

April 1997
**Programme for Promoting Nuclear
Non-Proliferation, Newsbrief, Number 37**

Citation:

"Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 37", April 1997, Wilson Center Digital Archive, Contributed by Michal Onderco from the private papers of Benjamin Sanders. Copies also available in MS 424, University of Southampton Special Collections. <https://digitalarchive.umd.edu/document/260488>

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.

Credits:

This document was made possible with support from Carnegie Corporation of New York (CCNY)

Original Language:

English

Contents:

Original Scan

PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 37

NEWSBRIEF

1st Quarter 1997

Editorial Note

The **Newsbrief** is a quarterly publication of the Programme for Promoting Nuclear Non-Proliferation (PPNN) which gives information about the actual or potential spread of nuclear weapons and about moves to prevent that spread; it also contains selected references to developments relating to the peaceful uses of nuclear energy. The contents of the **Newsbrief** are based on publicly available material, chosen and presented so as to give an accurate and balanced depiction of pertinent developments.

This issue of the **Newsbrief** covers the period 1 January–24 March 1997. The early ending date is due to the Easter recess of the University of Southampton, where reproduction of the **Newsbrief** takes place. Unless otherwise indicated, sources used and publications listed date from 1997.

The limited size of the **Newsbrief** makes it necessary to choose among items of information and present them in condensed form. The special attention the media tend to pay to particular issues and events, and the fact that many press organs take their information from the same sources, means that often different news items cover the same ground. This adds to the need for careful selection of references to be used for the **Newsbrief** from among the available material.

Subheadings used in the **Newsbrief** are meant to facilitate presentation and are not intended as judgements on the nature of the events covered. On occasion, in the interest of readability, related events that might fit under separate subheadings are combined under a single subheading. As warranted by developments, subheadings may be adapted. For instance, to accommodate references to discussions about the role played by nuclear weapons in the strategies of the states in question, it seemed appropriate to change the usual subheading 'Weapons-related Developments in Nuclear-Weapon States' to 'Nuclear Policies and Related Developments in Nuclear-Weapon States'.

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

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

I. Topical Developments

a. The NPT

- On 23 January Oman deposited its instrument of accession to the NPT. An up to date list of states party to the Treaty is presented in Section IV. **Documentation**.
- The first session of the Preparatory Committee for the NPT Review Conference of 2000, which is being held in accordance with the Decision on Strengthening the Review Process for the Treaty that was adopted by the Review and Extension Conference of the NPT on 10 May 1995, is scheduled to take place at United Nations Headquarters from 7 until 18 April, inclusive. As of late March it was not certain who would preside over the session. Ambassador Pasi Patakallio of Finland was the Western candidate for the chairmanship, but there were indications that members of the Non-Aligned Movement might submit another candidate for the position.

b. Further Non-Proliferation Developments

- Indonesia has ratified the Treaty on the South-East Asia Nuclear-Weapon-Free Zone (Treaty of Bangkok). The other states that have so far done so are **Brunei, Cambodia, Laos, Malaysia, Myanmar** and **Viet Nam**. (*Süddeutsche Zeitung*, 22/1; *Reuter's*, 12/3, in *UI Newsbriefing*, 97.11)
- On 28 February, at the annual summit meeting of Heads of Central Asian States, held at Almaty, Kazakstan, the Presidents of **Kazakstan, the Kyrgyz Republic, Tajikistan, Turkmenistan** and the **Republic of Uzbekistan** issued a declaration in which they resolved, *inter alia*, to call on all interested countries to support the idea of declaring Central Asia a nuclear-free (sic) zone and to recognise the development of 'a complex programme for environmental safety that addresses ... a nuclear-free zone

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in Central Asia and the struggle against the outflow of nuclear technology and materials..'. The full text of the declaration, which deals primarily with environmental issues affecting the Aral Sea, is reproduced in Section IV **Documentation**. (Information from the **Monterey Institute of International Studies**, 21/3, based on information from the Minister for Foreign Affairs, Uzbekistan)

c. Nuclear Disarmament and Arms Limitation

- On 20 and 21 March, Presidents Bill Clinton of the **United States** and Boris Yeltsin of the **Russian Federation** met in Helsinki, Finland, for a discussion on major strategic and economic issues. They are understood to have reached agreement on several outstanding matters in the area of disarmament and arms control:
 - The United States will concur with the extension of the deadline for the full implementation of START II until the end of 2003. This change in the provisions of START II reportedly requires renewed submission to and ratification by the US Senate;
 - President Yeltsin will seek prompt ratification by the State Duma of the Russian Federation of START II;
 - Once START II has been ratified the two states will begin negotiations on START III, with a view to reducing the numbers of strategic warheads each possesses to 2,000–2,500. START III would have to be implemented by the year 2007; and
 - The Anti-Ballistic Missile (ABM) Treaty of 1972 will be maintained in its present form and both sides agreed to accept the deployment of theatre missile defence systems as not running counter to the provisions of that treaty.

Reportedly, no agreement was reached on NATO expansion, which as the US made clear will go forward, while Russia repeated its opposition to this move. It was agreed that Russia and NATO should conclude a 'charter' that would give Russia a voice in NATO affairs without giving it a vote or veto. The charter, which would not be subject to approval by the Russian State Duma nor the parliaments of NATO's member states, and which, as President Yeltsin maintained, would have to be ready before the NATO summit meeting that will be held at Madrid in July, would also include NATO's pledge not to deploy nuclear weapons or station substantial contingents of foreign troops on the territories of the new member states, 'under present and foreseeable circumstances' (formulation used by US Secretary of State Albright, as quoted in the American press). Agreements were also reached on strengthening Russia's economic position and giving it a more prominent position in international economic fora. In particular, the Russian Federation will be invited to the economic summit, now to be called the Summit of the Eight, that will be held at Denver, this June.

(**National Public Radio News** [Washington, 21/3; **Newshour** [US Public TV], 21/3; **New York Times**, 22/3; **Times** [London], 21/3; **International Herald Tribune**, 21-22/3)

- The **Conference on Disarmament** (CD) has not been able, so far, to commence negotiations on a treaty banning the production of fissile material for nuclear weapons. While a cut-off treaty is seen as a priority issue by France, Russia, the UK and the US and many industrial nations, members of the Non-Aligned Movement (NAM) have linked their agreement with a negotiating mandate on this item to a start of negotiations on a treaty on the abolition

of nuclear weapons within a stated period. The three western nuclear-weapon states and Russia hold the view that multilateral negotiations on the reduction of nuclear arsenals would serve little or no purpose and that further nuclear disarmament talks should first be undertaken bilaterally between the Russian Federation and the United States. The disagreement has led to a stalemate on all disarmament issues in the Conference. (**Financial Times**, 20/1; **Neue Zürcher Zeitung**, 22/1; **Direct Information**)

- In the **United States** on 14 January, the Secretary of Energy signed a Record of Decision (ROD) confirming that a dual-track approach will be used to the disposition of 50 tonnes of excess plutonium from nuclear weapons: by conversion and fabrication into mixed-oxide (MOX) fuel elements for use in existing reactors and by immobilisation, i.e., mixing it into large, stable glass or ceramic waste forms, followed by burial (see **Newsbrief** 36, page 2–3). According to the Secretary's announcement, about 30 per cent of the material will have to be immobilised because making it into MOX fuel would require extensive purification. Once irradiated in reactors, the MOX fuel will be disposed of without being reprocessed. The ROD states that the option of using immobilisation for all of the surplus plutonium is kept in reserve. This point was made anew in early March, when a senior official of the Department of Energy (DoE) affirmed that, while in that month the Department was launching a competitive process of selecting private companies to build a MOX fabrication plant, it had not yet decided on a particular approach for the disposition of excess plutonium.

The same DoE official stated that all proposals would be considered, including those for the use of European-made lead test assemblies. An earlier report had indicated that DoE felt that, while the reactor-based plutonium disposition programme might be advanced by as much as four years through the use of European MOX manufacturing capacity, domestic opposition and intervention might slow down the licensing process to the point where that advantage would be lost. Industry sources are quoted as warning that utility interest in the use of MOX in power reactors was not as great as DoE claimed and that if the programme is significantly delayed because lead test assemblies are not readily available, it might fail altogether. Meanwhile, a DoE study of a possible site for a MOX-fuel fabrication centre is said to have concluded that of four potential sites considered — Pantex; Savannah River; the Idaho National Engineering Laboratory and Hanford — the Hanford site would have the most advantages.

DoE's Acting Director in charge of fissile materials disposition has said that unless within the next eight or nine years a formal agreement is reached between Russia and the US under which the two countries draw down their surplus plutonium inventories to equal levels, it is unlikely that the US will begin unilaterally burning surplus plutonium in MOX fuel and will probably have to decide to bury it. Presumably, according to this official, Russia's decision with respect to its excess plutonium 'will be driven by who is going to pay for it'. A member of the US Nuclear Regulatory Commission (NRC) has said that the proposal to burn American and Russian excess weapons plutonium is premature and that the first measure to be taken is to ensure that Russia's plutonium stockpile is secure.

Environmental advocacy groups from a number of countries have asked the US President to immobilise all

excess warhead plutonium. Within the country, demands to that effect are continuing.

It has been announced in Moscow that **France, Germany and Russia** have started to cooperate in a project for the testing of MOX fuel in Russian nuclear power plants and are making plans to design, construct and start a demonstration MOX fuel production plant which, reportedly, could be commissioned by the end of the present century. First contracts are expected to be signed this year. Atomic Energy of **Canada Ltd. (AECL)** is reported to be ready during the current Spring to test 1.2 kg of MOX fuel made with Russian and American weapons-grade plutonium in one of its CANDU power reactors. AECL has said it will collaborate with Russia under the Franco\German initiative.

(**NucNet News**, 9/1; **NEI Infowire**, 14/1; **New York Times**, 15/1; **Nucleonics Week**, 16/1, 6/2; **SpentFUEL**, 20/1, 3/2, 17/2, 3/3; **NuclearFuel**, 27/1, 24/2)

- In the **United States** the Quadrennial Defense Review is about to be updated. Reportedly, while arms control advocates view the current international situation as offering a window of opportunity to begin drastic reductions in nuclear weapons, senior officials in the Department of Defense warn against further cuts in the US nuclear arsenal as long as it is uncertain whether the Russian Duma will ratify the START II Treaty; their opinion, that negotiations on START III should not begin until START II has been ratified, now seems to have found its confirmation in the agreement reached in Helsinki. One reason for the Duma's tardiness in taking a decision on START II is said to be the absence of clear information on the budget implications of the arms reductions required by that Treaty. Russian specialists are also of the opinion that START II requires their country to make deeper cuts than the US and call for the Treaty either to be renegotiated or to be scrapped and replaced by START III.

Suggestions to that effect are said to have been entertained in Washington for some time, and in early March there were reports that the American Administration had advised the Kremlin that it was ready to discuss guidelines for START III and thus convince the Duma that START II was not 'the end of the road'. Russian ratification of START II is obviously connected also with the issue of NATO expansion, as well as with the American wish to develop anti-ballistic missiles — both matters that were discussed at the Helsinki summit, where no agreement was reached on the former issue, while the matter of theatre missile defence now appears to have been settled. It is still not clear, however, whether the Russian State Duma will be satisfied by the agreements reached at Helsinki; initial press reports would seem to imply that President Yeltsin is seen by many to have made far-reaching concessions. (**Defense News**, 6-12/1; **Washington Post**, 23/1; **Reuter's**, 24/1; **Die Welt**, 25/1; **Die Presse**, 25/1; **New York Times**, 9/3; **Guardian**, 24/3; **Times** [London], 24/3)

d. Nuclear Testing

- The American scientific consortium of Incorporated Research Institutions for Seismology (IRIS), which seeks to distinguish natural disturbances from nuclear explosions, in preparation for the establishment of a monitoring system for the Comprehensive Test Ban Treaty, has reported that on 28 May 1993 a large explosion took place in the outback of **Australia**, of which the cause has not yet been

determined. There has been speculation about the possibility of an earthquake, a mining explosion and a meteorite strike. One suggestion has been that the event was the work of the Japanese cult Aumshinrikyo, which is accused of having staged a sarin-gas attack in Tokyo's underground railway system in 1995. A scientific investigation is said to have found that the sect has tried to buy Russian nuclear warheads and had been mining uranium. It had also set up an advance laboratory on a ranch in Australia, not far from the site of the unexplained phenomenon. Although the IRIS investigators have calculated that the event was 170 times larger than the largest mining explosion ever recorded in Australia and might have been equivalent to two kilotons of high explosives, the 'signature' of the event was not typical of a nuclear explosion and the phenomenon was probably natural in character. (**New York Times**, 21/1)

e. Nuclear Trade and International Cooperation

- During March, **United States** officials had further talks in Beijing about **China's** nuclear exports to countries not subject to full-scope IAEA safeguards. Apparently, Washington still hopes to be in a position to certify China's non-proliferation credentials and to allow the 1984 agreement for nuclear cooperation to enter into force, so that American suppliers will be able to export nuclear components to China. (**Nucleonics Week**, 13/3)
- **Cuba: Russia** is reported to be ready to resume construction of the Juragua nuclear power plant in August. The installation, also called Cienfuegos, consists of two VVER-440s. Russia would reportedly invest about \$350 million and Cuba \$200 million for the completion of the first unit, which would take three-and-a-half years. Earlier attempts by Cuba to create an international consortium to help it finish the project, including several western companies, failed when the latter decided against participating. Washington is said to be still pressing Russia not to continue with the project. According to a report from Russia, the parts of the plant so far constructed are in good condition and meet contemporary safety requirements. (**ITAR-TASS Newsagency**, 7/2 in **BBC Monitoring Summary of World Broadcasts**, 14/2; **Nucleonics Week**, 13/2)
- In **Iran** the first Russian-designed VVER-1000 reactor to be built at Bushehr in the place of the reactor that was to have been built there by Siemens of Germany, should be ready for operation in three years. It is expected to cost \$800 million. However, Iran is said to have delayed processing of the credits it would get from Russia because of objections to the fact that the bank handling the credits employed Jewish officials. Reportedly, negotiations have resulted in Teheran being given the right to choose the bank that would be involved, but the financial negotiations have apparently not yet been concluded. The US Administration has repeatedly intervened with Russia to discourage it from following through on the agreement, but without success.

The Foreign Minister of **India** has stated that his country has no plans for cooperation with Iran in nuclear matters. The statement appears to have been in response to reports that the joint commission formed to discuss cooperation between the two countries, which met in February, would among other things consider cooperation in the nuclear field.

(**Reuter's**, 7/1; **Enerpresse**, 8/1; **ITAR-TASS Newsagency**, 7/2; **Nucleonics Week**, 13/2; **Indian Express**, 27/2)

- **Russia** has agreed with **India** to provide it with two VVER-1000 power reactors at an estimated cost of US\$1.5 billion to \$2 billion each. The reactors are to be built for the Kudangulam power station in Tamil Nadu in southern India. The news has led to protests from Washington, where it is pointed out that the supply runs counter to the agreement adopted in 1992 by the members of the Nuclear Suppliers Group (NSG) only to export such equipment on the condition that the recipient country accepts comprehensive safeguards on all its nuclear activities. In the case of India, IAEA safeguards would apply only to the reactors. Reportedly, Russian officials have responded that the sale was 'most important for Russia' and claim that the supply was agreed upon in 1987, before the 'full scope safeguards' undertaking was adopted, and that anyway the installation will not directly contribute to India's military potential. The US Administration, on the other hand, insists that Russia is in breach of the NSG agreement, which it sees as all the more unfortunate at a time when India is seen as being less cooperative than ever with respect to nuclear non-proliferation. In response, Indian analysts accuse the US of applying a double standard in promoting the supply of two light-water power reactors to the DPRK but condemning the sale by Russia of a similar facility to India. (**New York Times**, 6/2, 9/2; **Reuter's**, 6/2; **ITAR-TASS Newsagency**, 7/2; **PTI News Agency**, 10/2)

- It has been disclosed in the **United States** that the computer manufacturer Silicon Graphics, Inc. shipped two small Cray supercomputer systems to the Chelyabinsk-70 nuclear centre in **Russia**, possibly in contravention of American legislation. Reportedly, it is legal to ship a single device of this nature to Russia, but used in parallel they are said to be as powerful as some high performance computers of which the export to Russia is prohibited under US law. The matter is under investigation by American authorities. Russia is also said to have obtained, through a European middleman, an IBM supercomputer which reportedly might be used in the design of nuclear weapons. (**New York Times**, 19/2; **International Herald Tribune**, 26/2, 1-2/3)

f. IAEA Developments

I. General

- At the beginning of the year, there were informal reports that six countries had submitted candidates to succeed Dr. Hans Blix as **Director General**. These were Egypt (Mohamed Shaker, Ambassador to the UK), Iran (Reza Amrollahi, Vice President of Iran and President of the Atomic Energy Organisation), Italy (Fabio Pistella, Head of the Italian nuclear research agency, ENEA), Switzerland (Alec Baer, senior nuclear official), Ukraine (Yuri Kostenko, Minister of Environment and Nuclear Safety), and Zambia (Mwindaace Siamwiza, Head of National Council for Scientific Research). The Agency's Board of Governors had set a deadline of proposals of 31 December 1996, but is now said to have extended that deadline in order to find a person on whom consensus can be reached. During its meeting in March, the Board considered the steps to be followed in the event consensus would not be reached on any one candidate by the time the General Conference convenes, on 29 September. (**Nucleonics**

Week Extra Edition, 17/1; **IAEA Newsbriefs**, January/February; **Direct information**)

- Larry Johnson, USA, previously Principal Legal Officer in the Office of the Legal Counsel of the United Nations, has been appointed as the new Director of the Legal Division, following Wouter Sturms, of the Netherlands. (**IAEA Press Release PR 96/25**, 20/12/96; **Direct information**)

II. Safeguards

- There is a report that the **Islamic Republic of Iran** has agreed to allow the IAEA to carry out environmental monitoring, pursuant to part I of the enhanced safeguards system, '93+2'. Iran is also said to have agreed that samples collected at its safeguarded facilities may be analysed outside the country. It had previously refused to allow the IAEA to undertake environmental monitoring at declared nuclear sites, allegedly because data from environmental samples could be passed on to the US or other hostile states (see **Newsbrief 35**, page 13). (**NuclearFuel**, 31/1)
- IAEA personnel were in Belgrade, **Serbia** in February to discuss the status of the inventory of 40 kg of fresh 80 per cent enriched U-235 at the Vinca nuclear research facility and another 40 kg of irradiated highly enriched uranium (HEU) fuel in storage pools. Reportedly, officials at Vinca fear that the fresh HEU poses a proliferation threat, in view of the unstable political situation in the country. Also, apparently, damaged irradiated metal fuel poses a risk of explosion. The material is under safeguards pursuant to an agreement concluded by the former **Socialist Federal Republic of Yugoslavia**, but this is said to entail only one one-day inspection visit a month, mainly to check seals. Removal of the fresh material and eliminating the radiological hazard posed by the spent fuel is said to be costly and reportedly because the current regime in Belgrade is not formally recognised the IAEA is not in a position to allocate the funds that would be involved. (See related item under I. **Miscellaneous**, page 13) (**NuclearFuel**, 10/2, 24/2)

g. Peaceful Nuclear Developments

- In **Brazil**, construction of the German-designed 1300 MW Angra-2 power reactor has resumed. The plant should be ready for commercial operation by June 1999. Construction was started in 1976 and scheduled for completion by 1983, but had ceased in 1989, partly as a result of pressure from environmental groups and in part also for lack of funding. (**Nucleonics Week**, 23/1)
- On 20 January, **Bulgaria's** oldest power reactor, the 230 VVER-440 Kozloduy-1, which was completed in 1974 and had been down since May 1996 for analysis of the integrity of its pressure vessel, resumed operations. This followed the finding by an international panel that the reactor pressure vessel could be used up to 2004, i.e., the end of the lifetime of the reactor (see also **Newsbrief 36**, page 8). Bulgarian and Russian nuclear experts have expressed satisfaction at the conclusions by the expert group, which are said to have surprised some western safety experts. Nevertheless, the French and German nuclear safety authorities are reported to have again expressed doubt about the safety of the reactor, pointing to undersized emergency cooling systems, insufficient confinement of radioactive products in the event of an acci-

dent, vulnerability in the case of fire or internal flooding, and faulty evaluation of earthquake-related risks.

The Nuclear Safety Account (NSA), which is administered by the European Bank for Reconstruction and Development (EBRD), is not expected to be able to conclude the programme it had adopted for near-term safety upgrades of Kozloduy's four oldest VVER-440s. Reportedly, it is not certain that, as scheduled, the safety equipment now on-site will be installed by the end of the current year and closure of the reactors by the year 2000 is no longer seen as feasible.

There is talk about completing the nuclear power station at Belene. In response to a request from the Bulgarian government, Russian analysts have concluded that completion of the VVER-1000 station in accordance with current nuclear safety requirements would take five years and cost \$1.01 billion. They suggest that the work might be entrusted to Bulgarian, Czech, German, Polish and Russian firms, and that Moscow might grant credit of somewhat less than half of the total cost. Reportedly, the Bulgarian government has not decided whether to complete the power station.

(Standart News [Sofia], 7/1, in **BBC Monitoring Summary of World Broadcasts**, 9/1; **NucNet News**, 22/1, in **UI Newsbriefing** 97.04; **Nucleonics Week**, 23/1, 6/2)

- A pilot reprocessing plant under construction in Lanzhou, north-central **China**, is said to have been designed to handle spent fuel containing HEU. Reportedly, the U.S., in its discussions with Beijing about the US presidential certification of China's non-proliferation credentials (see **Newsbrief** 36, page 6) has suggested plans to use the new plant to reprocess HEU should be relinquished.

According to **Russian** sources, a Russian-built centrifuge enrichment plant has started operations at Chengdu, Sichuan Province. The plant, which enriches uranium to about four per cent U-235, is meant to be the first of a three-module enrichment plant. Construction of the second stage, which is supposed to double the capacity of the facility, should be completed in the Summer of 1998, and the third stage should enter operations by the end of the year 2000. The plant has been submitted to IAEA safeguards.

China and the Russian Federation are expected to work closely together in the construction of two VVER-1000 power reactors near Lianyungang, in Jiangsu Province. A framework agreement was signed by the Prime Ministers of the two countries in late December 1996. Reportedly, the cost of the two units will be around \$3 to \$4 billion. China also has an option on four additional power reactors of which two might be of the VVER-640 type.

A consortium headed by Hitachi Ltd of **Japan** has received an order for the supply of the entire secondary systems for the two 700-MW Candu-type reactors that are being built jointly by China and **Canada** in Zhejiang Province, near Shanghai.

(**Atoms in Japan**, January; **NuclearFuel**, 13/1, 27/1; **Nucleonics Week**, 23/1)

- The nuclear power station at Temelin, in the **Czech Republic**, is expected to be completed in December 1997 and begin trial operation in January 1998. A 15-month delay in the completion of the reactor is said to be due to

the unexpected need to demolish part of the structure in order to install a new cable system.

In **Austria**, opponents of nuclear energy have expressed strong criticism of new Czech nuclear legislation, allegedly because this does not provide for public participation in the nuclear licensing process.

(**Czech News Agency CTK**, 7/1, in **BBC Monitoring Summary of World Broadcasts**, 16/1; **Czech News Agency CTK**, 30/1; **Kurier** [Vienna], 3/2)

- **Egypt's** Electricity Minister has announced that construction of the country's first nuclear power plant will start at El-Dabaa, west of Alexandria, soon after the turn of the century. (**Nucleonics Week**, 2/1)
- In **France** the Conseil d'Etat, the country's highest administrative court, has annulled the operating license for the Superphénix fast-breeder reactor (FBR) on the grounds that the license issued in 1994 for the operation of the facility mentioned the purpose to be research and demonstration, while the application made by the owners in 1992 for the restart of the reactor gave as the purpose the production of electricity. The ruling of the Conseil d'Etat initially raised questions about the future of the venture. Reportedly, the environment minister expressed the view that the ruling would necessitate a new public enquiry, while the industry minister is reported to have said that all that was needed was a revised licensing decree. The latter view seems to have carried the day with Prime Minister Alain Juppé, who is reported to have decided that the Conseil's concurrence will be sought with the text of a new licensing decree, without further public enquiry.

The *Forum Plutonium*, an association of French antinuclear groups, are said to plan using public inquiries to hold up the licenses for the use of MOX fuel in the four 900-MW power reactors at Chinon. The organisation has asked for the scope of ongoing inquiries to be extended to all communities that will be crossed by trucks carrying MOX fuel from the fabrication plant in southern France.

France's Socialist Party and the country's 'Greens' have agreed that if they come to power in next year's elections there will be a new 'orientation' with regard to energy, under which construction of any new nuclear power reactors as well as the production of MOX fuel will be prohibited until the year 2010, Superphénix will be closed down, France's reprocessing policy will be reviewed and there will be a different approach to waste disposal.

(**Nucleonics Week**, 6/3, 13/3, 30/3; **NuclearFuel**, 10/3; **SpentFUEL**, 17/3)

- The Parliament of **Indonesia** has passed a law clearing the way for the construction of up to 12 nuclear power plants, but since then it has been announced that plans for the first nuclear station have been deferred indefinitely. This facility was to have been constructed in northern Java; it was to be a 600 MW unit, cost about \$3 billion and take approximately six years to complete. Earlier indications were that the plan was unpopular not only with what was said to be a majority of the Indonesian population but also with countries in the region, including **Australia**. The Australian government, on the other hand, had announced that it would seek to supply uranium for Indonesia's nuclear plants. (**Age** [Melbourne], 27/2; **Reuter's**, 13/3; **UIC Newsletter**, 14/3)

- The government of **Japan** has approved recommendations for a short-term Japanese nuclear fuel cycle policy as formulated by the country's Atomic Energy Commission. The recommendations came at the end of a five-month period during which the Commission held eleven public meetings aimed at achieving a national consensus on the future development of nuclear power in Japan, following the accident at the Monju FBR. According to the Commission, conservation and the effective utilisation of uranium resource demands that plutonium should be recycled in MOX fuel. The Commission recommended that by the year 2000 at least three or four reactors should start using MOX fuel; by 2010 all electric power utilities should implement a MOX policy. Programme transparency should be secured under international cooperation and the principle of 'no surplus plutonium' should be observed. Secondly, all spent fuel should eventually be reprocessed and to this end, the construction of the Rokkasho reprocessing plant should be promoted. Thirdly, research and development on the means of disposing of waste should be promoted and an institutional infrastructure for decommissioning nuclear facilities should be created. The issue of FBR development should be dealt with from a long-term perspective, to which end a special committee has been established.

A report of the Ministry of International Trade and Industry confirms that MOX fuel loading will begin by the year 2000 in three or four reactors. Plans are underway for new public acceptance efforts regarding the use of nuclear energy. The Governors of Niigata, Fukushima and Fukui Prefectures, where the highest number of nuclear power plants are situated, and who had initially raised objections to the use of MOX fuel in facilities in their prefectures, are said to have been persuaded by the country's Prime Minister to support the government's fuel cycle programme. Current plans call for use of MOX fuel by the Tokyo Electric Power Co. at its Fukushima No. 1 and No. 2 stations and at the Kashiwazaki-Kariwa plant in Niigata Prefecture. Nasai Electric Power Co. plans to start using MOX fuel in its Mihama and Takahama plants in Fukui Prefecture. While, as noted above, the Atomic Energy Commission recommended that by the year 2010 all Japan's power reactors should use MOX fuel, the Federation of Electric Power Companies of Japan is quoted as saying that present plans call for 16 to 18 reactors to do so.

Japan, the European Commission and Belgium have reached an agreement that will make it possible for plutonium of Japanese origin to be moved from France, where it has been reprocessed, to the Belgonucléaire plant at Dessel in Belgium, for fabrication into MOX fuel elements. Reportedly, an initial quantity of 221 kg of plutonium will be moved to Belgium in September 1997, and 262 kg in July 1998. Japan will send 3,008 kg of uranium to Belgium for incorporation into the fuel, which upon completion will be shipped to France and eventually to Japan.

On 11 March a fire broke out at a small low-level waste bituminisation (solidification) facility at Tokai-mura, about 70 miles from Tokyo. Apparently because the fire had not been adequately extinguished, a second fire broke out about ten hours later and was brought quickly under control. No-one was reported injured in the event and, although a total of 37 workers were exposed to minor doses of radiation, the amount of radioactivity released was said to be harmless. The number of persons exposed is said to

be the highest number to be involved in any nuclear accident in Japan and the event, not so far categorised under the International Nuclear Event Scale (INES) but some experts are reported to have classed it at level three on a scale of seven. Clean-up and repair of the facility is expected to take a year. The incident is expected to lend support to opponents of the use of nuclear power in Japan; in fact, Toshiyuki Kondo, President of the Power Reactor and Nuclear Fuel Development Corp. (PNC) which owns the facility, has characterised the accident as 'serious enough to potentially jolt the very basis of [Japan's] nuclear energy policy'. Prime Minister Hashimoto has expressed to both the Diet and the public 'extreme regret' for what he said was a deficient response by PNC, which was slow in reporting the incident to the government, the prefecture and the media; the Prime Minister added that the incidents had generated 'unnecessary fear' among the public. A report in the US nuclear trade publication *Nucleonics Week* sees the response to the incident as having been plagued by '[m]isinformation, delay and poor communication'; critics in Japan are accusing PNC — which was faulted for its supposed mishandling the incident of the sodium leak at its Monju FBR, in 1995 — of trying to cover up the incident.

Also on 11 March, Kyushu Electric Power Company announced that in the face of public opposition it had cancelled the planned construction of two nuclear power reactors near Kushima.

Attempts to promote wider acceptance of nuclear energy are said to have been affected also by public fear that a recent oil spill from a wrecked Russian tanker might clog the cooling water intakes of a number of power reactors located on Japan's coast. The plants concerned are at Shimane, Takahama, Ohi, Nihana, Shika, Kashiwazaki-Kariwa, and also include the Fugen advanced thermal reactor and the Monju FBR. It was noted that the oil slick was up to one metre thick, while the sea water intakes of the reactors are located seven metres below the surface. Although the fear that the operation of the reactors might be affected proved unfounded, the threat of a shut-down seems to have focused public attention once again on the country's heavy reliance on nuclear energy.

(Kyodo News Service, 10/1, in **BBC Monitoring Summary of World Broadcasts**, 13/1; **International Herald Tribune**, 11/1; **Frankfurter Allgemeine Zeitung**, 13/1; **Nucleonics Week**, 16/1, 6/2, 20/2, 13/3, 20/3; **Reuter's**, 16/1, 22/1; **SpentFUEL**, 27/1, 10/2, 24/2, 3/3; **NucNet News**, 27/1, 7/2, 13/2; **NuclearFuel**, 24/2; **New York Times**, 12/3; **Associated Press**, 12/3; **Financial Times**, 12/3; **United Press International**, 17/3)

- In the **Slovak Republic** work on completion of units 2 and 3 of the Mochovce nuclear power station is definitely planned to continue with the active involvement of the Russian Federation. Mochovce-1 is said to be 95 per cent complete and to contain 90 per cent of its equipment, and Mochovce-2 is 85 per cent finished and has about 40 per cent of its equipment. The reactors are second generation VVER-440s of Soviet design. Start-up of Mochovce-1 is scheduled for June 1998 and the second unit should come on line in early 1999. The Austrian-based committee 'Stop Mochovce' has said that it does not believe the assurance given by Slovak Prime Minister Meciar to the Austrian Vice Chancellor, that within a year after the start of operations of Mochovce, units 1 and 2 of the Bohunice plant would be shut down. The committee has called for

'massive' action of Austrian politicians against the completion of Mochovce. Bohunice, meanwhile, is reported during 1996 to have generated just over 44 per cent of the country's electricity. (*NucNet News*, 31/1; *Kurier* [Vienna], 3/2; *Nucleonics Week*, 6/2)

- **In Sweden** the three major political parties have agreed that the Barsebäck nuclear power station should be closed before the year 2010, which is the target date for the closure of all twelve of Sweden's nuclear power stations. Barsebäck-1 should be closed by 1 July 1998, before the general election that will be held in the Autumn, and Barsebäck-2 by 1 July 2001. It is noted, however, that a precondition for the closing down of the second reactor is that the resulting loss of electricity can be compensated through new production and savings. The operating utility, Sydkraft AB, has said that the dates are unrealistic and is against the closure of one unit at a time because operating a single unit is said to be uneconomical. Originally opposed to any shut-down, Sydkraft has now announced that it would be prepared to consider early decommissioning if an agreement can be reached on full compensation. Reportedly, this would have to be in the form of electricity generating capacity equivalent to the amount now being produced. This would mean, it is said, that the Swedish government would have to pay US\$2.7 billion. In a new draft law the government proposes that utilities should be compensated on the basis of a 40-year lifetime for each of the reactors involved. The government has also submitted to Sweden's parliament a set of groundrules for the way it would compensate Sydkraft AB and has submitted a plan to replace the 50 per cent of the country's electrical power now generated by nuclear reactors. In the short term, more natural gas would be used, and perhaps new coal-fired stations, while sources of renewable energy would be developed. Meanwhile, the government is said to plan educating domestic consumers to be more frugal in their use of electricity.

A group of 101 industrial leaders, including managers of some of Sweden's largest manufacturing firms, has warned against a move away from nuclear power, which it says will lead to a loss of jobs and serious disadvantages for Sweden's industry. The issue is growing into a major cause of domestic political contention; the head of the Federation of Swedish Industries has announced that the decision to close Barsebäck 'will be fought'. The Swedish Trade Union Confederation is also opposed to closure, as are apparently a majority of the population. Recent polls show that 66 per cent of those surveyed oppose the decommissioning of Barsebäck and that 52 per cent want a new referendum on nuclear shut-down. Sweden's Prime Minister has publicly said that the phase-out will go ahead and that before the year 2010 several more reactors will have to be shut down. Apparently, the original plan to close down all twelve of Sweden's nuclear power reactors by that date cannot be realised. The IAEA's Director General has given an interview to a major Swedish daily in which he predicted that rather than a nuclear phase-out, new nuclear reactors will be built in Sweden. A report from Finland, which depends on Sweden for part of its electric power, suggests that the closure of Barsebäck might compel that country to build a new power station to replace the resulting electricity deficit; the country's finance minister has called for the acquisition of a fifth power reactor, to help bring down the current carbon dioxide level. Other Nordic countries, too, are expressing criticism of the decision, which would affect energy sup-

plies also to several Baltic states, although Denmark has long called for the shut down of Barsebäck, which is situated on the Swedish coast facing it. The association of the European nuclear industry, Foratom, has expressed extreme disappointment at the decision to shut down Barsebäck. A report from Germany suggests that the German energy conglomerate Veba AG, which is a large shareholder in Sydkraft AB, does not believe that Barsebäck will be shut down prematurely.

(*Die Presse*, 20/1; *Reuter's*, 3/2, 4/2, 5/2, 6/2, 11/2; *NucNet News*, 4/2, 5/2, 7/2, 11/2; *Financial Times*, 4/2, 5/2; *Nucleonics Week*, 6/2, 13/2, 20/2, 27/2, 13/3, 20/3; *Neue Zürcher Zeitung*, 7/2; *Christian Science Monitor*, 11/2; *International Herald Tribune*, 28/2)

- **Ukraine:** A group of international experts under the auspices of the European Commission studying ways to turn the sarcophagus over the ruined Chernobyl-4 reactor into a safe system has come to the conclusion that only accessible fuel-containing materials should be extracted and the rest should be left in place for at least 500 years. Rejecting suggestions to build a new shelter for the present, they propose covering the ruin in sand or concrete. Initial reactions from Ukraine to this proposal are negative. The country is said to be working on its own proposals to stabilise the present structure and extract the material. An American company plans to test a foam sealant developed at Russia's Kurchatov Institute with financial backing from Europtech, to see if it can be used to damp down radiation inside the sarcophagus.

According to Environment Minister Kostenko, it will take fifteen years to get the funding and prepare the Chernobyl site for closure, after which it would take up to fifty years to remove and process the fuel. He was unable to put a price tag on the project but said that of the \$3.1 billion which the group of seven leading industrial states (G-7) had pledged towards the closing of Chernobyl, so far only \$185 million had been paid. Following a meeting with French President Jacques Chirac, President Kuchma is reported to have said that he is satisfied he will receive the additional funds needed to close Chernobyl and complete construction of other nuclear power stations as alternative sources of energy. However, the project is said to be held up by a disagreement between the EBRD and other potential lenders, including the US and the European Union (EU). The EBRD has commissioned a panel chaired by an economist from Sussex University to prepare a least-cost study comparing the completion of the other power stations (Khmelnitski-2 and Rovno-4) with other energy options. The panel report allegedly concludes that completion of the two power stations would not be a least-cost option and the EBRD's charter allows that institution to lend money only for projects that are cost effective. The EBRD now appears to face the problem that if it adopts the report it would ostensibly have to choose between backing a project that is commercially unsound, and letting the G-7 and the EU, who have pledged to assist Ukraine in closing down Chernobyl and finding alternative sources of power, break that promise. Talks are continuing between Ukraine and representatives of the G-7 and the EU. The nuclear safety working group of the G-7 has unanimously rejected the Sussex-based study as inadequate and flawed and the G-7, who feared that further hesitation may create a crisis of confidence between Ukraine and the West, have urged the EBRD to take an early decision based on a solid study of its own, in which use is made of other analyses beside the Sussex study.

Meanwhile, it has been announced in Kiev that Chernobyl-2 will be restarted during the current year.

According to a Ukrainian source, payment arrears to nuclear power stations had grown by the end of 1996 to the equivalent of the value of five months of output. The backlog has been building up since 1992 and has the result that nuclear stations cannot improve existing safety levels. They are also having problems paying workers' wages.

(**Reuter's**, 18/12/1996, 31/1, 6/2; **UNIAN Newsagency** [Kiev], 27/12/1996, in **BBC Monitoring Summary of World Broadcasts**, 3/1; **Nucleonics Week**, 2/1, 30/1, 6/2, 20/2, 13/3; **Nuclear Engineering International**, February; **New Scientist**, 1/2; **NucNet News**, 10/2, 14/2, 19/2, 21/2; **Economist**, 1/3; **Frankfurter Allgemeine Zeitung**, 3/3)

- A new analysis of a report made in 1990 on the possible health effects of the accident that occurred in 1979 at the Three Mile Island nuclear power reactor unit-2 suggests that the resulting radiation releases may have been substantially higher than previously assumed. The new study, made at the University of North Carolina-Chapel Hill School of Public Health, may affect a number of damage claims that were rejected in 1996 by a **United States** district court. (**Nucleonics Week**, 27/2)

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

- According to the Paris daily newspaper *Le Monde*, **France** and **Germany** have agreed to open a dialogue on the role of nuclear deterrence in the context of a European defence policy. The suggestion, apparently contained in a secret joint strategy paper signed by President Chirac of France and Chancellor Kohl of Germany, was that France's nuclear weapons could be used to help protect Germany and other European NATO allies. This follows the offer to Germany made in 1996 by Prime Minister Juppé, for 'concerted deterrence'. American diplomats have been assured that a joint European nuclear policy would evolve within the modernised NATO alliance as envisaged in Washington. On the other hand, France is said to adhere to its demand to take over the NATO Mediterranean theatre command from the US, as a condition to rejoining the NATO military command structure from which it withdrew thirty years ago. Accusations that Germany is seeking its own nuclear deterrence have been rejected in Bonn. (**Reuter's**, 24/1, 26/1; 28/1, 9/2; **New York Times**, 25/1; **Washington Post**, 26/1; **Kurier**, 26/1; **Die Welt**, 27/1; **Die Presse**, 28/1; **International Herald Tribune**, 30/1; **Times** [London], 30/1; **Neue Zürcher Zeitung**, 31/1)
- In **Russia**, Ivan Rybkin, national security adviser to the President, is quoted as saying that the country should be ready to use nuclear weapons even in the event of a non-nuclear attack. (**Economist**, 15/2)
- An unofficial estimate of the costs to the **United States** of developing, constructing and deploying nuclear weapons, made by the United States Nuclear Weapons Cost Study Project based at the Brookings Institution in Washington, D.C., is that between 1940 and 1995 these amounted to a minimum of \$4 trillion. The final estimate is expected later in 1997 and expected to be 'significantly higher'. The estimate does not include the costs of dismantling

weapons, disposition of nuclear material or the clean-up of contaminated sites.

It is estimated that the 'stewardship program', under which the US keeps its nuclear stockpile in working order, will cost \$4 billion a year over the next ten years. This is said to be more than the average annual spending on war-head production during the Cold War. Meanwhile, construction of the National Ignition Facility at the Lawrence Livermore National Laboratory has been approved. This laser facility, which is estimated to cost \$1.2 billion, will have the function of helping to ensure that nuclear weapons are properly maintained. Construction is expected to begin in April and will take three years.

(**Economist**, 4/1; **New York Times**, 6/1, 13/3)

- Also in the **United States**, the Secretary of Energy has announced that the Fast-Flux Test Facility (FFTF) at Hanford, in Washington State, which has been on 'hot standby' since 1992, will be kept alive for another two years as a tritium production option, pending a final decision in 1998 on the technology to be used. FFTF was built in the late 1970s to test fuels and materials for America's breeder reactor programme which has long been abandoned. About one-fourth of its fuel is plutonium and there are suggestions that the facility might be used also to burn up excess plutonium stocks. Environmental and disarmament advocates are concerned that funds currently earmarked for clean-up of the heavily polluted Hanford nuclear reservation will be used for the up-keep of FFTF. Reportedly, FFTF would be able to produce up to 2 kg of tritium a year. Its potential use is seen as an interim solution. Out-going Energy Secretary O'Leary has said that the consideration given to FFTF as a potential short-term tritium source does not imply that the Department has abandoned the two-pronged approach it hopes to follow for long-term tritium production: using existing commercial reactors or building an advanced tritium-producing particle accelerator. The nuclear utility Tennessee Valley Authority has announced that it will insert four tritium-producing target rods into its Watts Bar-1 reactor to test the viability of making tritium in light-water reactors. It is expected that in an 18-month operating cycle, one ounce of tritium would be produced but it will not be used in nuclear weapons, according to DoE officials. (**NuclearFuel**, 13/1, 27/1, 10/2; **Nucleonics Week**, 16/1, 13/2; **Washington Post**, 17/1)

i. Proliferation-Related Developments

- **DPRK**: After negotiations that lasted more than a year, agreement was reached between the **European Union** (EU) and the Korean Peninsula Energy Development Organization (KEDO) about the terms under which the former would join KEDO. Discussion on the details of the agreement do not seem to have been finalised yet but it has already been announced that the agreement provides for an annual contribution by the EU to KEDO of US \$19 million over five years; the EU would also have two seats on the KEDO board. The agreement will need to be approved by the Council of the European Union, which is expected to be a time-consuming process. Besides founding members Japan, South Korea and the US, Argentina, Australia, Canada, Chile, Finland, Indonesia and New Zealand are members of KEDO.

In January, DPRK technicians resumed the canning of the spent nuclear fuel rods from the 5-MW research reactor at Yongbyon, with the assistance of American engineers.

The canning process should be completed in six to eight months, unless it is once again interrupted. IAEA inspectors also returned to apply safeguards. So far about 4,200 fuel rods are said to have been canned. Once the entire process is completed, DoE is expected to arrange for the removal of the material to a third country. It has not yet been determined where the fuel will be moved. The newly appointed Secretary of Energy, Federico Peña announced at his confirmation hearings that DoE will send out requests for foreign participation in a study about the eventual fate of the material.

In February it was announced that negotiations would be resumed between the DPRK and KEDO on measures against non-compliance on the light-water reactor project, including Pyongyang's repayment for their construction. There were also plans for the deployment of a 30-member survey team from KEDO which would conduct geological tests at a designated location site and start making arrangements for preparatory work on such items as communications, travel, power supply and infrastructure. Presumably due to domestic economic and political problems in the North, the dispatch of the team, which has already been held up following a deterioration of North-South relations resulting from the incursion of a submarine into South Korean territorial waters in September 1996 (see *Newsbrief* 36, pages 11-12) had to be postponed further. Reportedly, the supply of heavy fuel oil, which had also been suspended, was resumed as well. There appears still to be hope that construction of the nuclear power station may start in the next few months.

South Korea's President Kim Young Sam confirmed early in January his country's willingness to start talks with **China**, the **Democratic People's Republic of Korea** and the **United States** on concluding a peace treaty to formally end the war of 1950-53. A preliminary briefing by South Korean and American officials was announced for late January. The North, after expressing regret for the submarine incident, had accepted to attend this briefing. In Tokyo, an unofficial spokesman for the DPRK was quoted as saying that this was only out of courtesy to President Clinton, rather than because of any real interest, and that it was 'highly unlikely' that the four-party talks would ever take place. The briefing was initially set for 29 January, then postponed for two days and then again put off by the North until 5 February, allegedly as the result of Pyongyang's disagreement with an American company from which it is buying grain, over the conditions of supply. The food shortage in the DPRK is meanwhile said to have worsened considerably, and Pyongyang has again appealed for international assistance in the supply of rice, grain and other food staples. Some western press sources suggested that the issue of food supplies was used by hard-liners in Pyongyang as a pretext to put the three-way briefing session off altogether, thereby once again avoiding any direct contacts with the South. Meanwhile, Pyongyang continued its invective against Seoul and particularly against President Kim.

In mid-February the political situation in the Korean peninsula was complicated further by the defection of Hwang Jang Yop, who is described as one of the major policy makers of the DPRK, adviser to the country's leader, Kim Jong Il, and a nephew by marriage of the late leader, Kim Il Sung. Initial reactions from Pyongyang were that Hwang had been kidnapped by South Korean agents; a radio statement by Kim Jong Il a few days later that 'cowards were welcome to leave the country' indi-

cates that Pyongyang realised that Hwang, who was accompanied by a long-time aide, had indeed defected. Reportedly in revenge, another defector, Lee Han Young, who had been in South Korea for some time, was shot, allegedly by Northern agents. There has been speculation in the international press that the departure of the DPRK's Prime Minister, Kang Song San, ascribed to illness, and his replacement by the Deputy Prime Minister, Hong Song Nam, as well as the subsequent deaths of Defence Minister Choe Kwang and of the First Deputy Minister of the armed forces, Kim Kwang Jin, described as being due to 'incurable diseases', were related to Hwang's defection, as, reportedly, was the replacement of the farm minister. While these events would seem to reflect domestic political problems within the DPRK, they gave rise to concern in Seoul and in Washington that intra-Korean relations might be affected. In this connection it is noted that Mr. Hwang, in a statement he was reputed to have written while staying at the South Korean embassy in Beijing, said, among other things that he wanted to save the Korean Peninsula from the war which Pyongyang may resort to in its desperation. In Beijing, where Hwang had asked for asylum, there was said to be concern that the affair might trouble China's relations with the DPRK. On 17 March, Hwang and his aide, reportedly accompanied by Chinese and/or South Korean escorts, were flown to the Philippines, from where they were expected eventually to move to Seoul.

All through these developments, relations between the US Administration and Seoul are also said to have undergone considerable stress. Some officials in Washington are quoted in the American press as seeing South Korea's hardening attitude towards the North as a potential obstacle to a reduction of tensions in the Korean Peninsula. There is said to be resentment in South Korea of what it sees as US receptiveness to Northern attempts to forge closer relations with Washington. The latter also appears to be more inclined to help alleviate the economic hardships of the North Korean population, although along with the US undertaking to send \$10 million in aid to the DPRK, it was announced in late February that Seoul would send \$6 million worth of food. Around that time, the DPRK announced that it would attend the briefing with representatives of South Korea and the US on proposed talks to negotiate a formal end to the Korean War. The meeting was held on 5 March at the New York Hilton Hotel and was described by the US State Department spokesman as 'quite serious and sincere', although it was said not to have brought any breakthrough on the matter of peace negotiations. Meanwhile, South Korea and the US have cancelled this year's military maneuvers in what is seen as a gesture to ease tensions on the Korean Peninsula.

The agreement by Pyongyang to accept nuclear waste from Taiwan (see **k. Environmental Issues**, page 12) has come to pose a new source of friction between the two Korean states, especially since, reportedly, the waste site may be an old coal mine, less than 40 miles from the border, where radioactive matter might leach into the ground and in the long term affect the environment of South Korea. Seoul has expressed its deep concern and reportedly at one time threatened to withdraw from the agreement to supply a nuclear power plant to the DPRK if that country accepts nuclear waste from Taiwan. Given Pyongyang's desperate need for funds it is thought unlikely that the move can be stopped, however. The transports will reportedly be carried out in DPRK ships. The fact that it is not known precisely where in the North the waste will

be stored is said to have raised concern also in the IAEA, not so much for environmental reasons but more out of concern that it may be deposited at sites where the DPRK has dumped waste from previous reprocessing work, which the IAEA had asked to be allowed to analyse. This request was refused and indirectly led the DPRK to quit the IAEA. If the material were to be stored at the same sites, it might further hide evidence of past reprocessing. Information provided to the IAEA by the Taiwanese company involved, Taipower, is understood to show that the waste from Taiwan does not contain uranium or plutonium in such quantity as to warrant the application of safeguards; contacts at government level between Taiwan and the IAEA are precluded by the fact that Taiwan is not accepted by that organisation as an independent state.

(*New York Times*, 5/1, 26/1, 1/2, 7/2, 14/2, 16/2, 17/2, 18/2, 19/2, 24/2, 6/3, 19/3; *International Herald Tribune*, 8/1, 28/1, 13/2, 18/2, 22/2, 27/2, 1-2/3; *Yonhap* [Seoul], 9/1, 14/1, 30/1 and 11/2, in *BBC Monitoring Service of World Broadcasts*, 10/1, 15/1, 31/1 and 12/2, respectively; *European Union Agence Europe*, 15/1; *Nucleonics Week*, 16/1, 20/2, 13/3; *Reuter's*, 16/1, 11/2; *Jiji Press* [Tokyo], 30/1; *Economist*, 1/2; *South China Morning Post*, 1/2; *Financial Times*, 18/2; *Kurier*, 22/2; *Indian Express*, 22/2; *Times* [London], 22/2; *Hindu* [Madras], 23/2; *Washington Post National Weekly Edition*, 24/2; *NuclearFuel*, 10/3)

- A report has been issued on a new US policy towards **India** and **Pakistan**. It was prepared by a task-force of 28 foreign policy experts working under the auspices of the Council on Foreign Relations and calls for American recognition that neither country can be pressured to give up its nuclear capabilities. It recommends that, instead of applying sanctions, US interests require the expansion of economic, military and political ties with both countries and an adaptation of US policy to existing circumstances. According to the report, the two countries occupy a special category, neither being recognised as nuclear-weapon states nor being considered as rogues. Rather, they should be seen as responsible states with undeclared, and to a large extent, unproven nuclear-weapon capabilities. The report calls on the US Administration to try to head off the overt deployment of nuclear weapons and a nuclear-arms race, and to discourage them from exporting nuclear-weapon-related material, technology and expertise.

The test firing of a surface-to-surface Prithvi missile by India in February was characterised by a spokesman for the Foreign Ministry of Pakistan as a threat to regional peace and security. This was reportedly the sixteenth Prithvi test since the missile was first developed in 1982.

In an interview given to a daily newspaper published in Lahore, former Pakistan Army Chief Gen. Mirza Aslan Beg claims that Pakistan has successfully completed tests of its nuclear-weapon capability, through computer simulation.

(*Washington Post*, 5/1; *Washington Post National Weekly Edition*, 20/1; *Agence France Presse*, 24/2; *Nucleonics Week*, 20/3)

- The newly confirmed US Secretary of State, Madeleine Albright, who visited a number of Asian countries in February, is reported to have drawn attention to the dangers her country sees in the nuclear programme of the **Islamic Republic of Iran**. In response to allegations that an employee of the US embassy in Bonn was committing

economic espionage against German firms, American officials have disclosed that the person in question was an agent of the CIA who was investigating contacts of German individuals and companies with suspected Iranian procurement agencies operating in Germany with the help of the Iranian embassy. The British newspaper *The Sunday Telegraph* has disclosed that an Austrian company has supplied Iran with what it calls 'a cyclotron for processing uranium'. The paper also claims that a number of Austrian nuclear experts are working in Iran to assemble the device, which is said to have been obtained in contravention of European Union trade sanctions; that Iran has a number of Vienna-based front companies to procure components for its nuclear-weapon programme; that 14 Chinese nuclear experts are working in that country; and that nuclear trade between Beijing and Teheran amounts to more than £60 million (\$96 million) a year. Russia is also said to have sold significant quantities of enriched uranium to Iran and to have trained 500 Iranian nuclear technicians. Reports that China is cooperating with Iran in the nuclear field have been denied by the Chinese deputy Prime Minister when he visited Israel in February. (*Ha'Aretz*, 18/2, in *BBC Monitoring Summary of World Broadcasts*, 20/2; *Sunday Telegraph*, 23/2; *Nucleonics Week*, 20/3)

- There have been new allegations about continued **Iraqi** efforts to circumvent the UN's embargo on its ballistic missile programme. Officials of the United Nations Special Commission (UNSCOM) are reported to have found computer software, apparently obtained fairly recently by Iraq, to simulate the launch and trajectory of long-range ballistic missiles. The evidence is said to point to new Iraqi efforts to build delivery vehicles for weapons of mass destruction. In January UNSCOM inspectors found four dismantled engines buried outside Baghdad but they are said to believe that what they found were inferior-quality domestically fabricated missile engines and that Iraq may have hidden a significant number of sophisticated Russian-built 'SCUD' engines which Iraq had claimed to have destroyed. While UN estimates a few months ago ranged between 6 and 16 missiles, more recent estimates are said to range from 18 to 25. As a result of prolonged negotiations Iraq has now allowed the UN to take away some of the items found for further analysis.

The Brazilian judiciary is reported to be blocking the extradition to Germany of Karl-Heinz Schaab, the German uranium-enrichment expert who gave assistance to Iraq's nuclear-weapons programme, and who was arrested in December 1996 (see *Newsbrief* 36, page 13). The fact that Bonn has accused Schaab of high treason and holds that his activities in Iraq have been prejudicial to Germany's foreign relations may mean that Brazil, whose law forbids the extradition of someone who might be considered a political refugee, is legally unable to meet Germany's request to have him extradited.

(*Reuter's*, 22/1; *Washington Post*, 5/2, 24/2; *Financial Times*, 24/2; *Nucleonics Week*, 20/3)

j. Illicit Nuclear Trafficking

- In response to American concern about the security of a store of HEU at the Mtskheta research reactor building near Tbilisi, **Georgia**, Russia's Minister of Atomic Energy has publicly committed himself to transfer the material to Russia in February or March. Reportedly, US officials

hold the view that as long as it is at the facility, the material (apparently 9.5 pounds of HEU and 2 pounds of spent fuel) is vulnerable to theft by agents from nearby countries, terrorists from Chechnya, or arms traffickers, although this is strongly denied in Georgia. The matter had been a subject of extended exchanges between Moscow and Washington and the solution seems to have been delayed by long wrangles within the Russian bureaucracy and by the apparent need for a special agreement between Georgia and Russia. (**New York Times**, 5/1, 7/1, 14/1; **Washington Post**, 8/1; **ITAR-TASS**, 10/1, in **BBC Monitoring Summary of World Broadcasts**, 13/1; **Interfax news agency** [Moscow], 12/1, in **BBC Monitoring Summary of World Broadcasts**, 15/1)

- The **German** press agency DPA claims that a CIA report based on information obtained in **Russia** and passed on to the German intelligence service indicates that the plutonium smuggling incident that took place at Munich airport in 1994 (see **Newsbriefs** 27, pages 20–21; 30, page 17; 31, page 19) was staged by officers of the Russian foreign intelligence service. As earlier alleged by the German secret service, the material involved came from the nuclear research installation at Obninsk. Russian sources continue to deny this. According to the IAEA, the few cases of plutonium smuggling that have come to light since the event in question have involved sub-gram quantities of that material. There have also been several instances of the smuggling of HEU, but the quantities involved in each of those cases have been much less than would be necessary to make a nuclear explosive. (**El Pais** [Madrid], 2/2; **Süddeutsche Zeitung**, 3/2; **Die Welt**, 3/2; **Nucleonics Week**, 6/2)
- The London-based newspaper *Al-Sharq al-Awsat* has alleged that persons previously associated with **Iraq's** nuclear programme are trying to sell radioactive substances, including uranium and 'red mercury'. The trade is said to be conducted in part through Jordan. (**Al-Sharq al-Awsat**, 15/1; **BBC Monitoring Summary of World Broadcasts**, 16/1)
- In **Kazakstan**, several persons were arrested trying to sell approximately 1 kg of uranium. The news item does not indicate the level of enrichment. (**Associated Press**, 13/2, in **UI News Briefing**, 97.07)
- There are reports that an agent for a gang of drug smugglers from Colombia has been caught in Miami negotiating with Russian military officials for the purchase, for US\$5.5 million, of a decommissioned 'Tango'-class nuclear submarine in **Russia**; allegedly, the boat was to be used in smuggling cocaine into the US. (**Scottish Daily Record**, 8/2; **New York Times**, 7/3)
- Police in the **Slovak Republic** have arrested four persons who were in possession of 2.36 kg of what is merely described as 'radioactive material'. No further details have been released. (**Reuter's**, 19/2; **Die Presse**, 20/2; **Süddeutsche Zeitung**, 20/2)

k. Environmental Issues

- According to law enforcement officials in **Germany**, quoted in the American nuclear trade press, terrorists have infiltrated the German anti-nuclear movement where they are said to orchestrate violent attacks on transports of nuclear waste and other nuclear targets. So far, Federal

German officials do not seem to have been able to identify these saboteurs, who they say belong to underground anarchist organisations and who may have contacts with members of the Red Army Faction, the anarchist group that carried out a series of attacks in the 1970s and 1980s.

As expected by German industrial sources, the derailment in France of a cargo of German spent fuel on its way to reprocessing in Britain has led to a new wave of anti-nuclear protests. Officials of the company responsible for the shipment qualified the incident, which involved three shipping casks, each loaded with six spent fuel assemblies, as harmless. A second consignment of spent fuel was rerouted. As German authorities had feared, in early March a transport of six 90-ton casks containing spent fuel and vitrified waste to the interim storage facility at Gorleben once again prompted violent protests along the route, including extensive acts of sabotage. Reportedly, among more than 10,000 mostly peaceful protestors demonstrating along the railroad tracks followed by the convoy, a number of well-trained and violent persons, wearing masks and armed with Molotov cocktails and flare guns, defied the 30,000-strong state and federal riot police (said to have been mustered at a cost of more than \$60-million). Protestors undermined roads, sawed through railway tracks, dismantled railroad ties, toppled telegraph poles, short-circuited or tore down electric power lines, blocked roads with tractors (some of them cemented to the road) and repeatedly brought the transport to a halt. Several hundred protestors were arrested. Under the circumstances, the operation is seen as having ended remarkably quickly, reportedly as a result of determined actions of riot police from eastern Germany. Although the protest actions appear to have been actively encouraged by anti-nuclear groups such as Greenpeace, security forces were first quoted in the press as saying that the violence came principally from persons described as 'environmental militants', who are not only opposed to nuclear energy but also aim to weaken the structure of the state; the police now claim, however, that the so-called peaceful demonstrators were in close touch with the violent agitators throughout the event. The turbulence surrounding the transport has led to renewed calls for discussions on the future of Germany's nuclear programme. The opposition Social Democratic Party (SDP) has pronounced itself as opposed to any further application of nuclear energy in Germany.

(**Nucleonics Week**, 2/1, 9/1, 6/2, 20/2, 27/2, 6/3, 13/3; **NuclearFuel**, 13/1, 24/2; **Reuter's**, 20/2, 28/2, 4/3; **Daily Telegraph**, 28/2; **Neue Zürcher Zeitung**, 28/2; **Süddeutsche Zeitung**, 28/2, 1/3, 3/3, 4/3; **Frankfurter Allgemeine Zeitung**, 1/3, 4/3; **Die Presse**, 1/3; **Guardian**, 3/3; **Le Monde**, 4/3; **New York Times**, 4/3, 5/3, 6/3; **Kurier**, 4/3; **Die Welt**, 4/3)

- Along with a number of other countries, **New Zealand** has expressed concern over the route followed by the nuclear transport ship *Pacific Teal*, carrying 40 containers of vitrified high-level nuclear waste from **France** for disposal at the waste storage facility of Rokkasho, **Japan**. Notwithstanding strong criticism in the press, **Australia** was said to be satisfied with the arrangement. **Malaysia** refused the ship access to its waters. Reportedly, the *Pacific Teal*, which belongs to Pacific Nuclear Transport Ltd., a subsidiary of the UK company BNFL, travelled around the Cape of Good Hope, through the Indian Ocean and the Southwest Pacific, and arrived at Japan's Port of Mutsu-Ogawara on 18 March, where it was greeted by

five hundred anti-nuclear demonstrators and riot police. While the ship was still on its way, BNFL denied that the choice of route around the South African coast broke a promise not to pass through that country's territorial waters. The transport, which received world-wide press attention, was also strongly criticised by Greenpeace and the Nuclear Control Institute of Washington, D.C., which conducted campaigns designed to generate public concern about the supposedly risky operation. (*Australian*, 19/12/96; *Canberra Times*, 19/12/96; *NucNet News*, 8/1, 11/1, 13/1, 14/1; *BNFL*, 11/1, 14/1, in *UI Newsbriefing* 97.02; *Reuter's*, 13/1, 14/1, 15/1, 17/1, 16/3; *Guardian*, 14/1; *Le Monde*, 14/1; *Die Presse*, 14/1; *El Pais*, 14/1, 15/1; *Jiji Press* [Tokyo], 14/1; *Standard* [Vienna], 14/1; *Enerpresse*, 14/1; *International Herald Tribune*, 14/1, 16/1; *South China Morning Post*, 18/1; *SpentFUEL*, 20/1; *BNFL/Cogema Press Release*, 12/2; *SAPA* [Johannesburg], 4/2, in *BBC Monitoring Summary of World Broadcasts*, 6/2; *United Press International*, 18/3; *Nucleonics Week*, 20/3)

- Officials from **Norway** and the **Russian Federation** are discussing the establishment of gamma radiation monitoring stations on the Kola Peninsula, in addition to the one set up there a year ago.

There is a report from Moscow of official proposals to use nuclear reactors from decommissioned submarines for the production of power and heat. Some of the reactors would be based on land, particularly in mountain caves, while others would be deployed on rafts. The proposals also include the idea of using some submarines for passenger cruises under the polar ice cap. An official of the Norwegian environmental organisation Bellona has qualified the plans as irresponsible and extremely risky. Reportedly, the Russian Atlantic fleet currently operates 67 nuclear submarines with a total of 115 reactors and two battle cruisers with two reactors each. There are also 52 decommissioned nuclear submarines whose reactors still contain fuel. In addition, there are a number of civilian nuclear ships operating out of Murmansk, including one container ship and eight ice breakers (See *Newsbrief* 36, pages 14–15).

(*Nucleonics Week*, 23/1; *Die Welt*, 25/2)

- The **Taiwan** utility Tai Power has confirmed reports that it has agreed with the **DPRK** to ship over the next two years 60,000 barrels of low-level radioactive waste to that country for final storage at an unspecified location, at a reported price of \$1,135 per barrel, and a total cost of \$200 million. The contract permits the shipment of up to 200,000 barrels of nuclear waste to the DPRK. According to press reports, Pyongyang is eager for the shipments to begin but a number of countries are strongly critical of the deal; China has expressed objections on both political and environmental grounds; Japan has said that the plan may inflict damage on the Korean ecosystem; South Korea has urged Taipei to cancel the contract which has meanwhile been signed and has asked the United Nations Environment Programme (UNEP) to intervene; the United States has expressed its concern; and, reportedly, the IAEA's Director General has promised Seoul it will try to persuade Taiwan to drop the plan. The government at Taipei has so far ignored all protests and has confirmed that the plan may go ahead because it is 'a lawful, safe business deal with no moral issue involved'. (See also under i. **Proliferation-related Developments**, DPRK, page 9.)

Tai Power has also had discussions with the **Marshall Islands** and **Russia** about similar arrangements.

The German Ministry for the Environment has rejected allegations published in South Korea and reproduced in several German newspapers that in the past German companies shipped large quantities of nuclear waste to the DPRK. According to the government in Bonn, German law prohibits such exports and no licenses have been issued in this context. The South Korean government has also denied the allegations. The story's source appears to be a South Korean scientist working at the Free University in Berlin. France is also mentioned as one of the countries that has sent nuclear waste to the DPRK.

(*Reuter's*, 13/1, 16/1, 17/1, 27/1, 28/1, 30/1, 1/2, 5/2; *Nucleonics Week*, 16/1, 30/1, 20/2; *Economist*, 18/1; *Yonhap News Agency* [Seoul], 25/1, 5/2, in *BBC Monitoring Summary of World Broadcasts*, 27/1, 6/2; *Süddeutsche Zeitung*, 25/1; *Die Welt*, 25/1; *Reuter's*, 28/1, 29/1, 31/1, in *UI Newsbriefing* 97.05; *Financial Times*, 1-2/2; *New York Times*, 7/2)

- On 17 March the **United Kingdom** government rejected the appeal by Nirex for planning permission for the geological test laboratory for a possible future underground nuclear waste repository at the nuclear complex at Sellafield in Cumbria, on the Irish Sea. Earlier, the government of **Ireland** voiced concern about two incidents at Sellafield. Reportedly, on 2 February six workers who were dismantling a redundant dissolver charge machine [used for loading irradiated fuel elements into dissolving tanks — ed.] at the Magnox reprocessing plant were slightly contaminated. The day after, a small amount of radioactive liquid that had spilled from a faulty valve on a storage tank, seeped into the drainage system. The two incidents appear to be unrelated. (*NucNet News*, 5/2; *Independent*, 6/2; *Financial Times*, 7/2; *New York Times*, 8/2; *NuclearFuel*, 10/2; **direct information**)

I. Miscellaneous

- On the 30th anniversary of the opening for signature of the Treaty of Tlatelolco, OPANAL, the government of Mexico and UNIDIR co-sponsored an international seminar on 'Nuclear Weapon Free Zones in the Next Century'.
- It has been disclosed in **Australia** that in the mid-1960s the government of that country gave serious consideration to the possibility of developing nuclear weapons. The debate supposedly centred around the question whether Australia should accept IAEA safeguards on its nuclear activities. A plan for the construction of a nuclear reactor in South Australia, including the option of eventually developing a military nuclear capability was finally squashed at the behest of Prime Minister Holt. (*Australian*, 1/1; *Daily Telegraph*, 1/1)
- On 12 March, the **United States** Senate approved the nomination of Federico Peña as Secretary of Energy, by a vote of 99-to-1. The vote was preceded by hearings in the Senate Energy & Natural Resources Committee, which took the opportunity for an in-depth discussion of America's waste disposal policies, and a discussion of pending legislation on interim nuclear waste storage and on the selection of a site for a permanent high-level nuclear waste repository. There had been speculation in the trade press that Peña's nomination would be controversial and would lead to considerable debate in the

Senate, partly because he has little experience in matters of energy, and in part because the Republican Senate majority have repeatedly expressed the desire to lower DoE's status to a sub-cabinet level. Against these expectations, however, the nomination went through the full Senate with very little discussion. (*SpentFUEL*, 6/1, 3/2, 17/2, 10/3; *Nucleonics Week*, 16/1, 23/1; *National Public Radio News*, 30/1; *Reuter's*, 28/2; *Nuclear Energy Institute*, 4/3; *Nucleonics Week*, 6/2; *New York Times*, 13/3)

- The US Secretary of Energy has revealed that in 1975, when the war in **Viet Nam** was approaching its end, attempts were made to retrieve a small amount of plutonium that was stored at the Dalat nuclear research institute. Reportedly, two American volunteers sent in to retrieve the material at the last moment mistakenly took a canister containing polonium and beryllium, and left the plutonium behind. Viet Nameese officials have confirmed that the material (less than 50 grammes) is still at the institute, in safe storage. The Dalat reactor facility is subject to IAEA safeguards. In a letter to the *New York Times*, a former senior official of the US Atomic Energy Commission claims that the plutonium had been removed before but was then returned because its removal was deemed politically undesirable. (*New York Times*, 16/1, 19/1, 22/1; *Neue Zürcher Zeitung*, 17/1)
- It has been revealed that the research reactor at the Vinca Institute of Nuclear Sciences and its associated hot cells were part of a nuclear development effort designed to provide the former **Socialist Federal Republic of Yugoslavia** with a nuclear-weapon production capability. Reports that plutonium separation may have taken place are denied by officials at the facility but are being investigated by the IAEA. US government documents indicate that an amount of less than one kg plutonium-239 was separated in the hot cells at Vinca. (*NuclearFuel*, 24/2)

II. PPNN Activities

- The PPNN Core Group held its twenty first semi-annual meeting at the Arden House Conference Center, Harriman, New York, on 6–10 March 1997. All members of the Core Group were present with the exception of Thérèse Delpech, Peter Goosen and Sverre Lodgaard.
- The Core Group meeting proper took place on Friday 7 March and Monday 10 March. Among issues discussed were the evolution of the nuclear non-proliferation system over the previous six months; functional issues and PPNN's future activities. The Core Group also initiated a *Disarmament Dialogue* to examine more closely the relationship between nuclear non-proliferation and disarmament.
- A substantive presentation was made to the Core Group by Harald Müller on *Doomed Prospects? A Ban on the Production of Fissile Materials for Weapon Purposes Cut-Off* [A revised version of this presentation will be published by PPNN later in 1997 as an Issue Review]. In the *Disarmament Dialogue*, short presentations were made by Jayantha Dhanapala and John Simpson on *Nuclear End States*; by Harald Müller on *Nuclear Disarmament Strategies*; and by Lewis Dunn on *Problems of Compliance and Implementation*. Following the disarmament dialogue, the Core Group discussed at some length the future role of PPNN in the international disarmament

debate. As a consequence, the *Disarmament Dialogue* will be maintained as a regular feature at future meetings; attempts will be made to extend it to facilitate examination of the ideas of other researchers in the field; and PPNN's objectives will be reoriented to examine the role of nuclear non-proliferation and of the NPT in particular as a positive factor in promoting nuclear disarmament.

- From Friday 7 to Sunday 9 March the Core Group convened an international briefing seminar on *The 1997 Preparatory Committee for the 2000 NPT Review Conference: Issues and Options* for diplomatic staff of permanent missions to the United Nations in New York who were likely to be delegates to the PrepCom meeting. The seminar was attended by 43 participants from 39 countries and by representatives from the Secretariats of the United Nations and the International Atomic Energy Agency.

The seminar was chaired by Ben Sanders, Executive Chairman of PPNN. Ambassador Jayantha Dhanapala, Ambassador of Sri Lanka to the United States and President of the 1995 NPT Review and Extension Conference gave the keynote address on *Nuclear Non-Proliferation and Disarmament: Global Security Structures in the 21st Century* on the evening of Friday 7 March.

The seminar comprised an initial Plenary Session; a series of four working group sessions; and a final Plenary Session. The initial Plenary Session opened with a short address from Ben Sanders on the context of the PrepCom, followed by a presentation by John Simpson on *The New Review Process: Theory and Practice*.

Each working group examined four clusters of issues. During these four working group sessions, short initial presentations on aspects within an issue cluster were made by members of the PPNN briefing teams, followed by discussion among members of the group. The issues were clustered as follows:

- Issue Cluster A: *The Review Process* chaired by Jayantha Dhanapala, with presentations by Ben Sanders on *The Functioning of the PrepCom* (PPNN/CGIII/15); by George Bunn on *A Lawyer's View of What the NPT and the 1995 NPT Extension Decisions Permit the 1997 PrepCom Session to do* (PPNN/CGIII/16); by Hannelore Hoppe on *Secretariat Preparations for the 1997 PrepCom Session*; and by Lewis Dunn on *Issues of Compliance and Implementation* (PPNN Issue Review No.9).
- Issue Cluster B: *Disarmament Issues Under Article VI* chaired by Oleg Grinevsky, with presentations by Tariq Rauf, speaking to a paper by Peter Goosen on *Multilateral Disarmament Initiatives and the CD Agenda after the CTBT* (PPNN/CGIII/17); and by Harald Müller on *Further P5 Disarmament Measures: The Way Ahead* (PPNN/CGIII/18).
- Issue Cluster C: *Other Disarmament Issues* chaired by Enrique Roman-Morey, with presentations by Olu Adeniji on *Security Assurances and Nuclear-Weapon-Free Zones* (PPNN/CGIII/19); and by Mohamed Shaker on *NPT Universality* (PPNN/CGIII/20).
- Issue Cluster D: *Peaceful Uses of Nuclear Energy* chaired by Jiri Beranek, with presentations by Richard Hooper on *93+2* (PPNN/CGIII/21) and on a paper by Paulo Barretto on *Peaceful Uses* (PPNN/CGIII/22); and by Martine Letts on *Export Controls* (PPNN/CGIII/23).

The seminar concluded with a plenary session, chaired by Ben Sanders. John Simpson, the Seminar Rapporteur,

presented and circulated a draft report that summarised some of the main points in the discussions. A panel, comprising the working group chairmen, Jiri Beranek, Jayantha Dhanapala, Oleg Grinevsky and Enrique Roman-Morey, concluded the session by discussing some of the key questions that had arisen in the various working groups.

- During February, PPNN published and distributed two Issue Reviews: **PPNN Issue Review Number 9: The Nuclear Non-Proliferation Treaty: Issues of Compliance and Implementation** by Lewis Dunn, and **PPNN Issue Review Number 10: A Nuclear-Weapon-Free Zone in Central and Eastern Europe** by Jan Prawitz. In addition, **PPNN Issue Review Number 11: The 1997 Preparatory Committee Meeting for the 2000 NPT Review Conference: Issues Regarding Substance** by John Simpson was published and distributed in March. A fifth edition of Volume II of the Briefing Book and a third edition of Briefing Book Volume I were produced in February for distribution at the March Briefing Seminar and to delegations attending the April NPT PrepCom. Volume I provides a short historical description of the elements of the nuclear non-proliferation system; Volume II contains relevant treaties, agreements and other documentation.
- Members of the staff of PPNN will be in attendance at the April 1997 meeting of the NPT PrepCom to distribute briefing material to delegates, convene working lunches for delegates, and monitor the proceedings.
- In partnership with the Monterey Institute for International Studies (MIIS), PPNN will be holding a workshop of invited participants in Monterey to review the outcome of the 1997 NPT PrepCom meeting over the weekend of 26 and 27 April.
- As a consequence of decisions taken at the March Core Group meeting, it is now intended to hold the next meeting of the PPNN Core Group in Bangkok, Thailand, in November 1997, following a regional nuclear non-proliferation workshop to be held in collaboration with ISIS Bangkok, the Peace Research Institute Frankfurt (PRIF) and MIIS.

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- William M. Arkin, 'The bomb has many friends', *Bulletin of the Atomic Scientists*, Vol. 53, No. 2, March/April, pp. 37-39.
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IV. Documentation

a. Almaty Declaration

[unofficial translation]

We, the Presidents of fraternal states—the Republic of Kazakstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan,

- motivated by efforts to strengthen the independence and sovereignty of our countries and to elevate the standard of living of our peoples;
- proceeding from the fact that environmental safety is a strategic component of national security and is of prime importance to the defense of the interests and priorities of the Central Asian states;
- taking into account the fact that the environmental disaster in the Aral Sea basin has global implications the resolution of which must not be delayed;
- considering that the extreme environmental situation in the Aral region will negatively affect the natural environment and living conditions of millions of residents — not only the Aral Sea basin, but also of other regions on the planet;
- confirming our commitment to the conditions of the UN Global Program on the Environment ('Agenda for the 21st Century'), and in all ways supporting efforts to develop and realize a unified strategy for the continuous development of the countries of Central Asia;
- recognizing that the management of water resources of trans-border rivers must be approached by taking the ecosystem into account, and be realized in a fair and rational manner, without creating mutual harm; and confirming previously adopted obligations for full-scale cooperation on the international and interstate levels;
- expressing the unanimous opinion of our countries, all of which are signatories of the Treaty on the Nonproliferation of Nuclear Weapons, on the necessity for declaring Central Asia a nuclear-weapon-free zone;
- proceeding from unwavering efforts to act jointly in the name of overcoming the consequences of the environmental crisis in the Aral Sea Basin;

at the 28 February 1997 meeting in Almaty,

HEREBY RESOLVE:

To declare the year 1998 to be the Year of Protecting the Environment in Central Asia under the aegis of the United Nations;

To call, on the eve of the 50th anniversary of Semipalatinsk Testing Ground, upon all interested countries to support the idea of declaring Central Asia a nuclear-free zone, the membership of which will be open to other states in the region;

To acknowledge the efforts of Central Asian states, which, despite serious economic difficulties, are making significant efforts to improve the environmental situation in the Aral Sea basin, the areas of the Semipalatinsk testing ground, and other areas affected by nuclear testing;

To recognize as necessary the development of a complex program for environmental safety that addresses the Aral issue, a nuclear-free zone in Central Asia, and the struggle against the outflow of nuclear technology and materials;

To call upon the United Nations and its specialized agencies to devote serious attention to the unfolding crisis in the Aral Sea basin and to take decisive measures to protect the environment in this region, paying particular attention to measures to assist the devastated population of the Priaralye region;

To confirm our readiness to provide the necessary cooperation to international organizations and institutes in their activities to implement programs of concrete action and other regional projects;

To conclude, together with international organizations, the development of a draft Convention on the Continuous Development of the Aral Sea Basin.

For the Republic of Kazakstan

Nazarbayev, N. A.

For the Kyrgyz Republic

Akayev, A. A.

For the Republic of Tajikistan,

Rakhmonov, E. Sh.

For Turkmenistan

Niyazov, S. A.

For the Republic of Uzbekistan,

Karimov, I. A.

b. Parties to the NPT [as of 24 March 1997]

Country	Date of Ratification/ Accession	Country	Date of Ratification/ Accession
Afghanistan	4 February 1970	Equatorial Guinea	1 November 1984
Albania	12 September 1990	Eritrea	16 March 1995
Algeria	12 January 1995	Estonia	31 January 1992
Andorra	7 June 1996	Ethiopia	5 February 1970
Angola	14 October 1996	Fiji	14 July 1972
Antigua and Barbuda	17 June 1985	Finland	5 February 1969
Argentina	17 February 1995	France†	2 August 1992
Armenia	15 July 1993	Gabon	19 February 1974
Australia	23 January 1973	Gambia	12 May 1975
Austria	27 June 1969	Georgia	7 March 1994
Azerbaijan	22 September 1992	Germany	2 May 1975
Bahamas	11 August 1976	Ghana	4 May 1970
Bahrain	3 November 1988	Greece	11 March 1970
Bangladesh	31 August 1979	Grenada	2 September 1975
Barbados	21 February 1980	Guatemala	22 September 1970
Belarus	22 July 1993	Guinea	29 April 1985
Belgium	2 May 1975	Guinea-Bissau	20 August 1976
Belize	9 August 1985	Guyana	19 October 1993
Benin	31 October 1972	Haiti	2 June 1970
Bhutan	23 May 1985	Holy See	25 February 1971
Bolivia	26 May 1970	Honduras	16 May 1973
Bosnia and Herzegovina	15 August 1994	Hungary	27 May 1969
Botswana	28 April 1969	Iceland	18 July 1969
Brunei Darussalam	26 March 1985	Indonesia	12 July 1979
Bulgaria	5 September 1969	Iran (Islamic Republic of)	2 February 1970
Burkina Faso	3 March 1970	Iraq	29 October 1969
Burundi	19 March 1971	Ireland	1 July 1968
Cambodia	2 June 1972	Italy	2 May 1975
Cameroon	8 January 1969	Jamaica	5 March 1970
Canada	8 January 1969	Japan	8 June 1976
Cape Verde	24 October 1979	Jordan	11 February 1970
Central African Republic	25 October 1970	Kazakhstan	14 February 1994
Chad	10 March 1971	Kenya	11 June 1970
Chile	25 May 1995	Kiribati	18 April 1985
China†	9 March 1992	Kuwait	17 November 1989
Colombia	8 April 1986	Kyrgyzstan	5 July 1994
Comoros	4 October 1995	Lao People's Democratic Republic	20 February 1970
Congo	23 October 1978	Latvia	31 January 1992
Costa Rica	3 March 1970	Lebanon	15 July 1970
Côte d'Ivoire	6 March 1973	Lesotho	20 May 1970
Croatia	29 June 1992	Liberia	5 March 1970
Cyprus	10 February 1970	Libyan Arab Jamahiriya	26 May 1975
Czech Republic	1 January 1993	Liechtenstein	20 April 1978
Democratic People's Republic of Korea	12 December 1985	Lithuania	23 September 1991
Denmark	3 January 1969	Luxembourg	2 May 1975
Djibouti	16 October 1996	Madagascar	8 October 1970
Dominica	10 August 1984	Malawi	18 February 1986
Dominican Republic	24 July 1971	Malaysia	5 March 1970
Ecuador	7 March 1969	Maldives	7 April 1970
Egypt	26 February 1981	Mali	10 February 1970
El Salvador	11 July 1972	Malta	6 February 1970
		Marshall Islands	30 January 1995
		Mauritania	26 October 1993
		Mauritius	8 April 1969
		Mexico	21 January 1969

Country	Date of Ratification/ Accession	Country	Date of Ratification/ Accession
Micronesia (Fed. States)	14 April 1995	Solomon Islands	17 June 1981
Monaco	13 March 1995	Somalia	5 March 1970
Mongolia	14 May 1969	South Africa	10 July 1991
Morocco	27 November 1970	Spain	5 November 1987
Mozambique	4 September 1990	Sri Lanka	5 March 1979
Myanmar	2 December 1992	Sudan	31 October 1973
Namibia	2 October 1992	Suriname	30 June 1976
Nauru	7 June 1982	Swaziland	11 December 1969
Nepal	5 January 1970	Sweden	9 January 1970
Netherlands	2 May 1975	Switzerland	9 March 1977
New Zealand	10 September 1969	Syrian Arab Republic	24 September 1968
Nicaragua	6 March 1973	Tajikistan	17 January 1995
Niger	9 October 1992	Thailand	7 December 1977
Nigeria	27 September 1968	The former Yugoslav Republic of Macedonia	30 March 1995
Norway	5 February 1969	Togo	26 February 1970
Oman	23 January 1997	Tonga	7 July 1971
Palau	14 April 1995	Trinidad and Tobago	30 October 1986
Panama	13 January 1977	Tunisia	26 February 1970
Papua New Guinea	13 January 1982	Turkey	17 April 1980
Paraguay	4 February 1970	Turkmenistan	29 September 1994
Peru	3 March 1970	Tuvalu	19 January 1979
Philippines	5 October 1972	Uganda	20 October 1982
Poland	12 June 1969	Ukraine	5 December 1994
Portugal	15 December 1977	United Arab Emirates	26 September 1995
Qatar	3 April 1989	United Kingdom*†	27 November 1968
Republic of Korea	23 April 1975	United Republic of Tanzania	31 May 1991
Republic of Moldova	11 October 1994	United States of America*†	5 March 1970
Romania	4 February 1970	Uruguay	31 August 1970
Russian Federation*†	5 March 1970	Uzbekistan	7 May 1992
Rwanda	20 May 1975	Vanuatu	24 August 1995
St Kitts and Nevis	22 March 1993	Venezuela	25 September 1975
St Lucia	28 December 1979	Viet Nam	14 June 1982
St Vincent and the Grenadines	6 November 1984	Yemen	14 May 1986
Samoa	17 March 1975	Yugoslavia [Serbia and Montenegro]	4 March 1970
San Marino	10 August 1970	Zaire	4 August 1970
Sao Tome and Principe	20 July 1983	Zambia	15 May 1991
Saudi Arabia	3 October 1988	Zimbabwe	26 September 1991
Senegal	17 December 1970		
Seychelles	12 March 1985		
Sierra Leone	26 February 1975		
Singapore	10 March 1976		
Slovak Republic	1 January 1993		
Slovenia	20 August 1992		

* Depository State
† Nuclear-weapon state under the terms of article IX.3

V. Comments From Readers/Corrections

Newsbrief 36 contained a duplication. A reference on page 11 to a speech by General Lee Butler to the Atlantic Council of the United States should have been combined with the first item under the heading 'Miscellaneous' on page 15, on the same subject.

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.

The **Newsbrief** is published on behalf of PPNN by the Mountbatten Centre for International Studies, Department of Politics, University of Southampton. Communications relating to its content and other editorial matters should be addressed to Ben Sanders at 240 East

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Web site: <http://www.soton.ac.uk/~ppnn/>

Production by Richard Guthrie. Printed by Autoprint.

ISSN 0965-1667