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## **April 2000**

# **Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 49**

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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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# PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 49

NEWSBRIEF

1st Quarter 2000

## Editorial Note

*The Newsbrief of the Programme for Promoting Nuclear Non-Proliferation (PPNN) has been published every three months since the early part of 1987, presenting information about the spread of nuclear weapons and their means of delivery, and about moves to deter that spread, as well as about relevant developments regarding the peaceful uses of nuclear energy. As far as can now be foreseen, it is highly likely that the present Newsbrief will be the last one but two, as the resources now available to PPNN do not permit the production of more than two issues in addition to the present one.*

*When it started, twelve years ago, the Newsbrief had a print-run of 500 copies; currently 3,500 copies are produced each quarter. About 2,500 copies are distributed free of charge to readers in more than 150 countries; the remainder are made available at various meetings and international conferences. The Newsbrief is also distributed electronically, and is accessible on the Web.*

*Thus, PPNN's Newsbrief has become one of the Programme's major products.*

*Consideration has been given to the possibility of continuing production of the Newsbrief and charging readers for its cost, but several factors mitigate against this. One is that charging the actual cost of production might make the Newsbrief inaccessible to many readers in developing nations and in academic environments; another is that PPNN currently lacks the facilities to administer such arrangements, and a shift to a subscription system would entail considerable extra expenditure, which again would have to make the Newsbrief more expensive. Moreover, PPNN does not have financial reserves with which to bridge the time involved in setting up such a system, while it would not be certain right away that enough subscribers might be found to cover the cost of the enterprise.*

*Under the circumstances, there would seem to be no choice but to bring the Newsbrief to an end after publication, in October, of issue number 51, covering the third quarter of this year, i.e. the period 1 July through 30 September.*

The present issue covers the period 1 January to 31 March. Unless otherwise indicated, dates (day/month) refer to 2000. Where reference is made to an uninterrupted series of items from a daily newspaper or a news agency, only the first and last dates of the series are noted. For example, "18-25/3" following the name or symbol of a particular publication means that use has been made of items appearing there on each day from 18 to 25 March 2000. Names of publications that are referred to often are abbreviated; a list is given on the back page.

PPNN's Executive Chairman, Ben Sanders, is editor of the **Newsbrief**. He produces it and takes responsibility for its contents. The inclusion of an item does not necessarily imply the concurrence of the members of PPNN's Core Group, collectively or individually, with its substance or its relevance to PPNN's activities, nor with the way it is presented.

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

## I. Topical Developments

### a. Nuclear Disarmament and Arms Limitation

- This year's session of the Conference on Disarmament (CD) opened in Geneva on 18 January. It adopted the following agenda for its session:
  1. Cessation of the nuclear arms race and nuclear disarmament.
  2. Prevention of nuclear war, including all related matters.
  3. Prevention of an arms race in outer space.
  4. Effective international arrangements to assure non-nuclear-weapon states against the use or threat of use of nuclear weapons.
  5. New types of weapons of mass destruction and new systems of such weapons; radiological weapons.
  6. Comprehensive programme of disarmament.
  7. Transparency of armaments.
  8. Consideration and adoption of the annual report and any other report, as appropriate, to the General Assembly of the United Nations.

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Expectations that the CD will be able to adopt a mandate to begin negotiations on a Fissile Material Cut-Off Treaty (FMCT) are said to be low.

(ACRONYM, 20/1; NW, 20/1)

- In early January, the Defence Minister of the **Russian Federation** urged the newly elected state Duma (lower house of Parliament) to ratify START II before the presidential election on 26 March. Observers had expected ratification procedures to start early in the year, since the Communist party, known to be opposed to START II, had lost strength in the December elections and the parties currently making up Russia's Cabinet were thought to support the Treaty. However, the Communist former Duma speaker, Gennady Seleznyev, was reappointed in his function; he did not put the issue on the Duma's agenda right away, apparently because, as he put it, while the Treaty remained a live issue, most legislators were prepared to ratify it only on condition that the government provides a firm plan for deploying the new Topol-M strategic ballistic missiles, which are to replace some of the weapons that will be dismantled under START II. He did not mention dates. On 9 February, the tenth test-firing of a Topol-M was reported to have taken place; the missile, which has a range of 6,900 miles (11,000 km), was said to have flown 5,000 miles (8,000 km). Two tests of submarine-launched Topol-M are said to have been made last November. In late March, as part of a programme to extend the shelf lives of older missiles, a 'Delta' class submarine launched two RSN-54 'MIRVed, missiles; the RSN-54 was first deployed in 1986. On 31 March, President-elect Putin said that he would make it a priority to increase the efficiency of Russia's nuclear potential; he also said he supported ratification of START II and would seek further reductions.

Early in February, the Duma's Foreign Affairs Committee put START II on its Spring agenda, along with the issue of the Anti-Ballistic Missile (ABM) Treaty of 1972. The Chairman of the Duma's Defence Committee, Andrei Nikolayev, was quoted as favouring ratification of START II but only if this did not have a negative affect on national security in a political or a military sense. Later in the month, Acting President Vladimir Putin was reported also to have urged parliamentary leaders to ratify the Treaty at the current session. Various senior Russian officials and politicians repeated in this connection that the ABM Treaty was not open to amendment. The head of Russia's National Security Council, Sergei Ivanov, pointed out that if the US should violate the ABM Treaty, Russia would automatically abandon START I and START II. In early March, it was announced that hearings on START II would be held on 14 and 21 March. At these hearings, reportedly, which were not accessible to the public, military and foreign policy leaders are said to have made a strong case in support of the Treaty, while many Duma members stressed the link with the ABM Treaty and resisted the appeals for ratification.

In Washington there were hopes that the Duma might ratify START II within the next several months. During a visit to Washington, the Secretary of the Russian Security Council confirmed to reporters that the Russian government wants the State Duma to ratify START II as soon as possible, but he, too, insisted that this could be done only "within the framework of the retention of the ABM Treaty".

There have been several rounds of talks in Geneva between senior disarmament officials from Russia and the United

States (see page 12). In the January session, the American negotiator, John Holum, is said to have handed his Russian counterpart, Yuri Kapralov, a draft START III text. Russia reportedly proposed cutting both sides' strategic warheads down to 1,500 each. This proposal is understood to have been prompted by economic necessity; Russian experts are quoted as saying that such a reduction is unavoidable, and would take place even if the US does not reduce its nuclear arsenal by the same numbers. The American side is said to have rejected the Russian proposal on the grounds that its strategic deterrence demands 2,000 to 2,500 warheads; as explained by the State Department spokesman, to go below that level would jeopardise US interests and would not be acceptable to the US military. In fact, US officials have disclosed that, under a little-known presidential directive of 1994, besides the 3,000-3,500 strategic warheads the US currently deploys, it has an "inactive reserve" of another 2,500 to 3,000. Thus, the total number of strategic warheads the US now holds is estimated to be still at the level permitted under START I, almost ten years ago. The US Department for Energy (DoE) is said to plan refurbishing all warheads over the next fifteen years, at a reported annual cost of \$4.6 billion. Against the argument from arms control experts that the US does not need this enormous arsenal, the Pentagon has stated that until Russia ratifies START II, and is seen to abide by it, the US must be ready for a possible reversal. Reportedly, DoE would also be ready to resume underground nuclear testing, if this is deemed necessary.

There have been press reports that during the Geneva talks, the Russian side repeatedly stated that it ruled out discussions on changing the ABM Treaty and that it linked the preservation of that Treaty to ratification of START II and negotiations on START III. At the same time, Moscow was said to be trying to convince Washington that it should find alternatives to establishing a missile defence shield. The possibility of cooperating in countering threats from so-called "rogue states" is supposed to have been mentioned.

(R, 13/1, 27/1, 28/1, 4/3, 6/3; AP, 19/1, 26/2, 22/3; AFP, 20/1, 4/2, 10/2, 11/2, 26/2, 21/3; If, 8/2; Newsweek, 14/2; RAI Novosty, 16/2; IT, 19/2, 22/2, 1/3, 6/3; NYT, 1/4)

- The Department of Energy (DoE) of the **United States** has adopted a 'hybrid approach' to the disposition of surplus plutonium (Pu) from weapons. Current plans call for the immobilisation of 17 metric tons of plutonium and the use of 33 MT in mixed-oxide (MOX) fuel. DoE is said to plan constructing a total of three new facilities at its Savannah River site: for the disassembly of Pu pits, conversion of Pu, immobilisation and MOX fuel fabrication.

In view of the opposition in **Canada** by environmental and indigenous tribal groups to plans for the transport of MOX fuel for test-burning in the research reactor at Chalk River, Ontario (see **Newsbrief** no. 48, page 3), DoE on 14 January took the material there by helicopter. Opponents repeated their criticism, calling the flight an unnecessary risk, reflecting disregard for the concerns and safety of Canadians; officials pointed out that no regulations were broken and said the 'Parallex' project, which should provide information on the performance of Canadian deuterium uranium (Candu) reactors to burn MOX, was crucial to efforts to help Russia dismantle nuclear weapons. The transport was also said to be a one-time event. Reportedly, it involved a total of 119g of mixed-oxide fuel, of which three per cent was weapons-grade plutonium of Russian origin, and the rest uranium, contained in nine

US-manufactured fuel rods. Earlier, a US district court had rejected a petition for an injunction against the shipment, brought by a group of nuclear opponents who argued that it shipment could have a detrimental impact on the environment. One argument of the court was said to be that the petition was an inappropriate attempt to influence foreign policy.

**Germany's** Foreign Minister Fischer has said that he will not allow the Siemens MOX-fuel production facility at Hanau, which has never operated, to be exported to Russia. France, Russia and Germany had been reported to be discussing a joint project to use the plant to fabricate fuel with weapons-grade plutonium from dismantled Russian warheads. Recently, several factors had been identified as having diminished chances of realising the project, including the apparent tendency of Russia to prefer using excess plutonium in fast-breeder reactors, the deterioration of Russia's relations with the West, and American concerns about the proliferation risks involved. According to Siemens, as well as German arms control officials of Fischer's Ministry, it is still likely that the export of the facility may be approved, once conditions have been fully worked out.

DoE is reported to have halted sales of its large stock of nickel left over from nuclear weapons manufacture. Originally it had planned to sell 6,000 metric tons of nickel in 2000 and 10,000 metric tons later, but the fact that the material is radioactive is said to deter prospective buyers even though the level is thought to be very low. The US Nuclear Regulatory Commission (NRC) is criticised by members of Congress for failing to develop a standard of radioactivity for materials like the nickel, in which radioactivity permeates the metal rather than staying on the surface. Previously, NRC had ruled that if metal includes radioactive material that was not added for "beneficial effect", the decision whether it could be released for public use was up to the state concerned. In Tennessee, the Division of Radiological Health is said to have approved the release. The NRC is supposed to develop the necessary standards.

(NW, 6/1; NF, 10/1, 6/3, 20/3, 3/4; NYT, 12/1; **Department of Energy**, 14/1; SF, 17/1, 24/1; AP, 18/1; NNN, 19/1; WP, 26/3; direct information)

## b. Nuclear Testing

- On 29 February, it was announced in Beijing that the government of the **People's Republic of China** (PRC) had submitted the Comprehensive Test Ban Treaty (CTBT) to the National People's Congress (Parliament) for ratification, before the Congress' annual ten-day meeting, which began on 5 March. (R, 1/3)
- The government of **Japan** has sent special envoys to countries that have not yet ratified the CTBT, urging them to do so before the start of the 2000 NPT Review Conference, on 24 April. Visits were made to Indonesia, Pakistan, Ukraine and Vietnam, and reportedly Japan has told these states that it would give them assistance in technology and devices for the detection of underground nuclear tests if they ratify the CTBT. Japan is understood also to have told India and Pakistan that it would be willing to lift economic sanctions in exchange for their accession to the Treaty. During a visit to Tokyo, on 13 January, **India's** Defence Minister had already assured his hosts that his government was considering following up on its nuclear testing moratorium by signing the CTBT and was consult-

ing all political factions and parties, to try and achieve consensus on the issue. Subsequent reports from New Delhi said that the government found it harder than expected to build such a consensus and no longer thought it would be able to sign the Treaty any time soon. The *Asahi Shimbun* newspaper has quoted Japan's ambassador to New Delhi as saying that while the Indian government feels that "from the viewpoint of international cooperation" it should sign the CTBT, many Indians think that further tests are necessary to maintain a minimum deterrence. It has also quoted the Japanese ambassador to Islamabad as saying that **Pakistan** might sign the CTBT "soon", but the timing would depend on that of "other countries". In February, Pakistan's Foreign Minister said that his government intends to wait for a national consensus before it will sign.

**India's** Prime Minister Vajpayee has said that all countries whose accession to the CTBT is essential for its entry-into-force must be expected to do so without any preconditions. The comment is seen as directed at the US, where the Senate might eventually reconsider its negative stance but attach conditions to its acceptance. Vajpayee has also repeated his view of the NPT as "discriminatory and flawed" and has underlined that in any case, India could not join that instrument as a non-nuclear-weapon state.

It appears that during USA President Clinton's visits to India and Pakistan (see pages 15-16, below), neither country made any concession in the matter of the CTBT.

(**China Daily**, 5/1; **AFP**, 11/1; **ASS**, 13/1, 21/1; **Sankei Shimbun**, 14/1; **Hindu**, 26/1;)

- The **Russian Federation** has announced that in the course of 2000 it will conduct a series of sub-critical (hydrodynamic) nuclear tests at its Novaya Zemlya testing range. So far, this year, seven subcritical nuclear tests were carried out. (AP, 1/1; IT, 1/1; **Bellona**, 8/2)
- In the **United States** a task force has been established to explore ways of making the Comprehensive Test Ban Treaty acceptable to the Senate. Heading the task force is General John Shalikashvili, who was Chairman of the Joint Chiefs of Staff from 1993 to 1997. While several Republican Senators are said to hold the view that there may be room for compromise on the issue and have called for a bipartisan effort, the State Department has announced that the President will not seek Senate ratification before the end of his term in office. John Holum, the State Department's Advisor for Arms Control and International Security, has said that the Administration hopes that the General's work will lay the foundation of a consensus in the Senate that can lead to ratification in the near future. (WP, 28/1; **Washington File**, 17/2; **Arms Control Today**, January/February; direct information)
- Also in the **United States**, a panel appointed in January by the Secretary of Energy to investigate cost overruns and delays in the construction of the National Ignition Facility (NIF) at the Lawrence Livermore National Laboratory has issued a report which is said to lay the blame on management problems (see **Newsbrief** no. 48, page 6). A major reorganisation of the Laboratory is said to have begun. The cost overrun, originally estimated at about \$300 million, out of a total budget of \$1.2 billion, is now expected to exceed \$500 million. Experts have said, however, that the original budget estimate had always been unrealistic and should have been \$1.7 billion, and that total costs may be

as much as \$2 billion; some think that costs may eventually rise to perhaps twice that amount. It is also expected that a much extended completion schedule will have to be adopted, under which half the number of laser beams planned would not be completed until the year 2008. As part of the US Stockpile Stewardship Program, NIF is designed to simulate by means of 192 laser beams conditions similar to those occurring in the explosion of nuclear weapons, in order to study the properties of those weapons without the need for explosive tests and permit them to be certified safe and effective. (NYT, 11/1; *Nature*, 3/2)

### c. Nuclear Trade, International Cooperation and Nuclear Export Issues

- It has been announced in Moscow that work will start at Kudankulam, **India**, in 2001 on a nuclear power plant to be supplied by the **Russian Federation**. An agreement to this effect was concluded in the summer of 1998. (See also *Newsbrief* no. 43, page 5.) (RFE/RL, 1/3)
- **Iran's** President Mohammad Khatami, in a message to the newly appointed Acting President of the **Russian Federation**, Vladimir Putin, has expressed the hope that ties between the two states would be further extended. In mid-January, Russia's Foreign and Defence Ministers met with the Secretary of Iran's Supreme National Security Council and confirmed that Moscow intended to fulfil its obligations under the relevant agreements. Atomic Affairs Minister Adamov has told reporters that claims in the Western media that Russia had agreed to stop nuclear collaboration with Iran were incorrect.

There have been reports that Iran might order three more nuclear reactors from Russia. In light of allegations that Russia is helping Iran develop ballistic missiles and nuclear weapons, the US Senate on 24 February unanimously adopted legislation that mandates the President to cut off arms sales or economic aid to nations helping Iran's nuclear or missile programmes and requiring him to submit to the Congress semi-annual reports identifying such countries. The new legislation is seen as addressed in particular to Russia. A similar bill was adopted last September by the US House of Representatives, by a vote of 419 to 0. Russia's Foreign Minister Ivanov has criticised the measure, which he said could complicate even further relations with the US. The Foreign Ministry in Moscow has accused the US Congress of seeking to exert pressure on foreign countries on a "clearly invented pretext" and called it a "pseudo-imperial approach". On the occasion of the signature of the law by the US President, in mid-March, Moscow called it "another attempt to extend domestic legislation beyond US borders", and stated that it destroyed the legal basis for US-Russian cooperation in nuclear non-proliferation and export controls.

Observers see signs that these American measures are already affecting Russia's ability to assist in the completion of the Bushehr power station. The work is far behind schedule, and Iran and Russia are said to blame each other for the delay.

(AFP, 5/1; *R*, 15/1, 15/3; *AP*, 18/1, 23/2; *NW*, 24/2; *NYT*, 25/2; *RFE/RL*, 28/2. See also below, page 21 — re: US cooperation with Russia)

- On 23 February, **Israel** and the **United States** signed agreements to expand cooperation in energy technology, non-proliferation and scientific exchange. Reportedly, the agreements provide for increased cooperation between

scientists of the two countries in specified nuclear and non-nuclear areas, including applications aimed at preventing proliferation of weapons of mass destruction and energy research. They will make it possible for Israeli scientists to have access to some types of US nuclear technology. According to one news-agency report, this pertains to American monitoring technologies to be used for verifying nuclear non-proliferation; reportedly, in accordance with the Nuclear Suppliers' Group guidelines, access to any other nuclear technology, or exports of other nuclear items to Israel, which has not accepted safeguards on all its nuclear activities, remain proscribed. Energy Secretary Richardson has said, however, that as a "friendly country ... Israel is not treated in a similar fashion as others on [the US] list of sensitive countries" (*DOE News*, 22/2; *AFP*, 22/2; *AP*, 22/2, 23/2; direct information)

- The **Libyan Arab Jamahiriya** and the **Russian Federation** have signed an agreement under which, apart from military assistance, the former will receive Russian help with its energy infrastructure. Cooperation may also be extended to the revival of Libya's nuclear research centre at Tripoli, which appears to have been dormant for some time. [Libya is a party to the NPT — Ed.] (*IF/R*, 16/2)

### d. IAEA Developments

- On 30 January, the Agency's Director General Emeritus, Dr. Sigvard Eklund of Sweden, died. Dr. Eklund became Director General in 1961, and remained in that function for five consecutive four-year terms. His death occurred in Vienna, where he had retired. (Direct information)
- It has been announced in Vienna that Mr. Kwaku Aning, of Ghana, has been appointed Representative of the Director General of the IAEA to the United Nations and Director of its Office at United Nations Headquarters in New York. Mr. Aning assumed his new duties on 1 February. Since 1977, Mr. Aning, who has a Doctorate degree in metallurgical engineering, a Masters degree in solid state physics and a Bachelors degree in mechanical engineering, has held several posts at the United Nations in New York and the United Nations Conference on Trade and Development in Geneva. His most recent UN assignment was as Secretary of the Organizational Committee of the Administrative Committee on Coordination; he has had senior assignments in Angola.

Mr. Aning's predecessor was Dr. Berhanykun Andemicael of Ethiopia.

(IAEA Press Release, PR 2000/6, 15/1; direct information)

### e. Peaceful Nuclear Developments

- There is a report from **Bulgaria** that plans to upgrade the oldest two VVER-440/230 units of the Kozloduy nuclear power station are no longer seen as justified, because the government has promised the European Commission to shut them down permanently within three years. (*NW*, 30/3)
- In the **Czech Republic**, fuel loading at Temelin-1, a Soviet-design VVER reactor completed with Western instrumentation and control systems, is scheduled for September. Temelin-2 should start up 15 months later. The completion of both units has involved great cost overruns and long delays. The Czech government has said that, given the depletion of its fossil fuel resources and growing energy

needs, it cannot exclude the possibility that by 2015 yet another nuclear power station will be needed. The government of the Austrian province of Upper-Austria has begun a campaign against start-up of Temelin. It has been collecting signatures under a petition to the authorities in Vienna and Prague, the European Parliament and the European Commission, asking them to support a move to make the station fully accessible to the citizens of neighbouring states, and to arrange for a public investigation of Temelin's safety. (NW, 13/1; SN, 14/1, 8/2; DP, 8/2)

- Recent political developments in **Germany** are widely thought to have made it less likely that at the next Federal election, of 2002, the pro-nuclear Christian Democratic Union (CDU) will once again become the reigning party. This is said to have reduced the pressure on the Green and Social Democratic parties to insist on an early start of a phase-out of nuclear power. The Federal government had let it be known earlier that it was preparing legislation on the compulsory phase-out of all 19 German power reactors, unless utility owners agreed within three months on limits to be set for reactor lifetimes. Industry had reacted to that announcement by stating that it would not accept less than a 35-year lifetime limit for power reactors, which would have put the first shut-down, of the Obrigheim reactor, in 2002, after the elections. More recent reports have it that the German government is working on a phase-out timetable that sets the lifetimes of all reactors at 30 years, but gives the two oldest plants, Stade and Obrigheim, two or three extra years. In fact, even before the disclosures in January of financial malfeasance, that seem to have disqualified CDU leaders as potential candidates for a government after 2002, Federal Chancellor Schröder and Economics Minister Müller had discussed with industry a compromise along these lines and the consultations are continuing.

Apparently, the utilities have been working on a proposal under which, rather than a flat time-table for a shut-down, they would agree with the Federal government on the amount of power German reactors could generate until the last reactor is shut down; the amount mentioned in the press is 3,000 terrawatt-hours (TWh). Initially, the government was said to have rejected this approach. One of the reasons for this opposition was said to be that it would have involved the Bundesrat (Upper House of Parliament), in which the CDU has a majority. In February, Chancellor Schröder twice met with the heads of companies owning nuclear utilities, reportedly in the absence of Environment Minister Trittin and Economics Minister Müller. There were unconfirmed reports that if the proposed solution is accepted by the government, industry would decide which reactors would produce the total quantity of energy agreed upon. There are also media reports that the utilities would agree to shut down four reactors before the federal elections of 2002. The sides are still said to be so far apart, however, that agreement may not be reached soon. It does not at present appear likely, however, that the utilities will hold to their earlier threat to sue the government for damages if it orders reactors to be decommissioned prematurely.

Opinion polls continue to show that the majority of the German public are opposed to a phase-out of nuclear power.

The German government has announced that it will allow five transports of spent fuel from power stations to the interim storage facility at Ahaus within about six months. There are reports that Environment Minister Trittin will

seek to link approval of transports to progress in getting industry to agree to a time-table for a phase-out.

(NW, 6/1, 20/1, 3/2, 10/3; NYT, 26/1; SF, 28/1; NNN, 31/1, 3/2. See also **Newsbrief** no. 48, page 8)

- **India's** twelfth nuclear power reactor, the 202-MW PHWR Rajasthan-3, which is based on Canadian technology, has gone critical. Rajasthan-4 is expected to come on-line around the end of the year (**Nuclear Power Corporation of India**, 10/1)
- **Japan/United Kingdom:** Japanese utilities have suspended the use of MOX fuel in power reactors, following the admission by British Nuclear Fuel Limited (BNFL) that quality control data for MOX fuel supplied by them had been falsified. The Kansai Electric Power Corp, one of the two utilities where the British-manufactured MOX was to be used, has said that it will send the fuel back as soon as it can arrange to have it shipped through international waters. It has announced that until the issue of quality control on fabricated fuel can be settled with BNFL, all contractual dealings with that company, both with regard to fuel fabrication and reprocessing, will be put on hold and no bids from BNFL for any new contract will be entertained. The Japanese government has asked a delegation of officials from Britain's Department of Trade and Industry that was in Japan to discuss the matter to begin immediately to make arrangements for the return of the fuel. The delegation is said to have apologised on behalf of the UK government and of BNFL, but it seems that arrangements for the return of the fuel have not yet been finalised.

Tokyo Electric Power Company has also postponed the use of its Belgian-manufactured MOX fuel until a review can prove the fuel to be safe. Pending the outcome of current investigations, it is not expected that MOX fuel will be loaded into any Japanese power reactors. The situation appears to have put short-term Japanese plans for a closed fuel nuclear cycle in doubt, but operators stress that in the long run Japan will have to use MOX in its fuel cycle. Opposition from environmental groups to any increase in the use of nuclear energy in general and the use of plutonium in particular, which had been reinforced by a recent criticality incident at the Tokaimura uranium conversion plant (see **Newsbrief** no. 48, pages 9–10) is said to be growing. Nevertheless, the Japan Atomic Power Company, operator of the Tsuruga power plant in Fukui Prefecture, is asking permission from the regional and local governments for the construction of two new reactors, beginning in 2003.

Japan's Minister for International Trade and Industry has commissioned a year-long review of the country's long-term energy policy in the light of slow growth in energy demand. He has denied that there will be nuclear cut-backs arising from the Tokaimura criticality incident. The Science and Technology Agency has withdrawn the operating license of the uranium-processing plant at Tokaimura, on the ground that the operator had demonstrated grave negligence.

A Japanese court has ruled that the government's safety screening of the prototype fast breeder reactor Monju — which has been shut down since December 1995, because of a leak of sodium coolant — was conducted properly and lawfully. It has rejected a request from anti-nuclear groups to nullify the reactor's operating license. Operation is

expected to resume within four years. The plaintiffs have said they will appeal.

The falsification of quality control data for MOX fuel fabricated at BNFL's Sellafield MOX Demonstration Facility — which have since apparently also been found to have occurred with regard to MOX fuel fabricated for Germany, Sweden and Switzerland — threatens to have grave consequences for that company. Reportedly, the UK Nuclear Installations Inspectorate has found serious management problems at the MOX Demonstration Facility as well as at other Sellafield facilities; in March, it gave the company two months to produce a programme meeting all concerns about the safety performance at the entire Reprocessing and Waste Management Complex. BNFL's Chief Executive Officer has been forced to resign. Several management-level officials have been warned of disciplinary action. Three workers were dismissed last October. Prime Minister Blair has said that the Sellafield plant is "sound and secure", and he has refuted the rumour, reputedly floated by a member of his cabinet, that the government would propose abandoning reprocessing altogether. Plans for BNFL's privatisation have been suspended until the latter half of 2002.

The main reason why workers falsified the records is said to have been that checking each of many thousands of fuel pellets is a tedious and time-consuming job, which is not always closely supervised. The matter has attracted much attention among the British press and public. In late March, criticism of the management and safety of BNFL's Sellafield plant intensified at the news that a saboteur had cut several cables controlling robotic operations in the reprocessing plant. BNFL is under contract with the US in clean-up projects at four DoE weapons fabrication sites: Idaho, Oak Ridge, Hanford and Savannah River, and is also associated with companies working at Rocky Flats, West Valley and the Waste Isolation Pilot Plant. DoE is reported to have set up a review team to look at BNFL's conduct of operations; the team is also meeting with UK investigators for a comparison of its work in the US. The recent disclosures of falsification of quality control data is said to prompt DoE to intensify its scrutiny of BNFL's activities. In a move BNFL has dismissed as a "stunt", American anti-nuclear groups have petitioned DoE to ban it from doing clean-up work.

BNFL's problem with Germany regards four MOX fuel rods supplied by BNFL in 1996 for the Unterweser nuclear power plant. BNFL has said that the fuel pellets in these rods were duly measured and secondary quality checks made. It seems, however, that the data were lost during computer operation and knowing that the fuel was within specification, a previous set of data were entered. This prompted the plant in February to shut down for removal of the rods, although BNFL said that there was no reason to do so. Preussen-Elektra AG, owners of the reactor, have announced that they will demand compensation for the unscheduled shut-down, and will review the business relationship with BNFL. The utility has earned the disapproval of the provincial authorities for having restarted the reactor in late 1999, even though it presumably knew by then that there were questions about the fuel. It has been announced that the German Environment Ministry will lift its ban on the import of MOX fuel fabricated by BNFL once that firm has proved it satisfies UK regulatory requirements for the restart of its MOX Demonstration Facility.

Sweden has announced that spent fuel from its Studsvik reactor will no longer be sent to BNFL for reprocessing.

Switzerland has suspended its contracts with BNFL and stopped the shipment of spent fuel rods to Sellafield.

BNFL's plans to participate in a consortium scheduled to assume management control of the UK's Atomic Weapons Establishment at Aldermaston on 1 April were reviewed by the Ministry of Defence. Ministers subsequently decided to let this contract proceed as planned.

(AFP, 7/1, 28/3; **Daily Yomiuri**, 8/1, 8/2, 10/2; FT, 12/1, 9/2; NW, 13/1, 20/1, 24/2, 2/3, 9/3, 30/3; NYT, 13/1, 27/3; SF, 15/1, 31/1, 21/2, 28/2, 6/3, 27/3; NF, 21/2, 6/3, 3/4; NNN, 28/3; G, 30/3)

- The **Netherlands** High Court has ruled that the Dutch government had no legal basis for limiting in 1997 the operating license of the Borssele power station to the year 2004, against a payment of \$35 million to the operating utility. As a result it is expected that the station may obtain permission to operate for several more years, possibly until 2007. Apparently the utility is keen to keep the station in operation for as long as possible since it produces electricity at about half the average price for the Netherlands. (NW, 23/3)
- The **Pakistan** Atomic Energy Commission (PAEC) has rejected claims by anti-nuclear activists that the Chinese-built nuclear power plant at Chashma is on a seismic fault. Reportedly, a team from Columbia University in the US had surveyed the site in 1976 and found the seismic risk to be "quite severe". The PAEC has been quoted as saying that subsequently these findings were proved wrong by international consultants from France, Italy and Spain, and PAEC inspectors. It also said that a team organised by the IAEA had confirmed the site's safety. Nuclear opponents and Pakistani press media continue to question the seismic safety of the site, however, and have also raised doubts about the quality of major plant components, including the pressure vessel, coolant pumps and control system, which were all made in China.

The plant is currently being commissioned. Criticality is expected by April and it is hoped that, after exhaustive testing, Chasma can start commercial operations by the end of the year. PAEC has said that active planning is under way for a second Chasma power plant, with the same output as the first.

The Belgian government has refused to allow the export of a neutron flux monitor for Pakistan's Karachi nuclear power plant (Kannupp), a 137 MW Candu-type reactor dating from 1971. As a member of the Nuclear Suppliers Group (NSG), Belgium reportedly does not allow the export of dual-use items to countries whose nuclear programmes are not under full-scope safeguards. Since the NSG guidelines provide for exceptions to the rule when it is agreed that the transfer enhances the safe operation of existing facilities, the IAEA's Director General is said to have written to the Belgian Prime Minister to confirm that the item is safety-significant and could not be diverted to military purposes. Moreover, it was pointed out that Kannupp has been under safeguards from the beginning. Reportedly, however, the Belgian government will not go back on its original refusal. A spokesman for the Prime Minister was quoted as saying that his government does not accept attempts to shift the responsibility for Kannupp's safety to the Belgian government, adding that "If they don't

have the equipment ... they shouldn't operate". He also pointed out that as soon as Pakistan commits to full-scope safeguards, the equipment can be exported. It seems that Canada, Germany and Japan had earlier turned down Pakistani requests to import such equipment.

(NW, 6/1, 13/1, 27/1; *The News* [Islamabad], 15/2)

- Research centres in **Russia** are reported to be looking into the possibility of using decommissioned nuclear submarines to transport cargo along the Arctic Route. Apparently the submarines considered for this purpose are boats of the Typhoon class, which could handle up to 10,000 metric tons of bulk cargo and could also be used as tankers. Their advantage is said to be that they can operate under arctic ice, thus without the help of ice breakers, and that they are fast.

Russia is also constructing floating nuclear power stations which will use the kind of reactors employed in nuclear-powered ice breakers. A number of these stations have been planned for sites off Northern Russia and there is also interest from Indonesia and the Philippines. Russian environmentalists have expressed concern at the lack of stability of this type of reactor, which uses high-enriched uranium, and also see the project as hazardous from the point of view of proliferation. US experts also feel that the negatives outweigh the pluses.

(AFP, 17/2; CSM, 17/2; IT, 18/2)

- According to the head of **Russia's** nuclear safety inspectorate, many of the country's research reactors are said to be potentially dangerous, because of a lack of finance for maintenance, the departure of capable staff and the fact that nuclear waste is not being recycled. Russia is said to have 112 research reactors, of which 30 have operated for 30 years or more. In 1999, research reactors were involved in 90 recorded incidents. (AFP, 29/3)
- Although it was reported previously that the government of the **Slovak Republic** had decided that units -3 and -4 of the VVER-440/213 at Mochovce would not be completed, it now seems that the decision as to what to do with the two units had merely been delayed. There is said to be a possibility that the utility in charge of Mochovce will seek foreign investment to finish units -3 and -4, in particular to replace the short-fall resulting from the shut-down of the first two units of the Bohunice nuclear power plant, in 2006 and 2008.

It has been widely reported that Austria might oppose a decision to construct the two additional Mochovce units by increasing its resistance to the entry of the Slovak Republic into the European Union (EU). The (then) Finnish President of the EU Council had criticised Austria's attempt to force another country to accept its energy policy. Influential Austrian newspapers have noted that Vienna's attempts to keep neighbouring countries from expanding their nuclear programmes have been counterproductive and have totally failed.

(K, 2/12/1999; DP, 4/12/1999, 9/12/1999, 10/12/1999; StV, 2/12/1999, 9/12/1999; NW, 20/1, 23/3. See also *Newsbrief* no. 48, page 10.)

- In the run-up to the national elections in **Spain**, in March, the country's left-wing parties announced that if they should win, they would have the two oldest power reactors shut down by the end of the year, and would aim to have

all remaining nuclear reactors shut down by 2005 [They lost, Ed.]. (NW, 2/3)

- Now that the 600-MW(e) boiling-water reactor Barsebäck-1 in **Sweden** has been shut down as part of the government's nuclear phase-out policy (see *Newsbrief* no. 48, page 11), utility operators have warned that severe cold in the region could mean electricity short-falls, especially in the Southern part of the country during peak hours. As expected, power from the closed-down plant is being replaced by electricity generated in Denmark in coal-burning facilities. A parliamentary committee on climate change should shortly present a report on possibilities for reducing greenhouse gas emissions. A committee member has said that the shut-down of Barsebäck-1 will mean two to four million additional tons of CO<sub>2</sub> a year; he has called for the continuation of nuclear power use.

Unloading of the fuel from the reactor started in February and the Swedish government has asked Parliament to approve the compensation agreement reached in 1999, including special provisions that would allow utilities to receive their payments as net after-tax funds. The Conservative Party in Parliament has said that the compensation agreement costs one billion Kronor (\$115 million) more than the government has said, because the law as submitted by the latter is based on the net rather than the gross cost. While the compensation provisions are expected to be adopted, it is thought that this disagreement will make it all the more likely that the debate over the decommissioning of the remaining 11 power reactors, which together are calculated to produce 47 per cent of the country's electricity, will resume soon. The production figure includes the output of Barsebäck-2, which the government says it wants shut down in 2001 if sufficient replacement power is available. A deal on compensation for the shut-down of Swedish reactors may be a precedent for arrangements that will be adopted in Germany.

(NNN, 14/12/1999; NW, 27/1, 3/2, 24/2, 9/3, 16/3, 23/3)

- In **Switzerland**, a new atomic law is in preparation which does not put a cap on the lifetime of existing reactors and does not call for an end to nuclear power. It provides for the possibility of a referendum on any new nuclear facility, upon obtaining signatures of 50,000 voters. (NW, 9/3)
- US Energy Secretary Bill Richardson is reported to have promised the government of **Ukraine** that, at next May's pledging conference for the international Shelter Implementation Plan (SIP), for the restoration of the sarcophagus over the destroyed Chernobyl-4 reactor, the US will make the largest contribution among the G-7. The pledging conference aims at obtaining \$700 million.

The shut-down date of the one reactor still operating at Chernobyl, unit 3, does not yet seem to have been finally settled. The West has called for an unconditional shut-down in 2000. The European Bank for Reconstruction and Development (EBRD) is said to be still considering a loan application for \$175 million towards the completion of the Khmel'nitski-2 and Rovno-4 power reactors, which should compensate for the loss of Chernobyl. The Kiev government has said once again that it could not shut Chernobyl down unless, as agreed with the G-7 in 1995, help was forthcoming towards the completion of these plants. Since they could in any case not be completed this year, Ukraine has asked for grants of fossil fuels in the meantime, which the G-7 have refused. Ukraine's energy authority is quoted



as claiming that an extension of Chernobyl's working life would be technically possible and economically justified, but the country's Nuclear Regulatory Administration, referring to frequent shut-downs for repair and maintenance, is said to see a need for extensive backfitting, if operation is to go on.

(R, 6/2; BBC, 8/2; NW, 10/2, 2/3, 30/3)

#### f. Nuclear Policies and Related Developments in Nuclear-Weapon States

- Contacts between senior civilian and military officials of the **People's Republic of China (PRC)** and the United States resumed in February, when a high-level US delegation visited Beijing for an extensive dialogue ostensibly intended, in part, to help avoid a confrontation between the PRC and Taiwan in the run-up to the presidential elections in the island. As reported, among issues discussed were US military supplies to Taiwan and China's missile build-up in Fujian Province, the area closest to Taiwan. In response to American expressions of concern about Beijing's intentions regarding Taiwan, China is said to have expressed strong opposition to American plans for a theatre missile defense system in East Asia. During meetings in late March with China's top level officials, US National Security Advisor Berger was told that Sino-American relations had reached a critical juncture, and was warned against encouraging Taiwan in its quest for independence. Berger was reported to have confirmed that the US would not support Taiwan's independence nor its entry into organisations that require statehood.

In the months preceding Taiwan's presidential elections, exchanges between China on the one hand, and Taiwan and the US on the other, assumed a sharper tone. Senior Chinese officials repeatedly warned Taiwan of grave consequences were it to seek independence and depart from the principle of 'one country, two systems'. Beijing stressed its determination to resolve the Taiwan issue as soon as possible, "following the successful return of Hong Kong and Macao", and said it would not wait indefinitely for reunification. A White Paper of 21 February said that "peaceful means is ... the best means", but also that "China is under no obligation to commit itself to rule out the use of force ...". It cautioned against any attempt to separate Taiwan from China through a referendum. The White Paper was followed by an editorial from the People's Liberation Army run in several Chinese newspapers, which warned that if Taiwan dragged its feet, it would have to expect war.

Beijing has responded to warnings from the US against the use of force in settling the Taiwan question, with the claim that this is an internal Chinese affair and any interference in the matter would be considered tampering with China's sovereignty. Officials in Beijing have pointed out that the White Paper was a notice to Taiwan's next president that the PRC wants serious talks on reunification, and said it should not be seen as meaning that it sought war. Initial assertions that the document did not contain a time-table for reunification have been followed by the warning that it did, but also with the comment that it might be a lengthy process.

Beijing's signals as its future actions remain mixed. During a visit to Beijing by the Commander of US naval forces in the Pacific, in early March, China's Minister of Defence stressed that his country's basic policy towards the Taiwan issue remained peaceful reunification and adhered

to the 'one country, two systems' doctrine. He warned, however, that China would not commit itself not to use force to win back Taiwan. At the annual session of the National People's Congress in March, the army was asked to make active preparations for war, but both China's President and its Prime Minister said they were confident that a peaceful solution would be found.

The US government has warned the PRC that it does not condone the views expressed in the White Paper, and urged both sides to refrain from actions or statements that increase tensions, and take steps towards dialogue.

The White House and the State Department are said to have expressed objections to the phrasing of a warning by a senior US Defense Department official, that the PRC would face "incalculable consequences" if it uses force against Taiwan. US Defense Secretary William Cohen was quoted as saying that the prospect of a military confrontation was "not likely", and Taiwan officials said they were willing to talk, but not under pressure. According to media reports from Taipei, the PRC's threats of force had the effect of fanning independence sentiments.

The three main candidates in the presidential elections were all seen as having a more moderate attitude on independence than had President Lee, but none was thought to fully endorse the PRC's formula for reunification. Among them, Chen Shui-Bian, head of the opposition Democratic Progressive Party, was said to be closest to seeking formal independence, although he had recently moderated this stance. Beijing's rhetoric was aimed especially at Chen, whose election, it said, would cause great trouble. When Chen was elected, on 18 March, Beijing's initial reactions were described as "terse and noncommittal". According to American sources, the PRC had adopted a cautious approach toward the new administration of Taiwan and was exploring the implications of the elections for cross-strait relations. After the election both sides expressed willingness to talk, but each quoted preconditions. PRC officials stressed that talks were possible as long as Taiwan's new President recognised that the island was part of a single China; most Taiwanese politicians were heard rejecting the idea of Taiwan being a "province" of China. Officials secretly dispatched from Taiwan to discuss reconciliation were said to have been turned away by the PRC, supposedly because Chen had not made a clear commitment to the 'One China' principle. Taiwan's decision to lift the ban on trade, travel and mail communications between the off-shore islands and the Mainland, was rejected by the latter, pending the President-elect's formal adoption of the 'One China' principle. Many observers in Taiwan and the US were reported to have been struck by the moderate statements issuing from Chen himself; his selection of a Nationalist as his future Prime Minister was seen as a sign that he would not make radical changes in policy toward the Mainland. On 1 April, senior officials in Beijing assured the US that they planned to adhere to a "wait and see" attitude. Supporters of independence among Chen's entourage, although now less vocal, were said still to follow a hard line; one prominent member of the Democratic Progressive Party has argued that if the US refuses to supply enough conventional arms, Taiwan should consider acquiring nuclear weapons.

Assessments of the military aspects of the situation vary. The People's Liberation Army has published a report outlining how it could take Taiwan by force; this is said to mention the possibility of a neutron-bomb attack on Taiwan

and to stress the availability of multiple warhead missiles. Both Beijing and Taipei are said to have put their forces on alert. In the US, China's ostensibly more aggressive stance towards Taiwan is not seen as necessarily a prelude to war. US Defense Secretary Cohen has said that both sides have "stepped back" from armed conflict. The Director of the US Defense Intelligence Agency said earlier that the threats expressed in the White Paper should not be interpreted explicitly and that neither China nor Taiwan wanted a military engagement. He also said that the modernisation of the PRC's conventional forces would provide "an increasingly credible threat against Taiwan (though probably not the large amphibious capability necessary for an invasion) by 2015."

Beijing has rejected claims by Western experts that it would be several years before it would have the military capability to invade Taiwan, whose armed forces they consider to be better equipped than those of the Mainland. US Defense Department officials, however, have been quoted as saying that Taiwan would be more vulnerable to attack than is generally recognised, and would have problems defending itself against airplanes, ballistic missiles and cruise missiles. Sources in Taiwan also fear that the PRC could harass it in a variety of ways, such as mounting a "cyberattack" on the island's computers. Shortly before this issue of the *Newsbrief* went to press, an authoritative source in Beijing was quoted as saying that the PRC would make a final decision later this year on whether to use military means against Taiwan; President Xiang Zemin had said that if the Mainland had to take military action against Taiwan, the sooner the better.

A report from Taipei claims that the US government has promised not to exclude it from a "Theater Missile Defense" (TMD) system once this is established. Taiwan's Defence Ministry has said that in 2001 it will conduct live tests of the Patriot missiles which the US has supplied. Taiwan is also said to have deployed US-made missiles on islands in the South China Sea for low-altitude air defence. Reportedly, Taiwan wishes to buy three more batteries of Patriot missiles and has asked the US for long-range radar warning systems. There are also said to be plans for the local development of a low-level anti-missile shield, and the US Defense Department has informed the Congress that it is prepared to sell Taiwan upgraded guided Hawk anti-aircraft missiles and help improve its surveillance radar.

Beijing has expressed "deep concern" about reports that President Clinton may give in to pressure from the US Defense Department for sales of advanced weapons to Taiwan, including four *Aegis* destroyers equipped with sophisticated radar and anti-missile interceptors. Urging the US to honour the Joint Communiqué issued by the two governments in 1982, and not to supply Taiwan with advanced weaponry, China has warned the US of serious consequences of such a sale. Reportedly, Taiwan's demands have put the US Administration before a serious problem, given its wish to maintain good relations with China, as against the insistence of conservatives in Congress that Taiwan should be protected at all costs. The matter is expected to become an issue in the forthcoming presidential elections in the US.

Beijing has complained to the US government about the adoption in the US House of Representatives, by a vote of 341 to 70, of the 'Taiwan Security Enhancement Act'. It has warned that, once law, the measure will threaten peace and stability in the region and Sino-US ties. The US

Administration, too, has expressed concern that the Act could greatly damage relations with China and said it was not in Taiwan's best interest but Taiwan has welcomed the measure. In late-February the US State Department confirmed that President Clinton would veto it. On 28 March, the House of Representatives, in passing a 'Concurrent Resolution' congratulating Taiwan on its elections, reaffirmed its previous decision. Two days later, the US Senate did the same.

In February, China was reported to have received the first of two guided-missile destroyers it has ordered from Russia. The ships are said to be intended for coastal patrols and could be used in implementing a naval blockade of Taiwan. Negotiations on the purchase of two more of the vessels are said to be going on. The SS-N-22 ('Sunburn') anti-ship missiles with which the destroyers are equipped are said to be nuclear-capable, but it is thought unlikely that the missiles as delivered carry nuclear warheads. Taiwanese authorities see the ships' presence as a "definite threat" to their own ships and those of the US, but they have also said that they will not give Beijing a significant military advantage; experts in military affairs in Taipei are said to believe, however, that China's development of high-tech weaponry is beginning to cause a shift in the balance of power. US analysts suggest that China intends to fortify its eastern coastal waters, extend control over nearby sea lanes and thus hamper US efforts to shield Taiwan. Already, according to the US Defense Department, China is building two new surface-to-air missile bases in the coastal area facing Taiwan, where it is said to have already deployed several batteries of Russian-made S-300 air-defence missiles. US officials concede that particularly the sea-based missiles will make a defence of Taiwan riskier.

In the midst of their political confrontation, Taiwan and the PRC are reported to have had discussions on the possibility of storing and disposing radioactive waste from the Taiwan Power Co. on the territory of the PRC. A letter of intent appears to have been signed, but talks now seem to have been suspended and may be resumed in the Spring. Reportedly, Taiwan had earlier been in contact with the DPRK, Kazakhstan and Uzbekistan, but of these, only Kazakhstan is still seen as a possible alternative.

A potential new problem has arisen between China and the US with the arrest of a Chinese national who was boarding a flight to Wuhan, China, carrying an infrared thermal imaging camera. The camera is a dual-use device of which the military application is said to be tracking missiles and serving in satellite reconnaissance. An investigation is underway. A Foreign Ministry spokesman in Beijing has said that the device, of which China was apparently hoping to purchase several more, is used by Chinese Customs for the all-weather monitoring of vessels in rivers. Both the CIA and the FBI have alleged that recently China has stepped up its intelligence operations in the US.

American officials are looking into the possibility that Dr. Wen Ho Lee, the former staff member of Los Alamos National Laboratory who is charged with copying vital information on US nuclear weapons from classified office computers onto ten tapes, which he had been suspected of having passed on to China, may actually have passed the data on to Taiwan. Dr. Lee was born there, and is said to have done consulting work for a "top-secret" institute in Taipei, which supposedly does nuclear research and works on missile development.

There have been press reports that the FBI lied to Dr. Lee when, after giving him a polygraph ('lie detector') test, interrogators told him he had failed, and threatened him with grave consequences. It turns out that, in fact, he scored exceptionally high for honesty. The heads of several American scientific associations have written to US Attorney General Janet Reno to protest the conditions under which Dr. Lee is being held pending his trial. Reportedly, he is kept in solitary confinement in a New Mexico jail for 23 hours a day, his hands and legs shackled. He has been denied bail. His defence team are expected also to argue that he is a victim of selective prosecution, seeing that high government officials in sensitive positions are not punished for the egregious security breaches they have committed.

(**Taiwan Central News Agency**, 29/12/1999, 1/1; **AFP**, 31/12/1999, 13/1, 23/1, 28/1, 30/1-2/2, 6/2, 14/2; 15/2, 18/2, 20/2, 22/2, 23/2, 28/2-2/3, 6/3, 8-10/3, 21/3, 23/3, 24/3, 28-30/3; **R**, 2/1, 13/1, 27/1, 28/1, 30/1, 31/1, 1/2, 2/2, 7/2, 22/2, 23/2, 1/3, 24/3, 30/3; **Nikkei Shimbun**, 3/1; **AP**, 5/1, 24-28/1, 2/2, 9/2, 18/2, 22/2, 28/2, 1/3, 11/3, 29/3; **NYT**, 6/1, 26/1, 31/1, 9/2, 12/2, 15/2, 19/2, 22/2, 24/2, 1/3, 7/3, 14/3, 16/3, 18-20/3, 22/3, 1/4, 2/4; **China Daily**, 7/1, 3/2, 4/2, 8/2, 23/2, 1/3, 8/3, 10/3, 24/3, 29/3; **IHT**, 4/1, 11/1, 26-27/2, 30/3; **WT**, 21/1, 24/1, 2/2, 3/2, 8/2, 22/2, 29/2, 6/3, 9/3, 21/3, 28/3; **WP**, 27/1, 10/2, 23/2, 5/3, 18-20/3, 31/3; **People's Daily**, 29/1, 5/2, 6/2, 22/2, 29/2, 1/3, 6/3, 8/3, 30/3; **People's Liberation Army Daily**, 30/1, 7/2, 28/2, 6/3; **USA Today**, 1/2, 16/3, 17/3; **US State Department/Office of International Information Programs**, 15/2, 22/2, 23/2, 8/3, 28/3, 30/3; **SCMP**, 23/2, 28/3; **Inside the Pentagon**, 2/3; **LT**, 8/3; **Australian**, 10/3; **Knight-Ridder News Service**, 14/3, 21/3; **NW**, 16/3; **FT**, 22/3; **WSJ**, 24/3; **E**, 25/3; **LAT**, 30/3)

- The new military doctrine of the **Russian Federation**, of which a draft was released in Moscow in October, has been approved by Acting President Putin and has entered into force in March. Reportedly, the text confirms the possibility of a nuclear first-strike response "if all other means ... have been exhausted or proved ineffective". Analysts note the difference between this formulation and that of the doctrine in force since 1997, which foresaw the possible use of nuclear weapons "in case of a threat to the existence of the Russian Federation." The new doctrine is said to be based on the assumption that a number of states are trying to marginalise and to weaken Russia and the level and scale of military threats is growing; Russian experts note that both China and the West have military superiority over Russia (even Turkey is mentioned as having a military potential comparable to that of Russia) so that the latter presumably has no option but to rely on nuclear weapons for its defence. The paper is said to have a strikingly anti-Western tone, warning in particular against a trend towards a US-dominated world. The paper also deals with a range of internal dangers, including terrorism and separatist movements, and foreign economic threats for which, again, it apparently implies that the West is primarily responsible. (**BBC on-line**, 14/1; **If**, 14/1; **NYT**, 15/1. See also **Newsbrief** no. 48, pages 13 and 14)
- The early warning system of the **Russian Federation** is said to have degraded to the point where, according to US sources, for at least seven hours a day it is unable to detect launches of American intercontinental ballistic missiles (ICBMs), and is unable altogether to spot missiles fired from US submarines. According to these sources, only four of Russia's 21 early warning satellites are operational. The situation is considered risky to both countries, because of

the danger that the launch of an American non-military rocket might be misread in Russia as a missile attack, triggering a nuclear strike. The Russian government and the **United States Administration** are said to plan setting up next year a joint advanced missile warning centre near Moscow. The centre would receive US missile warning data from the headquarters of the North American Aerospace Defense Command at Colorado Springs. The purpose of the centre is to ensure that Russia receives correct information on US missile launches, so as to avoid a premature launch of a strategic weapon in response to faulty or incomplete information. The centre is seen as a follow-up on the joint project to ensure that 'Y2K computer problems' would not result in the accidental launch of strategic missiles. For that purpose the two countries ran a jointly-staffed command post near Colorado Springs. (**Philadelphia Inquirer**, 10/1; **San Francisco Examiner**, 20/1)

- The **Russian Federation** has informed the **United States** that it wishes to go back on the Gore-Chernomyrdin agreement of 1997, for the conversion, by end 2000, of three reactors in Siberia, so as to make them unsuitable for plutonium production. At the time it was concluded, the agreement was seen as a step forward in non-proliferation efforts. Among reasons quoted why Russia no longer wishes to go ahead with the plan, are said to be concern that the aging Chernobyl-type reactors may not be able to stand conversion; the increase in the cost of the scheme; lower Russian estimates of energy needs in the two cities, and the apparent presence of surplus hydro energy in the area. Russia now wants to shut the reactors down and use conventional energy sources instead. Cost estimates given for that approach are between \$200 and \$300 million, of which the US would have to pay the main part. While the US the Administration is said to consider the use of alternate energy sources preferable to conversion, as it would guarantee an end to plutonium production, there is no certainty in Washington that the Congress would make the necessary funds available.

The US Administration has asked Congress for \$100 million to fund a collaborative programme with Russia to reduce proliferation risks posed by reprocessing facilities and separated plutonium stored there. Under the 'Expanded Threat Reduction Initiative' the US would assist in the design and construction in Russia of a dry storage facility for spent fuel from civilian reactors. It would further support accelerated material control and accounting regarding plutonium currently stored at the Mayak site. The scheme also foresees that the two countries would collaborate on research and development of less proliferation-prone fuel cycles. Funds would also be available to implement plans for the closure of specified nuclear-warhead production facilities, and for financing non-military projects providing alternative employment for personnel involved. The scheme needs Congressional approval. A condition of the American assistance is said to be Russia's fulfilment of its "commitment to curtail" nuclear cooperation with Iran, but Atomic Affairs Minister Adamov has said that US assistance amounting to \$100 million cannot be compared to the \$1 billion Russia will get for the completion of the power station at Bushehr.

It has been reported in Sweden that Russian authorities have agreed to consider building a large interim storage facility for spent fuel on the Kola Peninsula. This would be the repository for 60,000 spent fuel elements from nuclear submarines of which most are now stored in

makeshift pools. Storage at Kola avoids transporting fuel to Mayak, where a new pool storage facility has been under construction but is not likely to be completed.

(AP, 6/2; Bellona, 11/2; WP, 13/2; AFP, 14/2; SF, 14/2; NF, 21/2, 6/3; NW, 24/2)

- In the **United States**, the debate about National Missile Defense (NMD) continues, even though many American observers see it as “virtually a done deal”. It seems now that a number of experts consider the test of October 1999, when an ‘exo-atmospheric kill vehicle’ (EKV) intercepted and destroyed an intercontinental ballistic missile, not to have been a decisive demonstration of the feasibility and the effectiveness of anti-missile defence. Reportedly, Pentagon officials have conceded that, although they had initially called that test a success, the interceptor vehicle had difficulties hitting the target and at first aimed at a decoy balloon rather than at the warhead. While critics say that if the balloon had not been there, the target would not have been hit at all, defenders say that if the balloon had not been present the target might have been hit more quickly. Critics also claim that the problems that had arisen during the test demonstrate how easily an NMD vehicle can be misled; many see the test as having little to do with “real world defence” in which there may be a huge number of decoys scattered throughout space and warheads are very difficult to discern. Congressional investigators have pointed out that, already in 1984 and in 1991, tests of similar systems were so arranged as to make them appear more effective than they actually were. A former senior engineer with a major contractor for the NMD project has also charged that her company had systematically manipulated test interceptions and flight data. Backed by former co-workers, the engineer has alleged that the discrimination technology on which she had been working failed to distinguish between warheads and decoys, also when tests were so arranged as to facilitate discrimination. Reportedly, her warnings were ignored by management, negative test results were presented as successes, and she was dismissed. The matter is currently in litigation. The US Department of Defense has denied that test results had been falsified.

On 18 January a further test was staged, this one involving a fully integrated system of radar and sensors. The Raytheon-built EKV, launched from the Marshall Islands in the Pacific Ocean, failed to hit the target: a Minuteman intercontinental ballistic missile carrying a mock warhead and accompanied by a balloon decoy, launched from a US air force base in California. After first stating that it could not explain what had gone wrong, the US Ballistic Missile Defense Organization announced that the test had “not [been] a complete failure”, because, rather than being caused by a fundamental scientific flaw, it was found to be due to a “mechanical glitch” or “anomaly”: a leak in a metal tube that conducts nitrogen gas to refrigerate the infrared sensor panels of the interceptor. As a result the interceptor was thought to have been on target for all but the last six seconds of the flight, at which point the sensors had failed, so that the kill vehicle passed within 50 to 150 metres of the target missile. Defense Department officials subsequently declared they were pleased with preliminary data showing that several new systems performed “as well or better than expected”. Some analysts were concerned, however, at the ease with which a single, relatively slight, mishap could cripple the entire system.

In what was seen as a warning that the test schedule would prevent the military from reliably telling the President

whether the system is ready to be deployed, the Pentagon’s director of operational testing and evaluation has said that he is facing undue pressure “to meet an artificial decision point ...”. The spokesman for the Pentagon’s Ballistic Missile Defense Organization also warned that there was not much time to collect and review data from the next test — the one originally planned for end April, which would, to all intents and purposes be the basis on which the President’s decision would be taken. One senior Pentagon official said that if that test succeeded, the project would be “back on course”, but others have expressed apprehension that even in that case, a decision on deployment would be based on a single successful intercept and one semi-failure. It has since been announced, however, that the test has been postponed until 26 June, so that the Pentagon’s evaluation of the results, known as the Deployment Readiness Review (DRR) of the NMD system — which was to be the basis on which the Secretary of Defense would recommend to the President whether or not to deploy the NMD system — cannot be available until the end of July, and the President’s decision will probably have to wait until October. In announcing the postponement of the test, however, the General heading the Ballistic Missile Defense Organization said that two intercepts were no longer considered a requirement for deployment; the one intercept of last October was enough to permit the Pentagon to go ahead with the award of construction contracts.

The recent developments have prompted arms control specialists to point out that the malfunction even of a tightly-controlled system, equipped with all possible means of success, supports the contention that the President would be ill-advised to pursue deployment at this stage. Reportedly, opponents, but also some supporters of NMD have begun to question why a decision need be made this Summer, and to consider asking the Administration for a postponement until all the facts are in. In early March, Senator Biden, ranking minority member of the Senate Foreign Relations Committee, joined eight other Democratic Senators (as well as two Republicans who opt for a more robust NMD system than currently envisaged by the White House) in calling for a delay in the deployment decision until a new president has taken office. According to Biden, the missile threat from the DPRK does not warrant deploying a vastly expensive defence system that is not technically proven. He has expressed preference for having Aegis missile ships stationed in the area, to intercept missiles launched from North Korea in their ascent stage.

As of this writing, however, the President still seems to follow the original time-table, both so that, as newspaper reports speculate, the Democratic candidate for President need not face the accusation that the current Administration has not done all it can to promote NMD, and so as to “lock in” a limited NMD system in order to block a Republican move for a nation-wide scheme that would make abrogation of the ABM Treaty necessary. Following the mishap of 18 January, Senate majority leader Lott stated that NMD would go forward no matter what; conservative media in the US also advocate actively pursuing the NMD programme, pointing to the existence of the ‘National Missile Defense Act’, which remains valid notwithstanding test failures; these publications generally express the view that an imperfect defence is better than none. Editorials in other newspapers, however, including some by highly authoritative experts, support the opinion that the time has come to realise that missile defence has failed and that the real solution lies in arms reduction. Some commentators point out that the “fear of massive retaliation is still the best

deterrence", and that missile defence is in any case useless against a nuclear weapon hidden in a freighter docking in an American port, or in a smuggled suitcase. Many also point to the effect deployment of NMD would have on the ABM Treaty.

The draft budget for 2000 as submitted by the US Administration to the US Congress contains \$291 billion for defence. It includes funds to raise the number of NMD interceptors planned from 20 to 100.

Discussions between the United States and the Russian Federation on the former's proposals for modifications to the ABM Treaty of 1972 have continued, but do not seem to have made much if any headway so far. State Department officials appear confident, however, that Russia's new President will agree to minor alterations in the ABM Treaty that would make it possible for the US to deploy a limited NMD system. In Washington, officials predict that Presidents Clinton and Putin will meet soon to discuss the matter and the latter is likely to go along with the amendments proposed by the US. Those would have to be ratified by the US Senate, however, in which case some Republican senators are expected to vote against, since the changes would not permit the deployment of nationwide NMD. Senator Biden has said that these senators want a system that can defend the US against Chinese missiles, rather than North Korean ones.

So far, Russian officials had been adamant in their criticism of American plans to develop an NMD system, and had rejected all suggestions for alterations in the ABM Treaty. Bilateral discussions on this issue intensified during January. In the third week of that month, the senior disarmament officials of Russia and the United States, Yuri Kapralov and John Holum, met in Geneva to discuss the issue. These talks were followed by discussions between US Secretary of State Madeleine Albright and Russian Foreign Minister Igor Ivanov, which once again were said not to have brought agreement. In Moscow, in late January, Russia's Acting President, Vladimir Putin, warned against "the threat of the destruction of the Anti-Ballistic Missile Treaty". In February, the head of Russia's National Security Council, Sergei Ivanov, had meetings in Washington with his American counterpart, Samuel Berger, and with President Clinton, at the end of which, US sources contended, the Russian side appeared willing to "open the door slightly" to the US Administration's plans for a limited NMD system. Reportedly, Ivanov said that Moscow would discuss allowing the US to move the radar and interceptor site allowed under the ABM Treaty from North Dakota to another location. But Ivanov repeated the standard warning against changing the ABM, with the remark, as quoted in the US press, that "If we are talking about slightly modifying the ABM treaty at the same time as deploying national missile defense, these two things simply can't exist together".

Friction between the Russian Federation and the US has also arisen over the purpose of a US-built radar station in Northern Norway, near the Russian border. The facility is ostensibly meant to monitor space debris, but Russia believes that it is intended to monitor its ballistic missile launches and has been developed as part of the American NMD system. An article in the *Bulletin of the Atomic Scientists* by a well-known US expert on missile-related issues states that the installation can provide critical information for that purpose, but that space debris is best monitored by radar operated near the equator. According

to the Russian weekly journal *Nezavisimoye Voyennoye Obozreniye* the US also has upgraded early-warning stations in the UK, Thule, Grand Forks and Clear (Alaska) in a way that enables them to function as part of an anti-missile system aimed at the Russian Federation and China, rather than the DPRK, Iraq or Iran.

There is much criticism abroad of the American proposals to amend the ABM Treaty. President Chirac of France has repeated earlier warnings against "any questioning of the ABM Treaty" that could lead to a disruption of the strategic equilibrium and a new nuclear arms race. The Clinton Administration is said to have started a public relations campaign to win support in Western Europe for NMD deployment, but most European governments are thought to be against the project. America's NATO allies are reported to be concerned about the threat it poses to the ABM Treaty and about the damage it may do to their relations with Russia. Reportedly, however, the UK — originally said to have been sceptical of NMD plans, but now apparently giving tacit support — has asked Washington to consider including Europe under its protective missile shield, if NMD plans are realised. Against domestic opposition, British Prime Minister Tony Blair is said to have given the go-ahead for upgrading the early-warning radar station at Fylingdales, in Northern Yorkshire. A relay ground station is planned at Menwith Hill, also in Yorkshire. A senior official of Canada's Department of National Defence has told the Parliament in Ottawa that Canada should join NMD. Criticism of its reluctance to join a North American Missile Defense system (NAMD) from US Deputy Secretary of Defense John Hamre has prompted the Canadian Foreign Affairs Minister, Lloyd Axworthy, to call for American assurances that the scheme would not harm the NPT, and to accuse Hamre of misleading people about Canada's concerns. He also said that NMD technology remained unproven.

China has expressed its strong objection both to the possible deployment of NMD in the US and of any regional anti-missile defense in East Asia. Ambassador Sha Zhukang, the head of the disarmament department in China's Foreign Ministry, has expressed doubt about the feasibility of a working missile defence system and has called it a "paper tiger". China sees the issue as connected with that of space weapons, on which, with Russian support, it has proposed in the CD that a treaty banning the testing, deployment and use of such weapons should be concluded as a matter of priority.

In testimony before the US Senate, Joseph Cirincione, the Director of the Nuclear Non-Proliferation Project of the Carnegie Endowment for International Peace, has drawn attention to the fact that the ballistic missile threat to the US is significantly smaller now than it was in the mid-1980s. As he pointed out, "[o]nly China and Russia have the capability to hit the United States with nuclear warheads on intercontinental ballistic missiles".

Supporters of anti-ballistic missile defence are reported to have been encouraged by the successful interception on 6 February of a Minuteman target missile by a Patriot-3 'kill vehicle'. Meanwhile, it has been reported that the US army has had to replace hundreds of Patriot-2 missiles that had degraded as a result of having been on full alert, i.e. in a warm state, for six months or more, in the Korean Peninsula and the Persian Gulf.

(*NYT*, 14/1, 19-21/1, 30/1, 1/2, 2/2, 13/2, 19/2, 22/2, 25/2, 7-9/3, 24/3; *AP*, 17/1, 20/1, 27/1, 6/2; *WP*, 17/1, 19/1, 20/1,

28/1, 8/2, 21/3, 30/3; **AFP**, 18/1; **CSM**, 18/1; **Gannett News Service**, 18/1; **LAT**, 19/1; **Atlanta Journal-Constitution**, 20/1; **WSJ**, 20/1, 23/3; **WT**, 20/1; **USA Today**, 21/1; **R**, 27/1, 28/1, 10/2; **ST**, 31/1; **IHT**, 7/2, 15/2; **San Francisco Examiner**, 7/2; **G**, 8/2; **Carnegie**, 10/2; **Nezavisimoye Voyennoye Obozreniye**, 25/2-2/3; **Dallas Morning News**, 12/3; **National Post** [Ottawa], 17/3; **San Diego Union-Tribune**, 22/3; **DT**, 30/3 **Bulletin of the Atomic Scientists**, March/April. See also **Newsbrief** no. 48, page 16)

- Energy Secretary Bill Richardson of the **United States** has appointed a search committee to identify suitable candidates for the post of Under Secretary for Nuclear Security, who will head the new semi-autonomous National Nuclear Security Administration (NNSA) within DoE, that was mandated by the US Congress in 1999. All nuclear weapon activities of DoE will be concentrated in NNSA; the new Under Secretary will formulate policies on nuclear weapon development, naval propulsion, nuclear non-proliferation and the disposition of fissile material from weapons. (See **Newsbrief** no. 48, pages 16–17.) There had been uncertainty about the delineation of the functions of the new official and the latter's position *vis à vis* the Energy Secretary. Reportedly, Secretary Richardson has received assurances from the Senate that the Energy Secretary will have clear lines of authority and responsibility over the new agency. However, a bipartisan panel of the House Armed Services Committee has criticised Mr. Richardson for departing from Congressional guidelines in the creation of NNSA, and restricting the semi-autonomy which Congress had wished that body to possess. A particular complaint is that, supposedly, the Secretary has assigned DoE officials to jobs both within and outside NNSA, and is retaining too much control. (**NF**, 10/1; **SF**, 10/1; **NYT**, 13/2)

#### g. Proliferation-Related Developments

- Several rounds of talks have taken place between Vice-Foreign Minister Kim Gye-Gwan of the **Democratic People's Republic of Korea** (DPRK) and Ambassador Charles Kartman of the US, of which the main purpose was understood to be laying the groundwork for the first visit to Washington by a cabinet-level official from Pyongyang; presumably, this would be First Vice-Foreign Minister Kang Sok-ju. As reported, Pyongyang accepted the American invitation for a visit to Washington during talks held in Berlin in January. The event would reciprocate the visit to Pyongyang of May 1998 by former US Defense Secretary Dr. William Perry; the agenda was expected to include discussions on the DPRK's missile and nuclear programmes; future relations between the two countries, including the establishment of liaison offices; and the removal of the DPRK from the American list of countries supporting terrorism. The DPRK was also expected to demand an end to economic sanctions. Analysts believe that Pyongyang hopes to use the occasion of the visit to secure as many concessions from the US as possible while the present Administration is still in power, given the possibility that the next Administration will be less flexible.

The preparatory talks do not seem to have always proceeded smoothly. At the January meeting in Berlin, the DPRK is said to have first threatened to reconsider its moratorium on missile testing, in response to the American missile tests over the Pacific (see page 11). As of this writing, the date of the visit, which at first was to be in March, had not been announced. American officials have maintained that it would take place as planned, but it now

seems to have been put off until May. A preparatory meeting held in March is said to have been devoted mainly to producing a substantive agenda for the visit. It is understood to have been adjourned after a week, without agreement; reportedly, the DPRK had insisted on a series of US concessions as preconditions for the meeting, including its removal from the US list of nations that sponsor terrorism. The North's Ambassador in Beijing has warned the US that the DPRK could not visit there while branded as terrorists, claiming that without those concessions it would be impossible to have high-level talks. The issue is thought to be of fundamental importance to Pyongyang and US officials see it as possibly the most intractable one on the agenda, not likely to be resolved soon. An earlier report from Seoul had claimed that according to the RoK's Foreign Minister, the DPRK, in preparation for the Washington meeting, had already accepted proposals to stop developing missiles and nuclear weapons and to renounce terrorism, in return for better ties with the West and its removal from the US list.

On the normalisation of relations with Western countries, there were said to be several views within the DPRK government, with some officials stressing the economic benefit of closer ties and others afraid that ending the country's isolation might undermine its regime. In March the impression took hold that the former group had prevailed, when it was announced that diplomatic relations had been established with Italy. It was only in January that this country disclosed its wish to establish diplomatic relations with the DPRK; in late March, its Foreign Minister visited the DPRK with which, as he was quoted to have said, it was particularly important to open a channel of dialogue because of its suspected nuclear arms programme. Rome stressed that its approach to the DPRK was part of a strategy shared with other Western states, and a spokesman in Pyongyang, where the Italian visit was widely hailed, confirmed that his government looked for friendly cooperation with Western countries. In February it was reported that Australia and the DPRK had agreed in principle to reinstate relations and that diplomats from the two countries had visited each other's capitals. There were also reports of contacts with other Western countries, including Canada and the UK; according to sources in Seoul, the British government was planning to send a working level mission to discuss strengthening relations, closer involvement of the DPRK in the non-proliferation regime, and provision of humanitarian assistance. Pyongyang was seen also to seek economic and trade contacts with European states, among whom France was said to be in conversation with the DPRK over the supply of telephone equipment, and a Dutch firm was thought to have agreed to construct electric generators in the North and to be discussing opening a branch office there. Israel, the Philippines and Taiwan were reported to have expressed a willingness to improve relations with the North; there has been a report in Manila that the DPRK had shown interest in joining the Regional Forum of the Association of Southeast Asian Nations (ARF).

Japan's Prime Minister has announced that his country is ready to discuss the normalisation of diplomatic relations with the DPRK. A first meeting, in Pyongyang, was planned for early April and Japan said it planned to recommence food aid to the DPRK, to facilitate the talks, starting in March with 100,000 tons of rice. The move was complicated, however, by the DPRK's reported warning that it might suspend contacts if Japan went on making allegations about Japanese citizens being kidnapped in the North. The official DPRK daily, *Rodong Sinmun*, was reported to have

called Japan a "sworn enemy" and said it would have to atone for its "past wrongdoings" if it wanted to establish diplomatic relations with the DPRK. Tokyo sources predicted that progress in the talks would be slow.

News media in Seoul have given extensive publicity, recently, to the willingness of the South to extend government-level economic relations with the DPRK. It has been announced in Seoul that in July Ministers of Finance and Economy from China, the DPRK, Mongolia, the RoK and the Russian Federation will meet in Beijing, which would be the first occasion since 1998 for senior officials from the two Koreas to have discussions on issues of joint interest. It seems, however, Pyongyang is not willing to have bilateral talks or to accept the RoK's proposal to exchange special envoys, as provided in the Basic Agreement of 1991.

During a visit to Pyongyang in February by the Foreign Minister of the Russian Federation, the two countries signed a treaty of friendship, said to be intended to mend ties that had been strained since Moscow — a close ally during the Soviet era — established diplomatic relations with Seoul. Analysts claim that the agreement is an indication that Russia would not back North Korea in a military sense, but Pyongyang has presented the accord, which expressly recognises it as a partner in negotiations on the creation of a global system of non-proliferation of missiles and missile technologies, as providing for joint action against Japanese and American efforts to set up a theatre missile defence system. It has also taken the occasion to repeat that it would "strongly retaliate against any move to discriminate against it in the issue of satellite missile launch [*sic*]".

Pyongyang has kept up its militant rhetoric against the West, especially the US. Its official news agency said on 13 February that the DPRK was unable to trust the US because "tough Conservative elements" in Washington had control over policies directed at the DPRK, forcing it to doubt the US' true intentions. Shortly after the signature of the turn-key contract for the construction of two light-water reactors in the DPRK, Pyongyang warned the US of "serious consequences" if there were any further delays in the building schedule, for which it said it held Washington responsible and expected to be compensated. Reportedly it suggested that if these delays continued it might re-start its natural-uranium reactors. Meanwhile, full scale construction work at the building site of the two light-water reactors is said to have started, but more workers appear to be needed and, as it did already last October, the DPRK has said it will not send them until monthly wages are raised from the present \$110 to \$600. The initial rates had been agreed upon by all sides and are said to be a fair reward for the low-level work done by the Northern labourers. The dispute is reported to have added to the current delay in the schedule. Plans have been announced for a meeting in early April between the Korean Peninsula Energy Development Organization (KEDO) and DPRK officials, to discuss training of DPRK staff for the light-water reactors. As reported, KEDO wants the training to take place in the RoK, where the reactors were designed, but both the DPRK and the US are said to prefer a third country.

KEDO has announced that most of the funds needed to build the reactors are now on hand, enabling the principal contractor, the Korea Electric Power Corp., to start ordering long-lead components and reactor systems. There appears, however, to be a question about the liability of payment for

major components, if by the time they are ready to be delivered, the IAEA has not been able to certify, in accordance with the terms of the Agreed Framework, that the DPRK is in compliance with its safeguards obligations. In that case, delivery would have to be held up, which might add to suppliers' costs, and it seems that there is no agreement that they shall be compensated. This has been a ground, reportedly, for the General Electric Co. to refuse to provide turbine generators for the project. An alternative supplier is being sought.

Pyongyang has once again urged the US to supply it on a regular basis with crude oil. US President Clinton has authorised a payment of \$15 million to KEDO, for the supply of fuel oil to the DPRK. In doing so, he is reported to have waived the legislative requirements which oblige him to certify that the DPRK is not seeking to enrich uranium or reprocess nuclear fuel, and that no US assistance is diverted improperly. According to the presidential memorandum containing the waiver, supplying the funds is vital to US national security.

There are reports about an unparalleled power shortage in the North, affecting all aspects of the economy and daily life, including transport services, heating, lighting and agriculture. The DPRK has blamed this on a combination of natural disasters and "the US stranglehold on its nuclear industry", and has called on the latter for compensation. While the Northern economy appears to be improving, it is still meeting great problems, and US strategic experts are said to be surprised at Pyongyang's ability under current circumstances to carry out extensive military exercises.

The publication in the US of satellite images produced by the commercial firm Space Imaging Inc. of the missile base from which, in 1998, the DPRK is thought to have staged the first launch of a long-distance missile, Taepodong-1, has triggered renewed debate about the threat posed by Pyongyang's ballistic-missile effort. The Federation of American Scientists (FAS) has called the installation, which manifestly lacks rail links, paved roads, fuel tanks and staff housing, "singularly unimpressive" and consisting of the "most minimal imaginable test infrastructure". According to the FAS this reveals the modest ambitions of the DPRK's test programme. However, the US Defense Department spokesman has said that the fact that the launch facility is primitive may not make the missiles any less threatening. A senior CIA official has told a Senate committee that the DPRK is still developing its long-range ballistic missile programme and is ground-testing components. His testimony was said to have been based on an intelligence update of September 1999, which found that the DPRK is likely over the next 15 years to develop missiles "potentially capable of hitting the US". According to a report in a prominent South Korean newspaper, Pyongyang has resumed its missile programme and has recently tested engine systems for the Taipodong missile. The same report claims that there have been new excavations at Kumchangri, which was investigated by US experts in May 1999, and that nuclear-related equipment has been installed there.

RoK intelligence sources have also cautioned against underestimating the DPRK missile threat, even if its launch facilities seem primitive. In the US, Frank Gaffney, a senior official in the former Republican Administration, now head of a conservative think-tank, the Center for Security Policy, has warned against ignoring capabilities that have the potential of harming the US. Reacting to the

allegation by a North Korean scientist who recently defected to the US, that the DPRK has developed a missile with a range of 3,725 miles (6,000 km), capable of reaching California, Gaffney has accused the Clinton Administration of neglecting America's defence against missile attack, and instead trusting in arms control. Another DPRK defector, interviewed in Seoul, has claimed, however, that in 1997 when he escaped from the North, production of the Taepodong-2 missile had not yet started and he did not think that North Korea had finished developing the missile. He also said, however, as has Gaffney, that China had sent the DPRK a consignment of missile technology for its long-range missile programme; reportedly those shipments are continuing, which, if correct, would mean that China is contravening its undertaking to end such sales. A spokesman for China's Washington embassy has denied the reports.

The CIA official referred to has also said that the DPRK's continued willingness to sell missiles to other nations poses a major threat to US troops and allies in the Middle East and Asia. Israel, too, has complained to the DPRK about its missile sales to countries in the Middle East. There has also been a report that according to American and Israeli intelligence sources, Western technology obtained by Egyptian companies is being sent to the DPRK and returned by the latter in the form of advanced components for Egypt's ballistic missiles. The technology is said to be used also in the DPRK's Taepodong missile programme. A report from Tokyo alleges that the DPRK is helping Iran develop a more advanced version of a cruise missile which China sold to Teheran several years ago, before it agreed with the US to halt such exports. Reportedly, before it did so, China had delivered 75 of the missiles.

According to a newspaper report published in Seoul, the DPRK has for the last ten years carried out nuclear, biological and chemical warfare drills in a sparsely populated area.

In early March, it was reported in Seoul that the DPRK Navy Command had declared the Northern Limit Line (NLL) on the 'West Sea' (the Yellow Sea) null and void. Shortly after, Pyongyang said that US warships and civilian vessels would be allowed to enter waters South of that line, but it would consider any sea or air traffic North of it as an intrusion that would call for retaliation. The DPRK also said it was creating one-mile-wide "navigational zones" for ships going to and from disputed islands in the Yellow Sea and announced it would not allow aircraft to fly above those islands. The RoK Navy responded with a warning that any DPRK traffic South of the NLL would be regarded as a provocation. Once again, tensions in the area grew and RoK naval forces were put on alert; Seoul has warned Pyongyang not to provoke it.

The World Food Programme (WFP) has cautioned that if the international community does not make additional commitments to the food aid programme for the DPRK, that programme will have to be discontinued in mid-May. Earlier, it had said that if additional help would not be available by January the country's food supply would be greatly reduced by Spring, when last Fall's crops would have been consumed. Sources in the RoK have confirmed that food production in the North runs almost 50 per cent below estimated needs. The DPRK is said to have asked the US to provide food assistance on a direct, governmental basis instead of through international agencies; Washington is understood to have responded that this would be possible once the DPRK had been taken off the American list of

countries that sponsor terrorism; this would have to be approved by the US Congress. Israel has said it would be willing to help the DPRK's agricultural industry if the country stops selling missiles and technology to Arab states.

The DPRK has denied a report in a British newspaper, supposedly based on claims first published in the *Washington Times*, that its military personnel have been training Congolese soldiers and that in return, it has been granted access to Congolese uranium mines. Reports that DPRK soldiers have been seen in a Congolese mining town, had apparently led to unconfirmed reports that Pyongyang was acquiring uranium for a nuclear weapon programme. The Korean Central News Agency has called the report a fabrication. It has added that the DPRK has neither the intention nor the capacity to develop nuclear weapons amid its economic difficulties.

(**R**, 23/12/1999, 24/1, 21/3, 23/3, 27/3, 29/3; **KH**, 4/1, 5/1, 14/1, 24/1, 25/1, 27/1, 31/1, 2/2, 3/2, 7/2, 24/2, 27/2, 29/2, 3/3, 10/3, 11/3, 14/3, 27/3, 28/3, 30/3; **NYT**, 4/1, 9/1, 11/1, 22/1, 10/2, 14/3, 17/3; **AFP**, 5-7/1, 12/1, 23/1, 28/1, 30/1, 9/2, 10/2, 13/2, 14/2, 23/2, 28/2, 2/3, 4/3, 5/3, 7/3, 9/3, 12-14/3, 24/3, 27/3, 29/3; **WT**, 5/1, 4/2, 9/2, 3/3, 16/3; **JAI**, 6/1, 12/1, 13/2, 24/2, 3/3, 9/3, 12/3, 16/3, 23-25/3, 27/3, 29/3; **ChI**, 7/1, 18/1, 31/1, 2/2, 7/2, 2/3, 9/3, 12/3; **China Daily**, 7/1, 23/3; **KT**, 7/1, 13/1, 24/1, 30/1-2/2, 11/2, 17/2, 1/3, 2/3, 9/3, 10/3, 12/3, 16/3, 24/3, 26/3; **Daily Yomiuri**, 9/1; **People's Daily**, 10/1, 30/3; **DT on Sunday**, 16/1; **AP**, 31/1, 2/2, 7/2, 10/2, 23/2, 1/3, 6/3, 23/3, 28/3; **IHT**, 31/1, 19/2; **US State Department**, 31/1, 1/2, 28/2, 1/3; **Izv**, 17/2; **NW**, 17/2, 30/3; **Sankei Shimbun**, 17/2; **Jane's Defence Weekly**, 23/2; **LAT**, 10/3; **E**, 1/4)

- American political analysts see the current tensions between **India** and **Pakistan** as more likely to erupt into a major conflict than at any time since the war of 1971. It had been assumed that politicians at both sides of the border would rely on their nuclear capabilities as a means of keeping conflict at a low level, but present indications are that this calculation is not working and that armed confrontation escalating into a nuclear exchange can no longer be ruled out. The situation has been aggravated by events such as the hijacking in late December of an Indian commercial aircraft; Indian army manoeuvres near the border with Pakistan; and several massacres of Kashmiri villagers, including the killing of 35 Sikhs, while President Clinton was in India, all giving rise to mutual recrimination. The test-firing by Pakistan in February of a new short-range ground-to-ground missile has prompted protests from India; the increase by 28.2 per cent in India's military budget has led to angry reactions in Pakistan.

During discussions in New Delhi, in March, between US President Clinton and India's Prime Minister A.B. Vajpayee, the latter reportedly made no concessions on nuclear issues. He was said to have confirmed that India would not make any further nuclear tests, observed strict export controls and adhered to the no-first-use principle, but also to have made clear that it was not close to becoming a party to the CTBT. Reportedly, the two sides differed in their perceptions of India's security needs and agreed to continue the dialogue. The remark by the US President, at a state dinner in New Delhi, that the Indian subcontinent was "the most dangerous place in the world today", received the response from India's President K.R. Narayanan, that "[t]hese alarmist descriptions will only encourage those who want to break the peace ...". The Prime Minister also



said that there was no threat of war with Pakistan. In a speech to the Indian Parliament, however, Mr. Clinton stressed that "deterrence alone [could] not be relied on to prevent accident or miscalculation", and added that "in a nuclear standoff, there is nothing more dangerous than believing there is no danger". The President's references to nuclear matters are said to have been received in stolid silence, but the remark that only India could know if it is truly safer today than before the tests apparently won applause.

Pakistan's non-proliferation credentials and its plans regarding the CTBT were reported to have been among issues the US President raised when he stopped over in Islamabad for somewhat less than six hours on his way back from India. The President's brief sojourn in Pakistan was said to have vexed New Delhi, where it is feared that it may have lent legitimacy to the regime of General Musharraf. Reportedly, reactions to the American warning that a nuclear arms race with India would be a "ruinous folly", were met in Islamabad with the comment that in India Mr. Clinton had said it was up to that country to determine its national security requirements. On nuclear matters, Pakistan, too, was reported not to have made any concessions to the American President.

Both India and Pakistan are known to have employed prominent public-relations firms in Washington, in efforts to influence American officials and members of Congress in their favour, which peaked during the run-up to President Clinton's trip.

During a two-day meeting on security issues in Beijing, in early March, India is said to have warned China that its assistance to Pakistan's nuclear and missile programmes was threatening regional stability.

At the opening session of the Conference on Disarmament (CD) in Geneva on 18 January, Pakistan's delegate referred to resolution 54/54M on Conventional Arms Control at the Regional and Sub-regional Level, adopted by the UN General Assembly, and said he intended to pursue the matter at the CD. This elicited the response by the representative of India that she had voted against that resolution and that the CD was not the appropriate venue for this issue.

In an interview on Indian television in February, Pakistan's General Musharraf refused to rule out the use of nuclear weapons in a war with India. India's Prime Minister Vajpayee has denounced Pakistan's failure to adopt a no-first-use policy. He has said that Pakistan was threatening nuclear war, thinking that it could drop one bomb and thereby win. This, he said, would not happen: although India had said it would not be the first to use nuclear weapons, "if anyone uses them against us, we will not wait for our annihilation".

India is said to be prepared to test-fire a naval variant of its 160 mile (250 km) range Prithvi missile. Observers have pointed out that in this test the accuracy of the missile ('Dhanush') would be of crucial significance: if it is not accurate enough, they say, it will only be useful when equipped with a nuclear warhead.

It has been reported that the Indian navy is planning to lease from Russia four or more long-range nuclear-capable aircraft. At present the Indian navy is said to have eight Russian long-range reconnaissance planes and five medium-ranged ones; these are about to go back to Russia for upgrading and refitting with up-to-date weaponry.

With the new long-range Tupolev-22M3, the Indian navy will have acquired its first nuclear delivery capability. India is said to be considering the possibility of buying the planes, of which Russia is thought to have 265.

(NYT, 16/1, 8/2, 13/2, 18/2, 1/3, 7/3, 18/3, 22-26/3; ACRONYM, 20/1; Hindu [New Delhi], 14/1, 2/2; BBC, 8/2; WT, 8/2; E, 18/3; WP, 21/3; NW, 23/3)

- According to American press reports, the Central Intelligence Agency (CIA) of the US has told that country's Administration that Iran might [sic] now be in a position to make a nuclear weapon. As reported, this assessment is not based on evidence that Iran has achieved a breakthrough, but on the fact that the US "cannot track with great certainty" Iran's efforts to buy material and technology on the black market, particularly from (states of) the former Soviet Union. According to the report, there is no certainty that Iran actually has nuclear weapons, but the CIA cannot rule out that it does. A CIA spokesman has been quoted as saying that there were "as many opinions as analysts on that subject". Administration officials are said to be divided in their view on the issue. One official is quoted as saying that "no one [was] asserting they have enough for a bomb". Some analysts from other intelligence agencies, have said there was no evidence that Iran had either made its own weapons or had acquired enough fissile material to make one. Among Administration officials, there is said to be a view that the CIA's warning is a worst-case hedge to avoid the situation of May 1998, when it failed to give timely warning of the Indian tests.

The *Times* of London has published an article claiming that the DPRK is assisting Iran in upgrading a naval cruise missile which the former bought from China in the mid-1990s. The missiles are said to lack sophisticated targeting devices and the DPRK is apparently helping Iran develop an "over-the-horizon" designation system that would give the weapons an advanced anti-ship capability.

It has also been revealed recently that according to an intelligence report by the US Department of Defense (DoD), the DPRK has sold Iran 12 missile engines of the type used in its Nodong medium-range (600 miles/1,000 km) missiles. These engines are said to have been used in the first stage of Iran's Shahab-3 missile, which has an estimated range of 1,000 miles/1,500 km. Iran is also said to be working on a longer-range (1,200 miles/2,000 km) version of the Shahab, which US officials think could use two booster stages propelled by Nodong engines or one Nodong engine on top of a more powerful motor of Russian design.

(LT, 11/1; NYT, 17/1; WP, 18/1)

- On 12 January, Iraq announced that it would allow inspectors from the International Atomic Energy Agency into the country to make an inspection of its uranium holdings, and on 21 January five inspectors arrived in Baghdad. As reported, Iraq has 1.8 tons of low-enriched uranium and 13 tons of natural uranium. In early December, the IAEA had advised Baghdad that it needed to make one of its annual inspections of the material, pursuant to the safeguards agreement between Iraq and the IAEA under the NPT (see *Newsbrief* no. 48, page 21). As of late December, however, Iraq had not responded to the IAEA's request for visas and the Agency's Director General had set the first week of January 2000 as the deadline by which, if no visas were issued, he would have to take further steps. Visas were

subsequently issued. The inspection, which included a physical inventory verification of the nuclear material at the Tuwaitha site, was concluded on 25 January. Reportedly, IAEA safeguards personnel were able to perform their activities effectively and efficiently and did not encounter problems. The exercise was the first nuclear inspection in Iraq since 15 December 1998, when Agency inspectors were withdrawn along with staff of the United Nations Special Commission (UNSCOM). The IAEA has pointed out that the inspection of January was not a substitute for verification activities under the relevant Security Council resolutions and was restricted to the material cited.

As reported in *Newsbrief* no. 48, page 21, there have long been reports that Iraq possessed a comprehensive design of a nuclear weapon and was seeking to procure fissile material. According to the London *Sunday Telegraph*, a senior official of the UK's opposition Conservative Party — the shadow defence spokesman — has said that he had evidence that Iraq has secretly concluded a nuclear cooperation agreement with the Former Republic of Yugoslavia. He is supposed to have added that the improvement in ties made it increasingly likely that the latter would agree to give Iraq "50 kilos of fresh weapons-grade uranium" that are supposedly in storage just outside Belgrade.

A report made late last year for the Institute for Science and International Security (ISIS), in Washington by a former high-ranking official in Iraq's nuclear-weapons programme claims that before the Persian Gulf War of 1991, Iraqi students combed university libraries for information on the construction of nuclear weapons, and Iraqi agents and scientists collected valuable data at American scientific conferences. This reportedly broad and well-financed effort, which apparently was also conducted outside the US, is now reported to have enabled Iraq to build the foundations of a nuclear weapons programme, although the information is thought not to be sufficient in itself to complete a weapon. Students are also said to have purchased scientific literature on a large scale.

At the time this issue of the *Newsbrief* went to press, there still was no certainty if and when Iraq would admit inspectors of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), which the Security Council established in its resolution 1284 (1999) of 17 December 1999, or IAEA inspectors acting pursuant to that resolution. Indications were, however, that the defiant attitude of Iraq in this respect was receiving less international support than previously.

The choice of an official to lead UNMOVIC has been a subject of much debate in the Security Council. The deadline for UN Secretary-General Kofi Annan to submit a nomination to the Security Council set in Resolution 1284 (1999) of 17 December was 17 January. At that time two candidates were said to be in contention: Rolf Ekéus, the first Executive Chairman of UNSCOM and currently Sweden's Ambassador to Washington, and Pasi Patokallio, Finland's Ambassador to Israel, former Finnish Representative on the Conference on Disarmament and Chairman of the second session of the Preparatory Committee for the 2000 NPT Review Conference. A large number of possible nominees were said to have been considered, including Ambassador Celso Amorim, Permanent Representative of Brazil in Geneva, and Abdul Minty, Secretary-General of

South Africa's Foreign Ministry and a specialist in nuclear and disarmament issues.

On 17 January, the Secretary-General submitted the nomination of Ambassador Ekéus and reportedly gave Security Council members 24 hours to react. Russia is known to have objected, supposedly because it did not wish to have someone in the post who had been associated with UNSCOM; it suggested that if Iraq was to accept further inspections it would have to concur with the appointment of a chairman of UNMOVIC as well as with the composition of the inspection staff. China and France also objected; the former is understood to have suggested that a candidate from a developing country might be in a better position to convince Iraq to cooperate with the Council. Iraq ridiculed the choice of Ambassador Ekéus as "old wine in a new bottle", and harshly criticised the Secretary-General, accusing him of being in league with Washington. The US was among Council members who supported Mr. Ekéus' nomination and said it was "unwise in the extreme" to allow the Iraqi government to exercise veto power over UN decisions how to resume the arms inspections; at the same time some American officials were said to be frustrated that the Administration had not defended the Secretary-General's nomination more forcefully.

On 25 January the Council's President announced that it had not been possible to reach consensus on the nomination of Ambassador Rolf Ekéus, but that members had agreed to nominate Dr. Hans Blix, also of Sweden, the former Director General of the IAEA, and would submit his name to the Secretary-General for action. According to a news-agency report, Blix' name had been put forward by France. Baghdad's immediate reaction was that it made no difference who was named, because it did not accept the pertinent resolution, in whole or in part. It said it did not necessarily have problems with Dr. Blix, but was not concerned with the compromise and would not allow him into the country, nor would it end the disagreement over UN weapons inspections in Iraq. In February, a senior Russian official reportedly visiting Baghdad to persuade the Iraqi government to cooperate, met with Vice President Ramadan and Deputy Prime Minister Tariq Aziz and received a similar answer; the former was quoted as saying that, "There shall be no return of the so-called inspection teams". On 5 March, Tariq Aziz confirmed Iraq's refusal.

While waiting to assume his new job, on 1 March, Dr. Blix said that his teams would not force their way into suspected Iraqi sites, but would defer to UN headquarters to resolve any confrontations. His words were taken as a reflection of the traditional IAEA approach, where the inspection system is part of the organisation's structure. Blix was also quoted as saying that he would not permit his staff to take instructions from any government and would not tolerate the rejection of any inspector on the grounds of nationality. American critics of the UN and of the current Administration expressed scepticism of the newly planned inspection regime, which would, as one wrote, "probably do more harm than good", as they would be "an inexperienced group, deprived of Security Council backing and a strong director", and would find only what Saddam wanted them to. In a press conference given after assuming his post, Dr. Blix said, however, that he would expect Iraq to give unimpeded access to inspectors and the standard for the inspections would not be lowered. He announced that he had no present plans to go to Baghdad to smooth the way for the new task and said it was up to Iraq to accept the

resolution; cooperating with the inspections, he said, would benefit Iraq, as it could lead to the suspension of sanctions.

Just before Dr. Blix assumed his post, Charles Duelfer, Deputy to the Executive Chairman of UNSCOM and its highest-ranking American citizen, who had been acting head of UNSCOM since Ambassador Butler left, announced he was resigning. He was quoted as saying that he did not think that what the Security Council wanted the newly created organisation to do would be consistent with what UNSCOM had been doing.

The members ('commissioners') of UNMOVIC were named in March. Largely specialised in disarmament matters, they include officials from Argentina, Brazil, Canada, China, Finland, France, India, Nigeria, the Russian Federation, Senegal, Ukraine, the UK, the US and the UN Department for Disarmament Affairs.

The US Administration has said it had evidence that Iraq had rebuilt military and industrial sites where it might be able to produce chemical or biological weapons. A British press report claims that a defector from an Iraqi army unit charged with the protection of non-conventional weapons has revealed that Iraq is continuing the production of chemical weapons in binary form. A prominent American expert on biological weapons has pointed out that large amounts of several kinds of "cultured media" imported by Iraq for its biological weapons programme are still unaccounted for. While these missing quantities are usually discussed in terms of the amounts of anthrax that might have been produced with them, he has said that there are suggestions that Iraq, which has acknowledged production of three bacteriological agents, has produced others agents which, so far, are unidentified. As reported, former UNSCOM officials believe that Iraq may have produced an unnamed biological weapons agent in a so-far unknown underground production facility. British intelligence officials have suggested the agent is an organism that produces plague. There is said also to be a possibility that it is a new viral agent, different from the three on which Iraq is known to have done research; this reportedly troubles experts because it would indicate the high sophistication of the programme and suggest possible assistance from abroad.

While American intelligence reports are said to lack concrete evidence that Iraq has actually produced such agents, there appears to have been talk in Washington about the possibility of a renewed military confrontation. Some commentators, however, note that the US Administration seems not to have a clear policy for dealing with Iraq's enduring defiance of UN resolutions; widespread and still increasing smuggling of oil out of Iraq and the illegal import by that country of weapons parts are said to be countered only randomly. In early February, US naval forces seized a Russian tanker carrying oil alleged to be from Iraqi sources, exported in defiance of UN sanctions. The ship was taken to Muscat while laboratory tests were made; these have since confirmed the oil to be of Iraqi origin. The vessel had an Iraqi customs officer on board. Russian officials have claimed that the shipment had been arranged by a private Russian company. The American naval officer coordinating international patrols in the waters off Iraq has told the UN committee on sanctions that for the smuggling to be curtailed, the cooperation is needed of Iran, through whose waters many of the illegal transports pass. The claim by US intelligence sources, that some of the oil revenues are used for the construction of military bases for the Iranian opposition group, the People's

Mujahedin, considered in Washington as a terrorist organisation, is used by the US Administration as an argument for maintaining the oil embargo. The UN Secretary-General has warned that the oil-for-food programme should be made to operate more effectively, to avoid more unnecessary suffering of Iraq's civilian population.

The UN has reported that Iraq has raised more than \$13 billion for food, medicines and other humanitarian supplies under the oil-for-food programme. The ceiling on other Iraqi exports was lifted in December 1999, and Iraqi imports are now said to go far beyond immediate humanitarian needs. Disagreements develop from time to time over the purposes for which, and the way in which, oil earnings may be used, and how they are disbursed. A US-sponsored Security Council resolution of late March has raised the amount Iraq can spend each year on parts for its oil industry from \$600 million to \$1.2 billion.

In February, Hans von Sponeck, the UN director of the oil-for-food programme, resigned effective 31 March, saying that he was unable to help Iraqis affected by the UN embargo of 1990. Jutta Purgart, the head of the World Food Programme in Iraq, also resigned, in protest over the failure of Iraqi relief programmes. The Secretary-General has abolished the post of special UN envoy in Iraq, which was established in early 1998 and was held by Ambassador Prakash Shah of India (see *Newsbrief* no 41, p. 16).

In the period covered by this *Newsbrief* Iraqi military targets were attacked repeatedly by UK and US warplanes.

(IAEA Press Release 2000/2, 13/1, 2000/4, 26/1; NYT, 13/1, 15/1, 17-22/1, 26-28/1, 1/2, 5-8/2, 11/2, 15/2, 16/2, 29/2, 2/3, 3/3, 9/3, 15/3, 22/3, 24/3, 25/3; **Bahrain Tribune**, 13/1; **Gulf News**, 13/1; **NZZ**, 13/1, 27/1, 28/1; **R**, 13/1, 18/1, 25/1; **UN On-Line News Service**, 17/1, 18/1; **WP**, 21/1, 25/1, 10/2; **CNN On-line**, 25/1; **AFP**, 26/1; **AP**, 27/1, 11/2; **BBC**, 27/1; **DP**, 27/1; **LM**, 27/1; **NW**, 27/1, 17/2; **ST**, 20/2; **NBC News**, 24/2; **Sunday Telegraph**, 26/3; direct information.)

- The publication in **Israel** in November 1999 of excerpts from the previously classified transcript of the trial of Mordechai Vanunu, a nuclear technician sentenced for treason after disclosing information on the country's presumed nuclear-weapons programme, has received much press coverage. On 2 February, the Israeli parliament (Knesset) held a public debate on the country's nuclear arms programme. As reported, the debate, which was attended by foreign observers, was brief and did not bring any significant revelations, which observers see as confirming that the majority of Israelis are averse to discussing the issue. The main intervention came from Issam Mahoul, the Arab-Israeli member of the Knesset upon whose petition to the Supreme Court the Speaker granted the request for debate; speeches were broadcast live on television. Issam claimed that Israel has up to 300 nuclear warheads and said, among other things, that the three submarines Israel has recently obtained from Germany will be fitted with nuclear weapons, giving the country a second-strike capability. Right-wing members left the auditorium during the speech. For the government, a response was given by a minister without portfolio, who defended Israel's policy of secrecy and repeated as the guiding principles of Israel's nuclear policy, that it would not be the first to introduce nuclear weapons into the Middle East; that it supported in principle preventing the spread of nuclear weapons, even though international support of the concept had been ineffective in

curtailing Iranian and Iraqi weapons production; and that it supported the creation of a region free of nuclear weapons and ballistic missiles once there was a proven peace over a sustained period of time. A vote a week later, whether to have a full-scale discussion of the issue was defeated by 61 votes to 16.

A recent editorial in the daily *Ha'aretz* claims that contrary to what many observers have said, much has been published in Israel on the nuclear-weapon issue. According to the author, "there are no examples of publications being seriously censored". The article also claims that in the last five years the matter was before the Knesset a number of times although in none of these cases a serious debate was conducted.

A senior scientist said to have worked at the Dimona reactor has told Israel radio that the reactor is too old to continue functioning safely, and should be closed.

Israel has formally deployed its Arrow-2 antiballistic-missile defence system. Arrow-2 has been developed with American help, at a reported cost of \$1.3 billion. It is made by Israel Aircraft Industries.

(*NYT*, 25/11/1999, 20/1, 3/2, 15/3; *R*, 19/1; **Disarmament Diplomacy**, January/February; *CNN On-line*, 2/2; *Ha'aretz*, 3/2, 29/3; *AP*, 6/2)

- American official sources are quoted as saying that reports that **Pakistan** had used plutonium in nuclear tests are unfounded. Apparently, reports to that effect surfaced after the May 1998 tests, but it now appears that some plutonium used in Indian nuclear tests was vented at the latter's test site and blew into Pakistan, where environmental samples collected by US intelligence near the Pakistani test site are supposed to have contained traces of plutonium.

However, since 1998, Pakistan has been operating a natural-uranium fuelled and heavy-water cooled and moderated reactor at Khushab, suitable for the production of plutonium. The reactor, presumably constructed with Chinese assistance, is thought to have a thermal capacity of 50 MW, although satellite imagery obtained and analyzed by the Institute for Science and International Security (ISIS) in Washington has revealed the presence of cooling towers which it claims are able to dissipate heat generated by twice that power. [However, this has resonances with the CIA allegations in 1991 that a Chinese-supplied reactor in Algeria was twice the declared size owing to satellite observation of the cooling towers. The allegation was retracted in January 1992 after US government experts, having studied other Chinese reactors, realised that Chinese reactors simply have much bigger towers than other comparable models — as one unnamed source was quoted in the media at the time "It's a classic case of over-engineering. I guess pouring concrete provides employment" — Ed.]

Pakistan has long had a small hot-cell operation at its 'PINSTECH' research institute near Islamabad, but this is not believed capable of extracting enough plutonium for even a single weapon, and so far Pakistan has not been known to have any other reprocessing facility. Air samples taken recently near Khushab, however, are said to have revealed traces of Krypton-85 gas, which is taken as an indication that plutonium is indeed being reprocessed.

It has been disclosed recently, partly through the ISIS satellite images and in part from interviews conducted by

*Nucleonics Week* with American, European and Pakistani officials, that the heavy water (D<sub>2</sub>O) used in the Khushab reactor is produced in a production facility for which the components are thought to have been brought into the country from North America and Europe; some American experts are said to believe that important equipment also came from China. Initially, there were reports that the US intelligence community thought that Pakistan did not have the capacity to produce enough D<sub>2</sub>O and that most had been obtained from China, and some might have been diverted from the Kanupp pressurised heavy-water reactor at Karachi. In late March, however, senior US Administration officials were quoted as saying that the CIA had known all along that Pakistan had built a clandestine heavy-water production plant, but that it did not know the source of that facility.

Satellite photos released just before President Clinton started on his trip to South Asia depict what is said to be a dozen new garages at a missile base in Sargodha, Pakistan, for M-11 mobile missiles. The M-11 missile is said to be nuclear-capable.

(*O*, 19/1/92; *NF*, 7/2; *CNN On-line*, 15/3; *ISIS*, 15/3; *CBS News*, 16/3; *NW*, 16/3, 23/3; *NYT*, 16/3. direct information)

- According to US press reports, the **Republic of Korea (RoK)** is working on the development of a rocket with which it hopes within the next five years to be capable of placing satellites in orbit. Western officials have expressed concern that the programme, with its potential dual-use aspects, might be employed for military purposes. The RoK has an agreement with the US which initially prevented it from developing missiles with a range exceeding 110 miles (176 km); the US are said to be ready to raise this to the limit set by the Missile Technology Control Regime (MTCR) of 185 miles (300 km). Discussions have continued over the past few months. The DPRK has excoriated Seoul's missile plans as presumably being directed against it and has accused the RoK of developing intercontinental ballistic missiles under the guise of a commercial satellite-launching programme. Supposedly to increase its "leverage" in these talks, the US State Department has delayed since October 1999 the licensing for the export to Seoul of essential components for missile launch systems as well as other projectiles, including torpedoes. (*AP*, 5/1, 6/2; *AFP*, 7/2, 8/2; *KT*, 12/1; *NYT*, 15/1)
- h. Nuclear Material Trafficking and Physical Security**
- Customs officers in **Cyprus** have confiscated a box of what was described as 'nuclear accessories'. The consignment originated in France and was said to be destined for "a nuclear power station". The Cypriot customs service is reported also to have confiscated a large pump also intended for "a nuclear power station", which came from Ukraine. (*Nicosia Politis*, 5/2)
  - In January, a man allegedly intending to blow up the Tokaimura reprocessing facility in **Japan** was arrested before he could carry out his plans. The device he meant to use consisted of ten metallic cylinders containing gasoline, wired together and attached to batteries. (*AP*, 11/1)
  - Aum Shinrikyo, the cult in **Japan** which in 1995 attacked Tokyo's underground with poison gas, is alleged to have

obtained classified information about nuclear facilities in Russia, Ukraine and several other states. Among information it is said to have obtained by breaking into computer networks is Russian plutonium processing technology, safety information regarding the Chernobyl nuclear power plant in Ukraine, and information about nuclear facilities in China, the RoK and Taiwan. Russia's Minatom has denied that Aum Shinrikyo could have access to classified information on Russia's nuclear facilities, and although Japanese police seem to believe that the sect obtained access to computer networks, Japan's atomic energy authorities have said that there have been no break-ins. (IT, 29/3)

- In **Panama**, where the US recently transferred control over the Canal to the national government, the Panama Canal Authority has greatly strengthened the security measures on the transit of radioactive cargoes. The first instance was the passage through the Canal in mid-January of the BNFL vessel *Pacific Swan*, carrying a cargo of vitrified high-level nuclear waste from France to Japan. On entry into Panamanian waters, that country's security forces are said to have boarded the ship and taken control of security and escort vessels. Pressure for more stringent security measures is said to have come mainly from the Washington based Nuclear Control Institute (NCI), which is understood to have advised the Panamanian government, and whose President went to Panama to observe the ship's passage. (NYT, 15/1; SF, 24/1)
- Two **Russian** officials are reported to have been arrested trying to sell a container with 21 grams of radioactive strontium. The material was said to be worth \$400,000. (AFP, 23/2)
- In **Russia** four sailors and a retired naval officer have been arrested for stealing "radioactive fuel" from a nuclear-powered submarine of the Pacific Fleet which was waiting to be decommissioned. They were also accused of taking parts of submarine equipment that contained precious metals. The accused are quoted as saying that they took the items to obtain cash for their return to civilian life after military service; a factor in the increase of theft of metal from naval vessels is said to be the privatisation of the scrap metal industry. (AFP, 1/2; AP, 1/2; Vladivostok News Online, 4/2)
- A report commissioned by the Foreign Ministry of **Sweden** contains the recommendation that a body should be established under the authority of the United Nations to deal with smuggling of nuclear technology and material. Reportedly, the study, made by experts from Sweden, Norway and Latvia, has found that the efforts of individual countries and international organisations are not up to dealing with the problem. The entity to be established is seen as a complement to the IAEA, not to replace it. One need identified in the study is for national anti-smuggling legislation to be introduced in each country, based on the requirements of the NPT, the Convention on the Physical Protection of Nuclear Material, the Nuclear Suppliers' Group guidelines, and IAEA recommendations. It also calls for clear lines of responsibility in each country. (NW, 24/2)
- Upon the request of the government of **Thailand**, an expert team from the IAEA went to Bangkok in February to help local personnel deal with the consequences of an accident involving a discarded radioactive cobalt-60 source. Reportedly, at least ten persons were exposed to radiation when

one forcibly removed the safety cover of a Co-60 medical irradiation device, which had been found amidst industrial scrap. The Thai authorities were also assisted by three Japanese physicians. The IAEA has reported that it had provided assistance in similar cases occurring in Bangladesh, Georgia, Ghana, Peru, Turkey and Venezuela; its Director General has called on governments to maintain registers of all radiation sources in their territories and provide for proper supervision throughout their use and disposal. Reportedly, the cobalt source had been registered, but the Thailand's Office of Atomic Energy for Peace (OAEF) had lost track of its whereabouts.

The persons involved in the Thai incident were treated for radiation exposure; three have died. As reported, Thai health authorities refused the Japanese physicians, who are well-versed in the treatment of radiation sickness, access to the patients and restricted the disclosure of details about the case. Local doctors, on the other hand, were reported to have recognised the patients' symptoms right away and to have alerted the OAEF, which promptly traced the source and thereby prevented greater harm. The OAEF is said to have been very cooperative in its dealings with the IAEA.

(IAEA Press Release 2000/8, 3/3; NW, 9/3, 16/3, 30/3)

- Five persons are reported to have been arrested in **Ukraine**, trying to sell 28 containers with strontium-90 capsules. The material is believed to have been stolen from a military establishment. The number of thefts of radioactive sources in Ukraine is said to be increasing. (NW, 2/3)
- It has been reported from the **United Kingdom** that in late 1999, British Customs agents intercepted 32 crates of parts for Scud missiles which, disguised as automotive components, were to be flown to Malta, to be forwarded to the **Libyan Arab Jamahiriya**. The parts were said to have been manufactured in Taiwan by a firm called Hontex. Earlier consignments of this nature were understood to have been trans-shipped through the UK and to have reached Libya. UK Foreign Secretary Robin Cook has confirmed the smuggling attempt and said that he would lodge a protest with Libya. Diplomatic relations between Libya and the UK were restored very recently. The Taiwanese firm that uses the brand name Hontex has pointed out that they are a textile factory and do not make missiles. Taiwan authorities have launched an investigation. (NYT, 10/1; WP, 10/1; R, 11/1)

#### i. Environmental Issues

- As indicated on page 5 of **Newsbrief** no. 47, **Russia's** Ministry for Atomic Energy (Minatom) sees the storage of spent fuel from abroad on Russian territory as a potential source of hard currency and is said to be intensifying efforts to attract customers. Reportedly, there are talks with France about the possibility of reprocessing French irradiated fuel in return for up-to-date French reprocessing equipment and technology. A joint task force of Minatom and DoE has been set up to discuss cooperation, but a Minatom spokesman said in late February that there were as yet no plans to import irradiated fuel; he pointed to the existing prohibition of reprocessing and storage of waste from abroad. The American Non-Proliferation Trust (NPT), formed by German and American industry, appears to be interested in having 10,000 metric tons of foreign spent fuel shipped to Russia. Reportedly, it is proposing to build a temporary storage facility there, which would be leased to industrialised nations wishing to ship spent fuel

abroad under guarantee that it would not be reprocessed. In this way, the Trust apparently hopes to raise between \$6 and \$15 billion over 40 years; it envisages donating the profit to Russia. The scheme would require a change in the Law on Environmental Protection, which prohibits importing and reprocessing of radioactive materials from abroad.

Environmental groups are alarmed at the plan and point out that Russia risks turning into a dumping ground for richer countries. Some US officials are said to be against the plan for fear that it might add to Russia's plutonium stocks. American policy opposes any new project involving reprocessing.

It has been reported from Moscow that an agreement was signed there on 14 March, between the Russian Federation and the Netherlands, under which the latter has undertaken to help Russia dismantle submarines taken out of service and nuclear warheads [sic]. According to a Minatom report, there are at present 183 nuclear-powered submarines taken out of service — 110 in the North and 73 in the East — of which a total of 120 — 72 in the North and 48 in the East — still contain spent fuel. Most have two reactors. In all, there are said to be 135 reactors in the out-of-service submarines of the Northern Russian Navy and 91 in those of the Eastern Fleet, 91. Some of the oldest boats, from which it is apparently very difficult to remove the reactors, have been laid up for 15 years without much, if any, maintenance. Their hulls may no longer be watertight, so that many may be in danger of sinking. In a few, leakage from primary cooling circuits has been detected.

There are reports about growing problems in finding long term storage space for irradiated fuel from Russian civil reactors. The wet storage facility for VVER-1000 fuel at Zheleznogorsk, in Siberia, which is understood to be the only centralised storage facility for this kind of fuel in Russia, will reach its maximum capacity by 2005. Spent fuel for RBMK reactors is stored on-site, but these facilities are also said to be filled to capacity. There are plans for the construction of a facility for long-term dry storage at Zheleznogorsk of VVER-1000 and RBMK reactor fuel. Another source of radioactive waste is Russia's icebreaker fleet. According to Bellona, until 1986 most of the solid radioactive wastes from these ships was dumped at sea. Currently, irradiated fuel from nuclear icebreakers are stored at the base near Murmansk in two service vessels and five on-shore storage sites. Both vessels have reached the end of their useful life and their radioactive contents will have to be moved. Consideration is said to be given to long-term storage at Zheleznogorsk or at a new site to be built either at a location in the Novaya Zemlya archipelago or in the Kola Peninsula.

An agreement was signed in early March between Minatom and DoE for the establishment of a Tank Retrieval and Closure Demonstration Center at Zheleznogorsk. The centre will serve as an international site for testing equipment and technology for remediation of high-level waste tanks. The project is part of the US-Russian 'Nuclear Cities' initiative.

According to the *New York Times*, on 26 March, election day, the inhabitants of the Northern Russian city of Gadzhiyev, where the Russian navy is engaged in dismantling decommissioned submarines, held a referendum on whether the navy should be allowed to set up a nuclear dump site just outside the city limits. The move is said to have been a first of its kind, not only because this is a novel instance of the populace taking public issue with the

military, but also because it was led by former high-ranking submarine officers. No news has been received about the outcome.

It has been reported from Moscow that plans to store spent naval fuel in a wet-storage facility at Mayak have been dropped in favour of the construction, with Western assistance, of dry-storage sites on the Kola Peninsula.

(Bellona, 12/1, 8/3, 9/3, 13/3, 20/3; NYT, 23/2; LT, 2/3; NNN, 3/3; DoE, 10/3; WP, 11/3; If, through RFE/RL, 15/3)

- Also in the **Russian Federation**, the St. Petersburg prosecutor's office has appealed against the acquittal of former naval captain Alexandr Nikitin from the charge of high treason, after he disclosed information about environmental hazards created by the Russian navy. The case was to be heard in the Supreme Court in Moscow beginning on 29 March, in what was expected to be a closed session.

The Russian Prosecutor General's Office has begun to investigate organisations which have reported on industrial and military activities that may affect environment. While, reportedly, the auditing staff have not explained the purpose of their investigation, employees of the environmental organisations being audited have asserted that, unable to have persons like Nikitin and Pasko (see **Newsbrief** no. 48, page 24) convicted as traitors, the prosecutor's office hopes to stop ecological watchdog activities anywhere in Russia.

(Bellona, 7/1, 20/3; MT, 1/3)

#### j. Miscellaneous

- On 1 January the IAEA reported that it had received confirmation from all countries operating nuclear power plants that no incident with implications for safety had occurred at any such plant as the result of the transition to the year 2000. The Nuclear Energy Agency (NEA) of the Organization for Economic Co-operation and Development (OECD) announced on 5 January that no Y2K safety-related problems in nuclear facilities had been reported during the transition period to 2000. NEA did say that 14 non-safety related incidents were reported "during the first 24 hours of the rollover", but it did not yet know whether these were Y2K-related and further investigations were under way. NEA said that it would continue to operate the Y2K Early Warning System (YEWS) until March 2000. Among incidents reported, there were four, apparently minor, problems in computers in Japan, two small faults each in Spain and the UK, and five or six in the US, where the smooth transition was ascribed to years of hard work by all concerned. (IAEA **Press Release** PR 2000/1, 1/1; NEA **Information Communiqué** NEA/Com (2000)1, 5/1; NW, 6/1; NF, 10/1)

## II. PPNN Activities

- On 24 January, Harald Müller, Ben Sanders and John Simpson visited Lisbon at the invitation of the Portuguese Ministry of Foreign Affairs, to brief officials who would lead the Portuguese delegation to the 2000 NPT Review Conference, and who would also co-ordinate EU positions during the Portuguese Presidency, on procedural and substantive issues confronting the Conference.
- On Friday 10 March, PPNN's Core Group held its twenty seventh semi-annual meeting at the Chauncey Conference

Center, near Princeton, New Jersey. Among issues discussed were the evolution over the previous four months of the nuclear non-proliferation system, global and regional nuclear disarmament activities, and papers by Emily Bailey and John Simpson on *Issues and Options for the 2000 NPT Review Conference* and *Whither the Strengthened Review Process?* (Revised Versions of these Papers will be published as *PPNN Issue Reviews* in April).

From the evening of Friday 10 to Sunday 12 March the Core Group hosted an international briefing seminar on **Issues and Options for the 2000 NPT Review Conference**. This was attended by 48 diplomatic staff of permanent missions to the United Nations in New York and to the CD in Geneva, by officials from capitals, and by representatives of the secretariats of the United Nations and the International Atomic Energy Agency.

The seminar was chaired by Ben Sanders, Executive Chairman of PPNN. After dinner on Friday, Ambassador Jayantha Dhanapala, UN Under-Secretary-General for Disarmament Affairs, gave a keynote address on *Causes for Concern in the Nuclear Non-Proliferation Regime since 1995*.

The seminar comprised an initial plenary session; discussions in working group sessions; and a final panel session in plenary. The first plenary session opened with an address from Ben Sanders on the context for the Review Conference, followed by a presentation from Rolf Ekéus on *International Developments since 1995 and the Current Nuclear Non-Proliferation Situation* (CG27/1).

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

**Issue Cluster A: The Review Conference**, was chaired by Ben Sanders. John Simpson presented a paper on *An appraisal of the functioning of the strengthened review process 1997-1999* (CG27/2), and Hannelore Hoppe presented a paper on *The procedural issues confronting the Conference and what documents it might seek to produce* (CG27/3).

**Issue Cluster B: Universality of the Treaty: is there a way forward?** was chaired by Raja Adnan. Iftekhhar Zaman presented a paper on *India and Pakistan: methods of associating them with the regime* (CG27/4), and Oleg Grinevsky presented a paper on *Israel and the Middle East* (CG27/5).

**Issue Cluster C: Disarmament Questions and Security Issues** was chaired by Hu Xiaodi. Jozef Goldblat presented a paper on *Disarmament: ways forward* (CG27/6) and Enrique Román-Morey presented a paper on *Nuclear-Weapon-Free Zones* (CG27/7).

**Issue Cluster D: Compliance and Non-Compliance with the Treaty** was chaired by Jiri Beranek. Grigori Berdenikov presented a paper on *Regional Challenges: Iraq and the DPRK* (CG27/8), Martine Letts presented a paper on *Article IV and the role and impact of export controls* (CG27/9), Jan Priest presented a paper on *IAEA Safeguards and Additional Protocols: immediate concerns and the future development of the system* (CG27/10) and Lawrence Scheinman made a presentation on *Compliance and Non-Compliance with the Treaty*.

The briefing seminar concluded on the afternoon of Sunday, 12 December, with a plenary session, in which Camille Grand made a presentation on *Should and could the Review Conference try to set objectives for the States Parties to achieve between 2000 and 2005? What might they be?* and Ben Sanders made a presentation on *What guidelines might be offered for conducting the NPT Review Process in the period 2000-2005?*

- Ben Sanders will attend the 2000 NPT Review Conference as a member of the Delegation of the Netherlands and John Simpson as an Adviser to the Delegation of the United Kingdom. Abigail King and Emily Bailey will be in attendance as representatives of PPNN to distribute briefing materials to delegates and to monitor the proceedings.
- From 16 to 18 June, with the co-sponsorship of the Monterey Institute of International Affairs, PPNN will hold a workshop for invited participants on **The Outcome and Implications of the 2000 NPT Review Conference**. The workshop will be held at the Imperial Palace Hotel, Anancy, France.
- The twenty eighth, and possibly final, meeting of the PPNN Core Group has been rescheduled and is now to be held during 12-15 October 2000 at the Chilworth Conference Centre of the University of Southampton, UK.

### III. Recent Publications

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## ANNEX — Abbreviations of Sources

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

### The Programme for Promoting Nuclear Non-Proliferation and the Newsbrief

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

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e-mail: [bsppnn@bway.net](mailto:bsppnn@bway.net). Those relating to production and distribution should be addressed to John Simpson, Mountbatten Centre for International Studies, University of Southampton, Southampton, SO17 1BJ, United Kingdom (Tel. 023 8059 2522; Fax. 023 8059 3533; international code +44/23) e-mail: [ppnn@soton.ac.uk](mailto:ppnn@soton.ac.uk). **Please note the changes to the Southampton telephone and fax numbers.**

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