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Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 45

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Summary:

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

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NEWSBRIEF

1st Quarter 1999

Editorial Note

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

This issue covers the period 1 January to 24 March 1999.

The limited size of the **Newsbrief** makes it necessary to choose among available items of information and present them in condensed form. Selectivity is also called for because several publications may report on a single event in different, and sometimes even contradictory, ways. A further ground for cautious culling is the speculative nature of some media reports. Such reports are used only if there is reliable back-up information or if the fact of their publication is relevant in the framework of the **Newsbrief**.

Subheadings are used in the **Newsbrief** primarily to facilitate presentation; they should not be seen as judgments on the nature of the events covered. Related developments that might logically be dealt with under separate subheadings may be combined under a single one if doing so makes the text more readable.

Unless otherwise indicated, dates (day/month) refer to 1999. Where reference is made to an uninterrupted series of items in a daily newspaper, only the first and last dates of the series are given. For example, '6-25/2' following the name of a particular publication means that use has been made of items appearing there on each day from 6 to 25 February 1999. To save space, names of publications that are frequently referred to are abbreviated; a list is given on the back page.

PPNN's Executive Chairman, Ben Sanders, is editor of the **Newsbrief**. He produces it and takes responsibility for its contents. The inclusion of an item does not necessarily

imply the concurrence of the members of PPNN's Core Group, collectively or individually, with its substance or its relevance to PPNN's activities, nor with the way it is presented.

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

The current **Newsbrief**, as well as back issues, may be accessed electronically at www.soton.ac.uk/~ppnn/.

I. Topical Developments

a. The NPT

- At its second session, the **Preparatory Committee for the 2000 Review Conference** (see **Newsbrief** 42, page 2) confirmed its previous decision, that the third session would be held in New York, from 12 to 23 April 1999. These dates have since been changed. The third session of the Committee will now be held from 10 until 21 May 1999.

b. Nuclear Disarmament and Arms Limitation

- In February, the last of the 130 Soviet SS-19 strategic ballistic missiles in **Ukraine** were destroyed. (**NYT**, 27/2; **AP**, 1/3)
- On 22 March, Boris Yeltsin, the President of the **Russian Federation**, submitted the START II Treaty to the State Duma (the lower house of Russia's Parliament) for ratification, along with a new version of the ratification law which the Duma had adopted a week before, with 376 votes in favour and a single abstention. The law was said to include as circumstances that would give Russia the right to withdraw from the Treaty: any infringement by the US of the Treaty that may create a threat to Russia's national security; US withdrawal from the ABM Treaty; deployment by non-signatories of

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strategic offensive armaments that create a threat to Russia's national security; and the adoption and implementation by the US and other states, including NATO member states, of military decisions that create a threat to Russia's national security — including decisions on the deployment of nuclear weapons on the territory of countries that join NATO after the signing of the Treaty.

The law is further understood to contain provisions for the Treaty's implementation, among which is said to be the basic precept that the Treaty should be so implemented that it fully preserves Russia's nuclear potential at the level needed to maintain its national security. The law contains the further provision that the President shall decide on the time and the means for phasing out and deactivating strategic offensive armaments under the Treaty. It also requires the government to provide for priority financing of Russia's strategic nuclear forces, of the phase-out, and of all measures designed to give effect to the START I and II Treaties. Reportedly, deputies made it a condition of ratification that the government should proceed right away to negotiate on START III, which would make further drastic reductions in the nuclear arsenals of Russia and the US.

As this issue of the *Newsbrief* went to press on 24 March the negative reaction many members of the Duma were expected to have at the NATO action against the Milosevic regime over Kosovo put prospects of early ratification of the Treaty in doubt.

Once ratified by the Duma, the Treaty still needs the approval of the Federation Council — the upper house of the Russian Parliament. It is understood that Russia will not give effect to the Treaty until the US has ratified its Extension Protocol. Russian officials point out that the US Senate has also not yet ratified the ABM Treaty Succession Memorandum of September 1997, and is not likely to do so soon.

Ratification had already been deferred by the Duma a number of times. Expectations that START II would be ratified on 19 March were disappointed when unscheduled discussions about pressing domestic problems led to the cancellation of the Duma's regular meeting of the 18th, upsetting the programme for the Spring session. The ratification procedure had first been expected to start in the beginning of the month, but a move by Vladimir Zhirinovskiy, the leader of the nationalist Liberal-Democratic Party (LDP) which has long been opposed to START II, to start ratification proceedings on the 5th was rejected. The Russian government had pressed for early action so that work on further reductions under a START III treaty could begin; Cabinet Ministers and senior officials have long insisted that ratification is in the national interest. The Chairman of the Duma Defence Committee, Popkovich, shared this sentiment but reputedly was concerned that hasty debates might upset the procedure. In December 1998, the Duma had suspended ratification procedures after the US/UK air strikes against Iraq; it was moved to defer the matter further following the American disclosure of plans to deploy a national missile defence system (see below, pp. 10–12)

(*Segodnya*, 26/12/1998, 30/12/1998; *R*, 29/12/1998; *AFP*, 1/1, 16/3, 17/3; *Interfax*, 4/1; *IT*, 9/2, 3/3, 16/3, 18/3; *AP*, 3/3, 17/3; *Izv*, 3/3; *Carnegie*, 16/3, 18/3; *LAT*, 22/3)

- The **United States** Administration has asked Congress to release the \$200 million which it had appropriated to support **Russia's** plutonium disposition programme (see *Newsbrief* no. 44, pages 3 and 4). The appropriation is said to have given a new impetus to the talks between the two countries on a formal agreement for cooperation in this field although that is thought to be still months or perhaps a year away. It is expected initially to deal with the use of mixed-oxide (MOX) fuel assemblies in Russian reactors. At a later stage provision may be made for speeding up plutonium disposition by burning MOX elsewhere. The US Department of Energy (DoE) plans to send some experimental MOX fuel elements to the Canadian Chalk River Laboratory for testing; if sufficient funds are available, attempts may be made also to arrange for the testing of Russian fuel assemblies there. The US is said to hope that the G-7 (the Group of Economically Most Advanced Nations) will agree to establish a framework for the cooperative funding of the plutonium disposition project.

In Washington, the Nuclear Control Institute (NCI), which has long opposed the use of MOX fuel, particularly as a proliferation risk, has produced a study which claims that the incidence of cancer arising from severe accidents at a reactor using MOX produced from weapons-grade plutonium may be twice as high as that which DoE says might occur, and much higher than that arising from mishaps with low-enriched uranium fuel. NCI is said to plan to challenge the license applications of American reactor operators who seek to burn MOX fuel. DoE, while saying that it would reserve final judgement until NCI's full report is available, is disputing some of the assumptions and conclusions in the Executive Summary that has been published. A coalition of American religious, environmental and non-proliferation groups is also campaigning against the use of MOX fuel to burn weapons-grade plutonium, and in favour of its disposal as vitrified waste.

Talks have resumed between the Russian Federation and the US on the disposition of the uranium feed components from blended-down highly-enriched uranium (HEU) from Russian warheads. Three western uranium companies are associated with these talks so that, reportedly, a government-to-government agreement can be coordinated with a commercial deal. An agreement of 1993 provided for the purchase by the US of 500 metric tons of Russian HEU, for use as fuel in American commercial reactors. The US had agreed to pay for the natural and the enriched components of the material it was to receive, but in 1996 it stopped paying for the natural component and instead offered to return an equal amount of natural uranium. A further issue has arisen because the US Enrichment Corporation, the original partner, has been privatised and has refused to deal at the price Russia put on the natural uranium. The US Congress has allocated \$325 million for the purchase of the uranium component of some of the HEU the US buys. Supposedly, the main

purpose of the current talks is to ensure a fair market price for the uranium. Earlier, draft legislation had been introduced in the Russian State Duma, calling for suspension of the 1993 US–Russian agreement on the grounds that the US had breached it by its 1996 decision. The LDP and the Communists are calling for a new agreement, more favourable to Russia.

A first shipment of 227.5 kg Russian HEU is reported to have arrived in France. This would be about a third of the total quantity of HEU which France has agreed to buy, for use in the Orphée reactor in Saclay and the high-flux reactor in Grenoble.

(SF, 14/12/1998, 11/1, 1/2, 8/3; IT, 30/12/1998, 10/2; NF, 11/1; R, 12/1; NW, 4/2)

- According to the spokesman of the **United States** Defense Department (DoD), under current conditions the US may face a problem if it seeks to make unilateral reductions in its nuclear arsenal (see **Newsbrief** no. 44, pages 4 and 5). The apparent reason is that present legislation prohibits a reduction of the nuclear arsenal down to START II levels until Russia has ratified that Treaty. Russian disarmament specialists are urging the authorities to unilaterally remove warheads from their delivery vehicles and store them away from the launch pads, even before ratification of START II. (USIA, 8/1; IT, 12/1)
- The **United States** Chief of Naval Operations has urged a reduction of the Trident ballistic missile submarine fleet to 14 boats from the START I level of 18. The US Navy is understood to have ten modern Trident submarines fitted with D-5 missiles, with a 4,000 mile (6,400 km) range. Eight older Tridents carry shorter-range C-4 missiles but are scheduled to be retrofitted for D-5 missiles. All Trident boats can carry 24 missiles with eight warheads each. At any time, five Trident submarines are on patrol alert while five others are ready to launch their missiles on command. (WP, 7/1)

c. Nuclear Testing

- **The Comprehensive Test Ban Treaty (CTBT)**: On 12 January, at a conference on nuclear non-proliferation of the Carnegie Endowment for International Peace, US National Security Advisor Samuel (Sandy) Berger announced that President Clinton plans to make ratification of the CTBT a top priority for 1999. In his State of the Union Address, on 19 January, the US President called on the Senate to ratify the Treaty. Energy Secretary Bill Richardson said in early March that if the bill to approve the CTBT was allowed on the Senate floor, it would get the necessary votes for adoption. So far, this has not been the case.

Also at the Carnegie Endowment, Ambassador Sha Zhukang of China said that Beijing intends to ratify the CTBT before the conference planned for September 1999.

(R, 12/1; NYT, 20/1; USIA, 2/3)

- For **India** and **Pakistan**, see below, pages 15 and 19, respectively.
- The **Russian Federation** announced on 18 February that it would carry out a series of non-nuclear explosive tests at its Novaya Zemblya testing site. (**RFE/RL Newswire**, 19/2)
- Also in February, the **United States of America** conducted its sixth subcritical test at the underground testing site in Nevada. Three more tests are said to be planned to take place before September 2000. (**Kyodo News**, 10/2)

d. Nuclear Trade, International Cooperation and Nuclear Export Issues

- An international consortium is planning to market Westinghouse-designed power reactors in **China**. In mid-February, a formal alliance was concluded for this purpose between firms from **Japan**, **Spain** and the **United States**. There is thought to be little likelihood that China will order a new nuclear power plant during the current five-year plan, 1996–2000. (NW, 18/2)
- The report of the Committee of the **United States** Congress that has looked into transfers of technology to **China** (see **Newsbrief** no. 44, pages 5 and 6) is said to have found evidence confirming earlier allegations that Chinese experts visiting US nuclear laboratories had illegally obtained data on neutron weapons. The report of the investigation is classified and there is disagreement between Congressional Republicans and the Administration as to how much should be made public of findings said to indicate widespread laxness in security procedures applying to foreign visitors at US national laboratories.

In another development it has been revealed that in the mid-1980s design data on the W-88 warhead for the Trident II ballistic missile, with particular relevance to the miniaturization of nuclear warheads, were passed on to China from Los Alamos National Laboratory. In early March, a Taiwan-born Chinese–American employee of Los Alamos, Wen Ho Lee, described as a weapons scientist, was dismissed for, among other things, failure to notify officials about ‘contacts with people from a sensitive country’. He is reported to have been under investigation since 1996, but no specific evidence appears to have been found of the alleged espionage of ten years before. Lee has not been charged with any crime. Beijing is not believed to have used the information to produce new weapons, although it is said to have tested a nuclear device with similar characteristics. The matter apparently came to light only in 1995, as a result of the analysis of signals from those tests, and it seems that the US Administration was not told about the affair until 1997.

Another case of information being passed on to China involved a second Taiwan-born Los Alamos scientist, who was said to have supplied Chinese colleagues with ‘classified national defense information ... of significant material assistance to China in their [*sic*] nuclear weapons development program’. Reportedly, although the incident came to light only in 1997, it occurred in

the early 1980s and the information has since been declassified. The suspect pleaded guilty and was sentenced to a short term in a halfway house. Observers point out that any trips to China made by these scientists had the approval of their supervisors.

Republican members of Congress are highly critical of the Administration for what they see as insufficient attention to indications of espionage, and for not briefing Congress adequately. Most of the criticism is directed at National Security Adviser Samuel Berger. President Clinton has said he had been unaware of any nuclear espionage during his time in office; he has denied that his Administration minimised evidence of nuclear espionage by China, but his detractors are incensed at a report that the Acting Energy Secretary of the time deliberately refrained from briefing Congress lest the information be used against the Administration's China policy. Energy Secretary Richardson has deplored the damage done to US security, but has said that there was no evidence of additional espionage activity in national laboratories. It has been disclosed that already in 1996 the Deputy Secretary of Energy ordered security measures at national laboratories to be tightened. Supposedly as a result of the change in leadership at DoE, the directives were not followed up. Strict controls are now being imposed and the President has asked his Foreign Intelligence Advisory Board to investigate security threats at the national laboratories. Allegations by conservatives in and outside the US Congress that China has been allowed to gain a strategic advantage over the US have been decried by strategic experts; the American Pacific Commander in Chief has said that China is no military threat to the US. A number of US senators have threatened to block any more effort by the Administration to promote China's membership in the World Trade Organization. The Chairman of the Senate Intelligence Committee has called for a moratorium on visits to national laboratories by scientists 'from countries like China and Iran' and on visits by American scientists to foreign laboratories. The possibility of limiting military contacts between China and the US is also said to be under discussion. Senior Administration officials have warned that measures such as these would be counterproductive and that attempts to punish China for supposed espionage might prompt that country to upgrade its nuclear weaponry.

The Administration has set up an inter-agency team to conduct a formal damage assessment of possible harm done to US security by Chinese military espionage. Administration speakers have explained, however, that this does not mean that they embrace the conclusions reached in the Congressional investigation. The findings of the team are to be reviewed by a panel of independent experts which will report to Congress.

In February, after a review of the appropriate license application and supposedly partly in response to Congressional pressure, the US Administration stopped the export to China of a \$450 million satellite by the Hughes Electronics Corporation. The Commerce Department is said to have recommended approval of the deal but the Departments of State and Defense

formally objected, considering that the technology involved could help the Chinese military improve the accuracy of its ballistic missiles. The refusal was expected to have a negative impact on Sino-American trade relations; the Foreign Ministry in Beijing has said that the measure was 'entirely unjustifiable'. The Chinese Minister of Foreign Trade has urged the US to reconsider its decision.

As the result of a 'sting' operation in February, US law enforcement officers arrested a Chinese citizen and a Canadian of Chinese origin for illegally trying to export to China fibre-optic gyroscopes of a type used in missile guidance systems. One of the suspects claimed the gyroscopes were intended for a train navigation system. The Canadian national was said also to have tried to buy infra-red sensors commonly used in missiles. Arraigned on federal charges, both men have pleaded not guilty.

The Chinese Foreign Ministry has emphatically denied that China had used scientific exchanges to acquire military secrets and the Foreign Minister has denounced the allegations as 'irresponsible' and 'unfounded', and has warned that they will hurt bilateral relations. The US Congress, which is seen as increasingly xenophobic and has long been critical of the Administration's policies regarding exports of technology to China as well as to some other states, recently returned to the State Department the control over the export of commercial satellites; with a view to facilitating trade and international cooperation, the President had earlier entrusted this area to the Department of Commerce. Congress is seeking to follow up on a recommendation contained in the report on its investigation of US trade with China, that US inspectors should have the right to inspect Chinese facilities to ensure that US technology is not put to unauthorised use. Another recommendation is to ban the export of dual-use items to China. The President is understood to oppose both measures.

Most expert observers are said to believe that China will not soon change its defensive nuclear strategy, which is based on a doctrine of minimum credible deterrence. There are said to be signs, however, that China feels its present modest strategic nuclear force, which relies heavily on liquid-fuelled missiles in fixed silos, is becoming vulnerable. A new, solid-fuelled and potentially mobile missile is said to have been developed and is expected to begin replacing the older missiles in about ten years.

American newspapers have reported that the US National Security Agency claims to have evidence that China has shared space technology with the DPRK that could boost its long-range missile programme. The US State Department has said it cannot confirm the suggestions that US satellite expertise may have been used for this purpose and the White House has denied that there is evidence that China is even helping the DPRK develop long-range missiles. A Chinese official spokesman has called the report 'groundless'.

According to a report in the *Washington Times*, officials of the US Defense Intelligence Agency believe that

Chinese technicians may have obtained US laser-weapon technology from an Israeli company where they were working.

In Japan, a former managing director of Hitachi Electronics has been arrested for having sold to China, without authorisation from the Japanese Ministry of International Trade and Industry, 'telecomparators': electronic measuring devices that can be used in the extraction of plutonium for nuclear weapons. The exports are said to have been made with the help of a Japanese wholesale trading firm specialising in the export of precision instruments, and to have been channelled through South Korea. Japanese law enforcement agencies are said to be also investigating another Hitachi affiliate.

(ACT, October 1998; AP, 29/12/98, 30/12/98, 1/1, 2/2, 9/2, 25/2, 1/3, 2/3, 8/3, 10/3; LAT, 31/12/98, 1/1, 9/3, 18/3; NYT, 31/12/98, 10/2, 23/2, 1/3, 6-13/3, 15-18/3, 20/3; WT, 31/12/98, 27/1, 19/2, 23/2, 8/3, 10/3, 18/3; WP, 1/1, 24/2, 26/2, 7/3, 9/3, 10/3; IHT, 2-3/1; WSJ, 7/1, 9/3, 12/3, 18/3, 19/3; SCMP, 3/2; FT, 9/2, 11/2; DJ, 23/2; USIA, 23/2; China Daily [Beijing], 24/2; People's Daily [Beijing], 24/2; E, 27/2; R, 1/3, 8-10/3, 12/3, 15-17/3; Chicago Tribune, 8/3)

- In the run-up to the March visit to Washington of the Prime Minister of the **Russian Federation** — which has since been postponed in connection with the Kosovo crisis — American news agencies reported from Moscow that Atomic Energy Minister Adamov had offered to curtail Russia's nuclear cooperation with **Iran** if the US were to lift its sanctions against Russian nuclear research centres. Two institutes specifically mentioned were the Mendeleev University of Chemical Technology and the Scientific Research and Design Institute of Power Technology (NIKIET). Minister Adamov was said to have told a press conference that Russian institutes stood to lose more by being cut off from contracts with the US than from ceasing to work with Iran; reportedly, however, he indicated to the Russian press that he was planning to make only a small concession to the US. The exact extent of the concession Mr. Adamov was ready to make was obviously not clear matter was to have been discussed in Washington in late March. While welcoming Mr. Adamov's statement, the US State Department has said that Washington wanted to see action taken before the withdrawal of penalties could be considered. A Foreign Ministry spokesman in Teheran said that Iran expected no reduction in its nuclear cooperation with Russia.

In February, Minister Adamov had confirmed that he would push on with the completion of the Bushehr power reactors in Iran. He announced that over the next few months the number of Russian technical personnel on the site would be increased from 300 to 1,000 and more would be added later. At the time, it was expected that the first reactor unit could be completed by May 2003, at a cost of \$800 million. The Iranian Atomic Energy Organization was reported to be advertising for 225 engineers who were to be trained in Russia to operate Bushehr; to start with, in March 30 trainees would join the Novovoronezh power plant, which

comprises a VVER-1000 unit of the type under construction at Bushehr. It was also reported that a St. Petersburg factory had started manufacturing equipment for the first circuit, the reactor vessel and the steam generator casing, which were to be delivered by the end of 2001.

In February, the US imposed penalties against three Russian institutions, for providing sensitive missile or nuclear assistance to Iran. Besides the Mendeleev University and NIKIET, these included the Moscow Aviation Institute. Moscow reacted strongly to the measure. Prime Minister Primakov called it 'unproductive' and the Foreign Ministry stated that there were no grounds for the suspicion that the three bodies helped transfer missile and nuclear technology to Iran and that they were in full compliance with Russian and international law. Deputy Minister for Atomic Energy, Nigmatulin, said that NIKIET had been among several institutions that had held talks with Iran on the possible supply of a research reactor, but that those talks came to nothing. In May 1998, the US had taken action against nine other Russian business enterprises.

The Russian state Duma reacted to the latest American move by adopting, with 320 votes in favour and one abstention, a resolution expressing 'indignation' at the 'groundless introduction of sanctions'. It is noted that until recently, Minister Adamov was the head of NIKIET; he has denied that any nuclear technology was being transferred from his old institute. Senior Vice-Prime Minister Maslyukov said the allegation had 'obvious political aims'. In an earlier television interview, however, he had been quoted as saying that some of the cases which the US had cited turned out to be true. The head of Russia's Security Council, Nikolai Bordyuzha, has conceded that a number of private Russian companies have been 'going to the international market' on their own; he has said that Russia's export controls need tightening.

At the beginning of the year, Russia's President ordered an extension of the list of items related to missile technology that may not be exported. During the January visit of the US Secretary of State to Moscow, the two countries were reported to have agreed on tighter controls to ensure that American technology contained in US satellites launched by Russia is not leaked to Iran and other countries suspected of nuclear ambitions. Under a 'Technology Safeguards Agreement' concluded between Kazakhstan, the Russian Federation and the United States, access to American satellites will be strictly controlled and DoD personnel will be able to monitor the use of US technology in Russia and at the Baikonur Cosmodrome launch site in Kazakhstan. Seven launches are planned before 2001. Russia is said to attach great importance to the cooperation, both for technological and financial reasons, but the US has warned that it will terminate it if Russia continues to assist Iran in its missile development; presumably, termination would affect activities taking place after the seven launches now planned have been carried out.

In response to the American protests about Russia's alleged cooperation in Iran's nuclear and missile programmes, the Russian national security service, FSB, has told the newspaper *Segodnya* that Iranian scientists had received training in these fields in Canada, France, Germany as well as the US, and that Iran had obtained German, Japanese and Swiss equipment that could be used to make missiles.

In a report to the US Congress, the Non-Proliferation Center of the CIA, while praising the governments of Russia and China for 'expanding their commitments' to restrict the export of chemical, biological and nuclear weapons technology, has also said that independent or quasi-government entities in these countries are exporting sensitive equipment and technology to countries such as India, Iran and Syria. Russian officials have reacted angrily also to these allegations, which they say reflect a deliberate US policy to discredit their country. There is said to be speculation in Moscow that the accusations against Russia that currently circulate in Washington may be a prelude to the curtailment of American assistance to Russia.

In Moscow, Israel's Minister for Trade and Industry, Nathan Sharansky, has said that Israel will try to involve Russian scientists in joint research projects so that they will not be tempted to earn money by assisting Iran in making weapons of mass destruction. Sharansky has praised Russia's plans to improve export controls on weapons technology.

(**Disarmament Diplomacy**, October 1998; **AP**, 5/1, 26/1, 11/2; **R**, 9/1, 12/1, 14/1, 15/1, 18/1, 20/1, 16/2, 18/3, 19/3; **White House Release**, 12/1; **NYT**, 13/1, 30/1, 17/3; **Russian Public TV**, in **BBC**, 13/1; **WP**, 13/1, 14/1; **IHT**, 23-24/1; **US Fact Sheet**, 26/1; **AFP**, 29/1, 17/3, 18/3; **Gannett News Service**, 5/2; **NG**, 11/2; **Segodnya**, 15/2; **Bellona News** [Oslo], 16/2; **IT**, 23/2, 3/3; **LAT**, 23/2; **NEI**, March)

e. IAEA Developments

- Pierre Goldschmidt has been appointed Deputy Director General for safeguards. He has succeeded Bruno Pellaud, who had resigned as of 31 December 1998, but who will serve until 1 May. Mr. Goldschmidt is currently General Manager of Synatom, in Belgium.
- Arnold Bonne, also from Belgium, has been appointed Director of the Division of Nuclear Fuel Cycle and Waste Technology, in the Department of Nuclear Energy. Mr. Bonne is currently head of the waste technology section in the IAEA Department of Nuclear Energy.
- Shuja Nawaz, from Pakistan, has been appointed Director of the Division of Conference and Document Services in the Department of Administration. Most recently Mr. Nawaz was Chief of the Division of Conference and Training Support Services in the International Monetary Fund (IMF).

(IAEA PR 99/2, 12/3)

f. Peaceful Nuclear Developments

- In **Bulgaria**, French experts reviewing current plans to continue the operating life of the four old VVER-440/230 reactors at Kozloduy have said that the confinement system of the reactors is not sufficient for longer-term operation. The head of the Eastern Nuclear Safety Project of France's Institute for Protection and Nuclear Safety has called the plans 'unreasonable'. An extensive IAEA operational safety review, however, is reported to have reached a more favourable conclusion. Bulgaria's Parliament has unanimously rejected a shut-down of the reactors before the end of their design life: between 2004 and 2010. (NW, 28/1, 18/3; NNN, 9/2)
 - The nuclear safety authority of the **Czech Republic** has said there is no apparent obstacle to licensing the Temelin nuclear power station. Austrian politicians continue to campaign against the start-up. An independent evaluation team has submitted a report to the Czech government which is said to conclude that the plant will not be needed to meet electricity demands in the foreseeable future and to express doubt about the economics of completion. Apparently, the report neither recommends cancellation nor completion of the two reactors, pointing out that with the project at such an advanced stage any approach will have more negative than positive aspects. No immediate government decision is expected. (NNN, 18/1; DP, 8/2; NW, 18/3)
 - A decree authorising decommissioning of the Supérphenix breeder reactor was signed by **France's** Prime Minister on 30 December 1998. Opponents of the decommissioning have said they will fight the decree in court. The first phase of decommissioning as authorised will involve removing fuel from the reactor core, emptying sodium from the primary and secondary circuits, and dismantling the non-nuclear parts of the plant that are not required for safety; the latter are said to include electricity generating equipment and auxiliary and steam generator buildings. Plans call for defuelling to start in July; this is expected to take at least 18 months. The fuel assemblies are reported to contain a total of 4.8 metric tons of plutonium. Decommissioning is estimated to cost around \$3 billion.
- Opponents of closure of the reactor are seeking a court injunction against dismantling work that could constitute an irreversible barrier to future operation.
- (NNN, 4/1; **Tribune de Genève**, 5/1; NW, 7/1, 11/3)
- In **Germany**, whose coalition government is based, *inter alia*, on a commitment to end nuclear power, the question of the termination of reprocessing of nuclear fuel was a subject of intense debate during January and most of February, within the government and between the government and industry, as well as between Germany on the one hand, and France and the UK on the other. At the beginning of the year, the Federal Minister of Environment and Nuclear Safety, Jürgen Trittin (Alliance '90 Greens), called for an immediate stop to any reprocessing abroad of German-origin spent fuel. His views appeared to be shared by the Social Democratic Chancellor Gerhard Schröder, while other

cabinets members, including some Social Democrats, were evidently in less of a hurry. The move was strongly resisted by industry. Initially, the government intended to go forward with a compromise solution reached between the coalition partners on 13 January, under which it would call for a change in the country's Atomic Energy Act, prohibiting further reprocessing within twelve months, to give utilities time to renegotiate their reprocessing contracts. Reportedly, Chancellor Schröder accepted Minister Trittin's advice, obtained from his legal service, that since the utilities would face a unilateral decision by their government they should be able to plead *force majeure* to justify a breach of their contracts with reprocessors in France (Cogema) and Britain (BNFL), without having to pay damages.

The two reprocessing companies, reportedly taken by surprise, did not see things that way and warned that they would insist on the contracts being complied with, lacking which they would demand stiff penalties or go to court. The French government backed Cogema, which estimated that it stood to lose \$5.5 billion over ten years, and the UK government supported BNFL for which, according to its Secretary of State for Trade and Industry, the reprocessing of German fuel represents 10 per cent of the orders on its books. German utilities warned that an abrupt annulment of the contracts might mean their financial ruin; they put the cost at between \$2.9 and \$4.1 billion and threatened to take the government to court. They also pointed out that simple logistics would prevent ending reprocessing within a year. Unions of electricity workers expressed concern about likely job losses and demanded a place at the negotiating table. Nuclear utility workers demonstrated against independent Economics Minister Werner Müller, whom they hold chiefly responsible for the government's energy policy.

The issue was said to cause tension within the government. Foreign Ministry officials warned that unilateral cancellation of the contracts could have a negative effect on relations with France and the UK. Foreign Minister Joschka Fischer, who has said he is committed to continuity in Germany's foreign affairs, was nevertheless seen as unwilling to risk a rift with his co-Green Jürgen Trittin over this issue. Economics Minister Müller told the European Parliament that the contracts should be observed, but then apparently went along with a reprocessing ban. In the end, a consensus was said to have been reached in the cabinet that permitted the Chancellor to announce, on 18 January, that foreign reprocessing of Germany's spent fuel would be terminated within twelve months, without compensation being paid either to the reprocessors or their governments. Draft legislation making delivery of irradiated nuclear fuel to third parties for the purpose of reprocessing illegal as of 1 January 2000 would be approved in cabinet by late January.

With industry intensifying its pressure on the government to allow reprocessing to go on after 2000 and warning that without a means of disposing of their irradiated fuel several power stations would have to stop operating almost right away, and while officials from Trittin's Environment Ministry warned that, to the

contrary, a further delay in promulgating the ban would cause serious political problems. The Ministry of Justice announced on 22 January that it was starting a review of the legality of the proposition. This was expected to take six weeks — later reduced to three — during which any decision would have to be deferred. A basic item in the review was to be whether notes the Bonn government had exchanged with Paris and London in the early 1990s, in which it undertook not to impede the delivery of irradiated fuel elements to those two countries, were to be considered as binding, given their form and the mode of their approval. Another issue was the impact of a reprocessing stop on the validity of reactor operating licenses.

On 26 January, Chancellor Schröder met with top management of the nuclear utilities, at which, reputedly, each side made important concessions. Agreement was reached in principle that a reprocessing ban would be enacted, but that for the present no deadlines would be set. The government agreed to suspend the overall implementation of the ban and instead accepted a plant-to-plant approach under which the prohibition on reprocessing would go into effect with regard to power stations as and when they would have acquired means to store their irradiated fuel on-site. Meanwhile, the utilities would negotiate with the reprocessors about the issue of the penalties that might have to be paid. Licensing and construction of storage facilities was expected to take four to six years, during which reprocessing would be allowed to continue. It was still said to be the government's view that the utilities could abrogate their contracts without incurring damages, because, it held, a sovereign decision takes precedence over commercial contracts. As reported, there still is a ban in force on the transport of high-level radioactive waste and spent fuel. It appears that so far Environment Minister Trittin has not announced if and when this ban will be lifted, and as long as it is in force it will prevent the transport of irradiated fuel to France and Britain.

Events have intervened since to complicate the situation for the government. One was the announcement by the states of Baden-Württemberg and Bavaria that they would sue if the Federal government adhered to its phase-out plan. Another was the view of legal experts within and outside the government, that legislation mandating a phase-out would violate several clauses of the German constitution and/or the Euratom Treaty. Thirdly, not only the Federal Ministry of Justice seemed to identify several legal objections to the government's proposed action, but other branches of the government were also said to have found fault with it. Within the cabinet there was said to be disagreement. The Chancellor was reported to be displeased with the way the Environment Minister had acted, and the Greens were unhappy with the agreement between the Federal Chancellor and the nuclear industry, which they saw as a potential threat to the coalition. The government's position was weakened by the electoral defeat in Hesse of the Greens, as this meant that the coalition no longer had a majority in the Bundesrat (the upper house of the German Parliament), which, as legislation on a nuclear phase-out would affect the states, might have to be involved in the adoption process. At that point the Federal Chancellor is reported to have decided that the

nuclear phase-out was no longer a top priority; he deferred discussions on the phase-out with cabinet ministers and industry. On 22 February, Minister Trittin withdrew his draft phase-out legislation and announced that the new law would not contain a ban on foreign processing of German fuel.

The nuclear phase-out is expected to remain an important issue in German politics, with the coalition remaining on record as committed to an eventual phase-out, and most other parties, industry and the unions, opposed. A statement by Economics Minister Müller, that in the long run a move back to nuclear energy could not be excluded, was met with claims by senior members of the majority party that the phase-out would be 'irreversible'. The Greens, meanwhile, continue to agitate for an immediate end to all nuclear-generated power, with three or four plants closing within four years and the resulting shortfall to be made up by energy savings, better use of existing fossil fuel plants and natural gas, and new, renewable energy sources such as solar and wind power. German experts doubt the feasibility of this scheme and the ability of wind and solar power to meet the purpose without at least some reliance on fossil or nuclear power.

Germany's nuclear operators have expressed resentment at efforts of the government to fight them 'through attrition and tax power'. Bonn has introduced a draft tax reform that involves a retroactive levy on funds contributed by electricity users to cover the eventual decommissioning of power stations. The new tax would cost utilities the equivalent of \$14 billion. The government is said to have rushed the proposal to the Bundesrat before 19 March, the date by which the coalition was to lose its absolute majority in that chamber, which was upset as a result of the elections in Hesse. In reaction, utility operators have told the government they will no longer participate in discussions about a nuclear phase-out or in the working-group talks about reprocessing. They have also said they will fight the tax law in Germany's highest court of justice.

The question of decommissioning the nineteen power reactors now in operation was to have been discussed between the government and the utilities, in so-called 'consensus talks' at which it had been hoped a time-table could be worked out. Reportedly, the utilities want a timetable for the shut-down to be adopted only after an alternate energy policy has been decided upon. So far no sign of a consensus has been reported. Apparently, resentment of utility owners at the government's tax plans prompted them on 9 March to withdraw from the latest round of talks on a schedule for a phase-out; no new date was set. Minister Müller said on television that there would be no 'forced closures' of German nuclear plants and no nuclear unit would be closed down in the near future on anything other than economic grounds. A meeting planned for early March of a joint working group to discuss arrangements enabling reactor operators no longer to rely on reprocessing of their spent fuel abroad, including the construction of at-reactor storage facilities, has also been deferred. Cogema and BNFL

have urged utilities to keep reprocessing all spent fuel covered by present contracts.

In early February, Minister Trittin announced that excavations for the spent fuel storage facility in the salt dome at Gorleben, which was to have been the final repository for nuclear waste from the country's nuclear power plants, would cease. He said that repository sites would be sought elsewhere in Germany, which was seen as a time-consuming operation. Industry leaders have asked the Federal Chancellor for assurances that work on Gorleben will continue. Reportedly, the possibility of vitrifying all of Germany's separated plutonium rather than burning it as MOX fuel is being looked into. There is said to be about 32 metric tons of Pu in Germany of which 10 metric tons is said to be in the form of MOX.

The survival of Germany's Reactor Safety Commission (RSK) has also been a contentious issue. In late 1998, Minister Trittin decided to abolish the RSK, allegedly without consulting the Chancellor. The latter ordered the Commission to be reconstituted, given the likelihood that a nuclear phase-out might not take place right away. Trittin's reported move thereupon to replace those members of RSK who were associated with the nuclear industry by critics of nuclear power, is said to have run into opposition and the Commission is now said to be seen as more fairly constituted. As its Chairman, Trittin has named a political ally and opponent of nuclear energy.

(R, 23/12/1998, 4/12, 10/2; FT, 23/12/1998, 16/1, 19/1, 22/1, 25/1, 26/1, 23/2, 10/3; NW, 7/1, 14/1, 21/1, 28/1, 4/2, 11/2, 18/2, 25/2, 4/3, 11/3, 18/3; SDZ, 7/1, 13/1, 14/1, 27/1, 28/1; DW, 11/1, 16/1, 23/1, 26/1, 4/1; ff, 11/1; FAZ, 14/1, 15/1, 23/1, 27/1, 29/1, 4/2; NZZ, 15/1, 1/2; SN, 15/1, 27/1, 20/1; IHT, 16/1, 22/1, 25/1, 26/1; R, 17/1; NNN, 18/1, 20-22/1, 26/1, 23/2, 3/3, 9/3, 15/3; SF, 18/1, 25/1, 1/2; DT, 19/1, 22/1, 25/1; LT, 21/1, 25/1; LM, 22/1, 27/1; NYT, 22/1, 28/1, 23/2; E, 23/1; K, 23/1, 26/1, 27/1; NF, 25/1, 8/2, 22/2, 8/3; WSJ, 25/1, 27/1; G, 26/1, 27/1, 30/1; StV, 27/1; Energy Daily, 10/2; AP, 27/2; see also Newsbrief no. 44, page 7)

- A study is underway about the possibility of converting the high-flux reactor at Petten, in **the Netherlands**, to use low-enriched uranium (LEU). Plant management had agreed with the US that it would convert gradually to the use of LEU, if and when high-performance LEU fuel was available at reasonable cost. A committee considering the conversion of the high-flux reactor under construction near Munich, in **Germany**, which has somewhat different design features, is said to lean towards the opposite conclusion. (NF, 8/3; direct information)
- Before Mikulas Dzurinda took over as Prime Minister of the **Slovak Republic**, in the Autumn of 1998, he was widely expected to reconsider the pro-nuclear policy of his predecessor, Meciar. Particularly in Austria it was hoped that Dzurinda would consent to shut down the old power reactors at Jaslovske Bohunice, and that he would decide that no further reactor units should be completed at Mochovce. As matters stand now, however, it seems that Bohunice will continue to

operate for the foreseeable future. As to Mochovce, Prime Minister Dzurinda has announced that his government is considering an offer from Siemens to take part in financing two further blocks of that station. (**TASR News Agency** [Bratislava], 30/1, in **BBC**, 3/2; **DP**, 8/2)

- The Supreme Administrative Court of **Sweden** has postponed its decision on the legality of the closure of Barsebäck-1. Judgement was said to be imminent but there is some talk that the court may pass the case on to the European Court. The government still says it wants the reactor to be shut down, but it is currently unable to predict when that will be possible. Negotiations between the government and the owners of Barsebäck, Sydkraft, about compensation for the shut-down, have so far not led to agreement. The Environment Minister has spoken of an overcapacity in the Swedish electricity system, which would make it possible to shut the station down without hurting electricity supply, but there is concern that a shut-down of any of Sweden's 12 atomic plants, which together provide almost half the country's electrical power, would leave it without any reserves. It is noted, moreover, that the Swedish public is much less keen on seeing a nuclear phaseout than it was 20 years ago, when a referendum was adopted to end Sweden's dependence on nuclear power. (**Ux**, 4/1; **NW**, 7/1, 21/1, 4/2; **WSJ**, 15/2)
- **Ukraine**: New cracks have been detected in welds of the emergency core cooling system at Chernobyl-3, which had been shut down for safety upgrading. Repairs were completed by late February and the unit was restarted on 7 March. It appears uncertain how long the unit can continue on-line and further maintenance outages are said to be planned. It seems that if the unit were to continue after 2000 it would be necessary to replace 1,500 fuel channels, which would not be worthwhile if agreement is reached on funding to complete the VVER-1000 reactors Khmelnitksi-2 and Rovno-4.

The European Commission is still studying a proposal to lend Ukraine almost \$600 million towards the completion of those reactors, which the authorities in Kiev have said is a condition for the shut-down of the Chernobyl station. The European Investment Bank is said to oppose the proposal, claiming that Ukraine does not need the additional electricity, and that the proposition is uneconomical because payments for power supplies lag far behind actual costs. Still, a positive decision is expected, partly for political reasons and in part because European supplier countries seek to involve their nuclear industry, which some commentators see as a way of subsidising the project at the expense of European taxpayers.

As part of the international Shelter Implementation Plan for the reinforcement of the 'sarcophagus' over the ruins of Chernobyl-4, a contract was signed in January for the first stage of construction. The contract is for the reinforcement of the two main beams that support the roof over the reactor, which were reportedly found to need urgent remediation. A paper by a scientist working at Chernobyl warns that the sarcophagus presents a grave fire hazard. Allegedly, the destroyed

reactor unit contains over 2,000 tons of combustible material, and the report says that more work is needed to prevent fires from triggering radioactive releases. A group of Ukrainian scientists has drawn up a proposal under which, rather than being shielded where it is, a 1-km deep hole should be excavated in which the destroyed reactor would be buried together with the sarcophagus. Proponents claim that this could be done at a cost of US\$ 1.5 billion and would avoid the need of extracting radioactive material.

(**NW**, 14/1, 18/2, 25/2, 11/3; **G**, 17/2; **CNN**, 6/3; **NEI**, March)

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

- The President of **Belarus** has said that the decision to withdraw nuclear weapons from his country had been a mistake and that he would welcome them back. Late last year, **Russia** announced that when it reunites with **Belarus**, as currently planned, it will not deploy nuclear weapons there. (**AFP**, 30/12; **BBC**, 26/2) [In 1993 Belarus acceded to the NPT as a non-nuclear-weapon state — Ed.]
- First Deputy Premier Yuryi Maslyukov of the **Russian Federation** has said that the new Topol-M strategic missile will not be equipped with multiple warheads, as has been proposed by some military experts. Maslyukov said that this would be considered only if the Anti-Ballistic Missile (ABM) Treaty of 1972 were to be repealed. The Deputy Premier has called for the production of a new generation of nuclear missiles, to replace the nuclear arsenal, which is said to be in steep decline, with warheads decaying; nuclear missile submarines lacking supplies and maintenance and the number of operational boats reduced to a handful; the bomber force largely obsolete; and most land-based missiles well beyond their operational life-time. President Yeltsin has called upon his Defence Department to prepare a plan for the restructuring of Russia's nuclear forces into a single branch. (**Segodnya**, 26/12/1998; **R**, 10/2)
- The decision of **United States** Energy Secretary Richardson to use the Watts Barr and Sequoyah reactors of the Tennessee Valley Authority (TVA) for the production of tritium for use in nuclear weapons has been received with disappointment by TVA — which is said to have hoped that its partly-finished Bellefonte reactor would be completed for the purpose — and is criticised in the Congress because it departs from the traditional US policy not to use commercial installations for military purposes (see also **Newsbrief** no. 44, page 9). The decision is defended by the Administration as providing flexibility with regard to the start of tritium production. This flexibility is said to be needed because of uncertainty about the entry-into-force of START II and therefore the amount of tritium needed in the medium-term. While work is continuing on various aspects of tritium production by means of an accelerator, DoE officials are quoted as saying that preference is shifting towards the use of reactors. (**NW**, 7/1, 4/2, 18/3)

- The **United States** Administration announced on 19 January that it may ask Russia to renegotiate the Anti-Ballistic Missile (ABM) Treaty of 1972 so as to permit the establishment of a limited National Missile Defense (NMD) system, beginning with development and testing. The news had been expected for some time, although the White House was seen to be lukewarm about the idea of deploying an NMD system, because of doubt about its efficacy, the problems it would raise for the relationship with Moscow, and its incompatibility with the ABM. Conservative politicians and military officials had long pressed for the establishment of NMD and claimed that if this could not be reconciled with adherence to the ABM Treaty it should be amended or jettisoned altogether.

Russia is known to be strongly opposed to any change in or annulment of the ABM Treaty and the US Administration is said to have been aware that the new initiative might have a negative impact on the ratification of the START II agreement. On 18 January, a senior Russian defence official reacted to a quote in the *Los Angeles Times* from Secretary of State Albright, that the US should consider developing a defence system against ballistic missiles, by saying that any attempt at circumventing the ABM Treaty would upset the *status quo* and that he saw US statements about cancellation or amendment as being aimed at Russia's security interests. He dismissed the idea that the DPRK, Iran or Iraq had or would acquire missiles that could reach US territory and would warrant the deployment of NMD, and said that American withdrawal from the ABM Treaty would be 'a threat to Russia's security'.

The White House was said to have expected Russia to be less concerned at a proposal to amend the ABM Treaty than it would have been at the US' withdrawal from that instrument. In a letter to President Yeltsin, President Clinton stressed that the development of an NMD system should not be seen as an attempt to alter the strategic balance, and that any changes to the Treaty would be limited. Initially, signals from Washington varied. In a press conference, Defense Secretary Cohen stressed the importance of ABM in deterring a resumption of the arms race, but he also said that if no agreement could be reached on amendments, the US had the option 'to simply pull out of the treaty' with six months' notice. It was noted that already in October 1998, US Deputy Secretary of Defense Hamre had said that Secretary Cohen had authorised him to be 'very clear' that 'if we determined that deployment ... would require changes to the treaty [and] we were not able to reach agreement in the necessary time frame, then our recourse would be to withdraw from the treaty'. After January's press conference, however, an Administration spokesman explained that Secretary Cohen's remarks did not mean that he had threatened to withdraw from the ABM, which remained, the speaker said, 'in the view of this Administration, a cornerstone of strategic stability'; he added that the White House had not decided whether to amend the Treaty, or if so, what changes would be needed.

The first official Russian reaction to the American announcement came from Foreign Minister Igor Ivanov, and was flatly negative. Talks in Moscow in

late January between US Secretary of State Albright and Prime Minister Primakov were reported to have been overshadowed by differences over Iraq; Russia's cooperation with Iran and American reprisals against institutions involved; and NATO activities in Central and Eastern Europe. Strong disagreement was seen to have arisen over the US' plans for an NMD system and the possible need to amend the ABM Treaty. President Boris Yeltsin, whom illness kept from attending, expressed his concern over the telephone. For her part, Secretary Albright underlined US commitment to the ABM Treaty and gave the assurance that there had been no final US decision on the matter. She was reported not to have given ground over US insistence that it would develop the anti-missile defence system if and when it was found necessary and feasible. At the end of the meeting, Ivanov told the press that he had secured the assurance that the US would on no account annul the ABM Treaty and would take Moscow's views and security concerns into account.

Senior Russian officials have since expressed suspicion that the US' plans for an NMD system would exploit Russia's current economic weakness to neutralise its strategic missile forces. Moreover, they said, a defensive system could itself eventually become offensive. Some Russian experts suggest that if the US withdraws from the ABM Treaty, Russia would have to disregard the present ban on the deployment of multi-warhead strategic missiles, and convert the new Topol-M missile to carry multiple warheads. The designer of the Topol-M has said that the missile incorporates secret design features which enable it to be equipped with special defences against any anti-missile shield, but he added that such devices would make the missile heavier and more costly.

In February, in a follow-up on Secretary Albright's visit, US Deputy State Secretary Strobe Talbott reportedly set out to convince his Russian counterparts that the American plans were not intended to threaten Russia or undermine its nuclear deterrent. Mr. Talbott was said to have given 'the strongest possible reaffirmation' of the importance of the ABM Treaty. An American official added what has now become the standard reassurance: that no US decision had yet been taken. This argument was also used during a visit by a group of US Congressmen to the Russian State Duma in mid-March, made in hope of easing some of the concerns expressed there. Concern that the US wish to build an NMD would lead to the annulment of the ABM Treaty, which prohibits a nationwide missile defence, was seen as mitigating against the chances of ratification of START II, just when discussions on this issue in the Duma were reaching a climax.

The US Department of Defense (DoD) has given as its justification for what it calls 'the deployment of a limited number of ground-based interceptor missiles', its conclusion that the possibility of a missile strike against American troops overseas and eventually also US territory, from states like the DPRK, Iran and Iraq, is no longer a distant threat. Russian experts call the argument far-fetched and a pretext for a move towards strategic superiority in defence as well as offense.

President Clinton is known to have long hesitated to approve the scheme and Republican critics have complained bitterly about his caution. In February, a bill was introduced in the US House of Representatives, sponsored by 30 Republican and 28 Democratic members, which states 'That it is the policy of the United States to deploy a national missile defense system'. Also in February, the Senate Armed Services Committee approved by an 11-7 vote legislation that calls for the deployment of an NMD system as soon as 'technologically possible'. Democrats, who in 1998 had twice blocked similar proposals went along, reportedly out of concern about threats from 'rogue countries' and ignoring arguments that an NMD system could undermine nuclear reduction efforts. Bipartisan support for a Senate bill on NMD was assured by the adoption of a compromise adding two clauses: one assuring that the financing would follow the regular annual appropriations process, so that the Democrat minority in Congress would have a say in the matter; and one stating that any NMD system should be consistent with negotiations with Russia on the reduction of nuclear weapons. On 17 March, the bill was adopted with 97 votes in favour and three against; the President said he would sign it into law. He had initially threatened to veto it, reportedly because its language implied that a decision to deploy the system would be based solely on a technological determination and would ignore other critical factors besides technology and operational effectiveness, such as the actual presence of a ballistic missile threat, the cost of deployment, or disarmament considerations. On 18 March, the House of Representatives adopted, with 371 votes in favour and 105 against, a similar bill, but without the amendments. The bill was expected to be adjusted in Conference to the Senate version. First reactions from China and Russia were extremely negative. Russia's Foreign Ministry said that the move would seriously threaten the entire nuclear disarmament process.

According to Defense Secretary Cohen, the Administration will commit \$6.6 billion over the next six years for a network of radars and intercept missiles; this raises the budget for NMD in the years 1999-2005 to \$10.5 billion. Experts, many of whom call the project 'a blank check for the defense industry', point to the huge technological problems that must be solved before a system can be deployed and say that so far the US has spent \$55 billion without developing a working system; some doubt that it can ever be made to work and there are many scientists who insist that even if it works, the system can easily be fooled. Secretary Albright has been quoted as saying that NMD is 'not yet fully developed' and would only be deployed if it is found to be 'feasible'. Four tests are said to be planned before June, when an attempt will be made to destroy over the Pacific a missile with a dummy warhead launched from a California air base. Secretary Cohen has said that a decision whether to deploy would be taken then; according to DoD 2003 would be the earliest year for deployment. Given the lack of success of the programme to develop a Theater High Altitude Area Defense system (THAAD), DoD has announced that it will 'prioritize both THAAD and NTW (Navy Theater Wide) based on their future performance in order to

field an upper-tier (high-altitude) system as soon as possible'. Both systems will be flight-tested through the beginning of fiscal year 2001, after which the Department will evaluate the progress of these programmes and make a decision for further funding of one or both. DoD's announcement implies that it will preserve both programmes, including the less successful one.

The Chinese Foreign Ministry has warned repeatedly that the development and transfer of any missile system will undermine security and stimulate the proliferation of missiles. It has taken position in particular against the establishment of theatre missile defence (TMD) covering Taiwan province [*sic*] as 'a serious infringement of the sovereignty and territorial integrity of China' and have said that including Taiwan in a TMD system would be 'counterproductive to peace and stability'. According to Taiwanese military intelligence, China has over 100 ballistic missiles 'that could target Taiwan', and could have 600 within a decade, thus reinforcing the need for an effective missile defence capability. Reports about the Chinese missile forces directed against Taiwan differ. Western diplomats claim that those forces have recently been strengthened and several prominent American newspapers make similar assertions, but the US Defense Department has said it has not found that China has increased the number of missiles deployed in the area in five or six years. The newspaper of the Chinese military, *People's Liberation Army Daily*, has stated that the US is taking risks in developing a costly high-tech, low-efficiency missile defense system 'in pursuit of strategic superiority and hegemony'; *China Daily* has said that Sino-US relations would suffer a setback 'unprecedented since the normalization of bilateral ties'. The US Administration insists that a joint Japanese-American project to develop a TMD system is not a threat to China.

On 12 January, in an address at a conference on nuclear non-proliferation, Ambassador Sha Zukang, Director-General of the Arms Control and Disarmament Department of China's Foreign Ministry, expressed deep concern about the efforts of 'certain countries' to develop theatre missile defense (TMD) or NMD, because they would have a negative impact on regional and global strategic stability and would trigger a new round in the arms race and defeat any chance that China would join the Missile Technology Control Regime. He stressed the importance of maintaining and strengthening the ABM and suggested that it was worth considering to make it into a multilateral treaty. Mr. Sha said that China opposed cooperation between Japan and the US in the development of a missile defense system in the area, in part because this would involve transfer of technology applicable to offensive missiles. He took strong exception to the idea of a US transfer of any TMD elements to Taiwan. The DPRK has also condemned the American TMD plans. A British expert has suggested that the real rationale for US theatre-missile defence is a possible future threat of nuclear missiles from China.

(*Defense Monitor*, Vol. XXVIII, No. 1, 1999); *WSJ*, 13/1, 19/3; *WT*, 13/1, 10/2, 11/2; *Defense Week*, 19/1;

AP, 20/1, 21/1, 25/1, 11/2, 12/2, 11/3, 12/3, 16-18/3; **Inside The Pentagon**, 20/1; **NYT**, 20-26/1, 19/3; **R**, 21/1, 10/2, 12/1, 11/2, 24/2, 16-19/3; **USIA**, 21/1, 10/2; **WP**, 21/1, 22/1, 24/1, 7/2, 11/2, 12/2, 17/2, 25/2; **IHT**, 23-24/1, 3/2; **IT**, 23/1, 3/2, 9/2; **People's Liberation Army Daily**, 24/1; **AFP**, 26/1, 8/3, 18/3; **CSM**, 26/1, 4/2; **Chicago Tribune**, 27/1; **China Daily**, 27/1; **DW**, 27/1; **JoongAng Ilbo**, 27/1; **USA Today**, 27/1; **Defense Daily**, 5/2; **LAT**, 11/2. See also **Newsbrief** no. 43, page 11)

- In the **United States**, DoE's programmes designed to assist the **Russian Federation** in its efforts to turn from military nuclear activities to civilian projects and to find productive employment for the many idled scientists and technicians, have come under criticism from the Congress. A study report of 22 February by the General Accounting Office (GAO), produced at the request of Senator Jesse Helms, Chairman of the Foreign Relations Committee, contends that some of the funds have gone to dual-use projects related to weapons of mass destruction, which could 'unintentionally' provide useful defence-related benefits to Russia and other countries. The report acknowledges that US assistance has helped keep many Russian scientists from going abroad, but claims that it has 'not achieved its broader non-proliferation goal of long-term employment through the commercialization of projects'. The GAO study contains a set of recommendations for improvements in the management of DoE's programmes and Senator Helms has said that non-implementation of these reforms will jeopardise continued support of the programme. Among specific criticisms the study mentions the high percentage of money that is spent by DoE's national laboratories in charge of administering the programmes, and the lack of information about the actual amounts of money that reach the intended beneficiaries, given that Russian institutes tend to withhold funds in overhead costs, taxes and other fees. It also claims that in the case of some projects the impact on US national security has not been sufficiently ascertained, and that some of the institutes assisted had contacts with countries 'of proliferation concern'. While DoE has challenged some of the findings, it is expected that the Congress will scrutinise its work in the former Soviet Republics with greater care than it has so far. Senator Helms has also suggested that control of these programmes should be transferred to the State Department.

(**AFP**, 10/2; **NYT**, 22/2; **WP**, 23/2)

- Talks have begun between officials from the **Russian Federation** and the **United States** on ways to prevent the 'millennium bug' (the 'Y2K problem') from disrupting Russian systems for warning of enemy missile attack and from touching off false nuclear alert. The US has proposed setting up a temporary joint missile-warning centre in the Moscow area, staffed with personnel from both countries. Under this proposal the US would transmit to the centre as well as to the Russian military command, data about its missile launches, so as to help Russia avoid misidentifying American launches. (**NYT**, 22/1)

h. Proliferation-Related Developments

- On 16 March, representatives of the **Democratic People's Republic of Korea (DPRK)** and the United States of America, meeting in New York, announced that they had agreed on access to the underground site at Kumch'ang-ri. The two sides took the opportunity to reaffirm their commitment to the Agreed Framework of 1994. According to the announcement the DPRK will provide the US with 'satisfactory access to the site at Kumch'ang-ri by inviting a US delegation for an initial visit in May 1999, and allowing additional visits to remove US concerns about the site's future use. The United States has decided to take a step [*sic*] to improve political and economic relations between the two countries'. According to press reports, under the agreement US officials will have access to the entire site and can make follow-up visits as long as necessary. In return, the United States is said to have agreed to assist the DPRK with a pilot potato-growing programme and will arrange for the provision of 500,000 metric tons of grain, presumably through the World Food Programme.

The announcement was received in the US with relief and criticism. Senior US officials comment that the American right of access, as long as concerns remain about the site, should be able to remove suspicions and help find funding for the two light-water reactors to be supplied through the Korean Peninsula Energy Development Association (KEDO). However, also among those applauding the agreement there is an apparent recognition that the DPRK may be hiding nuclear activities elsewhere. Critics said that the agreement 'smacks of a food-for-access deal' which might prompt Pyongyang to demand more concessions in future. Conservative politicians claimed that the deal is a small concession obtained at huge cost to the US taxpayer, and questioned what the US would get out of the deal, since the DPRK supposedly had almost a year to clean out the site. Reportedly, the US Defense Department had decided there were 12 other sites it wished to visit. Officials pointed out that agreement on access to Kumch'ang-ri stood apart from other issues between the two countries and that if another suspect nuclear site were to be detected in the DPRK, the question of access would have to be dealt with on its own merits.

The agreement came at the end of well over two weeks of continuous negotiations, during which no authoritative information was released. Informal reports about progress varied widely, although most indicated that parties were getting closer. The State Department said that some headway was being made and one report had it that the DPRK had said it would allow 'inspections' of the site without setting terms for times and numbers; another report said that the DPRK had been willing to allow two 'visits' only — a term it has used again, recently — but in yet another account Pyongyang was cited as promising 'regular access'. For some time the parameters for access were said to have been an obstacle to agreement. Regarding the provision of 500,000 metric tons of US grain it was understood that this would be withheld until the first inspection had been made. As further reported, the US had made clear that after the second inspection it would begin to ease up on sanctions, which it offered to do by unfreezing

Pyongyang's assets in the US and allowing American companies to invest in DPRK mining development projects.

Negotiations on access to the Kumch'ang-ri site had started in November 1998 and took place in Pyongyang, Washington, New York and Geneva (see *Newsbrief* no. 44, page 10). When they started, the US was said still not to have conclusive evidence that the DPRK was engaged in the construction of a new nuclear complex there, but concern was growing. National Security Adviser Berger said that there was a suspicion that the DPRK was building a large natural-uranium, graphite-moderated reactor at the site, similar to the ones at Yongbyon, on which construction has been halted. Intelligence experts, basing themselves on the appearance of the excavations, chemical analyses of soil samples, and suggestions that the DPRK was testing nuclear detonation devices, reportedly saw a strong likelihood that the Kumch'ang-ri area was intended to form the centre of a new nuclear-weapons effort. US Secretary of Defense Cohen, on a trip through Asia, said there was 'sufficient evidence to be suspicious of that site'.

At the mid-January talks, the DPRK, repeating its resentment at the US' insistence upon access to the suspected site, was reported to have said that this could be obtained only against a cash payment of \$300 million. One argument it used was the economic loss it claimed to suffer through American delays in implementing the 1994 Agreed Framework. Another was that once it allowed access to 'an object that [was] very sensitive in view of [DPRK] national security, it [could] no longer be used for its original purpose'. The argument that the site had nothing to do with nuclear activities but was 'related to sensitive national security purposes' was also heard during the most recent meeting.

The January round did not lead to agreement but apparently brought parties closer together on the issue of compensation, with Pyongyang making clear that it could consider 'an appropriate *quid pro quo*' other than a cash payment, while the US, which had repeatedly said that it treated the question of food aid separately from that of access to the site, began to hint that it was giving consideration to the DPRK's demand for compensation. Reports from a variety of sources indicated that the issue of food was linked with that of the number of inspection visits to be allowed. The US was said to have insisted on multiple access in return for the supply of grain, but that no food aid would be provided until the issue of access had been resolved. Meanwhile, the State Department warned that if no access was obtained to the Kumch'ang-ri site, this would affect the viability of the Agreed Framework. Officials in Seoul expressed the hope that once suspicions over the site were cleared up the US would give positive consideration to the proposal of South Korea's President to gradually lift the sanctions. The US Ambassador to the RoK was reported to say that the US was indeed seriously considering lifting the sanctions but officials in Washington said that this was quite separate from the Kumch'ang-ri agreement.

China and Russia have deprecated the American insistence on access to the Kumch'ang-ri site. Officials in Beijing have called it 'rather unjustified and ridiculous'. Russia has chided the US on the issue and officials in Moscow have pointed out that for many years the DPRK has had an extensive infrastructure at 'thousands of underground sites'.

The access agreement has been welcomed in Seoul and in Tokyo. Japan's Prime Minister has said that as a major contributor to KEDO it had a 'profound interest' in the status of the site; he is reported to have suggested that if possible, Japan should like to participate in the inspection. After the deal was concluded Pyongyang once again called US inspection a 'wanton violation' of its sovereignty and security and spoke of the 'access fee' which it would have to pay.

American critics of the Agreed Framework claim that while this has halted plutonium production at Yongbyon and construction of two new reactors there, it has not ended the DPRK's nuclear weapons programme, including the development and testing of weapons designs. These observers suggest that cooperation with Iran and Pakistan on ballistic-missile and nuclear-weapon development points to a hidden and growing nuclear weapons programme. They also suggest that the DPRK's nuclear infrastructure may be larger and more diversified than originally believed and they point to Iraq's example to highlight the danger of widespread clandestine activities. In that context an American newspaper reports that Pyongyang is seeking to buy equipment to enrich uranium. The Japanese news agency *Jiji Newswire* has reported that after negotiations on access to the suspect site had started the North began to remove material through ten exits, and rearranged the interior of the excavation.

There have been reports that former US Defense Secretary William J. Perry, who, in late 1998, was named Policy Coordinator for the DPRK to review American policy and objectives towards that country (see *Newsbrief* no. 44, page 11), is close to completing a set of recommendations on actions to be taken. It is expected to recommend that Washington should prepare both for the possibility that Pyongyang will respond to positive proposals and that it does not. Thus, Washington should offer Pyongyang a final chance for more vigorous cooperation in a package deal that would include aid, the possibility of dropping the trade embargo and the expansion of political, economic and cultural in exchange for freezing nuclear production and restraints on ballistic missiles. Reportedly, if the North were to reject the proposals, the review recommends 'sterner measures', presumably a policy of military containment. Prominent Republican members of the US House of Representatives have urged Perry to recommend a tough US policy towards the DPRK, which they call 'a clear and present danger to the security of the United States'.

A new set of four-party talks on a peace treaty for the Korean Peninsula took place in Geneva from 18 to 22 January. A joint press statement at the end spoke of 'useful and productive discussions ... conducted in a businesslike manner'. The two subcommittees

previously set up to discuss the establishment of a peace regime on the Peninsula and tension reduction have agreed on their working methods. As reported from Beijing, this was significant in setting the stage for substantive discussions. The head of the Chinese delegation cautioned, however, that wide differences remain over the issues of establishing a peace mechanism and reducing tensions. A fifth plenary session is planned for mid-April.

The DPRK has increasingly directed hostile comments at Japan and South Korea. Accusing Japan of following a policy of isolating and stifling it, the DPRK has said that Tokyo's plans to launch its own observation satellites and participate in a missile defence system are bringing the two nations 'to the brink of war'. Pyongyang also keeps threatening to scrap the Agreed Framework. Many American conservatives say that this instrument is doomed to failure, but that as long as it is in force, it deprives the US of the means to respond to the DPRK's threats by force. The Administration has made clear, however, that it continues to attach importance to the deal and will go on using diplomatic means to dissuade the DPRK from developing a nuclear capability.

On 3 February, the DPRK government wrote to the government of the Republic of Korea proposing a high-level dialogue on reunification. Its letter set some conditions such as the discontinuance of joint military exercises with the US, and the abolition of the South's national security law. For his part, the RoK President has proposed resolving all outstanding political, security and economic issues in one package deal, under which Pyongyang would get food and economic aid and the US would lift its embargo, in return for an end to the North's nuclear and missile programmes. He has also suggested a government-level dialogue, including a summit meeting. As an incentive for negotiations, he has offered Pyongyang free fertiliser in time for the Spring rice transplanting.

There is concern in Japan and South Korea about the DPRK's reported deployment of the 625-800 mile (1,000-1,300 km) Rodong missile at up to ten different sites. The two countries are consulting about ways to discourage the DPRK from test-launching a second missile like the one that crossed Japan's territory in August 1998. Reportedly, the Japanese government has decided to publicise any indications it may receive of an imminent launch, in the hope of deterring it, triggering diplomatic pressure. On being alerted to a possible launch, Japan also plans to mobilise its self-defence forces in case a missile hits its territory. Some American experts already see the existing version of the Taepodong-1 missile as a threat to the region of Northeast Asia as well as to Alaska and Hawaii, and there is concern that Pyongyang might sell the missile to other countries. A CIA report alleges that Pyongyang continues to export 'ballistic missile-related equipment and ... components ... to countries of concern' and claims that one of its key customers is Egypt. It is realised, however, that the DPRK would have to resolve important technical issues before being able to use, in the words of the State Department spokesman, 'the Taepodong-1 with a small third stage to deliver a very

small payload to intercontinental ranges'. US intelligence officials believe that Taepodong-2 will eventually be able to reach all of the continental United States.

Rumours that the DPRK would flight-test a missile on 16 February, the birthday of Kim Jong Il, were not borne out. A South Korean government source is quoted as saying that it may try to put another satellite into orbit by the end of the year. China is said to have cautioned the DPRK against further missile tests, but Pyongyang has stated once again that it is not developing a weapons system but a satellite and will continue its tests as soon as Kim Jong Il gives the word. It has also insisted that it will not make concessions in the missile issue and American sources confirm that the recent access agreement does not refer to this issue. A report from a Chinese source claims that the DPRK is using Japanese technology in its ballistic missiles. A further round of talks on the missile issue between the DPRK and the US was planned to start in Pyongyang on 29 March.

Officials in Seoul and Tokyo have warned that a further missile launch by the DPRK in the direction of South Korea or Japan would jeopardise the future of the Agreed Framework. According to Japan's Foreign Minister another launch would lead the Diet to withhold its approval of Japan's \$1 billion contribution to the light-water project, which is currently still pending, reputedly because there is as yet no agreement as to who will give the necessary loan warrantee. The Chief Cabinet Secretary has said that unless the DPRK assures Japan that it will cease its missile tests, Tokyo would also find it difficult to resume its food assistance. The Associate Director of KEDO, the organisation charged with the implementation of the Agreed Framework, has said that a number of incidents, including the launch of Taepodong-1, have made delays inevitable and that it will be impossible to complete the two nuclear reactors in the DPRK before the agreed deadline of 2003. A Foreign Ministry spokesman in Pyongyang has said, however, that in bilateral talks the US had agreed to accelerate work on the reactors.

The food situation in the North is said to be worsening again. Officials in South Korea claim to have a classified report from the DPRK which says that during the past four years, famine has reduced the population of that country by four million people. The UN Development Programme (UNDP) representative at Pyongyang has said that UNDP has no evidence of a reported three million [*sic*] deaths in the parts of the DPRK where it provides aid, and has expressed doubt that there are that many people in those areas. A prominent DPRK defector, Hwang Jang-Yop, has spoken of 1.5 million deaths. Pyongyang has sent a delegation to Europe, to seek what is described as 'massive food support'. Many observers of the North Korean scene agree that, although the DPRK is increasingly dependent on outside assistance, the regime will try to continue its assertive military policy.

(WT, 26/12/98, 31/12/98, 8/1, 27/1, 24/2, 17/3; AP, 1/1, 2/1, 7/1, 8/1, 11/1, 12/1, 19-21/1, 24/1, 28/1, 9/2, 10/2, 16/2, 17/2, 25/2, 27/2, 2/3, 5/3, 6/3, 8/3, 12/3, 16/3, 18/3; NYT, 3/1, 19/1, 3/2, 4/2, 7/2, 11/3, 12/3, 17/3; R, 3/1,

6/1, 7/1, 11/1, 12/1, 15/1, 18/1, 19/1, 23/1, 25/1, 1/2, 3/2, 28/2, 7/3, 12/3, 17/3; **ChI**, 6/1, 25/1, 27/1, 24/2, 26/2, 5/3, 9/3; **KH**, 6/1, 7/1, 3/3, 8/3; **KT**, 6/1, 13/1, 9/2, 11/2, 2/3, 5/3, 16/3, 18/3; **USIA**, 6/1, 7/1, 21/1, 25/1, 26/1, 1/2, 3/2, 9/2, 16/2, 2/3, 4/3, 16-18/3; **SCMP**, 15/1, 2/3, 11/3; **DJ**, 20/1, 4/2, 10/2, 16/2, 3/3; **AFP**, 22/1, 27/1, 9/2, 24/2, 1/3, 2/3, 5/3; **E**, 23/1, 20/3; **Y**, 24/1, in **BBC**, 26/1; **China Daily**, 25/1; **Defense Week**, 25/1; **WSJ**, 3/2, 12/2, 25/2, 2/3; **Jiji Newswire**, 4/2; **JoongAng Ilbo**, 5/2, 9/2, 25/2, 26/2, 7/2 10/3, 19/3; **YOS**, 5/2, 12/2, 26/2; **WP**, 9/2, 14/3, 17/3; **LAT**, 22/2; **IHT**, 9/3)

- On 29–31 January, India's External Affairs Minister Jaswant Singh and US Deputy Secretary of State Talbott had their eighth round of talks on issues related to security, disarmament and non-proliferation. A joint statement after the meeting expressed satisfaction with the outcome of the talks. It was agreed that expert-level teams would meet to discuss export controls and that the US and Indian delegations at the Conference on Disarmament (CD) would 'endeavour to consult frequently on the status of negotiations on a fissile material cut-off treaty (FMCT) and the possibility of other multilateral initiatives'. A ninth round of deliberations is planned for the middle of the year. Reportedly, rather than seeking an overall agreement, the two sides are taking a series of reciprocal actions, with the US relaxing economic sanctions and India making discrete moves towards signing the CTBT. Officials from both countries appeared optimistic that India would be in a position to sign the CTBT by the Autumn of 1999 — some sources mention June — and the US would be able to persuade key nations and the World Bank to resume lending to India; it has since been reported that Washington has dropped its objections to a US\$150-million loan for Indian power project. Representatives of the Group of Eight (the G-7 and Russia), reenforced by Argentina, Australia, Brazil, Ukraine, and South Korea, have agreed to resume multilateral aid to India, but Tokyo has said that it will expand the present scope of its lending only once India has actually signed the Treaty.

A senior Indian government official confirmed earlier in London that his country was resolved to maintain its moratorium on testing until it signed the CTBT. Like Pakistan, India is said to resist committing itself to joining a moratorium on the production of weapons-grade fissionable material but to be willing to assist in the drafting of a fissile material cut-off treaty. Reportedly, the eight months of deliberations between India and the US have brought substantial improvement in the overall relations between the two states.

India has said that it will only use nuclear weapons in response to nuclear attack and will deploy no more than the minimum number of weapons needed to deter such an attack. But New Delhi has made clear that it has difficulties in meeting the American suggestion that it should specify what exactly its minimum nuclear deterrence requirements consist of. Deputy Secretary of State Strobe Talbott was quoted as saying that minimum deterrence should be zero. Foreign Minister Singh has said that India will not 'negotiate away' its nuclear capability in talks with the US nor engage in a dialogue on 'quid pro quos'.

On 1 January, India and Pakistan exchanged updated lists of the nuclear facilities which they have agreed to refrain from attacking. On 20 and 21 February, India's Prime Minister A.B. Vajpayee visited Lahore for talks with his Pakistani colleague Nawaz Sharif. In what was said to be a 'cordial' meeting, the two heads of government worked out a Memorandum of Understanding, in which, *inter alia*, they agreed to build confidence through a series of bilateral meetings and the adoption of measures preventing accidental launches of nuclear weapons. They undertook to alert each other to any accidental, unauthorized or unexplained accident that might trigger a nuclear exchange, give each other advance notice of ballistic missile tests and continue their current moratoriums on nuclear testing. At a South Asian regional meeting in Sri Lanka, in March, Foreign Ministers Jazwant Singh of India and Sartaj Aziz of Pakistan agreed to speed up talks to reduce the risk of nuclear conflict and resolve the Kashmir dispute.

The test-launch of a 1,500 mile (2,400 km) range version of India's Agni-2 ballistic missile, which had been expected on 26 January (Republic Day) was rescheduled for 5–7 March but was once again postponed for unknown reasons. A Defence Ministry spokesman has denied reports that India is developing a ballistic missile with a range of 5,000 miles (8,000 km), supposedly combining technology from Agni and the polar satellite launch vehicle tested before.

(**R**, 5/1, 8/1, 3/2; **NW**, 7/1; **WT**, 12/1; **AP**, 15/1, 21/1, 28/1, 1/2, 2/2; **AFP**, 21/1, 2/2, 11/2, 3/3; **FT**, 21/1; **LT**, 21/1; **NYT**, 29/1, 2/2, 22/2, 5/3, 20/3; **USIA**, 1/2; **The Hindu** [New Delhi], 2/2; **IHT**, 2/2; **E**, 6/2; **Asia Pulse** [Singapore], 11/2; **WP**, 22/2; **Inter Press Service**, 8/3)

- The international press has called attention to the choice of Gholam Reza Aghazadeh as the new cabinet official in charge of the Atomic Energy Organisation of Iran. The appointment is seen by American intelligence sources as signifying a strengthening of Teheran's efforts to obtain nuclear technology and material abroad. Information said to come from German and US intelligence services would indicate that Iran is engaged in uranium enrichment by centrifuges and laser isotope separation.

Iran's Defense Minister has said that the Shahab-3 ballistic missile, which has a range of 800 miles (1,300 km), is the last military missile his country will produce. He has stated that a new missile, the Shahab-4, which has a greater range than its predecessor, will have no military application but is meant to carry satellites into space. US authorities, however, consider the Shahab-4 a greater potential threat than the Shahab-3 and do not believe it is meant solely for satellite launches. They claim that Shahab-4 incorporates technology used in the 1,200 mile-range (1,900 km) Soviet SS-4, and could be upgraded significantly with up-to-date Russian technology.

US Defense Secretary Cohen, on a trip through the Middle East, has offered to share with Gulf states early warning data on ballistic missile launches, in response to Iranian missile tests.

(NW, 14/1; AP, 7/2; AFP, 8/3. See also above under section **Nuclear Trade, International Cooperation and Export Issues**, pp. 5–6, and **Newsbrief** no. 44, page 6.)

- In the aftermath of last December's air strikes in Iraq, the first three months of 1999 saw a series of raids by American and British aircraft in the no-fly zones of northern and southern Iraq. Initially, damage caused by air-to-air confrontations and exchanges between American and British aircraft and Iraqi air defence installations appeared to have been limited, but reports of civilian casualties have become more frequent. The ongoing attacks, of which some were directed at military targets besides anti-aircraft defences, appear to have taken on the character of a sustained low-level military campaign, intended to weaken Iraq's regime. US military sources have intimated that the damage inflicted on Iraqi military installations during this campaign may exceed that caused during the air strikes of December 1998. A report in the British newspaper *Sunday Telegraph*, supposedly based on 'Middle Eastern sources', which alleges that the Russian Federation has given Iraq \$160 million worth of assistance to upgrade its air defences, in defiance of the UN embargo, has been denied by Moscow. During a visit to Russia in early March, the UK Foreign Secretary raised the issue with that country's Prime Minister and reputedly also met with a vehement denial. There is a British press report that Syria has agreed to supply Iraq with military equipment valued at about \$96 million, including Russian tank engines and parts for anti-aircraft radar facilities.

Fresh intelligence reports claim that the military actions of December 1998 have done more damage than originally thought, especially to Iraq's missile construction efforts, and to a facility for the conversion of small aircraft into drones for the delivery of chemical and biological agents was seriously damaged. There also are reports that raids on headquarters buildings caused heavy casualties among Iraq's Republican Guard and impaired its means of communication, but media accounts see the Republican Guard as remaining firmly in control.

Opponents of the use of force against Iraq have kept up their criticism. Among leaders of countries friendly with the US, the Prime Ministers of France and Turkey denounced the air-strikes. Russia maintains its disapproval. Arab nations have condemned the military action, but also expressed annoyance at being taken to task by President Saddam Hussein for their lack of response to his appeal for a 'revolution' against US power in the Arab world, and denounced his tirades against the rulers of Gulf states that maintain good relations with the US. The Iraqi Parliament harshly attacked Kuwait and Saudi Arabia and said it no longer accepted the current borders with Kuwait; the Baghdad government has warned of retaliation if the two states do not stop the UK and the US from using military bases for strikes against Iraq, and has also threatened to take action against Turkey. At a meeting in Cairo, on 24 January, Foreign Ministers of Arab League nations adopted a statement expressing sorrow and displeasure at the use of the military option against Iraq but also

calling on Baghdad not to take any provocative actions against its neighbours and to reaffirm its borders with Kuwait. The statement said Iraq would have to comply with all UN resolutions before the sanctions could be lifted. Iraq's Foreign Minister, who supposedly had expected support for an immediate end to sanctions and a more outspoken condemnation of the air strikes, withdrew from the meeting after sternly rebuking the participants.

On 5 January, Iraq announced it would no longer guarantee the safety of American and British humanitarian workers and gave the United Nations a list of UK and US nationals whose visas would not be renewed, or who would have to leave Iraq on the expiration of their contracts with firms working for the 'food for oil' programme. In response, the UN first said it could not accede to discrimination among nationalities, and rejected Baghdad's request to have the persons in question replaced by relief workers of other nationalities, but in early February it ordered the two US citizens still in the country to leave.

The UN's position in Iraq has come under fire following charges in two leading American newspapers on 6 January — similar to earlier claims made in Baghdad — that personnel of the United Nations Special Commission (UNSCOM) had assisted US intelligence efforts in Iraq. The UN Secretary-General was quoted as saying that he had been aware for some weeks that journalists were pursuing this story, had asked UNSCOM's Executive Chairman, Ambassador Richard Butler, about them, and had received his categorical denial. Mr. Annan said he had no evidence 'of any kind' of the truth of these allegations and he denied reports that he had been pressuring Mr. Butler to resign. The latter confirmed that UNSCOM had received technical support from around forty states, but said it did not spy for anyone and had used the information it collected exclusively in its efforts to disarm Iraq.

This was followed by the contention from officials in Washington, that the US, which had shared with UNSCOM intelligence information on Iraq's weapons efforts and provided it with technical means to acquire additional knowledge, had in fact made use of UNSCOM facilities and personnel to carry on electronic eavesdropping operations in Iraq. They claimed this had been done with the knowledge of senior UN personnel; Ambassador Butler was mentioned as having given his 'blessing'. American officials were also quoted as acknowledging that US intelligence personnel working undercover with UNSCOM inspection teams had participated in intelligence-gathering on Iraq's activities — a London newspaper claimed that British intelligence officers were also involved — but they denied allegations from former UNSCOM inspector W. Scott Ritter, that the US had 'taken over' UNSCOM's information-gathering operations and had used it in efforts to destabilise the regime of President Saddam Hussein. There were allegations that information collected by UNSCOM had been used in planning the air strikes of December 1998.

Subsequent alleged disclosures by official American sources indicate both that the involvement of US intelligence services went farther than previously acknowledged, and that it was neither authorised by UNSCOM nor utilised by it. As revealed in early March, besides providing UNSCOM with information it asked for, including data obtained in covert operations, American intelligence services used UNSCOM equipment and facilities, particularly the remote monitoring system UNSCOM had set up with the knowledge of the Iraqi authorities, to intercept military communications and obtain information largely unrelated to UNSCOM's mandate. As reported, unbeknownst to UNSCOM, the American technicians who installed the 'repeater stations' through which camera images from monitoring equipment at inspected sites were relayed to UNSCOM's office in Baghdad, were intelligence operatives who had the job of giving these devices a covert capability to intercept Iraqi military microwave transmissions. This secret operation is said to have gone on ever since the deployment of the relay stations, in 1996.

Mr. Ritter is reported to have written a book which presumably repeats the accusation he made to the press in August 1998 (see *Newsbrief* no. 43, page 24) that the US Administration, intent on avoiding a direct confrontation with Iraq, had deliberately stood in the way of UNSCOM's work. The book, which will be published in April, is also said to include the allegation that the CIA has been actively involved in UNSCOM's work since 1992. Reportedly, the Defense Department has demanded to see a pre-publication copy of the book for a security review but Mr. Ritter has refused to provide it. The State Department has denied his allegation that the CIA helped plan arms inspections in Iraq as inaccurate and misleading.

Over the last few months the Security Council has discussed the policy it should adopt with regard to the economic sanctions on Iraq and further verification activities there. Iraq itself has stated repeatedly that it would no longer accept the presence of UNSCOM or of any other foreign monitoring body. In the apparent assumption that it would be neither possible nor desirable to revive UNSCOM's activities, several members of the Council submitted proposals for a new approach. One of these came from France, which advocated the lifting of the oil embargo and the establishment of a new system of permanent monitoring of sites that could be used to make or store weapons systems; this would be run by the UN Secretariat. The system would have a mainly preventive role, watching for illegal use of arms and attempts to buy or produce weapons of mass destruction. It would have oversight of Iraq's expenditures from the profits of its oil sales, with buyers of oil notifying it of each sale. Arms sales to Iraq would be prohibited and imports of materials that could be used in weapons development would be carefully checked and restricted.

Russia submitted a detailed proposal that focused on the creation of a monitoring centre within the framework of the UN Secretariat. To start with, there would be an assessment mission by representatives of the fifteen members of the Security Council and international

experts, including personnel from the IAEA and the Organization for the Prohibition of Chemical Weapons (OPCW), to work out how verification could be renewed. UNSCOM's function would be limited to providing purely technical support, with individual experts participating in a personal capacity. The files on Iraq's various weapons efforts would be closed, the embargo would be ended, and a long-term monitoring system would be put in place, using the elements already on-site. A monitoring centre in Baghdad would control Iraq's dual-use imports and exports. Russia's Foreign Minister said in Moscow that Ambassador Butler could not remain as head of UNSCOM, and that UNSCOM itself needed an overhaul.

The US continued to insist on Iraq's full compliance with its commitments under the earlier Security Council resolutions as the only way to bring relief from sanctions. According to National Security Adviser Berger, Washington adhered to its position that 'UNSCOM [was] the appropriate entity to verify and monitor Iraq's disarmament'. Ambassador Butler, too, was quoted as saying that UNSCOM was 'not dead' and would resume its work in Iraq, possibly with a less intrusive monitoring system, 'under a new dispensation'. In the Security Council, however, a growing number of members were seen to favour lifting the sanctions against Baghdad, but without relinquishing some system of strict control on Iraq's weapons activities. The US advanced a proposal under which restrictions would be dropped on the amount of oil Iraq could export to pay for relief supplies, beyond the current \$5.2-billion limit now set for any six-month period. It insisted that this did not imply the lifting of sanctions, which, it repeated, could be done only once the Security Council's requirements were met. In the Council, initial reactions to the American proposal were said to be lukewarm; Baghdad rejected it out of hand, insisting that it will settle for nothing less than the complete withdrawal of sanctions.

Canada, supported by Brazil, tried to reconcile various approaches while maintaining a workable verification system. It proposed starting with comprehensive assessments of the state of Iraq's disarmament and of the health and nutrition situation among its population. The results of those assessments would serve as the basis of further Council discussions. The assessment of the disarmament situation would be made by UNSCOM and the IAEA and presided over by Under-Secretary-General Dhanapala — rather than by Ambassador Butler.

First indications were that the US was not opposed to the Canadian proposal, but that this proposal did not have the support of France or Russia.

During the discussions, reference was made to an unofficial report from the IAEA which was reported to decry '[n]eedless confrontation' as detracting from the efficiency of the verification process, and depicting the best inspectors as career international civil servants loyal to their organisation. Observers at UN headquarters saw the report as supporting the suggestion that UNSCOM should become part of the UN apparatus.

Against the background of the various proposals to lift the Iraqi sanctions, American observers have pointed out that Iraq has been unable to reach the \$5.2 billion ceiling of the oil-for-food programme because of the run-down state of its equipment. There have also been reports that the Iraqi government had put off buying or distributing food and medicines which the food for oil programme enabled it to obtain, while at the same time publicising the sorry state of health and lack of nutrition, especially among young children. A press report asserts that among the funds available there was \$17 million for fortified biscuits and milk which apparently had not been used. Reportedly, some offers of help from Arab nations have been turned down.

Meanwhile, the Security Council's Sanctions Committee has authorised the release of \$81 million to Iraq for the purchase of equipment to help it rebuild its electrical infrastructure. \$6.5 million worth of contracts has also been approved for the upgrading of oil pumping equipment, but an increase in production is not expected until the Spring of 2000.

In the midst of discussions about further steps to be taken regarding arms verification, in late January, UNSCOM presented a report outlining a long-term monitoring proposal and containing a survey of Iraq's allegedly continuing moves to conceal its weapons work. A reputedly novel feature of the 200-page report was its use of information supplied by Iraqis outside the country; this contradicts much of the data provided by the Iraqi government. The report claims that there remain significant uncertainties in the disposition of Iraq's prohibited programmes. It concludes that if intrusive inspections are to be replaced by a long-term monitoring system, this will require twice the funds currently available for inspection and greater access to sites within Iraq. Russia, which has said that it would no longer deal with UNSCOM or its Chairman, supported by China and Malaysia, held up the distribution of the report as a formal Security Council document, but upon the formal request of the Netherlands and Slovenia, it has since been released.

On 30 January, the Security Council agreed to set up three panels to evaluate the situation with respect to Iraq. These are expected to present their recommendations by 15 April. Ambassador Celso L.N. Amorim of Brazil was named to chair all three bodies. A 20-member panel has been charged with the review of Iraq's disarmament progress. The group has been asked to formulate proposals to the Security Council on a regime of disarmament, surveillance and further monitoring. Reportedly, this body includes UN Under-Secretary-General for Disarmament Affairs, Jayantha Dhanapala, twelve persons from UNSCOM, including its Deputy Executive Chairman Duelfer, and three members of the IAEA Secretariat. It had its first session in New York on 23-26 February and is expected to visit Iraq for an on-the-spot assessment. Iraq has criticised the creation of the panels as 'procrastination', delaying the lifting of sanctions.

Neither UNSCOM Executive Chairman Butler nor IAEA Director General ElBaradei are members of this panel. Russia has refused to work with Mr. Butler and

Iraq is reported to have said that it would not accept UNSCOM's involvement as long as Mr. Butler remains at its head. In a newspaper interview in early February Ambassador Butler said that when his current contract expired, in June, he would not seek an extension. He was also quoted as saying that he would resist any attempt to oust him before that date, as Russia has advocated.

On 8 February, the IAEA submitted a report to the new panel, in which it says that it had found no indication that Iraq had retained prohibited nuclear material or equipment, but it underlined that this was not the same as a statement of 'non-existence'. The report stated that in developing a long-term monitoring programme it was prudent to assume that Iraq had retained documents of its clandestine nuclear programme, specimens of important components and possibly amounts of non-enriched uranium. It also said that it assumed that Iraq retained the capability to exploit, for nuclear weapons purposes, any relevant materials or technology to which it may gain access in the future. The Agency's report concluded that the Ongoing Monitoring and Verification Programme (OMV) for Iraq would have to be comprehensive, rigorous and intrusive, including unfettered access to any site and unannounced inspection at new sites, interviews, environmental monitoring and similar measures, in order to provide a significant probability of detecting prohibited equipment, materials or activities.

Three specific areas of uncertainty about Iraq's nuclear activities are understood to add to the need for intrusive monitoring:

- Iraq has said that it could not provide engineering drawings of weapon-design options, or design models, and it has not provided all drawings of the centrifuge enrichment equipment it obtained abroad;
- It has said it cannot provide further information about the foreign national who is alleged to have offered in 1990 assistance in designing nuclear weapons, producing weapons-grade material and obtaining critical nuclear components; and
- It says there is no record of a formal government decision to abandon its nuclear-weapons programme, nor does it appear to have adopted legislation, pursuant to Security Council resolutions, on the non-acquisition, development or maintenance of nuclear weapons.

There is uncertainty to what extent the recent allegations about the infiltration of the inspection apparatus by American intelligence will affect the future of verification activities in Iraq.

The former Iraqi nuclear official who defected in 1994 (see *Newsbrief* no. 43, page 21 and no. 44, page 19) has repeated his claim that at the time the Gulf War broke out, Iraq was within months of producing a Hiroshima-type nuclear bomb. He said that it would be able to do so again if it had the necessary fissionable material which, he suggested, might be obtained from Russia.

Karl-Heinz Schaab, the German technician who was found guilty in 1992 of giving Iraq information on gas-centrifuge enrichment technology, and who came back to his country after having spent some time in Brazil, has been charged with espionage and high treason (see *Newsbrief* no. 43, page 25, and no. 44, page 19). Reportedly, on the basis of new evidence the German authorities plan to try him again for the offense of which he was originally found guilty, i.e., the sale to Iraq of carbon-fibre centrifuge rotors, as well as for the sale — discovered later — of classified designs of the TC-11 super-critical Urenco enrichment device.

The Supreme Council for the Islamic Revolution in Iraq (SCIRI), said to be the principal Shi'ite opposition group, and one of seven chosen by the US for support in their efforts to overthrow the current regime, has refused that support, saying that resistance to the Iraqi regime should come from within. US Marine General Zinni, commanding American forces in the Persian Gulf area, has once again questioned the wisdom of supporting Iraqi opposition groups in the hope of ending Saddam Hussein's regime (see *Newsbrief* no. 44, page 18). According to Gen. Zinni, there are 91 opposition groups in Iraq (other reports speak of more than 100), among which he did not see one capable of overthrowing Saddam. The US Administration — which is also known to have doubts about the idea, but is said to have given in to Congressional pressure — has said it does not call on the Iraqi people to rise up but only looks at ways to support those who want to change their government. A Special Representative for Transition in Iraq has been appointed to coordinate US assistance to opposition groups.

(**R**, 1/1, 6/1, 7/1, 22-24/1, 3/2; **E**, 2/1, 9/1, 6/2, 27/2; **IHT**, 2-3/1, 19/1, 3/2; **NYT**, 3/1, 5-16/1, 23/1, 24/1, 26-29/1, 4/2, 5/2, 9/2, 10/2, 13/2, 15/2, 16/2, 21/2, 23/2, 24/2, 1/3, 3/3, 4/3, 7/3; **AP**, 6/1, 9/1, 30/1, 8/2, 10/2, 23/2; **SF-Sp**, 6/1; **UN Press Release** SG/SM/6858, 6/1; **WP**, 6/1, 12/1, 2/3, 3/3; **FT**, 7/1, 9/1, 11/1, 3/2; **G**, 7/1; **LT**, 7/1, 8/3; **NZZ**, 7/1, 1/2; **WSJ**, 7/1; **SDZ**, 8/1; **AFP**, 9/1, 26/1; **M**, 10/1, 24/1; **White House Release**, 12/1; **Iraq News Agency**, 14/1; **LM**, 14/1; **Ottawa Citizen**, 18/1; **Newsweek**, 18/1; **USIA**, 21/1; **CNN**, 23/1; **I**, 25/1; **CBS-TV**: '60 Minutes II', 27/1; **DW**, 1/2; **IT**, 13/2; **Sunday Telegraph**, 14/2, 21/2, 28/2; **NW**, 18/2; **ST**, 21/2; **WT**, 22/2; **DJ**, 2/3; **USA Today**, 8/3; direct information)

- On 1 and 2 February, US Deputy Secretary of State Talbott had another round of talks in **Pakistan**. He was reported to have said that Pakistan had promised to sign the CTBT but there were still a number of issues to be negotiated. According to a subsequent report from Islamabad, Prime Minister Nawaz Sharif has since told Washington that his country will not sign the Treaty until restrictions on the supply of conventional armaments have been removed; the ruling party, the Muslim League, appears largely opposed to signing. The opposition Pakistan People's Party is reported to be in favour, and on 18 March there was a report from Islamabad according to which the country's Foreign Ministry had written to Parliament that Pakistan might sign before September 1999.

At the end of the talks he had in early February, Talbott was quoted as saying that neither India nor Pakistan was ready to forego nuclear weapons; he called on both to define their requirements for minimum nuclear deterrence. Mr. Talbott also said that in order to make a positive contribution to non-proliferation, Pakistan should help bring about a halt in the production of fissile material worldwide. In a joint statement following the meeting both parties said they had agreed to remain in close touch during negotiations of a Fissile Material Cut-Off Treaty (FMCT).

Retired general Mirza Aslam Beg, a former Chief of Staff, has said that fissile material production in Pakistan ceased in 1989, so that the Fissile Material Cut-off Treaty would not affect it much. Pakistan's Foreign Minister had earlier said, however, that given his country's security concerns it would not agree to any demand for a moratorium on the production of fissile materials, 'unilaterally or multilaterally', and it would not sign a pact to this end.

Islamabad is reported to be working on draft legislation tightening nuclear export controls. While the new legislation is said to have widespread domestic support, it is opposed by the Islamic Party, reportedly because that is of the opinion that the law is generated under western pressure to help prevent export of nuclear components to enemies of Israel.

An Indian daily claims that US laboratory tests have found traces of weapons-grade plutonium at Pakistan's nuclear test site. It notes that the country's nuclear devices had been assumed to have only used HEU and wonders about the source of the plutonium, which could not yet have come from Pakistan's Khushab production reactor [which went critical only months ago — Ed.]

(**AP**, 26/12/98, 4/1, 1/2, 2/2, 4/2, 13/3, 18/3; **NW**, 7/1; **Times of India**, 19/1; **USIA**, 2/2; **NYT**, 3/2; **R**, 3/2, 8/2; **FT**, 27/2; **DJ**, 9/3)

- According to the American trade publication *Nucleonics Week*, the **Republic of Korea** (RoK) has for years run a secret parallel research programme to develop a clandestine nuclear weapons capability. Earlier, RoK officials steadfastly denied reports about the existence of a nuclear weapons programme but since the election of Kim Dae Jung as President, present and former officials have been willing to discuss the matter. According to South Korean sources, the existence of the parallel programme prompted the US government to limit its nuclear cooperation with Seoul. The US State Department neither confirms nor denies the reports. According to *Nucleonics Week*, until a few years ago the RoK repeatedly sought Washington's permission to have US-origin spent fuel reprocessed abroad. It also claims that US personnel keep careful watch on South Korean nuclear facilities for any indication of activity that might be construed as having a potential non-peaceful use. Reportedly, this supervision goes beyond the IAEA's inspection rights under its safeguards agreement with the RoK. (**NW**, 7/1)

i. Nuclear Material Trafficking and Physical Security

- The **United Kingdom** government has announced that shipments to **Japan** of mixed oxide (MOX) fuel produced in the UK and in **France** will be transported in an armed Pacific Nuclear Transport ship, accompanied by another armed vessel of that company. The weaponry will be under the control of specially trained members of the UK Atomic Energy Authority Constabulary. The arrangement, said to be in line with the pertinent IAEA recommendations, still needs the approval of the governments of the three states. The Japanese draft transportation plan has been reviewed and evaluated by **United States** experts and the US State Department has expressed confidence that the physical protection will be adequate as required by the US-Japan agreement. The environmental organisation *Greenpeace* and the Washington-based *Nuclear Control Institute* (NCI) have condemned the plans as inadequate and are urging the US government to reject them and to require the use of a special armed escort vessel, as was done in 1992 when Japan received a shipment of US-origin reprocessed material. The Chairman of the International Relations Committee of the US House of Representatives has asked Secretary of State Albright to review the plans. The first MOX fuel shipment from UK and Belgium to Japanese utilities is planned for late 1999. It is understood that this shipment will not go through the Panama Canal, as alleged by Greenpeace and NCI. A shipment of vitrified high-level waste is impending. (I, 19/1; G, 20/1; NW, 21/1, 18/2; NF 25/1, 22/2; SF, 25/1, 15/2; BNFL/Cogema, 3/2)
- The IAEA has had a meeting with intergovernmental bodies — the International Civil Aviation Organization (ICAO), the World Health Organization (WHO) — and representatives from 20 governments to discuss a programme plan for the Agency to become the world's universally accepted credible source of information concerning safe transport of radioactive material. Reportedly, the IAEA hopes to work with other UN agencies concerned with transport, including besides the ones mentioned, the International Maritime Organization (IMO) and the Universal Postal Union (UPU), and eventually also involve all governments concerned, regional bodies, non-governmental and trade organisations, and the general public. (NF, 8/3)
- In the **United States**, a report entitled *The Challenges of Fissile Materials Control* has been released by the Institute for Science and International Security (ISIS). According to the report, current efforts to prevent the misuse or unauthorised move of plutonium and highly-enriched uranium are 'dangerously disappointing'. The report calls for the strengthening of accounting, verification and physical protection of inventories of fissile materials all over the world. It is particularly critical of disposition efforts of excess plutonium. (SF, 15/3)

j. Environmental Issues

- An American company has proposed constructing in **Australia** a repository for commercial spent fuel and processed waste from defence nuclear activities.

Present Australian law prohibits the importation of nuclear waste. Earlier American suggestions to store nuclear waste in Australia had led to negative press comments. (See also *Newsbrief* no. 44, page 21.) (NW, 4/3)

- The High Court of Justice of the **Russian Federation** has once again taken up the case against former navy captain and nuclear inspector for Russia's Defence Ministry, Aleksandr Nikitin, who is accused of treason for having given information on the disposal of nuclear waste by the Soviet navy, to the Norwegian environmental organisation Bellona. It had been hoped that after a court in Leningrad rejected the state's charges for lack of evidence the case would be dropped. (NYT, 5/2; LAT, 4/3; see also *Newsbrief* 44, page 21, and next item.)
- There are said to be over 100 decommissioned nuclear submarines in **Russia's** Arctic ports, of which three fourths still have reactors, many of them apparently containing fuel. Some of these boats have been in this state for 25 years and form an acute safety hazard, but funds for the removal of nuclear material are lacking. It is noted, however, that apparently for what is thought to be the first time, Russian government officials have warned of radioactive waste leaking from mothballed nuclear submarines. Russian sources estimate that at the present rate it will take twelve years to unload all irradiated fuel from the submarines. Storage facilities for radioactive waste are in short supply; according to recent news agency reports thousands of fuel rods are stacked in old freighters moored in the Murmansk area. Reportedly, environmental specialists believe that by next year there will be 320 discarded naval reactors and 75,000 spent fuel rods in storage. At a meeting in Norway on 5 March, the Nordic countries, the European Union, Russia and the US agreed to cooperate in the clean-up of Russian nuclear waste. Norway and the European Union are currently helping with a total of \$100 million. During a trip to the area in March, British Foreign Secretary Robin Cook announced that the UK would contribute \$4.8 million. He also brought up the issue of Capt. Nikitin (see above). A promise by the US Administration to consider financial assistance for the dismantling of decommissioned nuclear submarines and the disposal of the fuel is expected to be discussed in the National Security Council in October and then submitted to the Congress. (IT, 25/2, 10/3; LAT, 4/3; RFE/RL Newsline, 4/3; Defense News, 9/3; R, 9/3)
- Also in **Russia**, the Atomic Energy Ministry is said to be considering a proposal to store spent fuel from other countries. The concept has been endorsed by the Russian State Duma which has filed a formal proposal to the government to amend the Law on Environmental Protection which prohibits storage of foreign nuclear radioactive waste on the territory of the Russian Federation. A governmental decree of 1995, moreover, requires the return of any radioactive waste generated during the reprocessing of foreign fuel to the country of origin. Reportedly, German, Spanish and Swiss utilities have shown an interest in the idea and there are indications that some Asian countries, including Japan and Taiwan, are also interested.

Russian and international environmentalist organisations, including Greenpeace Russia and the Duma Environmental Committee, are hard at work to defeat the project. One argument raised by opponents is that Russia, whose three reprocessing plants are already struggling to deal with the country's own waste, lacks the capacity to process any additional waste. Opponents of the importation of foreign-generated nuclear waste say that the likelihood that the Russian environmental law will be changed during the present election year is small. Supporters, however, believe that there is a good chance of an amendment.

Objections are also raised in the US, because the transfer to Russia of spent fuel irradiated in European or Asian facilities provided entirely or partially under cooperation agreements with the US would violate American law, since there is no Russian-US agreement for cooperation in the peaceful uses of nuclear energy. Also, Washington officials are saying that as long as Russia assists Iran in constructing nuclear reactors at Bushehr, such an agreement will not be concluded. However, there is said to be some interest in Washington in the idea of an internationally monitored storage project in Russia.

(Bellona News, 10/2, 19/2; RFE/RL Newline, 18/2; Moscow Tribune, 19/2; NF, 22/2; SF, 22/2; NW, 4/3)

k. Miscellaneous

- In **Australia**, recently declassified documents from 1968 show that the Gorton government had been looking into the possibility of producing nuclear weapons. At that time the Cabinet discussed the question of joining the NPT and decided that Australia would not need nuclear weapons as long as the US would commit itself to resist a possible Chinese attack, while any threat from Indonesia could be countered by conventional means. (NZZ, 8/1)

II. PPNN Activities

- From Thursday 11 to Sunday 14 March, PPNN's Core Group held its twenty fifth semi-annual meeting at the Chauncey Conference Centre, near Princeton, New Jersey. The Core Group members themselves met on Friday 12 March. Among issues discussed were the evolution over the previous four months of the nuclear non-proliferation system and global and regional nuclear disarmament activities, and a paper prepared by Lawrence Scheinman on *Ways to Involve Non-NPT state parties in the Nuclear Non-Proliferation Regime* [A revised version of this presentation will be published later this year as a *PPNN Issue Review*].
- From Friday 12 to Sunday 14 March the PPNN Core Group hosted an international briefing seminar on *The 1999 Preparatory Committee Session for the 2000 NPT Review Conference: Issues and Options*. This was attended by 51 diplomatic staff of permanent missions to the United Nations in New York, officials from missions to the CD in Geneva and officials from capitals. 7 officials from the IAEA and the UN, states parties and other organisations were also present as observers.

The seminar was chaired by Ben Sanders, Executive Chairman of PPNN. After dinner on Friday, Frank von Hippel, Professor of Public and International Affairs at Princeton University gave a keynote address on *Some Possible Steps towards Nuclear Disarmament and the Prevention of Nuclear Conflict*.

The seminar comprised two initial sessions in plenary; discussions in working group sessions; and a final panel session in plenary. The plenary sessions opened with a short address from Ben Sanders on the context for the PrepCom, followed by presentations from Jan Murray, World Energy Council, on *Energy Needs and the Nuclear Option in the Twenty First Century* (CG25/1), and from James Larrimore, formerly of the IAEA, on *The Future of IAEA Safeguards: Issues and Prospects*. (CG25/2)

After the plenary sessions, participants divided into working groups, each of which examined four clusters of issues, on which papers had been circulated and short presentations were made, followed by discussions.

Issue Cluster A, *The Strengthened Review Process*, was chaired by Grigori Berdennikov. Hannelore Hoppe made a short presentation of her paper on *The Strengthened Review Process* (CG25/3), while Ben Sanders introduced a paper prepared by Akira Hayashi on *The Third Preparatory Committee Session for the 2000 NPT Review Conference* (CG25/4).

Issue Cluster B, *Disarmament and Universality*, was chaired by Mahmoud Karem. Harald Müller made a short presentation of his paper on *Possible Measures to Foster Nuclear Disarmament* (CG15/6), while Tariq Rauf introduced a paper prepared by Iftekhar Zaman on *Living with a Nuclearised South Asia: The Desirable and the Possible* (CG25/5)

Issue Cluster C, *Security Issues and Compliance Questions*, was chaired by Sverre Lodgaard. Olu Adeniji made a short presentation of his paper on *Security Assurances* (CG25/7), Enrique Román-Moray of his paper on *Nuclear-Weapon-Free Zones* (CG25/8), and Rolf Ekéus of his paper on *Compliance with the NPT* (CG25/9).

Issue Cluster D, *Peaceful Uses of Nuclear Energy*, was chaired by Jiri Beranek. Raja Adnan made a short presentation of his paper on *International Co-operation and Technical Assistance* (CG25/10), and Martine Letts introduced her paper on *The Utility and Consequences of Nuclear Export Controls* (CG25/11).

The seminar concluded with a plenary session chaired by Ben Sanders in which the Cluster Group Chairmen highlighted some of the key issues that had arisen in the course of the various working group discussions.

- Members of the staff of PPNN will be in attendance at the 10–21 May session of the NPT PrepCom to distribute briefing materials to delegates and monitor the proceedings.
- It is the intention of the Monterey Institute of International Studies (MIIS), in partnership with PPNN

to hold, in the vicinity of Geneva, a workshop for invited participants to review the outcome of the 1999 PrepCom session. As a result of the postponement of that session, it has not yet been possible to finalise the dates of the workshop.

- The next meeting of the PPNN Core Group, its twenty-sixth, is scheduled to be held from 10 to 12 December in Lillehammer, Norway. It will be held in conjunction with a workshop on *The Tough Challenges Facing the Nuclear Non-Proliferation Regime*, co-sponsored by the Norwegian Institute for International Affairs.

III. Recent Publications

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William Epstein, 'Voting by Abstention', *The Bulletin of the Atomic Scientists*, Vol. 55, No. 2, March/April 1999, p. 6.

Vahram Gabrielyan, 'Armenia's Policy in the Area of Nonproliferation and Export Control', *The Monitor: Nonproliferation, Demilitarization, and Arms Control*, Vol. 4, No. 4, Fall 1998, pp.43-45.

Jozef Goldblat, 'The Case for a Nuclear No-Use Treaty', *Disarmament Diplomacy*, No. 33, December 1998/January 1999, pp. 5-6.

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ANNEX — Abbreviations of Sources

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

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