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Summary:

A compilation of the latest news, events, and publications related to nuclear weapons and nuclear non-proliferation. The "Newsbrief" was produced by the PPNN and personally edited by Ben Sanders.

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NEWSBRIEF

3rd Quarter 1999

Editorial Note

The *Newsbrief* is published every three months, under the auspices of the Programme for Promoting Nuclear Non-Proliferation (PPNN). It offers information about the spread of nuclear weapons and their means of delivery, and about moves to deter that spread; where appropriate, reference is made to related developments with respect to other weapons of mass destruction and their means of delivery. The *Newsbrief* also refers to relevant developments in the realm of the peaceful uses of nuclear energy. The contents of the *Newsbrief* are based on publicly available material.

This issue covers the period 1 July to 1 October, inclusive; the extra day has been added to complete coverage of the 43rd Regular Session of the General Conference of the International Atomic Energy Agency; it has also provided an opportunity to include a brief report on the criticality accident that took place in Japan the day before. Unless otherwise indicated, dates (day/month) refer to 1999. Where reference is made to an uninterrupted series of items from a daily newspaper or a news agency, only the first and last dates of the series are noted. For example, '18-25/8' following the name or symbol of a particular publication means that use has been made of items appearing there on each day from 18 to 25 August 1999. Names of publications that are frequently referred to are abbreviated; a list is given on the back page.

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

relevance to PPNN's activities, nor with the way it is presented.

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. Non-Proliferation Developments

- During the late-July meeting of foreign ministers of the Association of South East Asian Nations (ASEAN) in Singapore, **China** announced that it had decided to sign the Protocol to the Southeast Asia Nuclear Weapon-Free Zone Treaty (Treaty of Bangkok): SEANWFZ. It was the first nuclear-weapon state to have expressed its readiness to do so. **India** announced that it would also 'endorse' the Treaty and was ready to sign the Protocol, but it was noted that according to Article 3 of that instrument, this is open to signature only by the five recognised nuclear-weapon states. (**Protocol to the Southeast Asia Nuclear Weapon-Free Zone Treaty**, signed on 15 December 1995; *AP*, 27/7; *YOS*, 28/7; *Mainichi Daily News*, 29/7; *IT*, 23/8)
- **The Tokyo Forum for Nuclear Non-Proliferation and Disarmament** was organised at the initiative of the Japanese Government in August 1998, to identify actions which would improve prospects for global non-proliferation and disarmament in the aftermath of the

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nuclear tests by India and Pakistan. It was an independent and international body of 23 eminent experts from 17 countries, with Japanese co-chairs. The Forum's report, released on 25 July 1999, focused its analysis on the deteriorating international political climate for nuclear non-proliferation and disarmament, three years after the Canberra Commission issued its 'roadmap' for elimination of nuclear weapons, and made a wide range of recommendations on actions to stabilise and reverse these negative trends. Excerpts from the final section of the report containing its 'Key Recommendations' are reproduced in **Section IV. Documentation**.

- At the 43rd Regular Session of the General Conference of the International Atomic Energy Agency (IAEA) in late September (see below, pages 4–8), **Cuba** announced that it had decided voluntarily to become a party to the Additional Protocol with respect to its safeguards agreement with the IAEA. Cuba has concluded an agreement pursuant to INFCIRC/66, which pertains to the nuclear material associated with its so-far uncompleted nuclear power station at Juragua.

b. Nuclear Disarmament and Arms Limitation

- Following an agreement in July between Sergei Stepashin, then Prime Minister of the **Russian Federation**, and **United States** Vice President Al Gore, a first round of talks on START III took place in Moscow on 17-19 August. The delegations were led, respectively, by John Holum, US Under-Secretary of State designate for arms control and international security, and Grigori Berdennikov, head of the Security and Disarmament Department of Russia's Foreign Ministry. The talks, which also dealt with the issue of possible amendments to the 1972 Anti-Ballistic Missile (ABM) Treaty, were officially described as 'businesslike and productive', but Russian sources claimed afterwards that, in fact, they failed to produce any useful results. Senior Russian officials have since also made public statements to the effect that by insisting on altering the ABM Treaty, which Russia considers as the basis for all subsequent arms limitation agreements, the US risks destroying that Treaty and thereby the entire nuclear disarmament process, and that a departure from the Treaty would spell the beginning of a new nuclear arms race.

In the United States, on the other hand, the Administration continues to say that it considers the ABM Treaty as a cornerstone of its nuclear strategy and is cautiously seeking to adjust it without jeopardising its integrity, for the sake of the potential deployment of a limited anti-missile defence. The Republican majority in the Congress, meanwhile, insists that the US should abandon the ABM Treaty altogether and prepare for the deployment of an ambitious anti-missile system.

In preparation for the next round of talks, held in Washington in September, US Deputy Secretary of State Strobe Talbott had consultations in Moscow about the possibility of making 'modest' adjustments in the ABM Treaty that would allow the US to deploy a limited missile defence system. American sources speak of an initial plan to base 100 interceptor missiles in Alaska. Talbott claimed to have had useful exchanges with his Russian counterparts, in preparation for talks at a higher level, but Russian comments repeated the contention that US plans for a nation-wide anti-ballistic missile system would lead

to a new arms race. Around the same time, US Defense Secretary William S Cohen, in Moscow to discuss possible amendments to the ABM Treaty, said he felt this could be amended in a way that takes Russia's concerns into account. Roman Popkovich, Chairman of the Duma's Defense Committee, said that while current US proposals were unacceptable, it might be possible to discuss them if the US makes its plans for building an anti-missile system more transparent.

In Russia, President Yeltsin submitted in August a list of high-priority items for the Autumn session of the State Duma (lower house of Parliament), which included START II. Roman Popkovich said that ratification of the Treaty might take place in October, but warned that '[t]he foreign-policy context must be favourable for taking such a decision'. In a late-August interview, Popkovich accused the US of trying to keep Russia from ratifying START II, because without the Treaty American nuclear strength would be several times greater than that of Russia. The Chairman of the Foreign Affairs Committee, Vladimir Lukin, has said that it would facilitate ratification if the Duma had a more precise idea of the American position with respect to the ABM Treaty. Duma Speaker Gennady Seleznyov was quoted as saying that the Duma was not likely to ratify START II anytime soon. Experienced observers of the Russian political scene have expressed the view that the uncertainties arising from the replacement of Sergei Stepashin as Prime Minister by Vladimir Putin and the impending presidential elections, had once again made early ratification unlikely, as did US Defense Secretary Cohen, who visited Russia in September and met with Duma deputies and the Russian military. Cohen said, however, that he was sure the next Duma would ratify the Treaty.

Meanwhile, there were reports that senior officials of Russia's Defence Ministry had been pushing for early ratification of START II, so as to bring down the number of nuclear warheads for each side to 3,500, and to seek a prompt conclusion of START III, with further reductions to 2,000-2,500.

(AP, 22/7, 29/7, 9-11/8, 17/8, 18/8, 20/8; X, 28/7, quoting **Interfax**; R, 30/7, 13/8, 18-20/8, 8/9, 9/9; IT, 16/8, 14/9, 19/9; DT, 20/8; **People's Daily**, 22/8; X, 23/8; WP, 8/9; RFE/RL, 14/9)

- Firms in **Germany** and **Russia** have concluded contracts with utilities in Germany, Sweden and Switzerland to provide them over each of the next five years with about 30 metric tons power-reactor fuel produced with blended-down weapons-grade enriched uranium from former Soviet stocks. Reportedly, for each ton of fuel produced, 30-40 kg of highly enriched uranium (HEU) will be used. (NF, 9/8)
- Research institutes in **Japan** and the **Russian Federation** have concluded a five-year agreement for the production of uranium and plutonium MOX fuel and its experimental burning in the Russian BN-600 fast reactor. The research will involve three fuel assemblies, using about 20 kg of weapons-grade plutonium. Reportedly, after 2003 Russia hopes first to produce 40 to 50 MOX fuel assemblies, involving 0.3 tons of plutonium annually, and after 2007 to start producing each year a full MOX core for the BN-600 reactor, containing 1.3 tons of plutonium. (**Atoms in Japan**, July)

- In the **United States**, the Department of Energy (DoE) has announced that the agreement being negotiated by the US and Russia on the disposition of surplus weapons plutonium will cover 34.5 metric tons rather than the 52.5 metric tons the US had earlier declared to be surplus. The former amount is said to be all the US currently has available for inclusion in the agreement, but according to the announcement, if additional material is declared excess by either side, this would either be included in the agreement or covered by an additional agreement. The agreement being negotiated is to be the first step in meeting the promise made by Presidents Clinton and Yeltsin in 1998, that both countries would dispose of 50 metric tons of plutonium from their nuclear programmes.

Russia, which does not have a MOX fabrication plant, is said to have conditioned its acceptance of the US MOX disposition option on external financing of the capital investments needed to build one. In a recent speech, Atomic Energy Minister Adamov pointed out that Russia's reactors are not currently licensed to use MOX fuel. For the American side, DoE stresses that the US cannot proceed to construct its own MOX facility unless Russia makes progress in the matter. The Nuclear Regulatory Commission (NRC) has reported that the Defense Authorization Act for fiscal year 1999 gives it all the authority it needs to license a facility for the fabrication of mixed-oxide (MOX) fuel from surplus plutonium.

Canada has decided to accept MOX fuel containing weapons-grade plutonium from Russia and the US for a one-time test burn, which will be part of a DoE project to try using Candu reactors for this purpose. Reportedly, nine fuel rods each from Russia and the US are involved. They would be burned for two years and then removed for non-destructive testing to see how their burnup in Candu reactors differs from that of fuel tested in light-water reactors. Tests are also planned in Russia and the US. In 1998, a Canadian parliamentary committee unanimously recommended rejecting the project because it would set a precedent for trade in weapons-grade plutonium. The announcement of the project is said to have met with public opposition, mainly on safety concerns.

(SF, 2/8, 16/8; NF, 9/8, 6/9; DoE Press Release, 2/9; R, 3/9; NW, 9/9, 16/9)

- The **Conference on Disarmament (CD)** on 5 August decided to admit Ecuador, Ireland, Kazakhstan, Malaysia, and Tunisia as new members, raising the total number to 66. (ACRONYM on-line, 5/8)

c. Nuclear Testing

- The Secretary-General of the United Nations, in his capacity as Depositary of the Comprehensive Test Ban Treaty (CTBT), at the request of states that have ratified the Treaty, has convened a **Conference on Facilitating the Entry into Force of the Treaty**. The action was taken pursuant to Article XIV, paragraph 2 of the CTBT, which says that if the Treaty has not entered into force three years after its opening for signature, the Depositary shall convene such a conference at the request of a majority of the states that have deposited their instruments of ratification. The CTBT was opened for signature on 24 September 1996, and will enter into force when it has been ratified by 44 nuclear-capable states listed in the Treaty.

As of late September, 41 of these states had signed the Treaty and 21 had deposited instruments of ratification (three more have since done so and one more is expected imminently to accede). In all, at the time this **Newsbrief** went to press, there were 154 signatories and 48 ratifications.

The Conference was scheduled for 6-8 October. UN Under-Secretary-General Jayantha Dhanapala was to open the Conference on behalf of the Secretary-General; Japan was expected to provide the President.

(Daily Yomiuri, 28/8; YOS, 28/8; Fact sheets from CTBTO PrepCom, 16/9; UNIS/CTBT/3, 27/9; R, 28/9; direct information)

- The 181st tunnel out of a complex of 182 tunnels in the Degelen Mountains in **Kazakhstan**, that were used by the Soviet Union for nuclear tests, was blown up on 25 September, with US help. The test site was shut down in 1991 on the order of the country's President. (NYT, 25/9, 26/9)
- **Pakistan's** Foreign Secretary has said that the possibility that India may conduct further nuclear tests creates doubts in Pakistan regarding the advisability of its early adherence to the CTBT. He has been quoted as saying also that if India were to conduct further tests, Pakistan would be obliged to respond, and the world should therefore press India and not Pakistan to sign and ratify the CTBT. The statement is taken as meaning that Pakistan has definitely decided not to sign the CTBT before the October conference, notwithstanding Prime Minister Nawaz Sharif's statement at the last UN General Assembly, that it would do so. In a subsequent newspaper interview Pakistan's Foreign Minister was quoted as saying that his country will not sign the Treaty until the US lifts its economic sanctions. A law providing a five-year waiver of some of the sanctions and a repeal of others is currently before the US Congress. (AP, 7/9; R, 7/9, 30/9; Hindu, 8/9, NYT, 14/9)
- It has been reported in Washington that on 8 September, US intelligence agencies detected an underground explosion at the Novaya Zemlya test site in **Russia**. Analysts said the event might have been nuclear or conventional; an American defence official said it was the former, and there were suggestions that it was a subcritical experiment. Russia's Ministry of Atomic Energy has denied that a nuclear test has taken place at Novaya Zemlya and has said it has not held any subcritical tests in 1999. American intelligence sources note that a seismic event at the same site detected in August 1998 was caused either by a large conventional explosive or by an underwater earthquake.

In June, US intelligence also detected an explosion at the Lop Nor testing site in China, which was thought to be a small underground nuclear test. Republican members of the US Congress, preparing for the Senate debate on the CTBT, have said that these events are an additional argument to reject the Treaty, which they feel runs counter to US security interests.

(WT, 15/9; IT, 16/9)

- In the **United States**, President Clinton has urged the Senate to act on the CTBT, asking it at a minimum to hold hearings that would allow each side to make its case for

or against the Treaty. Senators from both parties have been trying to convince their conservative colleagues to vote on the matter before the start of the CTBT Conference. In August, the White House and Democratic members of the Senate said they planned to raise the issue in the Senate when that reconvened in September, after the summer recess, but Senator Jesse Helms, Chairman of the Senate Foreign Relations Committee, has persisted in his refusal to schedule a hearing on the matter until the Administration submits to the Senate the modifications to the 1972 Anti-Ballistic Missile Treaty that would allow the US to deploy an anti-missile defence system. Initially, Senate Majority Leader Trent Lott was said to be unwilling to bypass the Committee and bring the issue to the floor, but on 30 September, in what was seen as a calculated reversal, he offered to schedule a quick vote on the Treaty, expressing confidence that Republicans would manage to keep the Treaty from obtaining a two-thirds majority. Lott offered ten hours debating time and a vote on 6 October. Some Democratic Senators objected to the move, which would prevent them from gaining more support for the Treaty, while others, fearing that if they did not accept, the Treaty would be held in abeyance indefinitely, suggested going along. As of this writing the matter was under discussion at the highest political level and it seems that the dates for the discussion and the vote have been postponed for one week and more time has been made available for hearings.

In a recent poll by pollsters from both political parties, 82 out of 100 Americans questioned were in favour of the CTBT, 14 were against and 4 were undecided; 81 per cent of Republicans supported ratification of the Treaty, and 86 per cent of Democrats. Among persons identified as 'conservative' Republicans, 79 per cent were said to be in favour. A number of senior conservatives, including former Secretary of State Henry Kissinger, have expressed support for a test ban. In connection with the allegations about Chinese nuclear spying, a group of top-level nuclear experts and former senior members of the US military, in a letter sponsored by the Union of Concerned Scientists, has called on the Senate to ratify the Treaty which it says would greatly help protect the US 'against the weaponization of stolen nuclear secrets'.

(AP, 20/7; USIA, 20/7; WP, 25/7; R, 30/9; NYT, 1/8, 30/8, 1/10)

- The **United States** Department of Energy has said that on 30 September it conducted its seventh nuclear subcritical test at an underground test site in Nevada. (YOS, 1/10)

d. Nuclear Trade, International Cooperation and Nuclear Export Issues

- According to the trade journal *Nucleonics Week*, negotiations between **China** and the **United States** on measures to be taken by the former to prevent the diversion of US technology to Pakistan have still not been completed. Agreement on this matter is needed before the US government can allow American companies to transfer nuclear technology to China. Reportedly, China has so far refused to give assurances that technology received from the US will not be transferred to **Pakistan**, as it has done, for instance, with regard to **Iran**. The NRC has suspended the processing of nuclear export authorisations to China, pending a resolution of this matter. (NW, 1/7; see also page 14)

- The decommissioned Superphénix fast reactor in **France** has received a delegation from **Russia's** BN-600 breeder reactor which is said to be performing well. Reportedly, the delegation came to inspect Superphénix components which they might be interested in acquiring, including sodium valves, pumps and boilers. (NW, 5/8)
- In July, it was announced in Moscow that **Iran** and the **Russian Federation** had negotiated a series of trade agreements estimated to amount to \$8 billion. During talks in Moscow later that month, the two countries also announced that they would work together to stop the spread of nuclear missiles in the Middle East. In a meeting a few days later with Russia's then-Prime Minister Stepashin and Foreign Minister Ivanov, Israel's Prime Minister Ehud Barak reportedly expressed his concern about 'the penetration of missile know how into Iran' and its supposed possession of nuclear-weapon technology. Reportedly, he was assured that Russia was making every effort to stop theft and sale of nuclear technologies to both Iran and Iraq. Stepashin is reported to have said that Russia no more wanted a nuclear power on its border than did Israel and that, as he had just promised US President Clinton, if there was any suspicion that know-how which could be used by Iran in the making of nuclear weapons was leaking from Russia, Moscow would be ready to look into the matter.

In early September, there was a report that Iran was blaming Russia for delays in the completion of the Bushehr nuclear power plant, which was said to be one year behind schedule. Iran's Ambassador to Moscow was quoted as saying that as long as the commitment to complete the plant was not met, no new contracts would be signed. Iran later denied the statement had been made and stressed its readiness to expand its cooperation with Russia.

In the **United States**, the Congress has adopted, by a vote of 490 to nil, a bill that imposes sanctions on countries that help Iran develop weapons of mass destruction. The bill contains a provision specifically aimed at Russia, which obliges the President to withhold the \$590 million the US is to pay that country for its participation in the international space station programme, until the President determines that it is actively opposing proliferation by Iran. The Administration opposes the bill because Russia has recently enacted tough anti-proliferation measures and accepted a US plan to cut links between Russian firms and Iran's missile programme. Representative Gilman, Chairman of the House Foreign Affairs Committee says he will muster the votes to override a presidential veto. Russia has said that the measure will have a negative impact on US-Russian cooperation in non-proliferation and export control.

(Iran News Agency, 27/7, in BBC, 27/7; AFP, 28/7; R, 28/7, 2/8, 6/9, 8/9; FAZ, 3/8; NYT, 3/8; NZZ, 3/8; RFE/RL, 15/9; UPI, 16/9)

e. IAEA Developments

- The **43rd Regular Session of the IAEA's General Conference** was held in Vienna from 27 September to 1 October. It was attended by representatives of 111 member states. The Conference elected Dr. Abderrahmane Kadri, Chairman of the Atomic Energy Commission of Algeria, as its President.

- In the course of the session, the General Conference approved applications for membership in the Agency by Angola and Honduras. With these additions, the IAEA will have 131 member states.
- The Conference decided to hold its 44th Regular Session in Vienna from 18 to 22 September 2000.
- In his message to the Conference, the UN Secretary-General noted that the IAEA is playing a major role in advancing the highest aims of the United Nations by preventing proliferation of nuclear weapons, promoting a strong safety culture, and helping to develop the peaceful use of nuclear energy for sustainable development. He expressed regret that progress on Additional Protocols to the Safeguards Agreements had been delayed and voiced the expectation that at next year's NPT Review Conference, states committed to strengthening the safeguards system would demonstrate that they had played their part in equipping their safeguards to deal with the next century's challenges. He underlined the progress made in achieving and maintaining a high level of nuclear safety world-wide and noted the work of the Agency in this regard. He also stressed the Agency's role in coordinating international efforts to reinforce national systems to prevent, detect and respond to illicit trafficking. An excerpt from the Secretary-General's statement is reproduced in section **IV. Documentation**.
- In his statement, the Agency's Director General, Dr. Mohamed ElBaradei focused on the three 'pillars' of the Agency's work: technology, safety, and verification. In the context of nuclear technology he spoke about nuclear power, which has become an important part of the energy mix, producing 16 per cent of world electricity. Global energy demand is rising, especially in the developing world, and the World Energy Council estimates that it will triple in the next 50 years. The choice of the investment to be made in energy production will be influenced by energy security and the preference for low price and low risk, but also by the need for energy supply services that are 'environmentally benign'. Nuclear power, he said, is likely to be increasingly recognised as one of the few options with virtually no greenhouse gas emissions. While this might suggest that the share of nuclear power would grow or at least remain stable, current projections are less definite. In Western Europe and North America nuclear power is at a standstill or declining, although in a few Asian and Eastern European states it continues to grow. The overall share of nuclear power is expected to fall to about 13 per cent in 2010 and 10 per cent in 2020. The Director General said that environmental considerations alone would not trigger a resurgence of investment in nuclear power generation: only if the industry consistently reflects safety, competitiveness, and public support, can it be assured of a long term future.

In his statement, Dr. ElBaradei addressed the issues of economic competitiveness and of public confidence. He said that profitability must not be at the expense of safety and that efficiency and safety are in fact mutually supportive. As to public support, he stressed that there was much public misunderstanding and lack of knowledge and said that while this is not surprising given the complexity of the subject, this could not justify widespread misperception. He underlined the role of industry and civil society in promoting public

understanding through objectiveness, openness, and transparency.

The Director General outlined the ways in which the Agency assists member states in developing a capacity for decision-making in the energy sector, including studies on the feasibility of various types of advanced technology. He also gave examples of non-power applications of nuclear energy to assist states in combatting disease, decontaminating areas of land affected by the results of nuclear accidents (Chernobyl) and using isotope techniques in water resources management. With regard to nuclear energy, he said that high priority would be given to the back-end of the nuclear fuel cycle; to the development of small and medium-sized reactors; to the exchange of information on innovative fuel cycles and reactor designs; and to the potential role of nuclear energy in sustainable development.

Under the heading of 'Nuclear, Radiation and Waste Safety', the Director General said the development of an effective world-wide safety regime was progressing. This included a revision of the Agency's safety standards for the guidance of national authorities; safety reviews of nuclear installations; promoting acceptance of international conventions relating to nuclear safety and to the safety of radioactive waste and spent fuel management; and assisting states to strengthen their national infrastructure for nuclear, radiation and waste safety. The threat to public health posed by 'orphan' radioactive sources was of special concern, as was the safety of research reactors, which involved such issues as decommissioning shut-down reactors, ageing, obsolete equipment and lack of spare parts.

Dr. ElBaradei paid much attention to the third 'pillar' of the Agency's work: verification and the security of nuclear material. He traced the development of the Additional Protocol to safeguards agreements, and appealed to states which had not yet done so to conclude Additional Protocols at the earliest possible date. In his summary of the work the Agency has done in the past year he stressed the current effort on integrating traditional nuclear material verification activities with the new measures, to achieve maximum effectiveness and efficiency. While the Director General expressed confidence that the new system would enable the Agency to provide enhanced insurance that all states with comprehensive safeguards agreements and Additional Protocols are using nuclear energy exclusively for peaceful purposes, he said that work needed to be continued towards the universality of the non-proliferation regime, nuclear disarmament and a better system of global and regional security, which he saw as the best disincentives against using nuclear energy for military purposes.

The Director General saw the physical protection of nuclear material as closely associated with safeguards and verification. The Agency's Illicit Trafficking Database recorded 138 incidents involving nuclear material and 124 involving other radioactive sources which had been officially reported. The number of states providing information to the database stood at 61 and was growing.

Among 'Possible New Verification Activities', Dr. ElBaradei mentioned the Agency's work on a joint initiative with the Russian Federation and the USA,

focusing on Agency verification of weapon-origin fissile material in those states. Work had continued on the development of an inspection system that might allow Agency inspectors to carry out their verification duties without access to classified weapons information. He had indicated to the President of the CD his readiness to assist in developing the verification system for a treaty to ban fissile material production for nuclear weapons. He pointed to the challenge these new activities would pose in terms of resource requirements; he had presented possible options for financing Agency verification of future nuclear arms control and reduction measures.

With regard to Iraq, the Director General said that under present circumstances the Agency could not provide any measure of assurance regarding Iraq's compliance with its obligations under the relevant Security Council resolutions. The Agency continued to be ready to resume its activities in Iraq at short notice. The IAEA also remained unable to verify that all nuclear material subject to safeguards in the Democratic People's Republic of Korea (DPRK) had been declared, but it continued to monitor the freeze on the DPRK's graphite moderated reactors and related facilities. Despite twelve rounds of technical discussions there had not been progress on important issues such as the preservation of information relevant to Pyongyang's compliance with its safeguards agreement. Consultations with states of the Middle East region regarding the application of full-scope Agency safeguards to all nuclear activities in the Middle East had continued.

The Director General's statement ended with a brief sketch of the Agency's financial strictures. With a budget that had remained virtually static for over a decade and 27 member states that had been in arrears in their financial contributions for more than two years, the Agency was unable to implement all the high priority tasks it was given. Its responsibilities were growing but its resources were not, and if the Agency was to go on meeting member states' demands and expectations there had to be a correlation between tasks and resources. This was true with respect to both the Technical Co-operation Fund and the assessed programme costs.

The portion of the Director General's speech pertaining to nuclear verification and the security of material is reproduced in section **IV. Documentation** of this **Newsbrief**.

- The following is a selection from among issues stressed by delegates participating in the General Debate.

Australia was among a large number of speakers highlighting the Agency's new verification tasks and stressing the importance of next year's NPT Review Conference. Austria was one of several industrial states holding that the risks emanating from nuclear energy are such that they cannot be contained in an acceptable way. Belgium expressed disappointment with the preparatory process for the NPT Review Conference. Brazil, along with New Zealand and Sweden, referred to the need for a 'new agenda', in support of the NPT and the implementation of commitments under Article VI of that Treaty. Along with many other delegations, it expressed the hope that a solution would be found soon for the issue of the expansion of the Board of Governors. China was one of several states that stressed the need for a balance in the Agency's programme between promoting the

peaceful uses of nuclear energy and the application of safeguards; it warned of a tendency to make the Agency a tool mainly for verification — only by putting promotion activities in the right place would the Agency also be able to apply its safeguards. China found that it was premature for the Agency to consider the issue of funding of verification under various international treaties; it said that the cost of verifying surplus fissile material from Russia and the US should be covered from the regular safeguards budget. Finland, speaking for the European Union (EU), stressed the importance of the changing approach to safeguards, from quantitative towards a more qualitative verification. Germany dwelled on the issue of a phase-out and the replacement of nuclear energy, through improved efficiency of non-nuclear power plants, renewable energy sources and energy conservation. It conceded that its nuclear power plants could not be switched off immediately and an agreement with the owners of electric companies was necessary. Together with a number of other, especially industrialised, nations it underlined the uniqueness of the Agency's nuclear verification task.

Several delegations from developing states welcomed the initiative adopted by the Agency to focus more strongly on the application of small and medium-sized reactors, not only for power production but for fresh water supply and salt production. Iraq used its statement to survey the ways in which it had met its obligations under pertinent Security Council resolutions, which it said were confirmed in the Director General's reports to the Security Council. Iran stressed that with the growth in the world's population, energy needs were growing and there would be an increased demand for nuclear energy, especially in developing areas; the fact that some developed states were relying less on nuclear power should not undermine the role of the IAEA in enhancing the technological ability of others and their access to nuclear technology as mandated by Article IV of the NPT. It reiterated its objection to the way the Nuclear Suppliers Group 'continue[d] to assume the role of a compliance body behind its closed doors'. Ireland's speech was strongly anti-nuclear. Israel, on the other hand, said that public disinformation and fear of radiation exposure led to many benefits of 'the clean nuclear energy' being lost to the public; it called for non-patronising public education. It also reaffirmed its dedication to a nuclear-weapon-free zone in the Middle East, emanating from within the region and freely arrived at. It referred to the work done in the ACRS process and expressed the hope that current developments would go in the same direction.

Along with several other states, Italy called for changes among priorities in the Agency's programme, including a greater emphasis on safety issues. The Republic of Korea joined other delegations in stressing the importance of developing advanced reactor models, in particular the System-integrated Modular Advanced Reactor (SMART). New Zealand saw verification as 'a growth business' and called for reliable and predictable funding. Like China, Pakistan warned against enhancing the Agency's safety and safeguards activities at the expense of the Agency's promotional role. It repeated its commitment to the goals of non-proliferation and disarmament and stressed its own restraint and sense of responsibility in this respect. It said it had proposed a strategic restraint regime for the region, based on

maintaining nuclear deterrence at the minimum level, and it repeated its commitment not to export nuclear and other sensitive technologies. It warned against the imposition of 'coercive restrictions and embargoes on scientific knowledge'.

Russia laid strong stress on the use of nuclear energy as a source of electric power, on reactor safety and on radioactive waste management. It saw nuclear power as essential to reduce greenhouse gas emissions and told of its plans for the development of inherently safe fast reactors in a non-proliferation prone nuclear fuel cycle that would avoid resorting to plutonium separation. It saw the IAEA as the organisation primarily concerned with the implementation of such programmes.

South Africa was one of several states that praised the excellent administration of the Agency and the cost effectiveness in its activities. It was greatly concerned by attempts by some member states to confine the Agency's budget to a zero nominal growth rate which would prevent the Agency from meeting new and serious challenges. South Africa spoke about the developmental work that had been done on the Pebble Bed Modular Reactor, a unique technology in regard to which the Agency had been asked to advise on the technical and economic feasibility, safety and proliferation aspects. Switzerland devoted much attention to the issue of storing highly radioactive waste products, on which it had carried out research. It mentioned the option of creating an international project for storing nuclear waste products, which had also figured in other statements. Turkey was concerned about accidents caused by 'orphan' radioactive sources, one of which had occurred in that country; it thanked the Agency for the prompt assistance rendered through its emergency response centre. The issue of amending Article XIV of the Agency's statute so as to allow for biannual budgeting was mentioned in the statement of the UK, which also called on states that had not yet done so to conclude Additional Protocols; it underlined the inability of the Agency to fully implement its safeguards responsibilities in Iraq and the DPRK. The US pointed to the need for managing the world's growing inventory of civil spent fuel and separated plutonium. It said that more civil plutonium was being separated than was being recycled; more than 200 metric tons of separated civil plutonium was stored around the world; and storage for civil spent fuel was nearing global capacity. Proliferation risks were growing concomitantly. A solution would have to be found, including international storage.

- The General Conference approved the Agency's regular budget for 2000, which calls for expenditures of US\$221 718 000, including a sum of \$4 609 000 for Reimbursable Work for Others, making the total approved budget appropriation for the year \$226 327 000. The portion of the regular budget to be spent under the heading of Nuclear Verification and Security of Material is \$81 568 000, as compared with \$80 812 000 appropriated for the current year. (IAEA Document GC(43)/6)
- Eleven new members were elected to the Board of Governors for a two-year term: Algeria, Austria, Belarus, Bolivia, Cuba, Finland, Indonesia, Nigeria, Poland, Republic of Korea, and the Syrian Arab Republic. The other 24 Board members, which have either been designated by the Board of Governors or were previously

elected by the General Conference, are Argentina, Australia, Brazil, Canada, Chile, China, Egypt, France, Germany, Greece, India, Japan, Jordan, Norway, Russian Federation, Saudi Arabia, Singapore, Slovakia, South Africa, Sudan, Sweden, United Kingdom of Great Britain and Northern Ireland, United States of America, and Uruguay. It is noted that although the Rules of Procedure provide for the possibility of secret balloting for the eleven vacant seats, this time all candidatures had been agreed upon in advance and the list was adopted by acclamation. (IAEA Documents CG(43)/3, GC(43)/26; Press Release PR99/11)

- The Conference adopted draft resolutions on most of the items before it. The following subjects are singled out as being most relevant in the context of the *Newsbrief* and are mentioned in the order of the agenda items under which they were discussed. *All resolutions were adopted without a vote.* As the *Newsbrief* went to press, final resolution numbers were not yet available. (The texts of the pertinent resolutions are reproduced in section IV. **Documentation.**)
- A decision was taken to amend Article XIV.A, on finance, so as to permit bi-annual budget estimates. (IAEA Document GC(43)/15, not reproduced.)
- A resolution was adopted on Strengthening of the Agency's Technical Co-operation Activities, in which various aspects of the Agency's programme were highlighted with particular reference to the Agency's assistance to developing nations. While this resolution was adopted without a vote, six Western European states expressed objections to a preambular paragraph recognising that many countries consider nuclear power to be an eligible option under the Clean Development Mechanism (CDM) of the Kyoto Protocol, and to an operational paragraph requesting the Director General, *inter alia*, to help interested Member States to obtain access to relevant information on the role of nuclear power in achieving sustainable development in developing countries and in mitigating greenhouse gas emissions through the CDM. Austria, Denmark and Ireland, in particular, said that a reference to the Kyoto Protocol was inappropriate in the Agency's context, as this pertained to a UN forum. (IAEA Document GC(43)/L.15, not reproduced.)
- As had been the case in the last few years, a resolution was adopted on Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System and Application of the Model Protocol. This resolution welcomed the fact that as of 1 October, 45 states and other parties to safeguards agreements had signed Additional Protocols, five of which had entered into force and one was being applied provisionally. It requested the Secretariat, *inter alia*, to pursue the implementation of safeguards strengthening measures as well as Additional Protocols 'without delay as far as available resources permit' and called on all concerned states and other parties to safeguards agreements to sign Additional Protocols promptly, bring them into force or provisionally apply them as soon as their national legislation allows. (IAEA Document GC(43)/L.13, reproduced.)
- Once again, a resolution on Measures Against Illicit Trafficking in Nuclear Materials and Other Radioactive Sources was adopted. In contrast to last year's resolution

on the subject, this resolution specified the activities in the fields of prevention, detection and response undertaken by the secretariat. It also invited the Director General to report to the Board of Governors on the possibilities of further improving international standards in this area and enhancing cooperation and coordination with member states and other international organizations. (IAEA Document GC(43)/L.14, reproduced.)

- The question of the expansion of the Board of Governors through an amendment to Article VI of the Agency's statute had been subject of controversy in the Board and in the General Conference for many years. One particularly difficult aspect of this issue was the allocation of all member states to specific geographic areas, which involved the question of Israel's position in the Middle East. Thanks to assiduous discussions in the Board and in the margins of this session of the General Conference, and the intensive efforts of the President of the Conference, the previous and the current Chairman of the Board, and the Chairman of the Committee of the Whole, as well as the readiness of states concerned to make compromises, a solution could be achieved. The resulting resolution which was, exceptionally, proposed by the President of the General Conference, contains a paragraph for insertion into Article VI on the ways the allocation of states to regions is to be effected. Calls from several Middle Eastern states for amendments to this new paragraph were not adopted, leading Syria to protest that the way the resolution had come about was undemocratic; with several others, Syria maintained that a change in the number of members of the Board had nothing to do with the membership of regional groups. The General Conference was thus left with a clear indication that the practical implementation of these new provisions might be difficult.

One of the new seats to be added would rotate between members from Latin America and Eastern Europe. In an oral statement, the President said that this seat 'shall be filled in conformity with the requirements of the statute on a rotational and alternate basis and equally shared by these two areas. This rotation shall begin first with Latin America.'

(IAEA Document GC(43)/L.12, reproduced.)

- On the issue of the 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, a resolution was adopted which, as in previous years, expressed 'deep concern' over the continuing non-compliance of the DPRK and called upon that country to comply fully with its safeguards agreement. (IAEA Document GC(43)/L.2, reproduced.)
- With regard to the implementation of United Nations Security Council Resolutions Relating to Iraq, there was a discussion in which several states, including Russia, called for the lifting of the economic embargo on that country. Iraq pointed out that it was the IAEA that had withdrawn its staff from Iraq 'in solidarity with UNSCOM, without vindication, in coordination with the US Administration'. Nevertheless, the resolution, which stresses that the Agency's Action Team's monitoring and verification activities in Iraq should be reestablished without delay and underlines the importance for the

Action Team to continue updating and maintaining its operational plan for the resumption of its monitoring activities in Iraq, was adopted without a vote. (IAEA Document GC(43)/L.6, reproduced.)

- A draft resolution submitted by Egypt on the Application of IAEA Safeguards in the Middle East was under discussion almost from the start of the General Conference. In an attempt to achieve general agreement on the text, Egypt omitted from its original draft a paragraph inviting states in the area of the Middle East, pending the establishment of a nuclear-weapon-free zone there, not to develop, produce or test, or otherwise acquire nuclear weapons or permit the stationing on their territories of such weapons. The amended resolution, too, was adopted without a vote.

As previously, a paper had been submitted on Israeli Nuclear Capabilities and Threat. This time, however, there was no draft resolution. After intensive consultations the matter was dealt with along similar lines as followed in the previous General Conference, by the President noting that it had been felt not desirable to consider this agenda item at the previous session: that it had been reinscribed on the agenda of the current session at the request of certain member states; and that certain states intended to include it on the provisional agenda of the 44th Regular Session of the General Conference. The Conference endorsed the President's statement.

Also with respect to Israel, the Arab states participating in the session stated their reservations about the credentials of the delegation from that country. Their view was included in the report of the General Committee on the Examination of Delegates' Credentials. The report was adopted without a vote, after some discussion.

(IAEA Document GC(43)/L.1/Rev.1, reproduced; IAEA Documents GC(43)/8, GC(43)/31, GC(43)/32, GC(43)/33, not reproduced.)

- Other substantive items on which the General Conference adopted resolutions pertain to the Safety of Radiation Sources and the Security of Radioactive Materials (GC(43)/L.3); Safety of Transport of Radioactive Materials (GC(43)/L.4); the Radiological Protection of Patients (GC(43)/L.5); Measures to Strengthen International Cooperation in Nuclear, Radiation and Waste Safety (GC(43)/L.7); Extensive Use of Isotope Hydrology for Water Resources Management (GC(43)/L.8); and Plan for Producing Potable Water Economically (GC(43)/L.9/Rev.1). Several statements made in the general debate in Plenary, and in the Committee of the Whole mentioned the question of the Proliferation Potential of Neptunium and Americium, of which the general tenor was that in principle, safeguards should be applied with respect to the former but that the latter was so uncommon that consideration of special measures might be deferred.
- The 43rd Regular Session of the IAEA's General Conference thus ended in a rare spirit of unanimity, although on the last day the atmosphere was clearly depressed by the criticality accident that had just taken place in Japan, on which the Agency staged a special information session.

f. Peaceful Nuclear Developments

- The new Vice President-designate of the **European Commission (EC)**, Loyola de Palacio of Spain, who will have responsibility for Europe's energy policy, has said that if Europe is to meet the requirements adopted at the environment conference at Kyoto, the use of nuclear energy is indispensable. (NW, 2/9; direct information)
- With parliamentary backing, the government of **Austria** is pursuing an 'action plan' aimed at forcing countries in Central and Eastern Europe to set dates for the shut-down of older nuclear power plants, especially those of Soviet design, as a condition of their entry into the EU. The action was said to be directed in particular at the RMBK reactors at Ignalina, in Lithuania; the oldest VVER units at Kozloduy, in Bulgaria, and at Bohunice, in the Slovak Republic; and against the completion of Temelin, in the Czech Republic. The Austrian government claims that Temelin does not meet the latest European standards and proposes to join with Germany in a simulated licensing exercise of the plant, to register any deficiencies. The Austrian government also intends to prevent the import of nuclear-generated power and is calling for the amendment of the Euratom Treaty to deprive it of its promotional elements.

In Brussels, officials of the EC have been quoted as saying that there is no obvious link between negotiations about accession to the EU and the safety of a state's nuclear installations, as maintained by Austria in connection with the membership applications of the Czech and Slovak Republics. It seems, however, that the new member of the Commission responsible for issues of extension of the EU, a German national, has said that the shut-down of nuclear facilities where safety cannot be upgraded to Western European standards, should be a condition of membership.

[Developments in respect of some of the facilities in question are referred to below in the context of the respective countries.]

(NW, 22/7; SN, 28/7; DP, 2/8; **Enerpresse**, 9/8; **K**, 2/9; **StV**, 2/9)

- **Belgium's** new coalition government, composed of Liberal, Socialist and Green parties, is reported to have agreed on a phase-out policy for nuclear energy under which the lifetime of any of its seven power reactors would be limited to 40 years. This would result in a complete phase-out by 2025. Apparently, however, subsequent disagreement within the Green party over the lifetime is holding up the decision. (NNN, 5/7; **SF**, 12/7)
- The shipment of nuclear waste from **Bulgaria** for reprocessing in Russia was indefinitely suspended after the parliament of Moldova banned its movement across its territory.

The National Electricity Company of Bulgaria is reported to have accepted all the proposals made by Western consultants for the safety upgrading of the four first-generation VVER-440/230 reactor units. It is hoping to raise the reactors to a safety level acceptable in the West and operate them well into the next decade. In 1993, Bulgaria promised the European Bank for Reconstruction & Development (EBRD) to shut the four reactors down in 1997-98. The EC wants all four units to be closed down

as soon as possible because it does not consider them capable of being upgraded to Western European standards, but is said to consider a compromise solution under which units 1 and 2 would be closed down before the end of their design lives, while units 3 and 4, which were completed in 1980 and 1982 respectively, might be allowed to operate longer. The Bulgarian authorities, however, hope to persuade the Western European Regulators' Association (Wenra) that the four units, which have been extensively upgraded since 1992, should be allowed to operate until the end of their design lives, without affecting Bulgaria's chances to enter the European Union. The operator says that there is no reason to shut down the four reactors before 2004-2005.

Siemens A.G. of Germany, Framatome of France and Russia's Atomenergoexport have formed a consortium to modernise the two VVER/1000 reactors at Kosloduy, at a total cost of \$308 million. The upgrade of units 5 and 6 would presumably help the country advance the shut-down of the older units.

(NEI, June; NW, 1/7, 22/7, 16/9; **R**, 9/7)

- The **Czech Republic** is said to have started upon an ambitious programme to make the four VVER-440/213 reactors at Dukovany among the safest nuclear power plants in Europe. Plans foresee extensive upgrades which should bring the facility to a level where its safety would not prevent the country from entering the EU, notwithstanding Austria's campaign to have the plants shut down as a condition of entry. Once the modernisation is completed, in 2008, the utility hopes to keep all four units, which are the cheapest source of electricity in the country, operating until 2025. The Austrian campaign is also directed at stopping completion of the two units of the Temelin plant (see **Newsbrief** 46, page 10), which belongs to the same utility and is facing large cost over-runs. In May, the Czech government decided that construction of the facility should continue. (NW, 29/7)
- In **France**, where 78 per cent of electric power is generated by 58 nuclear reactors, the Green Party has threatened to leave the reigning coalition if the government approves without debate the construction of the new-type European Pressurised Reactor (EPR) that was foreseen to replace older-type plants. The Greens demand that a referendum be held on the country's energy strategy. Prime Minister Jospin has promised to start a comprehensive public debate on the matter. There is thought to be a possibility that France will be forced to reduce its reliance on nuclear power, but it is not thought likely that it will be phased out altogether.

France's Interior Minister Chevènement has been quoted as saying that the EPR 'must be built' to prepare for the replacement of France's existing nuclear power reactors, but he is also supposed to have said that construction should be undertaken jointly with China, India, Japan, or 'even' the US, rather than with Siemens. The rejection of cooperation with Germany is said to stem from that country's nuclear phase-out policy.

(NW, 26/8, 2/9; **R**, 27/8; **BBC News on-line**, 29/8, in **UINB**, 99.35; **NNN**, 30/8; **NYT**, 30/8)

- In early July, **Germany's** Chancellor Schröder and the nuclear utilities were reported close to agreeing to limit the lifetimes of the 19 German power reactors to 35 years,

although some utility managers were said to insist that reactors should be allowed to operate for 40 'full-power years'. The Green Party was seen opting for a maximum lifetime of 30 years. The suggestion of Economics Minister Müller of a compromise solution of 35 years was said to be too long for the Greens and too short for the operators. The Federal Government had been expected to take its final decision before 30 September, when an interministerial working group was to have settled remaining legal questions regarding the phase-out and to have made recommendations for a timetable that would avoid the risk to the government of being sued for damages by the utilities. Differences between the coalition parties, the Social Democrats and the Greens, as well as interministerial disagreements, are said to have persisted so that the legal review could not be completed as scheduled.

Media reports on the current problems of Germany's Socialist-Green coalition government, weakened by defeats in parliamentary elections in four provinces ('Länder'), have made much of reported differences between Economics Minister Müller (Independent) and the Greens' Minister of Environment & Nuclear Safety, Jürgen Trittin. There have been new reports that contrary to the Federal Chancellor's policy of seeking inter-agency consensus on a nuclear phase-out strategy, the Environment Minister has resumed his push for an early phase-out and now opts for a limitation of reactor lifetimes to 25 calendar years, insisting on the shut-down of at least two reactors by the end of the government's current term of office, i.e., by late 2002. In contrast, the preference for 35 years, as indicated by Minister Müller, and apparently acceptable to some utilities, would mean no shut-down until after the next Federal elections. Müller is also reported to hold that the government cannot legally demand the closure of any nuclear power plant before 2002, as that would hurt the interests of shareholders and give them the right to sue the company's management. The only way open for the government to effect an early shutdown, according to Müller, would be to buy the plants.

Another issue between the government and the utilities is the latter's current inability to ship spent fuel for which they have no space. The government had earlier proposed to allow the shipment of nuclear waste to continue until 2004, so that contracts with reprocessors in France and the UK could be honoured, but except for giving export permissions to four plants Minister Trittin has so far been unwilling to lift the general restrictions on the export of irradiated fuel for reprocessing abroad, as he had been expected to do. With Switzerland allowing spent-fuel shipments for the first time in over a year, this has left Germany as the only country where there is a limitation on utilities' shipping their nuclear waste abroad.

Environmentalists and non-proliferation advocates have long opposed the completion of the high-flux research reactor FR-2, at the Technical University at Garching, near Munich, which is designed to operate on HEU. The University has consistently resisted moves to change the reactor design to enable it to operate on uranium enriched to no more than 20 per cent, and the Bavarian parliament has rejected a move to study the matter. However, there is now said to be a possibility that an option listed in a scientific report commissioned by the Federal Government may be accepted. This would be to complete the reactor as planned, and convert it to use especially

developed LEU fuel. Reportedly, this would involve a long delay, since the development of the fuel is expected to take seven years. The University is believed to be open to a future conversion but to insist for now on the completion of the reactor along the original (HEU) lines. A new factor in the situation is that Foreign Minister Joschka Fischer, Vice-Chancellor and leader of the Green party, has expressed himself against the use of HEU.

(*Nature*, 1/7; *DW*, 3/7; *FT*, 6/7; *IHT*, 6/7; *NYT*, 7/7; *NW*, 8/7, 15/7, 22/7, 29/7, 5/8, 26/8, 16/9; *SDZ*, 8/7, 25/8; *LT*, 12/7; *SF*, 12/7; *FF*, 28/7; *FAZ*, 11/8; *DW*, 23/8, 25/8; *NF*, 23/8, 6/9, 20/9; *NNN*, 3/9, in *UINB* 99.36; *Ux* 13/9, in *UINB* 99.37. See also *Newsbrief* no. 46, pages 10 and 11.)

- On 30 September, a criticality accident occurred at a fuel-conversion plant in Tokaimura, **Japan**. The accident, apparently caused by human error, viz the loading of 16kg of uranium nitrate enriched to 18.8 per cent being poured into a vessel meant to contain no more than 2.4kg of the liquid, is reported to have led to a, possibly intermittent, chain reaction which was brought under control after 17 hours. The situation is thought to have been aggravated in part because the container of the uranium remained intact and thus in fact became a nuclear reactor without means of controlling the reaction. This was eventually stopped by draining the water from the cooling pipes around the tank, which had served to reflect the neutrons, intensifying the chain reaction. As a direct result of the event, which was given the provisional rating of level four on the International Nuclear Events Scale, radioactivity at the plant is said to have temporarily risen to several thousand times the permissible level. Three plant employees were reported critically injured and around 50 suffered some degree of exposure. Tests have shown that residents in the immediate area of the plant were not affected and about 300,000 people living in the vicinity, who had been evacuated as a precaution, have since been allowed to return.

Unit 2 of the Tsuruga nuclear power station has had to be shut down, as the result of a crack in a heat-exchanger and in a connected steel pipe, through which almost 51 tons of primary coolant were spilled. Reportedly, the escaping coolant raised the ambient radiation level far above the maximum permissible rate, but no radioactivity is said to have escaped to the outside environment, and the event was initially not thought to have been significant by itself; since then, however, it appears that several more cracks have been found. The cause of the rupture is said to be 'high-cycle thermal fatigue'.

The two events are expected to contribute to the growing public unease in Japan about the use of nuclear energy.

(*AP*, 12/7; *Kyodo News Service*, 13/7, 15/7, 18/7, 22/7; *DW*, 15/7; *NYT*, 16/7, 1/10; *YOS*, 3/8; *Atoms in Japan*, August; *NW*, 9/9; *R*, 30/9, 1/10; *DP*, 1/10; *IAEA on-line*, 1/10; *IAEA Press Release* 99/12, 1/10; *IHT*, 1/10, 2-3/10; *ISIS on-line*, 1/10; *LAT*, 1/10; *WP*, 1/10)

- In **Lithuania**, the 1,500-MW RBMK-type reactor Ignalina-1 has been licensed to resume operating. The license was given on condition that a number of safety upgrades would be introduced in the near future. Lithuania has said that the plant could be shut down in 2005. The EC has said that Ignalina should be shut down as soon as possible as it does not lend itself to safety

upgrades to Western European standards; it has said it is prepared to give Lithuania an annual financial support of 100 million Euro in exchange for an exact date for the decommissioning of the plant. The Ignalina power station covers 80 per cent of the country's electricity demand; 38 per cent of its power is exported to Belarus and 12 per cent to Latvia. (NW, 22/7, 5/8; NNN, 28/7; BNS news agency, [Tallinn] 9/8, in BBC, 20/8; DW, 13/8)

- Like Bulgaria, the **Slovak Republic** had hoped to convince the Western European Regulators' Association to reconsider its earlier assessment of the two first-generation VVER/230 units at Bohunice, which have undergone safety upgrades since the Association issued its first report. However, in early September there was a report that officials of the European Commission had advised the authorities in Bratislava that their proposal for shutting the two units down between 2008 and 2012 was not acceptable, but that the EC was willing to entertain proposals for a shut-down between 2003 and 2008. In mid-September, the Slovak government announced that it had decided to close the reactors down in 2006 and 2008, respectively. The decision was welcomed by the EC as a 'courageous act', but Austria, which had said it wanted Bohunice closed down in 2000, was not satisfied. At the time this **Newsbrief** went to press, Austria was reported to be blocking discussions in Brussels about admission of the Slovak Republic to the EU. The Austrian Federal Chancellor has been quoted as saying '...no accession with unsafe power plants. And Bohunice is an unsafe power plant'. According to a report from Bratislava, the Slovak Republic might bring the shut-down dates forward even further if it is admitted to the EU before 2006 and the country gets financial help for the closure. The service life of the two reactors would end in 2008 and 2010, respectively. (NW, 22/7, 9/9, 23/9, 30/9; NYT, 17/9; CTK [Prague], 25/9; TASR [Bratislava], 25/9; FAZ, 28/9; DP, 29/9, 30/9; K, 29/9; NZZ, 29/9; StV, 29/9)
- In **Sweden**, Sydkraft, the company which owns Barsebäck power station, has applied to the EC for a restraining order on the government's plans to have the power station shut down in 1999–2000. On 16 June, the Swedish Supreme Administrative Court turned down Sydkraft's appeal against the government's decision, but in so doing it did not first seek a ruling from the European Court of Justice, thereby, as Sydkraft claims, violating European law which demands that in cases without precedent, national courts must ask for such a ruling so as to avoid a conflict with EU law. Prime Minister Goeron Persson has told the parliament that the plant would be shut down in the course of this Autumn. Sweden's major centre-right party, the Christian Democrats, are calling for a new referendum on decommissioning, conjointly with a referendum on entry into the European Monetary Union, in the Autumn of 2000. The Conservatives claim that the government's decommissioning plans will mean higher electricity prices and more greenhouse gas emissions. The government in Stockholm has acceded to a proposal by the Greens to add an extra tax on nuclear-generated electricity, thus making it less competitive. (NNN, 6/7, 26/8, 9/9; NW, 8/7, 9/9, 16/9, 30/9; Ux, 30/8. See **Newsbrief** no. 46, page 11.)
- **Switzerland** has been warned by the International Energy Agency (IEA) of the Organization for Economic Cooperation and Development (OECD) that it would not

be able to adhere to its commitment to cut emission gases by eight per cent over the next ten years if it phased out its nuclear power stations, as it has indicated it is thinking of doing. The IEA is said to have recommended Switzerland keep its nuclear option open and consider a timetable for closure in which account is taken of decommissioning costs and the consequences for CO₂ emissions. Nuclear opponents, environmentalists, and the country's Socialist and Green parties have collected enough signatures to make a national vote possible on two anti-nuclear initiatives. One of these would order the decommissioning of Switzerland's nuclear power stations after an operating period of 30 years; the other would extend the current moratorium on building new nuclear power stations, which expires next year, for another ten years. (NNN, 28/6, 28/9; FT, 29/6; NW, 2/9)

- **Ukraine's** only remaining operational reactor of the Chernobyl power complex, unit 3, was shut down on 1 July for routine maintenance and extensive safety upgrades. Decommissioning of Chernobyl-1 and -2 is said to have begun. Ukraine has rejected a proposal by Germany's Federal Chancellor Gerhard Schröder that instead of completing the nuclear power reactors Khmel'nitski-2 and Rovno-4 it should construct gas and coal-fired generating plants. Reportedly, because in 1995 Schröder's predecessor, Chancellor Helmut Kohl, made a commitment that Germany would help finance the K2/R4 project, Schröder has now consented to join in the EU's support for the completion of those reactors. Another argument is said to have been that the German firm of Siemens will be involved in the work; the Chancellor is said to have assured Siemens that it will get the necessary export credits. Ukraine's president has said that if the members of the Group of Seven most highly industrialized nations (G-7) follow through on their promise to support completion of the two reactors, Ukraine will be able to shut Chernobyl down altogether in 2000.

Western governments are assisting Ukraine in protecting its fourteen reactors against the 'Y2K' computer problem. The project aims at preventing power blackouts from arising on or around New Year's Day 2000. Computers at reactor facilities in Russia and Ukraine are said to be vulnerable to break-downs, and while the 'Y2K' problem is not expected to cause a nuclear accident, there is concern that with the memory of the Chernobyl disaster still fresh in many minds, even a minor problem at a Ukrainian reactor may cause public perturbation.

A grant agreement for 111.6 Euro to improve the data base on the structure of the Chernobyl sarcophagus has been signed by Ukraine's Energoatom and the EBRD as part of the Shelter Implementation Plan (SIP).

(AP, 1/7; NW, 1/7, 15/7, 29/7, 5/8; ff, 2/8; Ux, 2/8; NYT, 19/8)

- It has been announced in the **United States** that DoE has ordered a formal review of possible uses of the Fast Flux Test Facility at Hanford, which in 1993 was placed on stand-by. The plutonium-fuelled 400-MW facility has had a number of missions, none of which is said to have been sufficiently lucrative to justify its operation. Top DoE officials are said to support a possible re-start of the reactor, which appears to be supported mainly by local politicians and nuclear researchers but is opposed by

environmentalists and non-proliferation advocates. (*Energy Daily*, 19/8)

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

- The alleged nuclear espionage by **China** has continued to figure prominently in the American press and the Congress. A National Intelligence Estimate issued in Washington in September contends that by 2015 China is likely to have 'tens of missiles targeted against the United States', having added modern land- and sea-based mobile missiles to its arsenal, 'in part influenced by US technology gained through espionage'. It is said to be the first time the American intelligence community has explicitly stated that Chinese warheads developed with stolen secrets will be targeted at the US. Meanwhile, however, many American analysts continue to criticise the report of 25 May from the Congressional Select Committee (the 'Cox Committee') that contained extensive allegations of Chinese espionage against US nuclear weapon secrets; terms like 'paranoid', 'dangerous' and 'incoherent' are used with regard to the manner in which the report was compiled and to the conclusions reached in it. DoE officials also tend to reject the allegations that important design data were purloined by China. Expert observers recall assertions of high-level collusion during the Cold War in allowing China to obtain information that might help it upgrade its nuclear armory. President Reagan's science adviser, Dr. George A. Keyworth, has expressed indignation at the description in the Cox report of a lecture trip he made to China in 1980, as a cautionary example of the security risks American scientists run when they go to China.

The issue came to a head over the role played by the Chinese-American (Taiwan-born) scientist Wen Ho Lee, who is suspected of having passed on classified nuclear information from Los Alamos National Laboratory. While confirming that he transferred classified information to unclassified computers — a practice federal officials are said to have documented in dozens of instances — Dr. Lee has denied that he divulged secrets to China or to any unauthorised person, and maintains he is the victim of 'selective prosecution'. A similar assertion has been made by a former chief of counter intelligence at Los Alamos, Robert S. Vrooman, who has said that Lee was singled out for investigation because of his 'ethnicity', which was, he said, 'a major factor' in initially making him the top suspect among 83 people from the laboratory who also went to China in the 1980s and possessed the same secrets. Vrooman stated that the case was 'built on thin air' and the information China might have obtained was not design information but engineering data, more likely to have come from military contractors than from weapons laboratories. Vrooman further claimed that data on the W-88 warhead had been made available to 548 mailing addresses throughout the federal bureaucracy and could have leaked from any one of them. Similar comments have come from researchers associated with the US weapons programme; recent reports say that the information in question might have been available to thousands of individuals throughout the weapons complex. Many experts feel that the investigations focused too soon on the Los Alamos National Laboratory and on a single person there. In late September, the Federal Bureau of Investigation (FBI) said it would begin its inquiries all over again.

Allegedly because the FBI mismanaged the initial investigation, it is possible that Dr. Lee will not be prosecuted for espionage but arraigned — if at all — on the lesser charge of mishandling information relating to national security, contained in federal computers. There have even been suggestions in Washington that unless hard evidence is produced corroborating the accusations of espionage against Wen Ho Lee, he may have to be reinstated in his former position and receive a formal apology. The problem is said to be that for a prosecution on espionage charges it would be necessary to expose additional classified information, and the authorities do not seem to have decided whether this would be warranted.

The senior DoE intelligence officer who instigated the action against Dr. Lee has denied that his department's investigation focused on him because of racist profiling. He has since resigned. Energy Secretary Richardson has insisted, however, that Dr. Lee 'massively violated' American security procedures, maintained 'improper contacts' with Chinese officials and deceived American authorities; he has rejected the discrimination argument. It has since been reported, however, that three DoE employees have filed formal complaints of ethnic discrimination related to the case. Richardson has also called for disciplinary action against the former director of the Los Alamos National Laboratory, against former security official Vrooman, and against a counter intelligence team leader at Los Alamos, all for improperly handling the investigations at the Laboratory. Vrooman has said the action against him was in retaliation for his disagreement with senior authorities.

There is said to be concern among scientists in the US that in reaction to the reports of espionage, the Congress might adopt restrictions on the ability of foreign, and especially Asian, researchers to work at American educational institutions and laboratories. Reportedly, Chinese and Indian nationals are already meeting problems securing student visas and some Asian-American researchers find their work being hampered. Resentment is reported among scientists in nuclear-weapon laboratories against new DoE security rules that oblige them to report 'close and continuing contacts' with any foreigner from a 'sensitive country'. The term is said to pertain to any sexual or intimate relationship, sharing of living quarters, or business or financial relationships; social contacts and non-sexual personal relationships must also be reported if 'sensitive professional or personal information is discussed...'. One-time sexual relationships are said to be exempted.

The US Congress and the aerospace industry are reported to have found that measures adopted in the Autumn of 1998 to control the export of satellites tend to delay exports and hamper commerce. Under these measures, introduced in response to allegations that two American firms had exported technology to China that might benefit its missile development, the job of licensing exports of satellites and their components was shifted from the Commerce to the more restrictive State Department (see *Newsbrief* no. 43, page 5). An American firm has announced that it has sold China a training simulator (its third) for use by operators of the two French PWR reactor units under construction there.

Officials in Washington have said that the US and the People's Republic of China (PRC) are seeking to improve

relations that were damaged as a result of the bombing of China's embassy in Yugoslavia. As reported, some improvement in relations resulted from discussions between China's Foreign Minister and US Secretary of State Albright during a meeting of the ASEAN Regional Forum (ARF), in Singapore in late July. Subsequent talks between the same officials during the Asia Pacific Economic Cooperation (APEC) meeting in Auckland, New Zealand, culminated in an encounter there between the Presidents of the two countries, in which, reportedly, the rift was healed and the way was prepared for bilateral trade talks. Apparently, however, while President Jiang Zemin said that China reserved the right to use force to stop an independence move by Taiwan, President Clinton warned that the use of force would have 'grave consequences', but he did reaffirm US adherence to the 'one-China' policy. However, reports that China had transferred M-11 missiles to Pakistan (see page 23 of this *Newsbrief*) have since raised the possibility that the US may have to take measures against Beijing as provided for under the US Missile Sanctions Law. Senate Foreign Relations Committee Chairman Jesse Helms has announced that he will block Senate confirmation of the new Assistant Secretary of State for Nonproliferation Affairs until the President imposes sanctions on China for the missile sales. It is expected that such a step would once again cause difficulties for the relations between Washington and Beijing.

On 27 July, the US House of Representatives refused, by a vote of 170 to 260, to overturn the Administration's decision to extend by one year normal trade relations with China, thus endorsing the Administration's policy of engagement with the PRC. Conservative politicians expressed indignation at this outcome, since the Republican leadership in the US Senate had called on the Administration to reassess its attitude to China and seek closer political and military ties with Taiwan, bringing it under the US missile-defence umbrella. Conservative members of Congress, supported by dignitaries from former administrations, alleged that the current government's conciliatory approach to the PRC was promoting war. A 'statement on the defense of Taiwan', accusing the Administration of acting against American strategic interests, policy and democratic ideals was issued by the Heritage Foundation, and signed by 23 prominent conservatives. The same view was reflected by Senator Helms when he introduced the 'Taiwan Security Enhancement Act', which would oblige the Administration to ensure that Taiwan would have the necessary self-defence capabilities. In Senate hearings, senior officials of the Departments of State and of Defense said that such legislation would unnecessarily provoke a dangerous response and ran counter to Chinese-American agreements; it would also do little to protect Taiwan. Helms, however, called for support to Taiwan's 'moral courage' in standing up to Mainland China, referring to the statement by Taiwan's president Lee Teng-hui that his country would no longer adhere to the traditional 'one-China policy', but claimed separate status as 'one of two states in one country'. Lee had been quoted as saying that Taiwan would henceforth consider contacts with the PRC as 'state-to-state' relations; he has also repeatedly said that Taiwan will continue to seek membership in the UN and other international organisations.

The PRC has reacted sharply to these utterances, making it clear that it would not tolerate attempts by Taiwan to declare independence and would not accept a separation of Taiwan from China nor any change in Taiwan's constitution towards a 'two-states' approach. It has also warned Taiwan not to hold a referendum on independence. Recently, China's armed forces are said to have carried out large-scale landing exercises on the coast facing Taiwan. Beijing has stressed it is weighing a military option against Taipei, including possibly an amphibious assault on a Taiwan-controlled island off the mainland, but it has denied reports that its troops are on alert, and the US Administration has confirmed that it has seen no evidence that either Beijing or Taipei is preparing for military action.

The Clinton Administration, reportedly concerned about the negative effect which Taiwan's move could have on the stability in the area and on Sino-American relations, has said it saw Taiwan's action as 'unhelpful' and stressed that it did not support independence for Taiwan, nor its membership in organisations where statehood is required. Urging both sides not to use force. President Clinton has said the US would take 'very seriously any abridgement of the peaceful dialogue', and Secretary-of-State Albright, repeating US support for the 'one-China principle', has urged her Chinese counterpart to seek a peaceful resolution. Senior American officials have visited Beijing and Taipei to urge restraint and a resumption of the bilateral dialogue. Ostensibly in order to help maintain a balance of forces, Washington has allowed Taiwan to obtain elements for a modified air defence system, including fighter planes and early warning aircraft; it has said a future sale of theatre missile defence systems to Taiwan could not be precluded. Beijing has objected strongly to President Lee's expressed wish to be included in a regional missile defence scheme and demanded that the US 'scrupulously abide' by its promises.

Taiwan's President has reiterated on a number of occasions that, while he has no plans to pursue independence and does not intend to create a conflict with the PRC, Taiwan will talk to China only as a separate state. He has also spoken about 'reunification under [*sic*] the basis of democracy', and underlined his wish for dialogue and negotiation. This does not seem to have appeased Beijing's anger, however, which was expressed repeatedly during August and September. There were reports that the Chinese leadership had warned the US that it would feel compelled to use force to punish Taiwan for its statehood assertions, and media sources in Beijing have insisted that military conflict could erupt at any moment.

In July, Beijing issued a 36-page report containing a rebuttal of the allegations made in the 'Cox Committee' report. Beijing's report, said to have been authorised by China's State Council, included the assertion that since the 1980s, China had perfected neutron weapons and miniaturised nuclear warheads. US official sources were seen to evince neither surprise nor concern at the announcement. Western media saw the timing of Beijing's report mainly as a warning to Taiwan that the PRC would not shrink from using every means to subdue an independence move. In a statement of early September which reconfirmed China's resolve to use force against Taiwan if it moved towards independence or foreign forces interfered in attempts at reunification, a Chinese

Foreign Ministry spokesman repeated that the PRC would not be the first to use nuclear weapons and would not use nuclear weapons against non-nuclear weapons countries and regions; the statement contained the additional provision that 'our nuclear weapons will not be directed towards our Taiwan compatriots'. Nevertheless, an official daily publication in Beijing on science and technology is reported to have speculated about possible results of the explosion of a small nuclear weapon in the stratosphere over Taiwan, to paralyse computers without causing human casualties.

While American politicians, especially among the Republican majority in Congress, saw Beijing's claim to have developed sophisticated nuclear weapons as validating the findings of the Cox Committee, the Chinese report contained a step-by-step rejection of the Committee's allegations, and asserted that much of the information it was supposed to have stolen was openly available, and that for the rest China's own research was responsible. The State Council's chief spokesman, who announced Beijing's report, described the allegations of the Cox Committee as typical examples of racism, demeaning the ability of the Chinese, who, in fact, had begun their research in 1973.

On 2 August, China announced it had test-launched a new long-range ballistic missile over its own territory. US sources said the test involved the new Dong Feng (DF-31) missile, believed to have a range of 5,000 miles (8,000 km) and capable of carrying a single nuclear warhead weighing about 1,500 lbs (700 kg). Reportedly, the missile can be launched from mobile platforms; China is expected to build between ten and 20 DF-31's for deployment in early 2000 and to test a submarine-launched version called JL-2. American sources stressed they had long expected the test; Japan voiced concern that the event might give an added impetus for a test launch by the DPRK.

A report from Washington in June said that Chinese companies had supplied the DPRK with material and precision-grinding instruments for use in the production of missiles. Administration officials have confirmed receiving intelligence suggesting that equipment, including gyroscopes and accelerometers may have been provided. It appears that the transfers did not have the approval of the Chinese government which, US government officials confirm, has no interest in seeing the DPRK develop its missile capability. China was also said to be supplying Syria with missile technology.

Beijing has denied earlier American allegations that the part of the Belgrade embassy that was targeted by NATO missiles — recent reports indicate that this was the one instance of the American Central Intelligence Agency (CIA) selecting a target — was used for intelligence purposes; it does insist, on the other hand, that the strike was deliberate, and has demanded that those responsible should be identified and punished. Discussions on compensation ended in late July with the US' promise to pay \$4.5 million for the victims of the raid, but as of late September there still did not seem to be agreement on compensation to be paid for physical damage done to the embassy building, nor regarding the US demand to be compensated for the burning of its consulate in Chengdu and the damage to the embassy in Beijing.

(WT, 16/6, 30/6, 13/7, 20-22/7, 3/8, 5/8, 25/8; AP, 29/6, 30/6, 13/7, 14/7, 16/7, 20-23/7, 26/7, 27/7, 4/8, 5/9, 7/9, 9-11/9, 13-15/9, 17/9; WSJ, 8/7, 13/7, 20/7, 21/7, 5/8, 11/8; IHT, 9/7, 23/7, 17/8, 23/9, 24/9; NYT, 13-15/7, 17/7, 19/7, 21/7, 23/7, 26/7, 31/7, 1-3/8, 5/8, 6/8, 13/8, 18/8, 19/8, 24/8, 3/9, 7/9, 10/9, 14/9; R, 13/7, 14/7, 20-22/7, 25/7, 2/8, 4/8, 5/8, 7/8, 13-15/8, 18/8, 19/8, 2/9, 7/9, 9/9, 10/9, 12-14/9; USIA, 13/7, 21/7, 2-4/8, 16/9; WP, 13/7, 20/7, 21/7, 25/7, 26/7, 3/8, 7/8, 13/8, 17/8, 2/9, 12/9, 15/9; AFP, 15/7; X, 15/7, 16/7; China Daily, 16/7, 21/7, 15/9; DP, 16/7; NG, 16/7, 22/7; SCMP, 16/7, 11/8, 17/9; E, 17/7; LM, 17/7; People's Daily, 19/7, 21/7, 4/9, 11/9; LAT, 20/7, 21/7, 24/7, 26/7, 24/8; Il Sole-24 Ore [Rome], 27/7; Mainichi Daily News [Osaka], 27/7, 29/7, 4/8; Chi, 28/7, 13/9; De Standaard [Brussels], 28/7; Izv, 29/7; NW, 29/7, 19/8, 26/8; Japan Times, 30/7; DT, 19/8; San Jose Mercury News, 21/8; CBS News, 24/8; CSM, 25/8, 17/9; Newsweek, 30/8; KH, 13/9, 14/9; KT, 13/9. See also Newsbrief no. 46, pages 20-23.)

- A Russian official source has denied reports that China had bought two Russian nuclear-powered submarines, capable of carrying ballistic missiles. Initial reports had claimed that China had bought two Typhoon-class boats equipped with 20 launchers that fire SSN-20 nuclear-capable ballistic missiles. A senior Russian military official was quoted as saying that Moscow could not sell such submarines because this would violate both the NPT and the missile technology control regime (MTCR). Moreover, Typhoon-class submarines were not on the list of weapons allowed for export. (AFP, 1/9, 3/9; RFE/RL, 2/9; Hindu, 3/9; WT, 3/9)
- In late June, the State Duma of the Russian Federation adopted a law on funding for the country's nuclear forces until 2010. The timing of the measure was said to be connected with a renewed move towards ratification of START II, but it was also seen in the context of greater reliance on the use of nuclear weapons in the current Russian strategic doctrine, following the weakening of its conventional forces since the end of the Cold War. In an interview in the army newspaper *Krasnaya Zvezda*, the commander of Russia's strategic rocket forces also underlined the increased importance of the country's strategic nuclear weaponry. Russia's Deputy Minister for Atomic Energy, Lev Ryabov, said on 26 August that Russia would have to improve its nuclear weapons in response to the US development of anti-missile systems.

Russia's current Prime Minister, Vladimir Putin, has said that nuclear weapons remain fundamental for the country's security and added that the development and improvement of its nuclear arsenal are among the most important tasks for the government. Russia's Defence Minister, Marshall Igor Sergyev, has said that the country's nuclear weapons are 'on a par with the world's best'.

A National Intelligence Estimate recently released in the US claims that mainly as a result of budget constraints, Russia's nuclear arsenal, while still formidable, will decrease 'dramatically', to well below the limits set in START I and II.

While calling for the earliest possible application of the new nuclear financing law, the chairman of the Duma Defence Committee, Roman Popkovich, has urged that START II be ratified as soon as possible. Popkovich is reported to have advocated a number of new uses for

Russia's ballistic missile complex, including the mirving of the new Topol-M missile and the development of a Russian anti-missile defence.

Former Minister of Atomic Energy, Viktor Mikhaelov, is reported to have said that Russia is developing a new generation of low-yield nuclear weapons for battlefield use, which he said would be more effective than the most modern conventional weapons. Many Russian nuclear scientists, facing the possible end of their employment, reportedly strongly support this scheme. Other Russian experts, however, while recognising the importance of tactical nuclear weapons as deterrents rather than a means of war-fighting, claim that a new generation of tactical warheads is not imminent; in any case, they say, even if such weapons were to be designed, the inability to test them would prevent their manufacture.

A Russian news agency has said that a new short-range missile of great precision has been developed. The missile, described as a 'deterrent weapon' to be used in local conflicts, is said to be ready for serial production and export.

In late June, Russia held its largest military exercises of the last ten years. According to official Russian sources, in six days of military maneuvers, staged over an area extending from the Arctic to the Black Sea, simulated nuclear strikes were tested as a defence against an unspecified Western attacker using conventional means. During the exercises, US fighters are reported to have encountered Russian nuclear-capable bombers flying along the coast lines of Iceland and Norway; some bombers are reported also to have flown over the North Pole and to have test-fired strategic missiles.

In 1994, Russia's then Prime Minister, Viktor Chernomyrdin, agreed with US Vice President Al Gore that Russia's three Chernobyl-type RBMK reactors would be converted so that they would no longer produce weapons-grade plutonium. Reportedly, this would be done by the introduction of new cooling systems that would have made it possible to use low-enriched uranium. This has not yet been done however, and it will require time and money; plutonium production is now expected to continue for several more years, at the annual rate of 1.5 metric tons.

(*Izv*, 25/6; *AP*, 28/6; *NEI*, July; *NYT*, 1/7, 3/7, 10/7; *CNN Online*, 2/7; *Ekhomoskvy (Radio) Information Agency*, 9/7; *IT*, in *AP*, 2/8; *X*, 17/8; *AFP*, 27/8; *R*, 30/8; *Interfax*, 31/8; *IT*, 31/8; *WP*, 31/8; *IHT*, 1/9)

- On 14 July, a commission of the **United States** Congress released a report assessing the way the American government is organised to combat the proliferation of weapons of mass destruction. The report evaluates nuclear, biological and chemical weapons and the threat they pose to the US and their military forces, and it is said to conclude that the US is ill prepared to combat this threat. The Commission which was headed by John Deutch, former director of the CIA, has recommended the establishment within the National Security Council of the post of National Director for Combatting Proliferation. (*AP*, 8/7; *R*, 8/7; *NYT*, 9/7; *Congressional Media Advisory*, 23/7)
- **United States** Secretary of Energy Bill Richardson has agreed to a Republican proposal to consolidate nuclear

weapons programmes under a semi-autonomous Agency for Nuclear Stewardship within the DoE. The Agency is to run the nuclear weapons laboratories and the facilities that assemble and maintain the weapons stockpiles as well as the Office of Fissile Materials Disposition. Non-governmental organisations involved with environmental and disarmament issues have expressed concern about a potential conflict of interest arising from the fact that the new body will deal with issues of security, non-proliferation, environment, safety and health, together with the production of nuclear weapons. Proposals for the Agency followed the controversy arising from the allegations that the national nuclear-weapons laboratories which operate under DoE's responsibility had not been prepared for China's supposed attempts at espionage, and that the subsequent investigations had not been handled properly.

During the period covered by this **Newsbrief**, the future of DoE was still under discussion in the Congress. Besides creating the Agency for Nuclear Stewardship, the Congress has adopted legislation establishing a semi-autonomous National Nuclear Security Administration within DoE. This proposal was said to have been resisted by Secretary Richardson, supposedly because it would exclude him from direct control over the employees of the new agency. The possibility of transferring DoE's nuclear weapons activities, including its plutonium disposition activities, to the Department of Defense (DoD) was also said to have been under consideration among Republican members of the US Congress. Reportedly reversing a long-time trend, these changes would have emphasised deterrence and national defence over non-proliferation. Some Conservatives in the Congress were still heard to call for DoE to be dissolved altogether.

(*AP*, 8/7; *WP*, 8/7, 7/8; *IHT*, 9/7, 23/7, 23/9; *NF*, 12/7; *SF*, 12/7. See also **Newsbrief** no. 46, page 22.)

- **Japan** and the **United States** have concluded an agreement for joint research on a theatre-missile defence (TMD) system. Media reports speak of a cooperative programme under which the two states would work on a five-year demonstration and validation phase costing \$525 million. This would eventually lead to the development of a seaborne anti-missile defence system with a radius of 1,860 miles (3,000 km). A spending ceiling has been set for the design portion of the project, to which the two countries will each contribute \$36 million. A Japanese Foreign Ministry spokesman has stressed that the project is still in the very early stages and that the possible deployment of a working TMD system is years, if not decades, off. A Japanese Defence Agency white paper has underlined the importance for that country of joint research on TMD, which is seen as a basic element in a joint security system.

Both China and the Democratic People's Republic of Korea (DPRK) have criticised the Japan/US cooperation as disturbing peace and stability in the Asian Pacific area. The RoK is understood to have little interest in joining the TMD system.

(*Defense Week* [Washington], 26/7; *R*, 27/7, 15/8, 17/8; *Mainichi Daily News*, 28/7; *ASS*, 4/8, 16/8; *USIA*, 10/8; *AP*, 16/8; *NYT*, 17/8; *E*, 21/8; *People's Daily*, 22/8, 23/8)

- **United States** President Clinton has signed into law the 'National Missile Defense Act' which states that it is US policy to deploy as soon as technologically possible a national missile defense (NMD) system. The President has stressed that any deployment of the system must be subject to the authorisation and appropriations process and that no decision on deployment has been made. He has added that any NMD system must be 'operationally effective, cost-effective, and enhance [US] security'. In making this determination, the President said, '...we will also review progress in achieving our arms control objectives, including negotiating any amendments to the ABM Treaty that may be required to accommodate a possible NMD deployment'.

On 3 October the US Ballistic Missile Defense Organization (BMDO) conducted the first intercept test of the NMD programme, in which, reportedly, a 'kill vehicle' launched from the Marshall Islands destroyed a modified Minuteman intercontinental ballistic missile over the Pacific Ocean. It was to be the first of three tests planned to take place before the review that is to be made in 2000, when the President would decide whether to deploy the system. In all, about 20 NMD system trials are said to be planned for the next six years.

A spokeswoman for **France's** Foreign Ministry has warned that the American development of anti-missile defences is bound to re-launch an arms race. She said it would call into question the 1972 ABM Treaty and had already 'blocked' the work of the Conference on Disarmament in Geneva, including the ban on the production of nuclear material.

During a visit to Washington in late July by **Russia's** Prime Minister of the time, Sergei Stepashin, the two sides are said to have discussed the possibility of exploring cooperation on defences against the ballistic missile threat from 'unstable regimes'. Although apparently no concrete measures were discussed, these talks were seen by some Washington officials as indicating a potential shift in the Russian approach to missile defence.

(WT, 26/7; **Baltimore Sun**, 1/8; **R**, 25/8, 3/10; **Aerospace Daily**, 29/9)

- On 2 August, it was announced that a Theater High Altitude Area Defense (THAAD) missile had successfully intercepted a simulated warhead over a test site in New Mexico, **United States**. This was presented as being the first time a separated warhead was hit outside the Earth's atmosphere. Independent scientists have pointed out that until a missile is tested under realistic conditions, such as would prevail in the case of actual hostilities, the results will be misleading. The director of operational test and evaluation for the US Defense Department, Philip Coyle, has said that the intercepts were 'tightly scripted' and not 'operationally realistic'. He has also said that the tests used a missile other than the one that would be purchased; the targets were at shorter range than the system might really face; and the test conditions were 'contrived'. He was further quoted as saying that before the Lockheed Martin Corporation was awarded a contract covering the whole development phase, a new missile should first prove itself in more realistic scenarios. Mr. Coyle has since been reported to have said that he had not been criticising the Army's testing procedures and that the test limitations were

unavoidable 'given range safety considerations and the maturity of the THAAD program'. A Congressional report has said that the THAAD system is plagued by manufacturing flaws and that reliability remains a concern, because most components were produced under an inadequate quality assurance system. Initially, two further tests had been foreseen until the project would move into the engineering and manufacturing stage of its development, but on 19 August officials of the US Army and the Ballistic Missile Defense Organization announced that based on recent testing successes Lockheed Martin Corporation was being authorised to proceed toward full development of the missile interceptor. Officials justified the move in the interest of cost-saving and said that making the prototypes work had diverted too much attention from the goal of designing a production model. A spokeswoman for the US Defense Department said that little would be accomplished by additional tests. The project has so far cost \$3.9 billion and the development stage is said to be assessed at \$15.4 billion. Reportedly, during the development phase, 40 more flight tests are planned.

(AP, 29/7, 2/8, 26/8; LAT, 29/7; **Lockheed Martin Missiles and Space Newswire**, 2/8; NYT, 3/8; **Defense Week**, 23/8; WP, 28/8; WSJ, 28/8; IHT, 7/9)

- Military officials from the **Russian Federation** and the **United States** have agreed to establish a joint missile warning centre to overcome false alarms that might be caused by the 'millennium bug' (the 'Y2K problem'). The discussions had been suspended during NATO's air action against Yugoslavia. Current plans call for the construction of a 'Center for Strategic Stability and Y2K' at a US air base in the state of Colorado, to be staffed by personnel from both sides in December 1999 and January 2000. Up to 20 Russian officers are expected to be assigned there. The centre will be in touch with command posts in Russia and the US.

The Republican chairman of the US Senate panel considering the Y2K issue and his Democratic vice-chairman have called on the Administration to invite China, India and Pakistan to join the exercise.

Discussions on Y2K cooperation between the defence ministers of the two countries are said also to have dealt with the creation of a permanent missile early-warning system centre in Moscow.

(RFE/RL, 1/9; AP, 2/9; **R**, 9/9; WP, 11/9; UPI, 13/9. See also **Newsbrief** no. 45, page 12)

h. Proliferation-Related Developments

- The concern that had reigned during most of the period covered by this **Newsbrief** about the possibility that the **Democratic People's Republic of Korea (DPRK)** would stage another long-range ballistic-missile test, was relieved during the second week of September by news that in bilateral talks in Berlin the DPRK had agreed to observe a temporary freeze on testing long-range ballistic missiles for the duration of its negotiations with the US on the improvement of relations. Reportedly, in return the US would lift part of the sanctions it has maintained on the DPRK since the early 1950s.

Tension had existed ever since, in early July, former UN Under-Secretary-General Yasushi Akashi was told in

Pyongyang that preparations for a second test of an intercontinental-range missile were complete. Akashi is said to have conveyed Japan's concerns about the DPRK's plans and Pyongyang reportedly responded, as it has often done since, that it had every right to launch a satellite if others did so, and said its rocket programme was purely scientific.

In the course of July and August there were numerous reports of launch preparations and predictions that a launch would take place soon. American sources said that Pyongyang appeared intent on test-firing its missile during the summer; in Seoul there was speculation that a test would take place on the anniversary of one of several events of significance to the DPRK. In mid-July, South Korean intelligence sources claimed that 'a large missile' had been moved to a launch site on the East coast; the launching pad used in last year's test was said to have been raised, which gave rise to speculation that the range of the missile had been increased, possibly to 3,750 miles (6,000 km). In Tokyo, Japanese and American sources were quoted as saying that the DPRK was constructing facilities for storing and injecting liquid fuel at the launching pad, including fixed pipelines; according to intelligence experts, this would make it more difficult to detect when a missile was being fuelled for an upcoming launch. In early August, American officials cited evidence that fuel had been delivered to a DPRK missile-launch site and that radar activity there had increased which might indicate that a launch was not far off.

Military experts are said to agree that the missile in question, Taepodong-2, has a first stage similar to China's liquid-(nitrogen/hydrogen) fuelled CSS-3 rocket, and is powered by four Taepodong-1 engines. The second stage is supposed to be analogous to the DPRK's Rodong-1 missile. While Taepodong-2 is thought to have a greater range than anything the DPRK has tested before, its accuracy is thought to be low. There have been suggestions that a satellite might be mounted on the missile to demonstrate its scientific function. The Director General of Japan's National Defence Agency has quoted experts who say that yet a third long-range missile seems to be under development. This is seen in conjunction with an earlier report that Pyongyang may be working on a more advanced version of Taepodong-2, with a range of 5,000 miles (8,000 km).

Reportedly, in July the DPRK started satellite broadcasting, using the Thaicom 3 satellite owned by the Sinawat Satellite Co. of Bangkok. This was seen as relevant to the issue of accuracy of Taepodong-2, in light of a South Korean news agency report which alleged that the satellite had a global positioning system which enabled it to locate a missile's point of impact. The Thai company has since confirmed having supplied the DPRK with a facility on its satellite, but has denied that this has a global positioning system.

South Korean sources have also reported that the DPRK is building an underground missile base with up to ten launching ramps near the Chinese border, from which missiles would be able to reach all of the Republic of Korea (RoK) and Japan.

In late July, a concerted effort began to prevail upon the DPRK to drop its plans to test Taepodong-2. The US State Department warned that a launch would have 'very

serious consequences' and could be expected to have 'negative implications' for any improvement in relations between the US and the DPRK. Senior Japanese officials stressed that another long-range DPRK missile test would make it difficult for Tokyo to continue its support for the provision of the reactors promised under the Agreed Framework. Underlining this, Prime Minister Obuchi said he had asked China and Mongolia to convey his country's concern to Pyongyang. During the July meeting of the ASEAN Regional Forum in Singapore, the Foreign Ministers of Japan and the RoK and the US Secretary of State jointly framed an appeal to the DPRK to accept engagement with the world rather than risking the 'serious negative consequences' that would follow a missile test. At the end of the meeting, 22 Foreign Ministers from Asia, the Pacific and Europe issued a joint statement warning that the DPRK's ballistic-missile programme was a threat to regional stability in the Korean Peninsula and Northeast Asia.

US Defense Secretary Cohen, on a visit to Seoul, said that the US would mobilise 'all available means' against Pyongyang if it undertook a second long-range missile test, but he ruled out the use of military force. The RoK Defence Ministry had earlier been reported as mentioning the possibility of using military 'sanctions' against the DPRK, but senior RoK sources later said that neither their country, Japan or the US were considering taking military action.

During a visit to Washington by RoK President Kim Dae-jung, both he and President Clinton had warned the DPRK that they would take 'tough joint action' if it pushed ahead with a second ballistic-missile test; the former said that he had received positive responses from the Presidents of China and the Russian Federation to his request for cooperation in dissuading the DPRK from carrying out another test. One report from Seoul said that the RoK was considering taking the issue to the Security Council, if necessary. Japan and the US were reported to plan sharing tracking data on any DPRK missile launch and two American intelligence-gathering ships — one of them said to be fitted with a system for monitoring electronic signals from short-, medium- and intermediate-range ballistic missiles — were reported to have taken position in the Western Pacific. It was reported from Seoul that the US had agreed to station more air and naval forces on and around the Korean Peninsula and was sending a carrier task force. In August, Japanese and RoK naval units held joint exercises, as did RoK and US military forces, provoking the reaction from Pyongyang that a second Korean war had now become unavoidable.

Regarding the actual steps to be taken in the case of another test launch, American, Japanese and South Korean officials said that they would cut their aid to the DPRK to a 'minimum humanitarian level' and take further measures, such as banning remittances of funds by the approximately 750,000 ethnic North Koreans in Japan, who reputedly send each year more than \$600 million to the DPRK; the suspension of South Korean tourism in the North; and the interruption of US oil supplies. Already after the DPRK's missile test of August 1998, Japan had suspended its grain supplies to Pyongyang. At a meeting in July of the Korean Peninsula Economic Development Organization (KEDO), Japan confirmed that it would reinstate its \$1 billion contribution to the light-water reactor project, which it had suspended after last year's test of Taepodong-1, but

that it would freeze them again if the DPRK staged a second long-range missile launch. This reportedly caused some disagreement between Tokyo, Seoul, and Washington, since the latter two seemed to feel that the existing framework of the engagement policy towards the North should be maintained in any case. The US said, however, that it understood that under the circumstances, it would become difficult for Japan to disburse money for the supply of energy to the DPRK.

In July, the US House of Representatives, in a 305 to 130 vote, added as a condition of any US assistance to the DPRK in the provision of the two light-water power reactors under the Agreed Framework, that this can be rendered only once Pyongyang is certified as being in compliance with its obligations under the NPT. Upon the initiative of Foreign Relations Committee Chairman Helms, the Senate began consideration of a similar measure. One apparent consequence of its adoption would be the inability of the Administration to conclude a nuclear cooperation agreement with the DPRK — needed if the US is to provide any components for the reactors covered by the Agreed Framework — without the express consent of the Congress. The US State Department warned against linking the DPRK's missile tests with the Agreed Framework, which, as its spokesman stressed, is very much in America's own interest. On his visit to Seoul, US Defense Secretary Cohen also underlined the importance of maintaining the Agreed Framework even if the DPRK launched the missile. South Korea's Foreign Affairs Minister also said that the RoK wished to stay with the light-water reactor project; this was just after the RoK National Assembly adopted a law approving \$3.2 billion for the construction of two light-water reactors in the DPRK pursuant to the Agreed Framework.

Besides pointing to the negative consequences of a missile launch, governments' appeals contained hints of rewards to be expected if the launch should be called off. Japan's Foreign Minister spoke of the 'clear benefits' that would follow if Pyongyang demonstrated restraint. RoK President Kim urged the states concerned to consider incentives; the nature of these incentives was not specified but in a subsequent opinion article in a major American newspaper, President Kim said that when and if the DPRK decided to take 'a course toward peace' there would be a guarantee of its security; its economic reconstruction would be actively supported; and it would be treated as a respected member of the international community.

In early August, the Korean Central News Agency in Pyongyang said that US pressure would only encourage it 'to significantly increase [its] national defense capabilities and continue to push ahead with the missile test-fire...'; it reiterated that launching a satellite or missile was a legitimate right of a sovereign state and '...in no way runs counter to the DPRK/US Agreed Framework...' Two weeks later, the DPRK Foreign Ministry warned again that US pressure might trigger 'unpredictable consequences', including a test launch. At the same time the DPRK military were heard calling for 'emergency measures' if the light-water reactor project continued to be delayed. A statement in a DPRK army newspaper said that if positive moves were not taken in this regard the military would be forced to respond. For its part, the US said that it did not believe there was a basis for the DPRK's complaints, and pointed out that the

burden-sharing agreement among KEDO members did not contain any US commitment to contribute to the reactor project proper. South Korea's chief delegate to KEDO said that work on the two reactors would be accelerated to allay the DPRK's concerns and that major construction was likely to begin before the end of the year.

Until well into August, American and RoK sources expressed concern that the DPRK, ignoring all warnings, was persisting in preparing for a missile-launch, but in mid-August military observers in Seoul reported that a test appeared no longer imminent and senior RoK officials said they had begun to think that the DPRK was using the threat of a launch to obtain financial and political concessions. The head of the RoK's National Intelligence Service said that Pyongyang had finished building the missile and was weighing the economic and political pros and cons of a test launch; he said it would in any case require another three or four weeks to complete the preparations. Similar statements were heard from Washington.

Signals from Pyongyang were encouraging. In early August, a Foreign Ministry spokesman was heard denying any launch was planned. During the August round of four-power peace talks in Geneva, the DPRK Vice Foreign Minister said his country might refrain from testing a missile if the US dropped its 'antagonistic policies'; this was thought to refer to the phasing-out of economic sanctions. Bilateral US-DPRK talks held in Geneva, in the margin of the four-power talks, were said to have given some further hope that Pyongyang might delay its plans for a missile test. A rumour of an impending launch, said to have been sparked by the departure from their Japanese base of the two American observation ships, was followed by reports that at those talks, the US delegation had told the DPRK that it might lift economic sanctions, and drop the DPRK from the Trading with the Enemy Act, if the latter promised not to test the Taepodong-2 missile. Shortly after, a senior DPRK functionary publicly suggested that the missile issue could be discussed 'in a reasonable manner'. The DPRK Foreign Ministry followed with the assurance that Pyongyang was ready for negotiations about 'the reported plan to test-launch the missile'. A Japanese news service reported from Washington in late August that unnamed diplomatic sources there asserted that the DPRK had interrupted preparations for the missile test and seemed ready to suspend the launch. RoK intelligence analysts again confirmed that no immediate launch seemed likely and there was a report that no activity had been noticed at the launch site since the DPRK hinted that it was willing to negotiate.

On 7-11 September, bilateral talks were held in Berlin, which ended in the agreement that the DPRK would suspend long-range ballistic missile tests in exchange for the partial lifting of sanctions by the US. Reports from the meeting indicated that it was held in a 'constructive and businesslike atmosphere' and the joint press statement issued at the end 'acknowledged the need to continue taking steps to address [the other's] concerns'. During the annual Asia Pacific Economic Cooperation (APEC) meeting held in Auckland, New Zealand in September, US President Clinton confirmed he was preparing to lift some of the trade sanctions imposed on the DPRK in the 1950s.

This order was duly given on 17 September. The extent of the decision was described in a White House Press Release on the same date, further detailed in a Fact Sheet from the same source; both documents are reproduced below under **IV. Documentation**. The economic impact of the measure is expected to be limited, especially in the short-term; its significance is seen in the possibility that it is a first step in a long-term plan to induce the DPRK to abandon its missile and nuclear ambitions, although officials in Washington are said to question whether for now the DPRK's military will go beyond a freeze on long-range missile testing, and will dismantle other deployed missiles. The White House spokesman has added that the lifting of the sanctions is 'very conditional' and that if a missile test was to take place, the US would reinstate economic sanctions. A week after Washington's announcement, Pyongyang confirmed that it would refrain from missile tests while talks with the US were underway. American sources, including former US Defense Secretary Dr. William Perry, expressed the hope that the DPRK might commit itself to suspending all missile tests. President Clinton said he believed Pyongyang would fulfil its pledge not to test long-range missiles. On 30 September, however, the DPRK's official newspaper, *Rodong Sinmun*, said that the country still had the right to test-launch new missiles which was a matter 'wholly pertaining to [its] sovereignty'.

The relaxation of sanctions was said to be one element in a package of proposals by a panel led by Dr. Perry, in his capacity as Special Coordinator for North Korea policy. Supposedly, the main aim of five policy recommendations made in the panel report — which was submitted to the US Congress in mid-September — is the normalisation of the DPRK's position in the international community; the recommendations made in it are understood to include 1) taking a comprehensive approach in implementing DPRK policies; 2) appointing an ambassador-level official to coordinate DPRK policies among the US Government agencies involved; 3) keeping up the trilateral coordination among Japan, the RoK and the US; 4) soliciting bipartisan support for these policies in the US Congress; and 5) remaining ready to react to possible future provocative action by the DPRK. The report is said to call for stepping up diplomatic and trade relations at a 'markedly faster rate', in the stated assumption that it is better to contain the DPRK's ambitions through negotiation than through isolation and confrontation.

First reactions from the East-Asian region generally expressed confidence that the recommendations would help ease political and military tensions in the area, although early reactions in Japan are said to have been divided, with the country's chief cabinet secretary expressing support for the Perry report and the Foreign Minister and the head of the Defence Agency responding with caution. Officials in the RoK, however, expressed the view that Japan would have to follow the 'trend' set by the results of the Berlin meeting. Pyongyang expressed satisfaction but also called on the US to cease the sanctions altogether. It has since repeated in the UN General Assembly both its undertaking not to launch ballistic missiles for the duration of its talks with the US and its insistence that the latter should lift its embargo altogether. A new round of bilateral talks on the matter was scheduled for early October.

Comments from conservative American politicians have been highly critical of the approach followed in the Perry report and the relaxation of the sanctions. In a statement (reproduced below under **IV. Documentation**) the Chairman of the House International Relations Committee, Benjamin Gilman, said that the US was 'again entering a cycle of extortion'; earlier, he had said that the measure would provide a long-term benefit to the DPRK for the short-term concession of halting missile tests. Gilman announced that the proposals would be reviewed by the 'North Korea Advisory Group' of leading Republican members of the US House of Representatives which was set up in August for the purpose of reviewing 'the threat that the North Korean dictatorship poses to the United States'. No Democrats are included, adding to the concern that the Republican majority will attempt to hamper attempts by the Administration to settle problems with the DPRK in a non-provocative manner. Administration officials defend their policy with the argument that the US has given little and obtained much; critics maintain that the DPRK has 'bullied' the US into making concessions. South Korean President Kim has urged the US Congress to 'support with patience' the opening of the DPRK and his own country's efforts to persuade it to end its military threat.

It may be noteworthy in this context that the National Republican Senatorial Committee is soliciting funds for the elections of November 2000 by calling for assistance to protect the US 'from a potentially devastating nuclear attack [by the DPRK]'. A letter from the Committee claims to have been made aware 'only recently' that 'the Communist North Korean Government has obtained nuclear technology, and possibly the capability of reaching our shores with nuclear missiles'. Political observers see the move not only as a novel technique to raise funds by raising fears, but as raising a potential barrier to Congressional acceptance of better relations with Pyongyang.

Concern about a second missile launch has been particularly strong in Japan. Even after the Berlin meeting, a senior Japanese defence official stated that the DPRK had not abandoned its plan for a missile launch, but this remark has since been disavowed by the Japanese government. Other Japanese experts have voiced concerns about the DPRK's ability to produce medium-range modified 'Scud' missiles. Fears are said to grow in Japan about the country's growing vulnerability, and domestic and foreign media speak of calls among politicians and the military, for a reconsideration of Japan's defence policy. The US National Intelligence Council is said to have concluded that Japan might shift towards a security approach more independent from the US than it has been so far. Information from declassified US sources about Japan's tacit acceptance during the Cold War of the presence of American nuclear weapons on its soil and in its territorial waters are said to raise questions in Japan about the role of the US 'nuclear umbrella'. Some American security experts speculate that Japan might develop nuclear weapons if either of the two Koreas should do so, or if it thinks that other changes in its security environment warrant this. These comments note that Japan would have the means, including weapons-grade plutonium, to produce nuclear weapons on short notice, and point out that Japan's non-proliferation pledge was not unconditional. Japanese authorities have strongly denied that their country is

thinking of quitting the NPT. Researchers in Tokyo are said to plan circulating a petition asking scientists in Japanese industry and research to pledge not to work on the development of nuclear weapons.

In late June, two members of the Japanese Parliament claimed to have obtained evidence that key parts of the DPRK's missiles had been made in Japan. The Diet has begun discussing legislation to tighten export controls. For American allegations that Chinese firms have supplied the DPRK with missile parts, see above, page 14.

In related developments, in Beijing on 2 July, the RoK delegation left the North-South talks on family reunification that had started on 22 June, allegedly in response to the DPRK's refusal to discuss family reunions until Seoul apologised for sinking one of its naval vessels in the Yellow Sea.

Over the past several months, talks have taken place between representatives of the DPRK and the UN Command (UNC) over the disputed area in the Yellow Sea where earlier a series of naval engagements had taken place (see *Newsbrief* no. 46, pages 16-17). The DPRK is reported to have said it can no longer accept the Northern Limit Line (NLL) that was adopted in 1953, and, at each of its meetings with the UNC, has demanded that it be replaced by a new maritime borderline extending the on-land military demarcation line. It has threatened to implement this demand by force, if needs be. South Korea has refused to discuss the issue of the NLL in the framework of the UNC and has said it will take 'firm countermeasures' if the DPRK again infiltrates its sea space. Observers have noted that, against expectations, the DPRK does not appear to have raised the question of the NLL at the Berlin talks, where it might well have been an obstacle to agreement.

A sixth round of the four-party talks on a permanent peace arrangement for the Korean Peninsula was held in Geneva in early August, chaired by China. The talks were said to have been dominated by the DPRK's expected missile-launch, although this was not brought up as a formal agenda item. According to a press statement issued at the end of the five-day talks the discussions had been 'useful and productive', and parties had expressed the hope to expedite the process of talks on tension reduction in the Korean Peninsula. The DPRK is said to have rejected the suggestion to include Russia and Japan as partners in the talks.

A delegation from the IAEA is reported to have been in Pyongyang in July to discuss the resumption of formal talks with the DPRK about the application of Agency safeguards. The discussions do not seem to have had led to a change in the current stand-off. (See also above, page 6.)

The daily *Washington Times* alleges that US military intelligence agencies are watching 'several hundred' DPRK military advisers training Congolese government forces. The concern appears to be that the DPRK will be paid for the service in uranium ore from Congolese mines.

At the beginning of the three-month period covered by this *Newsbrief*, Pyongyang claimed that persistent drought was causing extensive crop damage and asked the RoK to resume shipment of the promised 200,000 metric tons of fertiliser, independently of the issue of family reunions; Seoul hinted that it was thinking of making

further shipments. According to a Japanese source, last year's North Korean grain harvest had been consumed by April of this year. The World Food Programme (WFP) and the Food and Agricultural Organization have asked donors to supply oils and other protein-rich substances rather than only the wheat and maize that have so far made up the bulk of international shipments and which do not provide all needed nutrients. WFP Executive Director Catherine Bertini has indicated that the situation seems to have improved recently, but she has also urged the continuation of food aid even if the DPRK were to proceed with its missile test. Estimates of deaths due to starvation during the last four years are said to range from 1.5 million to 3 million, and results of malnutrition in children are ubiquitous.

In August, a devastating typhoon hit the DPRK, causing floods and mud slides which washed away much agricultural land or buried it under silt. The damage was expected to lead to further food shortages, as some of the best grain-producing areas were among the worst hit.

Pyongyang has accused the South of a 'sinister plot' that caused the sudden death of about half the cattle it supplied last year. Allegedly, the animals' intestines were found to contain a range of indigestible objects, including iron nails, glass and rope. Aid workers are said to have confirmed that many of the cows have mysteriously died.

Robert Gallucci and Daniel Poneman, former senior US officials who negotiated the Agreed Framework with the DPRK, have disclosed that until former US President Jimmy Carter visited the late DPRK President Kim Il-sung in July 1994, there was a real risk of armed conflict breaking out between the two countries. According to former Defense Secretary Perry, the US came literally within a day of imposing sanctions on the DPRK which the latter said would be equivalent to an act of war. In an interview with the RoK daily newspaper *JoongAng Ilbo*, that country's former President Kim Young-sam has said that he dissuaded President Clinton from bombing the DPRK's nuclear facilities at Yongbyon.

(USIA, 26/6, 1/7, 8/7, 13/7, 19/7, 27/7, 2/8, 5/8, 9/8, 10/8, 17/8, 18/8, 23/8, 25/8, 31/8, 13/9; KT, 28/6, 1/7, 6/7, 7/7, 11-13/7, 18/7, 22/7, 23/7, 27-30/7, 1/8, 9/8, 12/8, 17/8, 24-26/8, 29/8-3/9, 6/9, 8/9, 9/9, 12/9, 14/9, 16/9; AFP, 29/6, 1/7, 5/7, 3/8, 17/8, 24/8, 25/8, 30/8, 31/8, 9/9; AP, 29/6, 30/6, 1-9/7, 11/7, 13/7, 14/7, 22/7, 26/7, 27/7, 29/7-5/8, 10-12/8, 17/8, 18/8, 22/8, 23/8, 25/8, 26/8, 28/8, 29/8, 31/8, 1/9, 3/9, 4/9, 7/9, 9/9, 13-15/9, 18/9, 21/9, 22/9, 24-26/9; R, 29/6, 1/7, 3/7, 7/7, 9/7, 11-13/7, 15/7, 26-29/7, 2-6/8, 9/8, 10/8, 16-19/8, 24/8, 29-31/8, 3/9, 5/9, 7/9, 12/9, 13/9, 15/9, 18/9, 20-22/9, 24/9, 30/9; CHI, 1/7, 2/7, 4/7, 7/7, 13-15/7, 18/7, 29/7, 3/8, 10/8, 22/8, 2/9, 3/9, 5/9, 8/9, 9/9, 11/9, 12/9, 14/9, 26/9; IHT, 1-4/7, 30/7, 9/7, 10/8, 11/8, 19/8, 30/8, 25-26/9; JAI, 1/7, 5/7, 6/7, 13/7, 14/7, 27-30/7, 4/8, 10-13/8, 17/8, 18/8, 27/8, 2/9, 7-9/9, 12/9, 13/9, 22/9; LT, 1/7; NYT, 1/7, 3/7, 4/7, 9/7, 11/7, 6/8, 8-10/8, 15/8, 17-20/8, 24/8, 26/8, 4/9, 7-9/9, 13-15/9, 18/9, 25/9, 26/9; WT, 1/7, 16/7, 23/7, 6/8, 25/8; KH, 2/7, 6-8/7, 12/7, 22/7, 23/7, 27-30/7, 6/8, 10/8, 18/8, 23/8, 27/8, 30/8-1/9, 3/9, 4/9, 7/9, 9/9, 10/9, 13/9, 15/9, 21/9, 27/9, 28/9; DW, 3/7; ASS, 7/7, 29/7, 24/8, 27/8, 17/9; Kyodo News, 7/7; WSJ, 8/7, 12/8; Nikkei Shimbun, 9/7; WP, 9/7, 10/8, 12/8, 27/8, 5/9, 13/9; E, 10/7; NPR, 11/7; NG, 13/7, 17/8; DJ, 14/7, 29/7, 17/9; SCMP, 15/7; Daily Yomiuri, 16/7, 19/7, 29/7, 4/8, 10/8; MAS, 21/7; Inside The Pentagon, 22/7; Pacific Stars And Stripes, 23/7,

30/7, 31/7, 3/8; **USA Today**, 23/7; **Mainichi Daily News**, [Osaka], 27-29/7; **NW**, 29/7, 12/8; **YOS**, 10/8; **LAT**, 13/8, 16/8, 25/8, 31/8, 3/9, 7/9; **House International Relations Committee Press Release**, 25/8, 15/9; **NW**, 2/9; **China Daily**, 8/9, 14/9; **US-DPRK Press Statement** [Berlin], 12/9; **PBS Television News Hour**, 17/9)

- At the end of the first month covered by this **Newsbrief**, the international concern about an escalation of the conflict between **India** and **Pakistan** over Kashmir was lessening. India's Defence Minister had said earlier that Pakistan could be tempted to use nuclear weapons; Pakistan's Religious Affairs Minister said that nuclear weapons were not meant to be kept on the shelf if the security of the motherland was threatened; and India's Prime Minister stated that his country was prepared for all eventualities. By the second week of July, the US Administration was understood to have encouraged the two sides to discuss an end to the escalating ground war. India announced it had expelled the Pakistan-backed infiltrators from the areas it claimed, while Pakistan, which had first said it had no control over the guerilla forces that had attacked the Indian positions, agreed to arrange a withdrawal. On 12 July, Pakistan's Prime Minister Nawaz Sharif said he was trying to avoid the suicide of a nuclear war and confirmed his forces were withdrawing. India said its military campaign was being suspended. Senior officers from the two states discussed terms and a timetable for a phased withdrawal, and by the second half of July, the volume of reports about events around Kashmir had been much reduced.

Low level hostilities continued between Indian soldiers and irregular troops said to be backed by Pakistan. Both sides expressed their readiness to resume a dialogue on issues dividing them, but the Indian Foreign Ministry insisted that it remained Pakistan's responsibility to create the right atmosphere for new talks, while Pakistan said it was Indian 'intransigence' that stood in the way and suggested that sanctions be imposed to force India to resume the talks. Pakistan's Foreign Minister said that it had been Pakistan's nuclear deterrent that kept India from another war over Kashmir. Tensions increased again when India shot down a Pakistani naval surveillance plane, killing 16 persons on board. Each side claimed the aircraft had been over its territory when it was hit and accused the other of having committed a warlike act.

On 17 August, India's National Security Advisory Board released a draft for the country's nuclear doctrine, based on the assumption that India will pursue a policy of minimum credible nuclear deterrence. The draft, which is reproduced below in full under **IV. Documentation**, says that 'India's peacetime posture aims at convincing any potential aggressor that any threat of use of nuclear weapons against India shall invoke measures to counter the threat.' The document includes the statement that, 'any nuclear attack on India and its forces shall result in punitive retaliation with nuclear weapons to inflict damage unacceptable to the aggressor'. It further states that, 'India's nuclear forces and their command and control shall be organized for very high survivability against surprise attacks and for rapid punitive response. They shall be designed and deployed to ensure survival against a first strike and to endure repetitive attrition attempts with adequate retaliatory capabilities for a punishing strike which would be unacceptable to the aggressor.'

It has been clarified in New Delhi that the draft doctrine can become policy only when a new government is in place after the early-Autumn elections; as of this writing the BJP which was the mainstay of the previous government seemed to be on the way to gaining a plurality of the votes. India's other major party, the Congress party, has said that the nuclear doctrine would start an arms race with Pakistan, and the Communist Party has also rejected the draft. Comments from Indian experts have expressed concern that the doctrine would necessitate the development of a large and complex nuclear arsenal. One newspaper puts the costs of nuclearisation at the equivalent of \$12 to \$14 billion over the next decade. A senior Indian official has said that deployment of the nuclear weapons envisaged by the nuclear doctrine would cost at least \$16 billion over the next three decades. Calling this 'eminently reasonable and affordable', the official added that in case punitive measures were taken against India, economists believed that the costs could work out at 100 times this amount. Prime Minister Vajpayee has said that his country is prepared to discuss the draft nuclear doctrine with all nations.

Initial international reactions to the draft nuclear doctrine expressed concern that it reflected a move to an expanded nuclear arsenal. Pakistan spoke of a 'dangerous escalation' which would lead it to increase its own reliance on its nuclear capabilities; it said it would soon issue its own nuclear doctrine and emphasised that the number and types of weapons it would have would be determined solely by a minimum nuclear deterrent capability. China said that a new and escalated round of the nuclear arms race was imminent in South Asia. Among European comments was the view that the draft contained 'little that is new and much that is vague'. The US once again called on India to show restraint. India responded by claiming the right to decide on its own security interests and deriding the 'hypocrisy' of the recognised nuclear-weapon states, which legitimise their status for an indefinite future.

Countering Western analyses that express doubts that any of the nuclear devices India set off in May 1998 qualified as a genuine hydrogen bomb, the Chairman of India's Atomic Energy Commission, R. O. Chidambaram, has insisted that in May 1998, India did successfully explode a true hydrogen device. He has also said that it would not be difficult for India to build neutron weapons, but a senior nuclear defence analyst in New Delhi has said that the Indian military are not 'excited' about such a weapon. The Director of the Bhabha Atomic Research Centre has said that, while India adheres to a testing moratorium, it has not stopped its nuclear research. A senior Pakistani nuclear scientist has claimed that Pakistan also has the expertise and material to make neutron weapons.

In August, India's Prime Minister announced that the nuclear-capable Agni II ballistic missile, which has a range of more than 1,300 miles (2,000 km), would be added to the arsenal.

Indian customs authorities are reported to have impounded a DPRK freighter ostensibly bound for Malta, which carried what was described as a 'dubious consignment', and which the authorities thought was intended for delivery to Karachi. A search made with the help of defence and atomic energy experts was said to have established that 148 (another report says 178) containers listed in the cargo manifest as 'water

purification machinery' destined for Malta included missile parts, equipment for machining rocket casings and motors, and blueprints of a Scud-type missile, supposedly the DPRK Rodong-1. A major South Korean newspaper, however, has reported that the Libyan government had said that the ship was bound for a Libyan port. The DPRK has rejected the claim that the cargo was destined for Pakistan. Indian authorities were said to be 'reconsidering' the matter.

India's National Security Advisor has announced the arrest of eight persons alleged to have been spying for Pakistan. One of them has been identified as a Bangladeshi national, who is accused of passing on to Pakistan secrets about the Indian nuclear-weapons test site.

(AP, 29/6, 30/6, 4-7/7, 12/7, 21/7, 22/7, 31/7, 1/8, 10/8, 11/8, 16-19/8, 25/8, 17/9; NYT, 29/6, 2/7, 4/7, 6/7, 10-13/7, 11/8, 12/8, 22/8; R, 30/6, 4/7, 10/7, 22/7, 25/7, 28/7, 30/7, 3/8, 6/8, 10/8, 11/8, 13/8, 17/8, 19/8, 20/8, 22/8, 24/8; LAT, 1/7; Times of India News Service, 1/7; DJ, 6/7; IHT, 6/7, 18/8; DT, 11/7; DJ, 12/7; USIA, 12/7, 7/8, 18/8; WP, 12/7, 17/7, 18/8; WT, 12/7; Sunday Express, 25/7 in Hindu, 26/7; JAI, 28/7; NG, 28/7, 17/8; LT, 16/8; Government of India Website, 17/8; WSJ, 17/8; FT, 18/8; G, 18/8; LM, 19/8; NW, 19/8; E, 21/8; China Daily, 23/8, 24/8; JDW, 1/9)

- In the period covered by this issue, intermittent air strikes at military installations in the so-called no-fly zones over Iraq continued. In the first eight months of 1999, American and British aircraft were reported to have fired 1,100 missiles against 359 targets in Iraq. Baghdad has repeatedly claimed that civilian targets had been hit. An Iraqi air force general said in September that since last December the air raids had killed 187 civilians and injured 494.

China, France and Russia have criticised the air campaign and have sought agreement in the Security Council on a long-term arms control and verification system, combined with an easing of the sanctions against Iraq. Their approach differs sharply from the one embodied in a British-Dutch draft resolution, which demands that Iraq should once again accept stringent UN inspections and provide information on its weapons of mass destruction, in return for the partial lifting of the embargo (see *Newsbrief* no. 46, page 18). Representatives of the five Permanent Members of the Security Council met in London in mid-September in hopes — since disappointed — of obtaining an agreement that could be adopted by the end of the month. Reportedly, an approach being considered would involve a new inspection body operating along lines less confrontational than the United Nations Special Commission (UNSCOM); the measure would also include incentives to gain Iraq's cooperation. In September, Iraq's Deputy Prime Minister stated that Iraq's demands were known: 'the condemnation of the aggression against Iraq and the lifting of the embargo', and the government in Baghdad let it be known that it was not willing to accede to even the most generous proposition aiming at establishing a new inspection system. In a formal statement the Iraqi Revolutionary Command Council said that any proposal that did not grant the complete lifting of sanctions would be rejected. In New York meanwhile, attempts at finding agreement among the P-5 intensified and as of this writing, there

seemed to be a chance that some version of the Anglo-Dutch resolution might be adopted.

In September, Washington released a report about the current situation in Iraq which, among other things, lists instances of the ways in which that country allegedly ignores pertinent Security Council resolutions. Supposedly in reply to this report, Hans von Sponek, the UN Humanitarian Coordinator for Iraq, has made a plea for the immediate and unconditional lifting of sanctions that would permit widening a substantial increase of Iraq's imports, including food and medicine.

The expulsion, in July, of a UN mine-clearing expert of New Zealand nationality, on allegations of spying, sabotage, smuggling and waging germ warfare against the country, has raised further concern about Baghdad's persistent unwillingness to harbour experts from countries and organisations it sees as hostile to its interests. Meanwhile, a team of experts from the Organization for the Prohibition of Chemical Weapons visited Baghdad to help the UN evaluate possible hazards arising from the presence in the UNSCOM laboratory of chemicals and samples stored there, and subsequently close the laboratory. Press reports noted that none of the team members had worked for UNSCOM, which had established the laboratory. The team was reported to have destroyed seven vials containing small quantities of toxic materials, including samples of VX nerve agent, and to have buried the residue in concrete. Reportedly Russia, which was said to have suspected UNSCOM of planting traces of VX nerve agent on Iraqi missile warheads, had dropped an earlier demand made in the Security Council, to have the samples preserved for analysis. China and France were said to have supported Russia's demand.

Ambassador Richard Butler, whose term as Executive Chairman of UNSCOM ended on 30 June and who has since joined the Council for Foreign Relations in the US, has criticised the UN for not supporting him adequately during his tenure. In an article in the August issue of the American magazine, *talk*, Mr. Butler accused UN Secretary-General Kofi Annan of seeking to destroy UNSCOM because it was too independent, and of appeasing Iraq; excoriated senior UN officials for supposedly sabotaging his mission; alleged that Russia's then Prime Minister Primakov received financial incentives from Iraq to have sanctions lifted prematurely; asserted that his predecessor, Swedish Ambassador Ekéus, 'caved in' to Iraqi pressure; and praised US President Clinton as virtually the sole supporter of a determined approach to Iraq's weapons effort.

Israel is reported to be concerned about Iraq's capability to resume the build-up of its mass destruction arsenal, after the departure of UNSCOM's inspectors. The US Administration has told Congress that American intelligence is monitoring 'with concern' activities at Iraqi facilities capable of producing weapons of mass destruction and is watching Iraqi efforts to buy dual use items abroad. In early September there were reports that Iraq was rebuilding its missile factories and a secret report of the US Administration to the Congress was said to have expressed concern about Baghdad's 'long established covert procurement activity'. Once again, allegations were heard that Iraq possesses a design of a nuclear weapon and is trying to obtain the necessary fissile material abroad.

Iraq has complained about the quality of food and medicines obtained under the UN Oil-for-Food programme. UN officials have confirmed that many of the complaints were justified, but some Security Council members said that Iraq had selected the supplier countries and therefore had only itself to blame. There are also reports that Iraqi officials have sold abroad items bought under the Oil-for-Food.

The US is reported to be considering charging President Saddam Hussein with genocide and war crimes.

(OPCW Synthesis, July-August; R, 1/7, 28/7; NYT, 6/7, 8-10/7, 19/7, 23/7, 1/8, 13/8, 14/8, 18/8, 20/8, 25/8, 14/9, 16/9, 18/9, 20/9, 21/9; AFP, 29/7; WP, 8/6; Ha'aretz (Jerusalem), 12/8; WSJ, 17/8; CSM, 30/8; ST, 5/9; US Department of State Report, 13/9; IHT, 22/9, 25-26/9; FT, 24/9)

- On 7 July, it was announced in **Israel** that Prime Minister Barak had a meeting with his predecessor Netanyahu, at which control over the systems of strategic weapons was transferred. This is taken as a reference to nuclear weapons.

A British newspaper, reporting from Tel Aviv, has claimed that **Syria** plans to demand that Israel give up its nuclear weapons in return for the promise by Damascus to dismantle its biological and chemical weapons.

The first of three small conventional-powered submarines built in Germany has arrived in Israel. The vessel is said to carry Harpoon surface-to-surface missiles which, experts claim, can be replaced by nuclear-capable cruise missiles. The news is reported to have caused concern in neighbouring Arab states.

The League of Arab States has published a report accusing Israel of 'military and nuclear cooperation with India'.

(Ha'aretz, 7/7 [Hebrew-language version]; StL, 25/7; AP, 29/7; AFP, 24/8)

- Pakistan's** Foreign Minister has said that his country has achieved a minimum nuclear deterrence and does not want to engage in a further arms race. If, however, India were to go ahead with further production and deployment of nuclear weapons called for in its draft nuclear doctrine, Pakistan would have to reconsider its own policy and might have to depart from its minimum nuclear deterrence approach. Pakistan has said that like India, it is capable of producing enhanced radiation (neutron) devices for use as battlefield weapons.

US intelligence sources are reported to have disclosed for the first time that Pakistan had received M-11 short-range ballistic missiles from China (see also page 13).

(Radio Pakistan, 20/8, in BBC, 23/8; LM, 22/8; R, 13/9)

- A visit by the Minister for Defence of **Saudi Arabia** to facilities for uranium enrichment and for the production of ballistic missiles in **Pakistan**, last May, is reported to have caused concern among American officials and non-proliferation experts. In May 1998, Saudi Arabia praised Pakistan as the first Muslim country to be a nuclear power. Prince Sultan's visit was depicted in the US press as reflecting Saudi interest in purchasing medium-range ballistic missiles, to replace shorter-range

missiles supplied by China ten years ago, but a British news agency report has spoken of concern among Western governments that Saudi Arabia may seek a nuclear-weapons capability. A spokesman for the Foreign Ministry in Islamabad has denied that Saudi Arabia had sought to acquire nuclear weapons from Pakistan, and a senior US intelligence official has said that there is no evidence that Saudi Arabia was seeking nuclear-weapon technology or is in any way in violation of the NPT. (NYT, 10/7; R, 3/8, 6/8; WT, 6/8)

- A Chinese-language daily in Hong Kong, quoting sources in Beijing, has claimed that **Taiwan** is developing nuclear weapons technology and has made a computer simulation test of an atomic explosion. The report also said that Taiwan had enough nuclear material to produce more than ten atomic bombs, but a scholar at the Chinese Council of Advanced Policy Studies in Taipei has said that when Taiwan had a weapons research programme in the 1970s the US took all of its weapons-grade uranium away. The report also claims that Taiwan is developing a ground-attack missile with a range of about 375 miles (600 km).

The presidential candidate of Taiwan's Independence Party has said that the country should develop nuclear weapons. This suggestion has triggered the comment in Taipei that if the Taiwan Government embarked on the development of nuclear weapons it would be sure to provoke an attack by the PRC.

(AP, 29/7; CSM, 27/8)

i. Nuclear Material Trafficking and Physical Security

- Belgium:** In Brussels, three men were arrested in early August trying to sell a five kg bar of uranium for \$1.2 million. From the description in the news report the material seems to have been natural uranium. (R, 6/8)
- In **Georgia** four persons were arrested while supposedly trying to smuggle one kg of a radioactive substance to Turkey. The material was described as 'U-235'. (Interfax [Moscow], 25/9; NYT, 25/9; FAZ, 27/9; SDZ, 27/9)
- Police in **Italy** say they have broken up a gang allegedly associated with the Italian Mafia, who had been trying to sell uranium bars stolen from an American shipment to Zaire in 1998 as suitable for the production of nuclear weapons. A large number of suspects are said to have been arrested. (R/Nando Media, 29/7 in UINB, 31-22; NZZ, 31/7)
- A shipment to **Japan** of MOX fuel left Europe in July (see Newsbrief no. 46, pages 23-24), the first of what reportedly may be 80 such shipments. On 21 July, the purpose-built cargo vessels *Pacific Teal* and *Pacific Pintail* left the port of Barrow-in-Furness, in the Northwest of England. Reportedly, *Pacific Pintail* was carrying a consignment of MOX manufactured in the UK. *Pacific Teal* had to delay her departure by 14 hours, having been forced to turn back by demonstrations staged by the anti-nuclear organisation *Greenpeace*. *Greenpeace* is understood to object to such shipments because it claims that they are not adequately protected against terrorist attack, raise a proliferation risk, and constitute an environmental hazard. *Pacific Pintail* sailed

to Cherbourg where, reportedly, it took on a load of MOX fuel, and then joined *Pacific Teal*, after a further delay caused by Greenpeace protests. The two ships, both equipped with light naval armaments and carrying a reported total of 40 MOX assemblies, containing altogether 446 kg plutonium, sailed together along a route which, according to an official Japanese announcement, took them around the Cape of Good Hope via the Tasman Sea to Japan, where they unloaded their cargo at various ports, during the fourth week of September. Before the arrival of the two ships in Japan, a third nuclear-cargo carrier, *Pacific Sandpiper*, had entered a Japanese port to rehearse docking procedures; the vessel carried no cargo.

After the attempts by *Greenpeace* to prevent the departure of the ships from Britain and France, courts in both countries issued injunctions enjoining that organisation not to interfere with the shipments. *Greenpeace* tried nevertheless to do so and protested publicly when the two governments ordered its vessels, *MV Greenpeace* and *MV Sirius*, to leave their respective territorial waters. A French court also set a fine of \$50,000 for each time a *Greenpeace* ship would come within 100 km of the transports. *Greenpeace* described these measures as 'draconian and anti-democratic'. It also denounced a decision by a court in the Netherlands, recognising a claim for £90,000 in damages by British Nuclear Fuels plc (BNFL) and ordering that, until this claim had been settled, it could not issue any cheques without the court's approval [*Greenpeace International* is based at Amsterdam — ed.]. *Greenpeace Japan* has taken the Japanese authorities to task over the shipment, which it says stands in contrast to the country's wish to be a world-leader in nuclear non-proliferation.

After the Trade Ministry of the RoK had urged Japan to give it information on the route of the ships, and said it would prevent them from passing through South Korean coastal waters, Japan confirmed that it would not consider using the Korean Strait route for the transfer of the MOX fuel. Fourteen heads of Caribbean Governments (*Greenpeace* has spoken of 25) released a statement protesting against the transport. New Zealand has objected to the ships' route, which would bring them near its territorial waters, and South Africa is said to have expressed concern that the ships might pass through its exclusive economic zone.

On 27 September, *Pacific Teal* docked at Okuma, Fukushima Prefecture, once again amidst extensive demonstrations; *Greenpeace* boats tried to block the freighter's progress. After unloading *Pacific Teal* sailed on in company with *Pacific Pintail*, which was taking its cargo to a harbour in Fukui Prefecture, where they arrived on 1 October.

A day earlier, *Greenpeace* and the Nuclear Control Institute of Washington, D.C. issued a statement alleging that the American authorisation for the MOX shipment had been unlawful and that the State Department had misled the US Congress about the adequacy of the security arrangements. In the accompanying background paper, France and the UK were accused of colluding with Japan in violating the security requirements of the US-Japan Nuclear Cooperation Agreement.

The actual loading of the MOX fuel into Japanese reactors may be delayed for testing, necessitated by the discovery

in the UK of faked data in quality assurance records at the Sellafield MOX pilot plant.

It has been announced in France that the firm of Cogema is shortly to begin producing MOX fuel for Japanese customers in a newly completed part of its factory.

(BNFL/Cogema, 30/6, 19/7; *People's Daily* [Hongkong], 13/7; *G*, 16/7, 17/7, 22/7; *KT*, 16/7; *KH*, 17/7; *R*, 16/7, 18/7, 19/7, 10/9; *NNN*, 19/7, 20/7; *SF*, 19/7, 2/8, 20/9; *Greenpeace*, 20/7; *LM*, 20/7, 22/7; *AP*, 21/7; *KH*, 21/7; *SDZ*, 21/7, 28/9; *NW*, 22/7, 29/7; *Daily Yomiuri*, 23/7; *NYT*, 23/7; *NF*, 26/7, 23/8, 20/9; *Japan Times*, 30/7; *Kyodo News Service*, 4/8, 27/9; *Atoms in Japan*, August; *Jiji Press*, 27/9; *YOS*, 27/9; *AFP*, 28/9; *NZZ*, 28/9)

- Customs officials in **Kazakhstan** have reported arresting a Russian military officer who, they say, was trying to smuggle 'a small amount' of nuclear fuel to Uzbekistan. The officer was said to be employed at the Bikonur cosmodrome.

In Almaty, three people were apprehended trying to sell five kg of HEU. There was no information about potential customers. Kazakh law enforcement agents also found a container with iridium-192, which had apparently been used to trace cracks in oil pipes. (*IT/AP*, 23/7; *Kazakh Television*, 2/8)

- In St. Petersburg, **Russian Federation**, a group of five men were apprehended by the Security Police on 13 July, when they were trying to sell a radiation source and 17 kgs of mercury. The radiation source, Californium-252, which is said to be employed in the start-up of nuclear reactors, originated from the nuclear ice-breaker base, *Atomflot*, at Murmansk, with which reportedly several of the arrested persons were associated. The alleged theft of the source seems to be causing some concern because the facility where the material is stored is supposed to have been equipped with security equipment provided by the US DoE. There is some suspicion, however, that the event was set up by Russian security police to show their vigilance in combatting theft of radioactive materials.

As part of the nuclear material protection, control and accounting programme which DoE operates in cooperation with Russia, a security system has been installed in a Russian submarine service ship to protect nuclear fuel used in the refuelling of nuclear-powered submarines. DoE's announcement says that two more Russian navy submarine service ships will receive security upgrades.

In Vladivostok six people were arrested in a sting operation when they tried to sell six kg of a radioactive material apparently consisting of an alloy of U-238 and nickel. Reports indicate that the material might have been stolen from a submarine repair yard.

Also in Russia, a nuclear submarine is said to have been disabled by the theft of the powder used in the filtration of the air inside the vessel. The powder apparently contains a precious metal.

Following a series of bombing attacks in Moscow and several other Russian cities, security around the country's nuclear power stations has been tightened.

(**R**, 14/7; **AP**, 1/9, 10/9; **EP**, 2/9; **RFE/RL**, 2/9, 10/9; **Vladivostok News**, 3/9; **IT**, 16/9; **US Department of Energy**, 16/9)

- Also in **Russia**, there has been an incident involving a military unit near Murmansk, guarding nuclear waste from the former Soviet submarine fleet, in which two soldiers killed one of their colleagues and then committed suicide, after reportedly causing minor damage to a container with radioactive substances. In Siberia, a soldier said to be guarding a weapons research centre is reported also to have killed several others, and then himself. No motive has been given for either incident. (**R**, 6/8; **NG**, 7/8)
- **United Kingdom** customs officers are said to suspect that 20 tons of high-grade aluminium seized on the Kent coast were destined to be shipped to Lahore, Pakistan, for use in that country's nuclear missile programme. (**G**, 26/7)

j. Environmental Issues

- The radioactive pollution from decommissioned naval vessels in the **Russian Federation** and the disposal of naval reactors and other navy-generated nuclear waste constitute a growing problem. Efforts to scrap the many hulks, of which some have sunk and others have been abandoned in bays and ports, appear to flounder on bureaucratic obstacles as well as a lack of funds and facilities. In July, Russia's Atomic Energy Ministry signed an agreement with the US Department of Defense, to cooperate in the reprocessing of irradiated nuclear fuel from decommissioned Russian submarines. Reportedly, the US will finance the transport of the fuel to the 'Mayak' reprocessing plant in the Chelyabinsk region.

To cope with the liquid waste from the Russian Pacific Fleet, Japan and Russia have cooperated on the construction of a floating processing facility which was completed in 1996. Reportedly, some flaws were found in the processing equipment, which was manufactured in the US, and there currently seems to be a question about the responsibility for correcting these; processing operations are suspended, meanwhile. Progress in completing a liquid waste processing facility in Murmansk, in Northwestern Russia, also appears to be extremely slow. The facility was scheduled for commissioning in 1997 but it is not expected to be ready for some time yet.

Russia has pledged not to dump liquid radioactive waste into the Sea of Japan.

The case against the former Russian naval journalist Captain Grigory Pasko, who was arrested in 1997 on a charge of treason for having given a Japanese television network a videotape showing the Russian navy dumping nuclear and chemical waste at sea, was ended after a seven-month trial. The prosecution had demanded that Pasko be stripped of his rank and given a jail term of twelve years. The court rejected the treason charge and instead sentenced him to a prison sentence of three years for 'overstepping his authority', and then freed him on a court pardon. His colleague Aleksandr Nikitin, who has also been prosecuted for treason after giving Western environmentalists information about pollution caused by Russian naval practices, is once again the subject of investigation by the Russian Security Service and is expected to be tried again. An investigation has also

started into the activities of a marine radiology professor in Vladivostok, Vladimir Soyfer, who had been researching radioactive pollution on the Russian Pacific coastline. On 3 July, Soyfer's apartment and laboratory were searched and papers and photographs taken away, reportedly for evaluation by the military counterintelligence service. Initially Soyfer was not charged with any crime, but the Russian Security Service say he is guilty of espionage and should be prosecuted for high treason.

(**NYT**, 8/7, 21/7; **AFP**, 14/7; **Bellona**, 14/7, 20/7, 28/7; **R**, 14/7; **NW**, 15/7, 22/7; **AP**, 22/7; **IT**, 23/7, 2/9)

- **Russia's** Ministry for Atomic Energy (Minatom) has long been known to see a promising source of hard currency in the storage on Russian territory of foreign spent fuel. Japan and Switzerland are among several states said to have expressed interest. An agreement has been concluded between Minatom and the Non-Proliferation Trust ('NPT'), an American-based and financed company set up for the purpose, which is said to provide for storage of the imported material without reprocessing. Because Russia's Law on Environmental Protection includes spent fuel among nuclear waste, of which the import is prohibited, Atomic Energy Minister Yevgeny Adamov has introduced in the Cabinet an amendment to distinguish between spent fuel and nuclear waste; this would theoretically make the import possible. The Cabinet, however, has rejected the proposal, keeping it from submission in the Duma. Minister Adamov has stated in a subsequent press conference not only that he will keep trying to have the amendment adopted, but also that — in opposition to the agreement with 'NPT' — Russia will insist on the imported material being reprocessed and re-exported. Another departure from the initial understanding is seen in Antonov's statement that Russia wishes to use the proceeds for the upgrading of its nuclear industry, while 'NPT' had expected it to be used for environmental clean-up. (**NEI**, June; **IT**, 28/6; **NW**, 1/7; **WSJ**, 22/7; **FAZZ**, 23/7; **Bellona** [Washington] 2/9)
- Police in **Ukraine** have reported that during a routine check they found two lead cylinders containing 300 grams of strontium-90. They said the material had been in the possession of a resident of the Russian Republic of Dagestan, described as the leader of an international smuggling gang specialised in moving radioactive substances from Russia to the West. He was planning to sell the strontium for \$450,000. (**Interfax** [Moscow], 25/9, in **BBC**, 28/9; **NYT**, 25/9; **FAZ**, 27/9; **R**, 27/9; **SDZ**, 27/9)

k. Miscellaneous

- In the **United States**, Energy Secretary Bill Richardson has acknowledged that in the Cold War period, the health of employees of contracting firms engaged in the production of nuclear weapons may have been damaged. The Secretary has announced the introduction of legislation providing for compensation for lost wages and medical care. Illnesses mentioned in this context include cancers and lung diseases caused by exposure to beryllium, asbestos, mercury, and uranium — among others. (**NYT**, 15/7, 17/9)

II. PPNN Activities

- PPNN will hold the twenty-sixth semi-annual meeting of its Core Group at Bolkesjø in Norway from Thursday 9 December to Sunday 12 December. The main element of the meeting will be a seminar for government officials and researchers on 'The Tough Challenges Facing the Nuclear Non-Proliferation Regime'.
- PPNN now plans to hold its twenty-seventh semi-annual meeting at the Chauncey Conference Center, near Princeton, New Jersey, over the weekend 9-12 March 2000. This will be combined with a briefing seminar on the 2000 NPT Review Conference for about 45 of the national representatives intending to attend this meeting.

III. Recent Publications

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Greg Ansley, 'Nine Minutes to Midnight: The India-Pakistan Crisis', *Defence Quarterly (New Zealand)*, No. 26, Spring, pp. 2-5.

Asher Arian, 'Israeli Public Opinion on National Security 1999', *Memorandum No. 53*, Jaffe Center for Strategic Studies, Tel Aviv University, August, 51 pp.

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Clayton P. Bowen and Daniel Wolvén, 'Command and Control Challenges in South Asia', *Nonproliferation Review*, Spring-Summer, Vol. 6, No. 3, pp. 25-35.

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Zachary S. Davis, 'The Convergence of Arms Control and Nonproliferation: Vive la Différence', *Nonproliferation Review*, Spring-Summer, Vol. 6, No. 3, pp. 98-107.

Andre Dumoulin, 'Perspectives sur la non-prolifération', *Arès*, Vol. 17, No. 3, July, pp. 45-68.

Michael Eisenhalt, 'Living with a Nuclear Iran', *Survival*, Vol. 41, No. 3, Autumn, pp. 124-148.

E. Anders Eriksson, 'Information Warfare: Hype or Reality?', *Nonproliferation Review*, Spring-Summer, Vol. 6, No. 3, pp. 57-64.

Sumit Ganguly, 'Slouching Towards Pokhran II: Three Explanations of India's Quest for the Bomb', *Disarmament Diplomacy*, No. 38, June, pp. 9-11.

Richard L. Garwin, [Special Section: The Cox Report], 'Why China Won't Build U.S. Warheads', *Arms Control Today*, Vol. 29, No. 3, April/May, pp. 28-29, 35.

Amit Gupta, 'Nuclear Forces in South Asia: Prospects for Arms Control', *Security Dialogue*, Vol. 30, No. 3, September, pp. 319-330.

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Dmitry Litovkin, 'Indian Nuclear Submarine Fleet Development Program: Russian Participation', *Yaderny Kontrol (Nuclear Digest)*, No. 10, Spring, pp. 46-50.

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IV. Documentation

a. The Report of the Tokyo Forum for nuclear non-proliferation and disarmament [extracts]

... [A]t the threshold of the 21st Century, the fabric of international security is unravelling and nuclear dangers are growing at a disturbing rate. Relations among major powers are deteriorating. The United Nations is in ... crisis. The global regimes to stop the proliferation of nuclear weapons and other weapons of mass destruction are under siege. ... Nuclear tests by India and Pakistan have shown that not all countries share the view that the usefulness of nuclear weapons is declining. Years of relentless effort have not eliminated the clandestine weapons of mass destruction programs of the most determined proliferators. The US-Russia nuclear disarmament process is stalled, with adverse consequences for the global disarmament agenda. The situation in Asia is ... fluid, portending negative changes for disarmament and non-proliferation. ... Unless concerted action is taken ... to reverse these dangerous trends, non-proliferation and disarmament treaties could become hollow instruments. A renewed sense of commitment to both non-proliferation and disarmament is urgently needed.

... The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) demands both disarmament and non-proliferation. The nuclear-weapon states must demonstrate tangible progress in

nuclear disarmament, while the non-nuclear-weapon states must rally behind the Treaty and take stronger steps of their own, such as adopting improved ... [IAEA] safeguards. To support the NPT's core bargain, a permanent secretariat and consultative commission should be created to deal with questions of compliance and to consider strengthening measures for the Treaty. ... The world faces a choice between the assured dangers of proliferation or the challenges of disarmament. The better choice is the progressive reduction and complete elimination of nuclear weapons.

... The Comprehensive Nuclear-Test-Ban Treaty must be ratified urgently by those key states still holding out — the United States, Russia, China, India, Pakistan, North Korea and Israel. All states must respect a moratorium on nuclear testing and pay their fair share of the treaty's verification costs. ... [T]he United States and Russia ... [should] initiate new comprehensive talks on nuclear arms reduction and security issues ... to further extend reductions to 1,000 deployed strategic warheads. If [existing] treaties remain stalled ... both countries ... [should] pursue parallel and verifiable reductions to that level. ... China ... [should] join the United Kingdom and France in reducing and, in the first instance, not increasing nuclear weapon inventories. ... Irreversible reductions in nuclear forces require great transparency. ... The implementation of further transparency measures on the numbers and types of nuclear weapons and on the amounts of fissile material should be encouraged. ...

... [A]ll states with nuclear weapons ... [should] endorse and implement the goal of zero nuclear weapons on hair-trigger alert. ... [T]he United States and Russia ... [should] immediately stand down nuclear forces slated for reduction in START II. To eliminate the risk of the millennium computer bug leading to an accidental launch, all nuclear weapons in all states should be removed from alert for the period of concern.

... [T]he United States ... [should] increase cooperative threat-reduction efforts in the former Soviet Union. The world community, especially the G8 states and the European Union, must substantially expand cooperative threat-reduction efforts. ... [A] Fissile Material Cut-off Treaty [should be concluded promptly]. ... China, India, Pakistan and Israel ... [should] declare moratoria on producing fissile material for nuclear weapons. Nuclear-weapon states should put all excess military stocks of fissile materials and civil fissile materials under ... [IAEA] safeguards.

... [R]egional and global cooperative efforts [are necessary] to prevent weapons of mass destruction from falling into the hands of extremist, fanatical or criminal groups.

... The guidelines of the Missile Technology Control regime need to be strengthened. ... [A]ll states, particularly North Korea, ... [should] respect these guidelines. ... A special conference of concerned states should be convened to deal with ... missile proliferation.

... [M]issile defence deployments could produce [uncertainties and complications]. Recognising the security concerns posed by ballistic missiles ... all states contemplating the deployment of advanced missile defences ... [should] proceed with caution, in concert with other initiatives to reduce the salience of nuclear weapons.

... [I]n the near term, ... India and Pakistan ... [should]: maintain moratoria on nuclear testing; sign and ratify the Comprehensive Nuclear-Test-Ban Treaty; support prompt negotiation of an Fissile Material Cut-off Treaty; adopt and properly implement nuclear risk-reduction measures; suspend missile flight tests; confirm pledges to restrain nuclear and missile-related exports; cease provocative actions; and take steps to resolve the Kashmir dispute. In the long term, ... India and Pakistan [are urged] to accede to the treaty on the Non-Proliferation of Nuclear Weapons as non-nuclear-weapon states.

... [T]he linkage between the core objectives of a [peaceful] Middle East ... and one free of weapons of mass destruction ... [should be recognised]. ... [This necessitates]: a revitalised Arab-Israeli peace process; resumption of an effective WMD control regime for Iraq under UN Security Council auspices; restraint on missile and flight test programs; effective and verifiable implementation of the Chemical Weapons

Convention and Biological Weapons Convention by all states in the region; implementation of strengthened ... [IAEA] safeguards; and Israel's accession to the ... [NPT] as a non-nuclear weapon state.

... [A]ll parties [are urged] to redouble their efforts to achieve ... a denuclearised Korean Peninsula ... [and pursue] coordinated global efforts to maintain North Korea's freeze on its graphite-moderated nuclear reactors and related facilities. All nuclear weapon and missile-related activities in North Korea must cease, including production and sale of WMD-capable missile technology. ... [F]ull and effective implementation of the 1994 Agreed Framework, North Korea's full compliance with an ... [IAEA] safeguards agreement, and its adherence to the agency's strengthened safeguards system [is called for].

... [T]he UN Security Council ... [should] pass a resolution declaring that the proliferation of weapons of mass destruction constitutes a threat to international peace and security. Permanent members of the Security Council ... [should] refrain from exercising their vetoes against efforts to assist or defend UN member states that have become victim to the use or the threat of use of weapons of mass destruction. All current and prospective permanent members of the UN Security Council should have exemplary non-proliferation credentials.

... [T]he ... Conference on Disarmament ... [should] revise its procedures, update its work program and carry out purposeful work, or suspend its operations. ... [Its] consensus rule is causing ... deadlock [and] should not be necessary to begin or conclude negotiations on a multilateral convention.

... The scope of verification of disarmament should be expanded to non-deployed nuclear weapons and the dismantling of nuclear weapons. An effective verification protocol should be agreed for the Biological Weapons Convention, and implementation decisions weakening the verification regime of the Chemical Weapons Convention should be stopped and reversed.

... [All] states seeking nuclear non-proliferation and disarmament ... [should] actively support the development of arrangements through which states in non-compliance with arms control treaties will know ... that they will be caught ... [and] will face serious consequences. The international community must be united and unequivocal in its intended response to would-be violators based on a broad consensus, including possible recourse to Chapter VII of the UN Charter. A revitalised ... [UN] with a reformed and authoritative Security Council is essential to building and maintaining the support of the international community for the effective enforcement of compliance.

b. Extract from the Message of the UN Secretary-General to the IAEA General Conference

Let me turn first to the Agency's role in seeking to prevent the proliferation of nuclear weapons. After the Cold War, the world has become safer and more complicated at the same time. I refer specifically to the multi-dimensional nature of potential proliferation threats, whether from 'breakouts' within the ranks of States committed to the nuclear non-proliferation regime; from States which have concluded, in the face of overwhelming conclusions to the contrary, that national interests are enhanced by pursuing the nuclear weapons option; from national or sub-national terrorist groups; from illicit trafficking in nuclear material; or from weakness in arrangements to ensure adequate physical protection of nuclear material.

These are some of the issues which I expect to find discussed at next year's Review Conference of the States Party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). At that time, parties to the treaty will be expected to give an account of their respective roles in seeking to implement the package of decisions adopted by the 1995 NPT Review and Extension Conference. Last year, I welcomed the significant progress that had been made with regard to the Additional Protocols to the safeguards agreements. I regret that further progress has been delayed, even in countries with significant nuclear facilities. I trust that all the countries committed to strengthening the safeguards systems will be ready to turn their words into deeds

and thus demonstrate, at next year's NPT Conference, that they have played their part in equipping their safeguards system to deal effectively with the challenges of the 21st century.

I also hope that progress will be made towards nuclear disarmament. This has proven to be more difficult than expected. The START II agreement remains unratified, and the Comprehensive Test-Ban has yet to enter into force.

Negotiations in the Conference on Disarmament on a ban on the production of fissile material for nuclear weapons and other nuclear explosive devices have been stymied by procedural wrangling. Again, the NPT Review Conference will provide a significant opportunity for taking stock of where we stand with regard to the noble and ambitious goals which States set for themselves in 1995 and of their willingness to match their intentions with actions...

Although effective actions have been taken to improve the security of material, the threat from illicit trafficking in nuclear materials and other radioactive sources to global security and public health remains. International cooperation has to be further strengthened to prevent these criminal activities. The IAEA has a crucial role in coordinating international efforts to reinforce national systems for the prevention and detection of, and response to, illicit trafficking.

c. Extract from the Statement of the Director General to the IAEA General Conference

Introduction

This forty-third General Conference takes place at the dawn of a new millennium. It presents us with an occasion to reflect on the past and plan for the future.

I want this morning not only to recall where we stand now but also to outline where we want to be. I will consider the Agency's programme in terms of the three 'pillars' that constitute its mandate, namely technology, safety and verification. I will also touch on two supporting elements that undergird those pillars: effective interaction with the outside world, and excellence in management.

I. Nuclear Technology

I begin with the Agency's work under the technology pillar. Nuclear technology provides the basis for all of the Agency's work. Our mandate in this area is clear: to maximize the ability of Member States to make full use of nuclear technology for their economic and social development.

Let me start with nuclear power. In the past fifty years, nuclear power has become an important part of the energy mix. At the end of 1998, over four hundred nuclear power reactors in more than thirty countries were producing about 16% of world electricity. Sixteen countries relied on nuclear power for 25% or more of their electricity supply.

Global energy demand, particularly for electricity, is clearly rising, especially to meet increasing needs in the developing world. A conservative estimate from the World Energy Council is that global electricity demand will triple in the next fifty years. Thus, many countries will have to decide on the nature and extent of new investments in energy production. Energy security and the preference for low price and low risk will, as always, strongly influence the choice. It will also be influenced by the steadily growing awareness of the need for energy supply services that are environmentally benign. Nuclear power is likely to be increasingly recognized as one of the few options that can help countries meet base load electricity demand with virtually no greenhouse gas emissions and can thus satisfy growing energy needs while helping to meet the carbon dioxide emission targets set out in the Kyoto Protocol. Currently, nuclear power generation results in the avoidance of about 8% of global carbon dioxide emissions compared with fossil fuel generation.

This might suggest that the share of nuclear power in global energy production will grow, or at least remain stable. However, current projections point to a less definite situation. Today, in Western Europe and North America, nuclear power is at a standstill or almost in decline, though it continues to grow in a

few rapidly developing countries in Asia and in parts of Eastern Europe. But the overall share of nuclear power as a proportion of global electricity production is projected to fall, to about 13% in 2010 and to 10% in 2020.

I should note here that the assumption that environmental considerations alone will trigger a resurgence of investment in nuclear power generation is at best doubtful. Only if the nuclear power industry consistently reflects three crucial attributes — safety, competitiveness and public support — can it be assured of a long term future.

A resurgence of nuclear power will thus depend on action on three fronts: continued improvement in the global nuclear safety record, including the 'back end' of the fuel cycle, further improvements in economic competitiveness, and the enhancement of public understanding of, and confidence in, nuclear power. I shall address the latter two aspects here. The question of safety is one to which I will return later in this statement — under the second pillar.

One of the prerequisites for nuclear power to remain economically competitive — in a world in which changes brought about by liberalization and privatization have placed an unprecedented premium on cost effectiveness — is that scientific and technical research must focus not only on how to improve fuel cycle technology but also on how to develop designs for reactors of various sizes, with higher efficiency and greater availability, shorter construction times and lower capital costs. Nuclear power technology is a relatively young technology and it is essential that it continue to develop in order to remain competitive.

I should caution here, however, that the emphasis on profitability must not be at the expense of safety. Indeed, cutting corners may increase the likelihood of mistakes in an industry in which public opinion is quick to judge and slow to forget. However, experience shows that efficiency and safety are in practice mutually supportive. I should also add that it is only fair that the full costs of different energy options, including their environmental impact, are factored into the comparative assessments of the economics of the different energy options if we are to take seriously the threat of global climate change.

...

III. Nuclear Verification and the Security of Material

I turn now to the third pillar of the Agency's work — verification and the security of nuclear material. Agency safeguards are key to international efforts to prevent the proliferation of nuclear weapons. Safeguards have evolved steadily since their inception as changes in technology have led to improvements in verification techniques and capabilities. A major catalyst for change, however, as I recalled in my statement to last year's General Conference, was the Agency's experience in Iraq. Since 1991, efforts have concentrated on equipping the safeguards system to provide assurance not only of the absence of diversion of a State's nuclear material from declared activities, but also of the absence of any undeclared material or activities. A high point was the adoption by the Board of Governors, in May 1997, of the Model Additional Protocol to a safeguards agreement that provides the Agency with the necessary supplementary authority in this regard.

A longstanding concern of the Secretariat has been the number of States which have still not concluded safeguards agreements with the Agency, despite their obligation to do so. The Secretariat continues to take every opportunity to encourage the relevant States to take the appropriate action in this regard. With a view to next year's Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), I urge, in particular, the 52 NPT States without safeguards agreements in force to conclude and bring such agreements into force without further delay. The full potential of the strengthened safeguards system can be realized only through universal adherence to the Additional Protocol. That, in turn, depends upon all relevant safeguards agreements being in force.

Since last year's General Conference, a further 13 Additional Protocols have been approved by the Board of Governors,

including four at last week's Board meeting. This brings the total of Additional Protocols approved to 45.

While I naturally welcome this progress, it falls short of expectations. States have consistently emphasized the great importance that they attach to a strengthened safeguards system and, in that regard, to universal adherence to the Additional Protocol. I appeal to all the States which have not yet done so to conclude Additional Protocols at the earliest possible date.

My report to the General Conference on 'Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System' describes the work that the Secretariat has undertaken since last year's conference: implementing safeguards strengthening measures within the Agency's legal authority under safeguards agreements; implementing measures contained in the Additional Protocol in States where the Protocol is in force; and developing 'integrated safeguards'. The latter involves the integration of traditional nuclear material verification activities with the new strengthening measures, including those from the Additional Protocol, to achieve maximum effectiveness and efficiency.

The Secretariat has already started implementing some of the new strengthening measures. And the integration process will be progressively introduced starting next year. I am confident that the new system will enable the Agency to provide enhanced assurance to the international community that all States with comprehensive safeguards agreements and Additional Protocols are using nuclear energy exclusively for peaceful purposes. But we need to continue to work towards the universality of the non-proliferation regime, towards nuclear disarmament and towards a better system of global and regional security. In my view, these are the best disincentives against using nuclear energy for military purposes.

Let me now turn to the physical protection of nuclear material, which is closely associated with the Agency's safeguards and verification mission. It is important that nuclear materials not be misused — by States or by subnational groups. The Agency's Illicit Trafficking Database records 138 incidents involving nuclear material and 124 involving other radioactive sources which have been officially reported by States. The number of Member States providing information to this database, at present 61, is steadily increasing.

The Secretariat will continue to assist States in their efforts to prevent, detect and respond to illegal uses of nuclear and radioactive material and to co-operate to that end with other international organizations, such as customs and police organizations. In the coming years, we aim to achieve progress in the global implementation of the recently revised recommendations on physical protection (INFCIRC/225/Rev.4), whose scope has now been extended to cover protection of not only nuclear material but also nuclear facilities containing nuclear material. The Secretariat is also convening, at the request of Member States, an open-ended expert meeting in November to consider whether there is a need for revision of the Convention on Physical Protection of Nuclear Material.

Possible New Verification Activities

In the area of nuclear arms control and reduction measures, the Agency has continued its work on a joint initiative with the Russian Federation and the USA, focusing on Agency verification of weapon-origin fissile material in the two States. During the year, work has continued on the development of a proposed prototype inspection system that might allow Agency inspectors to carry out their verification duties without access to classified weapons information. Discussions with the Russian Federation and the USA have also continued on the drafting of a model verification agreement that will inter alia ensure that fissile materials of weapon origin submitted to Agency verification will not be used again in nuclear weapons. Minister Adamov, Secretary Richardson and I will meet this week to review the work and set goals for the coming year.

The Conference on Disarmament (CD) continued its discussion on issues relating to the negotiation of a treaty to ban fissile material production for nuclear weapons or other nuclear explosives. In line with an earlier United Nations General

Assembly resolution, I have indicated to the President of the CD the Agency's readiness to assist in developing the verification system for such a treaty. At the request of a number of States, the Secretariat has been providing expert advice and information on its experience in areas relevant to the development of such a verification system.

It goes without saying that any new verification activities will pose a challenge for the Agency in terms of resource requirements. In this connection, I presented earlier this year to the Board of Governors the possible options for financing Agency verification of future nuclear arms control and reduction measures. The document focused on the principles that could underline such funding and the different mechanisms available, including the possible establishment of a nuclear arms control and reduction fund based on assessed contributions. The document, however, emphasized that whatever the financial arrangements agreed upon, they should be predictable and reliable. At its June meeting, the Board of Governors had an initial discussion on the subject and I expect the issue to be pursued when the envisaged verification tasks become concrete. It is a statutory responsibility and a long standing tradition for the Agency to accept all requests for the application of safeguards and we should continue to be able to do so. If we are asked to take on new roles in the important field of nuclear arms control then we need to be prepared and we need to agree beforehand on the modes of financing the work. I therefore hope that Member States will give this issue the attention it deserves.

...

Specific Verification Issues

Let me now turn to some specific verification issues on your agenda.

It is now some nine months since the Agency's last inspection in Iraq under the relevant Security Council resolutions. One year ago we were cautiously optimistic that the Agency would be able to proceed with the full implementation of its monitoring and verification plan. This has not happened. And the United Nations Security Council is still consulting on a mechanism for the resumption of verification activities in Iraq. Clearly, under present circumstances, the Agency cannot provide any measure of assurance regarding Iraq's compliance with its obligations under the said resolutions. However, the Agency continues to be ready to resume its activities in Iraq at short notice.

The Agency remains unable to verify that all nuclear material subject to safeguards in the Democratic People's Republic of Korea (DPRK) has been declared to the Agency. The Agency, however, continues to monitor the 'freeze' on DPRK's graphite moderated reactors and related facilities as requested by the Security Council. The measure of co-operation we receive from the DPRK continues to be limited. And, despite twelve rounds of technical discussions, there is still no progress on important issues such as the preservation of information relevant to verifying the DPRK's compliance with its safeguards agreement. As I have indicated before, without this information it will be difficult, if not impossible, to verify, in the future, compliance by the DPRK with its safeguards agreement.

Pursuant to the mandate conferred on me by the General Conference, I have continued my consultations with States of the Middle East region regarding the application of full scope Agency safeguards to all nuclear activities in the Middle East as relevant to the preparation of model agreements, as a necessary step towards the establishment of a nuclear weapons free zone in the region. This year, during visits to Egypt, Jordan, Lebanon, Morocco and the Syrian Arab Republic, I reiterated the importance of obtaining more detailed information from States of the Middle East on key issues relevant to my mandate. Additionally, I wrote in May 1999 to the Foreign Ministers of Middle East States in this regard and have received a number of replies that are annexed to my report to the General Conference. I also reiterated my willingness to provide any assistance within my mandate and authority to States of the region in seeking to fulfil the objectives of successive General Conference resolutions. There is clearly a common view among States of the region, which is globally shared, that a Middle East nuclear weapons free zone would contribute to regional stability and

security. It is to be hoped that the political climate now prevailing in the region will be conducive to progress in the attainment of these important goals. ...

VI. Conclusion

Looking back on the last fifty years, we can see that great progress has been made in the world. But serious global challenges remain. High among them are: improving social and economic conditions over much of the globe where 1.3 billion people live on less than one dollar per day; curbing the spread and eventually eliminating the threat of nuclear weapons from a world where some tens of thousands of warheads continue to exist; and stopping the degradation of the environment. The Agency has a modest — though important — role to play in helping the world to meet these challenges. We pledge to do our best. And we look forward to your continued support.

d. White House Press Release, 17 September 1999 'Easing Sanctions Against North Korea'

Today the President announced his decision to ease some sanctions against the Democratic Peoples Republic of Korea, administered under the Trading With the Enemy Act, Defense Production Act, and the Department of Commerce's Export Administration Regulations. The United States is taking this action in order to pursue improved overall relations with North Korea, support the Agreed Framework, and as a result of U.S.-North Korean discussions in Berlin September 7-12, 1999. On the basis of these discussions, it is our understanding that North Korea will continue to refrain from testing long-range missiles of any kind as both sides move toward more normal relations. The easing of sanctions will allow most consumer goods to be available for export to North Korea and will allow the importation of most North Korean-origin goods into the United States. To support this easing of sanctions in the trade of goods, most personal and commercial funds transfers will be allowed between U.S. and North Korean persons. The relaxation of transportation restrictions will allow commercial air and sea transportation between the U.S. and North Korea for passengers and cargo, subject to normal regulatory requirements. This easing of sanctions does not affect our counter-terrorism or nonproliferation controls on North Korea, which prohibit exports of military and sensitive dual-use items and most types of U.S. assistance. Statutory restrictions, such as U.S. missile sanctions, will remain in place. Restrictions on North Korea based on multilateral arrangements also will remain in place, such as the Wassenaar Arrangement.

e. White House Office of the Press Secretary Fact Sheet, 17 September 1999

The Departments of Commerce, Transportation and Treasury have begun the process of modifying regulations to implement the President's decision [on easing DPRK sanctions]. That process may take several months. Examples of activities on which restrictions will be eased are: the importation of most North Korean-origin goods and raw materials; the export and re-export of most non-sensitive goods and services of U.S. companies and their foreign subsidiaries, such as most consumer goods, most financial services, non-sensitive inputs for investment in non-sensitive industrial sectors; investment in such sectors as agriculture, mining, petroleum, timber, cement, transportation, infrastructure (roads, ports, airports), travel/tourism; remittances from U.S. nationals to North Koreans; the transport of approved (i.e., non-sensitive) cargo to and from North Korea by commercial U.S. ships and aircraft...; commercial flights between the U.S. and North Korea.... Restrictions associated with North Korea's designation as a terrorist-supporting state will remain in place.... Examples of activities that still will not be permitted due to these restrictions are: the export of United States Munitions List goods or technology; the export of dual-use goods or technology on the Commerce Control List without a license; any assistance under the Foreign Assistance Act, the Agricultural Trade and Development Act, the Peace Corps Act, and the Export-Import Bank Act; support

for loans to North Korea by international financial institutions; the transfer of spoils of war; the duty free treatment of exports to the United States; financial transactions between U.S. persons and the North Korean government unless authorized by regulation by the Secretary of the Treasury; and claiming foreign tax credits on corporate or individual income in North Korea. In addition, statutory restrictions such as U.S. missile technology sanctions remain in place, as do restrictions based on multilateral arrangements and nonproliferation controls.... Finally, assets currently blocked under the Trading With the Enemy Act remain frozen, and claims settlements issues are not addressed by this initiative.

f. Press Release from the US House of Representatives International Relations Committee

U.S. Rep. Benjamin A. Gilman (20th-NY), Chairman of the House International Relations Committee, released the following statement today concerning President Clinton's decision to ease sanctions on North Korea: 'We appreciate the efforts Dr. Perry has made to address the North Korean threat, but I am concerned that we are once again entering cycle of extortion with North Korea. I am opposed to lifting any sanctions on North Korea at this time. North Korea is one of the most significant threats to American national security in the world today. North Korea proliferates missiles to terrorist states and has been pursuing weapons of mass destruction. It has been starving its own people, producing and trafficking in illegal narcotics, threatening American and South Korean forces and generally destabilizing the East Asian region. Although we met this week with North Korea policy coordinator William Perry, our committee was not consulted by the administration before lifting specific sanctions. I had hoped that the Administration would have proceeded in a more bipartisan manner on Dr. Perry's report. At this time, however, this approach does not have support in Congress and would not be sustainable into the next administration. If this decision is based on the Berlin Agreement, then it is premature. The de facto moratorium that was agreed to in Berlin is limited. The Berlin Agreement is far from comprehensive and the lack of transparency regarding the North Korean missile program and our inability to verify their compliance are troubling issues. Ultimately, we have no assurances that North Korea has halted missile development.'

g. Draft report of the National Security Advisory Board of India on Indian Nuclear Doctrine

[released by National Security Advisor Brajesh Mishra in New Delhi on 17 August and published by Indian government web site on 17 August; subheadings as published]

Preamble: 1.1. The use of nuclear weapons in particular as well as other weapons of mass destruction constitutes the gravest threat to humanity and to peace and stability in the international system. Unlike the other two categories of weapons of mass destruction, biological and chemical weapons which have been outlawed by international treaties, nuclear weapons remain instruments for national and collective security, the possession of which on a selective basis has been sought to be legitimised through permanent extension of the Nuclear Non-Proliferation Treat (NPT) in May 1995. Nuclear weapon states have asserted that they will continue to rely on nuclear weapons with some of them adopting policies to use them even in a non-nuclear context. These developments amount to virtual abandonment of nuclear disarmament. This is a serious setback to the struggle of the international community to abolish weapons of mass destruction.

1.2. India's primary objective is to achieve economic, political, social, scientific and technological development within a peaceful and democratic framework. This requires an environment of durable peace and insurance against potential risks to peace and stability. It will be India's endeavour to proceed towards this overall objective in cooperation with the global democratic trends and to play a constructive role in

advancing the international system towards a just, peaceful and equitable order.

1.3. Autonomy of decision making in the development process and in strategic matters is an inalienable democratic right of the Indian people. India will strenuously guard this right in a world where nuclear weapons for a select few are sought to be legitimized for an indefinite future, and where there is growing complexity and frequency in the use of force for political purposes.

1.4. India's security is an integral component of its development process. India continuously aims at promoting an ever-expanding area of peace and stability around it so that developmental priorities can be pursued without disruption.

1.5. However, the very existence of offensive doctrine pertaining to the first use of nuclear weapons and the insistence of some nuclear weapon states on the legitimacy of their use even against non-nuclear weapon countries constitute a threat to peace, stability and sovereignty of states.

1.6. This document outlines the broad principles for the development, deployment and employment of India's nuclear forces. Details of policy and strategy concerning force structures, deployment and employment of nuclear forces will flow from this framework and will be laid down separately and kept under constant review.

2. Objectives

2.1. In the absence of global nuclear disarmament, India's strategic interests require effective, credible nuclear deterrence and adequate retaliatory capability should deterrence fail. This is consistent with the UN Charter, which sanctions the right of self-defence.

2.2. The requirements of deterrence should be carefully weighed in the design of Indian nuclear forces and in the strategy to provide for a level of capability consistent with maximum credibility, survivability, effectiveness, safety and security.

2.3. India shall pursue a doctrine of credible minimum nuclear deterrence. In this policy of 'retaliation only', the survivability of our arsenal is critical. This is a dynamic concept related to the strategic environment, technological imperatives and the needs of national security. The actual size components, deployment and employment of nuclear forces will be decided in the light of these factors. India's peacetime posture aims at convincing any potential aggressor that:

- (a) any threat of use of nuclear weapons against India shall invoke measures to counter the threat; and
- (b) any nuclear attack on India and its forces shall result in punitive retaliation with nuclear weapons to inflict damage unacceptable to the aggressor.

2.4. The fundamental purpose of Indian nuclear weapons is to deter the use and threat of use of nuclear weapons by any State or entity against India and its forces. India will not be the first to initiate a nuclear strike, but will respond with punitive retaliation should deterrence fail.

2.5. India will not resort to the use or threat of use of nuclear weapons against States which do not possess nuclear weapons, or are not aligned with nuclear weapon powers.

2.6. Deterrence requires that India maintain:

- (a) Sufficient, survivable and operationally prepared nuclear forces,
- (b) a robust command and control system,
- (c) effective intelligence and early warning capabilities, and
- (d) comprehensive planning and training for operations in line with the strategy, and
- (e) the will to employ nuclear forces and weapons

2.7. Highly effective conventional military capabilities shall be maintained to raise the threshold of outbreak both of conventional military conflict as well as that of threat or use of nuclear weapons.

3. Nuclear forces

3.1. India's nuclear forces will be effective, enduring, diverse, flexible, and responsive to the requirements in accordance with the concept of credible minimum deterrence. These forces will be based on a triad of aircraft, mobile land-based missiles and sea-based assets in keeping with the objectives outlined above.

Survivability of the forces will be enhanced by a combination of multiple redundant systems, mobility, dispersion and deception.

3.2 The doctrine envisages assured capability to shift from peacetime deployment to fully employable forces in the shortest possible time, and the ability to retaliate effectively even in a case of significant degradation by hostile strikes.

4. *Credibility and Survivability*

The following principles are central to India's nuclear deterrent:

4.1. **Credibility:** Any adversary must know that India can and will retaliate with sufficient nuclear weapons to inflict destruction and punishment that the aggressor will find unacceptable if nuclear weapons are used against India and its forces.

4.2. **Effectiveness:** The efficacy of India's nuclear deterrent be maximised through synergy among all elements involving reliability, timeliness, accuracy and weight of the attack.

4.3. **Survivability:**

- (i) India's nuclear forces and their command and control shall be organized for very high survivability against surprise attacks and for rapid punitive response. They shall be designed and deployed to ensure survival against a first strike and to endure repetitive attrition attempts with adequate retaliatory capabilities for a punishing strike which would be unacceptable to the aggressor.
- (ii) Procedures for the continuity of nuclear command and control shall ensure a continuing capability to effectively employ nuclear weapons.

5. *Command and control*

5.1. Nuclear weapons shall be tightly controlled and released for use at the highest political level. The authority to release nuclear weapons for use resides in the person of the Prime Minister of India, or the designated successor(s).

5.2. An effective and survivable command and control system with requisite flexibility and responsiveness shall be in place. An integrated operational plan, or a series of sequential plans, predicated on strategic objectives and a targeting policy shall form part of the system.

5.3. For effective employment the unity of command and control of nuclear forces including dual capable delivery systems shall be ensured.

5.4. The survivability of the nuclear arsenal and effective command, control, communications, computing, intelligence and information (C4I2) systems shall be assured.

5.5. The Indian defence forces shall be in a position to, execute operations in an NBC [nuclear, biological and chemical warfare] environment with minimal degradation.

5.6. Space based and other assets shall be created to provide early warning, communications, damage/detonation assessment.

6. *Security and safety*

6.1. **Security:** Extraordinary precautions shall be taken to ensure that nuclear weapons, their manufacture, transportation and storage are fully guarded against possible theft, loss, sabotage, damage or unauthorised access or use.

6.2. **Safety** is an absolute requirement and tamper proof procedures and systems shall be instituted to ensure that unauthorised or inadvertent activation/use of nuclear weapons does not take place and risks of accident are avoided.

6.3. **Disaster control:** India shall develop an appropriate disaster control system capable of handling the unique requirements of potential incidents involving nuclear weapons and materials.

7. *Research and development*

7.1 India should step up efforts in research and development to keep up with technological advances in this field.

7.2. While India is committed to maintain the deployment of a deterrent which is both minimum and credible, it will not accept any restraints on building its R and D [Research and Development] capability.

8. *Disarmament and arms control*

8.1. Global, verifiable and non-discriminatory nuclear disarmament is a national security objective. India shall continue

its efforts to achieve the goal of a nuclear weapon-free world at an early date.

8.2. Since no-first use of nuclear weapons is India's basic commitment, every effort shall be made to persuade other States possessing nuclear weapons to join an international treaty banning first use.

8.3. Having provided unqualified negative security assurances, India shall work for internationally binding unconditional negative security assurances by nuclear weapon states to non-nuclear weapon states.

8.4. Nuclear arms control measures shall be sought as part of national security policy to reduce potential threats and to protect our own capability and its effectiveness.

8.5. In view of the very high destructive potential of nuclear weapons, appropriate nuclear risk reduction and confidence building measures shall be sought, negotiated and instituted.

h. International Atomic Energy Agency General Conference Resolutions adopted September 1999

GC(43)/L.1/Rev.1 — Application of IAEA Safeguards in the Middle East

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(42)/RES/21,

1. *Takes note* of the Director General's report in documents GOV/1999/51-GC(43)117, GOV/1999/51/Add.1-GC(43)/17/Add.1 and GOV/1999/51/Add.2-GC(43)117/Add.2;

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-fourth 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(43)/L.2 — 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

The General Conference,

(a) *Recalling* the Board of Governors' resolutions GOV/2636 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, GC(40)/RES/4 of 20 September 1996, GC(41)/RES/22 of 3 October 1997 and GC(42)/RES/2 of 25 September 1998,

(b) *Noting* with concern the lack of progress reflected in the Director General's report contained in document GC(43)/23,

(c) *Recalling* further resolution 825 (1993) adopted by the Security Council of the United Nations on 11 May 1993 and 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 on 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. *Recognizes* the important role of the IAEA in monitoring the freeze of nuclear facilities in the DPRK and *commends* the Secretariat for its continuous efforts to monitor the freeze of specified facilities in the DPRK as requested by the United Nations Security Council;

3. *Expresses* deep concern over the continuing non-compliance of the DPRK with the IAEA-DPRK safeguards agreement, in spite of repeated calls by the international community for such compliance, 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-fourth 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(43)/L.6 — Implementation of United Nations Security Council Resolutions Relating to Iraq

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), fortieth (1996), forty-first (1997) and forty-second (1998) General Conferences (GC(XXXV)/RES/568, GC(XXXVI)/RES/579, GC(XXXVII)/RES/626, GC(XXXVIII)/RES/19, GC(39)/RES/5, GC(40)/RES/21, GC(41)/RES/23 and GC(42)/RES/3,

(c) *Taking note of* the Director General's report contained in document GC(43)/16, his introductory statement to the forty-third General Conference, his sixth and seventh consolidated six-monthly reports to the Security Council (GOV/INF/1998/22 and GOV/INF/1999/6), his report in connection with the panel on disarmament and current and future ongoing monitoring and verification (OMV) issues (GOV/INF/1999/4), and his report to the Board of Governors (GOV/1999/50),

(d) *Noting* that as of October 1998 the IAEA judged the summary of Iraq's technical achievements provided by Iraq to be consistent with the technically coherent picture of that programme,

(e) *While however noting, with concern* that since mid-December 1998 the Agency has been unable to implement its mandate in Iraq and since that time has been unable to provide any measure of assurance regarding Iraq's compliance under those resolutions,

(f) *Noting* that the Director General's report recalls that Iraq's refusal to address further questions related to its clandestine nuclear programme has made it impossible for the Agency to proceed with its stated intention to seek to clarify the few remaining questions and concerns regarding that programme as part of its OMV activities,

(g) *Also noting* that the Agency is satisfied that the uncertainties resulting from these few questions and concerns do not prevent the full implementation of the OMV plan, and would continue with their investigation, along with any other aspect of Iraq's clandestine nuclear programme, as part of its OMV activities, and

(h) *Recalling* that effectiveness of the implementation of the Agency's OMV plan is critically dependent upon the full exercise of rights of access enshrined in that plan, and the necessary co-operation of Iraq,

1. *Commends* the Director General and the Agency's Action Team for their strenuous efforts to implement the Security Council's resolutions 687, 707, 715 and 1051;

2. *Stresses* the need for full implementation by Iraq of all relevant Security Council resolutions;

3. *Stresses* that greater transparency by Iraq in its dealings with the IAEA would contribute greatly to the resolution of the few remaining questions and concerns in the framework of the OMV plan;

4. *Welcomes* the work done by the three separate panels on Iraq-related issues and Agency participation in the panel addressing disarmament and current and future ongoing monitoring and verification issues;

5. *Stresses* that the Agency's Action Team's monitoring and verification activities in Iraq should be re-established without delay;

6. Stresses the importance for the Action Team to continue updating and maintaining its operational plan for the resumption of its monitoring activities in Iraq in accordance with its mandate under the relevant Security Council resolutions;

7. Stresses that it is essential that the basis under which the Agency's activities in Iraq might be resumed preserves those rights of access in order to avoid any reduction in the value of assurance provided by the Agency through the implementation of its OMV plan; 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-fourth 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(43)/L.12 — Amendment to Article VI of the Statute

The General Conference,

(a) Recalling its decision GC(42)/DEC/10 which requested the Board of Governors, inter alia, to submit its report on a finalized formula on amending Article VI of the Statute and all previous resolutions and decisions on the subject,

(b) Having examined the proposal for amendment of Article VI of the Statute submitted by Japan in accordance with Article XVIII.A of the Statute, contained in Annex 1 to document GC(42)/19,

(c) Having also examined the proposal for the modification of the Japanese amendment submitted by Slovenia in accordance with Article XVIII.A of the Statute, contained in document GC(43)/12,

(d) Having also considered the report and recommendations of the Board of Governors contained in document GC(43)/12, which constitute the Board's observations on the aforesaid modification to the Japanese proposal proposed by Slovenia,

(e) Having also considered the Board's observations on the aforesaid Japanese proposal to amend Article VI,

(1) Approves the aforesaid modification proposed by Slovenia to the amendment of Article VI proposed by Japan;

(2) Approves the amendment proposed by Japan, as modified in operative paragraph (1) and as further modified, by which Article VI of the Agency's Statute is amended as follows:

I. Replace paragraph A of Article VI of the Agency's Statute by the following:

"A. The Board of Governors shall be composed as follows:

(1) The outgoing Board of Governors shall designate for membership on the Board the eighteen members most advanced in the technology of atomic energy including the production of source materials, the designated seats to be distributed among the areas mentioned below as follows:

North America	2
Latin America	2
Western Europe	4
Eastern Europe	2
Africa	2
Middle East and South Asia	2
South East Asia and the Pacific	1
Far East	3

(2) The General Conference shall elect to membership of the Board of Governors:

(a) Twenty-two members, with due regard to equitable representation on the Board as a whole of the members in the areas listed in sub-paragraph A.1 of this article, so that the Board shall at all times include in this category:

four representatives of the area of Latin America, four representatives of the area of Western Europe, three representatives of the area of Eastern Europe, five representatives of the area of Africa, three representatives of the area of the Middle East and South Asia, two representatives of the area of South East Asia and the Pacific, and one representative of the area of Far East.

(b) Two further members from among the members in the following areas:

Western Europe
Eastern Europe
Middle East and South Asia

(c) One further member from among the members in the following areas:

Latin America
Eastern Europe"

and

II. Add at the end of Article VI the following new paragraph:

"K The provisions of paragraph A of this Article as approved by the General Conference on 1 October 1999, shall enter into force when the requirements of Article XVIII.C are met and the General Conference confirms a list of all Member States of the Agency which has been adopted by the Board, in both cases by ninety per cent of those present and voting, whereby each Member State is allocated to one of the areas referred to in sub-paragraph 1 of paragraph A of this Article. Any change to the list thereafter may be made by the Board with the confirmation of the General Conference, in both cases by ninety per cent of those present and voting and only after a consensus on the proposed change is reached within any area affected by the change".

(3) Urges all Member States of the Agency to accept this amendment as soon as possible in accordance with their respective constitutional processes, as provided for in Article XVIII.C(ii) of the Statute;

(4) Requests the Director General to report to the General Conference, at its 45th regular session on the progress made towards the entry into force of this amendment.

GC(43)/L.13 — Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System and Application of the Model Protocol

The General Conference,

(a) Recalling resolution GC(42)/RES/17,

(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, including with respect to the role of the Agency as the competent authority responsible to verify and assure compliance with its safeguards agreements,

(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) Welcoming the fact that, as of 1 October 1999, 45 States and other Parties to safeguards agreements have signed additional protocols, 5 of which have entered into force and 1 is being provisionally applied pending entry into force, 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 safeguards strengthening measures contained in document GOV/2807 and endorsed by the Board of Governors in 1995 as

well as of Additional Protocols without delay as far as available resources permit;

2. *Requests* the Secretariat to intensify, within available resources, its efforts to conceptualize and develop an integrated and cost-effective safeguards system;

3. *Requests* the Secretariat to continue to explore all possibilities of achieving reductions in safeguards inspection costs;

4. *Recalls* the need for all concerned States and other Parties to safeguards agreements with the Agency to supply the Agency with all the information required under safeguards strengthening measures contained in document GOV/2807 and endorsed by the Board of Governors in 1995;

5. *Requests* the Agency to fully implement its role as the competent authority responsible to verify and assure compliance with its safeguards agreements;

6. *Stresses* the need for effective safeguards in order to prevent the use of nuclear material 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;

7. *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;

8. *Reiterates* its support for the Board's decision to request the Director General to use the Model Additional Protocol as the standard for additional protocols which are to be concluded by States and other Parties to comprehensive safeguards agreements with the Agency and which should contain all of the measures in the Model Additional Protocol;

9. *Reiterates* its support for 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 Additional 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 1 of the NPT;

10. *Reiterates* its support for 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 Additional Protocol in pursuance of safeguards effectiveness and efficiency objectives;

11. *Requests* all concerned States and other Parties to safeguards agreements which have not yet done so to sign additional protocols promptly;

12. *Requests* the States and other Parties to safeguards agreements having signed additional protocols to take the necessary measures to bring them into force or provisionally apply them as soon as their national legislation allows; and

13. *Requests* the Director General to report on the implementation of this resolution to the General Conference at its forty-fourth regular session.

GC(43)/L.14 — Measures against Illicit Trafficking in Nuclear Materials and other Radioactive Sources

The General Conference,

(a) *Recalling* its resolutions GC(XXXVIII)/RES/15, GC(39)/RES/18, GC(40)/RES/17, GC(41)/RES/17 and GC(42)/RES/18 on measures against illicit trafficking in nuclear materials and other radioactive sources,

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

(c) *Welcoming* the confirmation of participants at the Denver Summit of June 1997 on their commitment to implement the 'Programme for Prevention and Combating Illicit Trafficking in Nuclear Materials',

(d) *Noting, also* that revised Recommendations for the Physical Protection of Nuclear Materials and Nuclear Facilities

(INF/CIRC/225/Rev.4) were issued after intensive consultations by Member States' and Agency experts,

(e) *Noting* further that an informal Open-Ended Experts Meeting will take place on 15–19 November 1999 to discuss whether there is a need to revise the Convention on the Physical Protection of Nuclear Material,

(f) *Noting further* that the Agency, together with the European Commission, the World Customs Organization and the International Criminal Police Organization (Interpol), organized the 'International Conference on the Safety of Radiation Sources and the Security of Radioactive Materials' in Dijon, France, from 14 to 18 September 1998, and that the results of this conference have had an important impact on the activities undertaken by the Agency,

(g) *Noting further* that some of the activities were covered by the Secretariat Action Plan regarding the safety of radiation sources and the security of radioactive materials developed pursuant to resolution GC(42)/RES/12, which was endorsed by the Board and by the General Conference in resolution GC(43)/RES/ ... [GC(43)/L.3], and

(h) *Noting further* that the UN General Assembly is continuing its elaboration of an international convention on the suppression of acts of nuclear terrorism (UNGA resolution 51/210 of 17 December 1996),

1. *Takes note* of the progress report submitted by the Secretariat in document GC(43)/13;

2. *Welcomes* the activities in the fields of prevention, detection and response undertaken by the Secretariat, in support of efforts against illicit trafficking, including activities to:

- improve the international standards for protecting nuclear and other radioactive material from illegal uses, including the necessary guidelines for detecting and responding to illegal use of these materials,
- assist Member States to assess and to improve their systems for protection and control of nuclear material and the security of other radioactive material by implementing Agency standards and recommendations,
- assist Member States on request to improve border controls of nuclear and other radioactive materials, and
- provide training to staff in Member States for these purposes;

3. *Also welcomes* the activities undertaken to provide for an exchange of information with Member States, including continued maintenance of the illicit trafficking database programme, as well as to improve the exchange of information by making the best use of the database;

4. *Invites* all States to participate in the illicit trafficking database programme on a voluntary basis;

5. *Invites* the Director General to submit a report to the Board of Governors on the progress on the Secretariat's activities and on the possibilities:

- of further improving the international standards in this area, particularly with regard to security of radioactive material, and
- of enhancing co-operation and co-ordination with Member States and with other international organizations in preventing, detecting and responding to the illegal use of nuclear and other radioactive materials;

6. *Also invites* the Director General to develop within available resources a plan describing the future activities to be undertaken in these areas and the time schedule for their implementation;

7. *Further invites* the Director General to continue working during the coming years in accordance with the relevant conclusions of the Board of Governors;

8. *Requests* the Director General to submit a report to the General Conference at its forty-fourth session on activities undertaken by the Agency in the intervening period; and

9. *Requests* the Director General to bring the present resolution to the attention of the UN General Assembly and *invites* the UN General Assembly, in its continued elaboration of the above-mentioned convention, to bear in mind the Agency's activities in preventing and combating illicit trafficking in nuclear materials and other radioactive materials.

V. Comments from Readers/Corrections

The editor of the *Newsbrief* has been made aware that PPNN's *Issue Review* No. 16 of May 1999: 'Engaging Non-NPT Parties in the Nuclear Non-Proliferation Regime', by Dr. Lawrence Scheinman, contains an inaccuracy. The last, partial, paragraph on page 4 of *Issue Review* No. 16 contains the sentence, 'India, Israel and Pakistan all participated in the Group of Expert's study for developing a

convention on safety of spent fuel management and on safety of radioactive waste management, but none are yet party to the Convention on Nuclear Safety which they signed in 1994'. In a letter to the author, the Pakistan Atomic Energy Commission has pointed out that Pakistan had in fact ratified the Convention on Nuclear Safety on 30 September 1997, without any reservation, and that the Convention entered into force for Pakistan on 29 December 1997.

Annex — Abbreviations of Sources

ACT:	<i>Arms Control Today</i>	LP:	<i>La Prensa</i>
AFP:	<i>Agence France Presse</i>	LT:	<i>Times</i> [London]
AP:	<i>Associated Press</i>	M:	<i>Mena: Middle East Nuclear News Agency</i> [Cairo]
ASS:	<i>Asahi Shimbun</i>	MAS:	<i>Mainichi Shimbun</i>
BBC:	<i>BBC Monitoring Summary of World Broadcasts</i>	N:	<i>Nature</i>
CN:	<i>La Correspondence Nucléaire</i>	NEI:	<i>Nuclear Engineering International</i>
CNN:	<i>Cable News Network</i>	NF:	<i>NuclearFuel</i>
Carnegie:	<i>Proliferation Brief of the Carnegie Endowment for International Peace</i>	NG:	<i>Nezavisimaya gazeta</i>
CdS:	<i>Corriere della Sera</i> [Italy]	NN:	<i>Nuclear News</i>
ChI:	<i>Chosun Ilbo</i>	NNN:	<i>NucNet News</i>
CSM:	<i>Christian Science Monitor</i>	NPR:	<i>National Public Radio News</i>
DJ:	<i>Dow Jones Newswires</i>	NW:	<i>Nucleonics Week</i>
DP:	<i>Die Presse</i>	NS:	<i>New Scientist</i>
DS:	<i>Der Spiegel</i>	NYT:	<i>New York Times</i>
DT:	<i>Daily Telegraph</i>	NZZ:	<i>Neue Zürcher Zeitung</i>
DW:	<i>Die Welt</i>	O:	<i>Observer</i>
E:	<i>Economist</i>	PBS:	<i>Public Broadcasting System News Hour</i> (TV)
EP:	<i>El Pais</i>	RFL\RL:	<i>Radio Free Europe/Radio Liberty</i>
FAZ:	<i>Frankfurter Allgemeine Zeitung</i>	R:	<i>Reuters</i>
fF:	<i>freshFUEL</i>	SCMP:	<i>South China Morning Post</i> [Hongkong]
FR:	<i>Foreign Report</i> [UK]	SDZ:	<i>Süddeutsche Zeitung</i>
FT:	<i>Financial Times</i>	SG-Sp:	<i>Secretary-General's Spokesman Daily Press Briefing</i>
G:	<i>Guardian</i>	SF:	<i>SpentFUEL</i>
I:	<i>Independent</i>	SN:	<i>Salzburger Nachrichten</i>
IHT:	<i>International Herald Tribune</i>	StL:	<i>Standard</i> [London]
IT:	<i>Itar-TASS</i>	StV:	<i>Standard</i> [Vienna]
Izv:	<i>Izvestia</i>	ST:	<i>Sunday Times</i> [London]
JAI:	<i>JoongAng Ilbo</i>	UINB:	<i>Uranium Institute News Briefing</i>
JDW:	<i>Jane's Defence Weekly</i>	UPI:	<i>United Press International</i>
JFR:	<i>Jane's Foreign Report</i>	USIA:	<i>United States Information Agency Transcript</i>
JoC:	<i>Journal of Commerce</i>	Ux:	<i>Ux Weekly</i>
JP:	<i>Jerusalem Post</i>	VoA:	<i>Voice of America</i>
KCNA:	<i>Korean Central News Agency</i> [Pyongyang]	WP:	<i>Washington Post</i>
KH:	<i>Korea Herald</i>	WP/NWE:	<i>Washington Post National Weekly Edition</i>
KT:	<i>Korea Times</i>	WT:	<i>Washington Times</i>
KV:	<i>Kourier</i> [Vienna]	WSJ:	<i>Wall Street Journal</i>
LAT:	<i>Los Angeles Times</i>	X:	<i>Xinhua News Agency</i> [Beijing]
Lib:	<i>Libération</i>	Y:	<i>Yonhap</i> [Seoul]
LM:	<i>Le Monde</i>	YOS:	<i>Yomiuri Shimbun</i>

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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