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PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 17 **NEWSBRIEF** **Spring 1992**

Editorial note

This issue of the **Newsbrief** refers to developments related to the non-proliferation of nuclear weapons that took place, or became known, during the first three months of 1992.

The quarterly **Newsbrief** is published by the Programme for Promoting Nuclear Non-Proliferation (PPNN) as part of its effort to help deter the spread of nuclear-weapon capabilities, by fostering a wider awareness of that phenomenon. PPNN's **Newsbrief** seeks to present an accurate and balanced picture of current events relating to the spread of nuclear weapons to additional states. Besides giving information on moves to counter that spread and on developments in international relations that may help constrain it, the **Newsbrief** refers to relevant aspects of the peaceful uses of nuclear energy.

Subheadings used in the **Newsbrief** are meant to facilitate presentation; they do not imply judgments. In the interest of clarity, related items of information may be mentioned under a single heading, although they might also fit into separate categories of subjects identified in the **Newsbrief**. Thus, disclosures about nuclear-weapon programmes in Iraq are presented as developments of concern to horizontal nuclear proliferation, together with references to actions carried out under the aegis of the UN Security Council to nullify them. Similarly, the developments taking place in the Commonwealth of Independent States, which might be presented piecemeal under such headings as 'Events in Nuclear Weapons States' or 'Developments of Concern for Horizontal Proliferation', are taken together under one heading, to facilitate recognizing them as being part of the same context.

PPNN's **Newsbriefs** are based on publicly available items derived from reputable and reliable sources. As editor of the **Newsbrief**, the Executive Chairman of PPNN is responsible for its contents. The inclusion of an item does not necessarily imply the agreement of the members of PPNN's Core Group collectively or individually, either with its substance or with its relevance to PPNN's work.

The limited size of the **Newsbrief** makes it necessary to choose among items of information and to present them in condensed form. Readers who wish to comment on the way in which an item is presented in the **Newsbrief** or to draw attention to information they think should be included are invited to send their remarks to the editor, for possible publication.

Unless otherwise stated, all sources referred to date from 1992.

I. Topical Developments

a. Background

On 31 January, the Security Council met in New York for the first time at the level of Heads of State and Government. The Council adopted a Declaration which included the following two paragraphs regarding the proliferation of weapons of mass destruction:

'The proliferation of all weapons of mass destruction constitutes a threat to international peace and security. The members of the Council commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end.'

'On nuclear proliferation, they note the importance of the decision of many countries to adhere to the Non-Proliferation Treaty and emphasize the integral role in the implementation of that Treaty of fully effective IAEA safeguards, as well as the importance of effective export controls. The members of the Council will take appropriate measures in the case of any violations notified to them by the IAEA.'

Relevant extracts from the declaration are reproduced in **V. Documentation, Annex a.**

The United States and the Russian Federation are conducting high-level talks in hopes of concluding, at a summit meeting planned for the summer of 1992, an agreement on further deep cuts in long-range nuclear missiles. Reportedly the two sides are still at variance about important aspects of the issue.

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On 24 March the 'Open Skies' treaty, which allows parties to make surveillance flights over each other's territories, was signed in Helsinki by representatives of NATO members and of the states that belonged to the Warsaw Treaty Organisation. Signatories included Belarus, Georgia, the Russian Federation and Ukraine.

China has acceded to the Treaty on the Non-Proliferation of Nuclear Weapons. It is the only major nuclear exporter that has not yet joined the Nuclear Suppliers Group or made full-scope safeguards a condition for export.

The period covered in this **Newsbrief** has seen the start of a concerted effort to assist the Commonwealth of Independent States in measures to prevent the disintegration of the former USSR from resulting in increased nuclear proliferation risks. It had been expected that by the summer of 1992 all tactical nuclear weapons that had been based in the Soviet Republics would have been moved to the Russian Federation, but Ukraine has held up the transfer pending guarantees that once in Russia they will be destroyed. This matter seems now to have been resolved. Kazakhstan is apparently still expressing reservations about giving up the strategic missiles deployed on its territory.

The activities of the United Nations Special Commission and of the IAEA, pursuant to Resolution 687 and to Iraq's safeguards agreement with the IAEA have led to further disclosures about Iraq's ambitious nuclear-weapons programme, in particular its efforts to develop a powerful centrifuge enrichment capability. There is evidence of extensive outside assistance, particularly from industrialised nations. While the Security Council has felt obliged to issue a warning to Iraq over its resistance to United Nations efforts to eliminate its weapons of mass destruction, the IAEA was planning for the dismantlement, in early April, of the research facilities at Al-Atheer, supposedly the principal weaponization site, where Iraq has continued to install dual-use equipment.

On 30 January North Korea signed its safeguards agreement with the IAEA. This will have to be approved by its parliament. It is not yet clear when it will open all its nuclear activities to international verification. In light of reports that it is fast developing the means for an extensive plutonium production programme, this uncertainty gives rise to serious concern.

The process of strengthening the implementation of the IAEA safeguards system is well under way. In February, the Board of Governors reaffirmed the Agency's right to make special inspections in member states with comprehensive safeguards agreements when necessary and appropriate and to ensure that all nuclear materials in peaceful nuclear activities are under safeguards. It also reaffirmed the Agency's rights to obtain and to have access to additional information and locations in accordance with the Agency's statute and the appropriate agreements. Further, it called on parties to comprehensive safeguards agreements to provide the IAEA as early as possible with design information on new facilities and on changes to existing facilities.

While the IAEA has been given an expanded mandate, especially in nuclear safety and safeguards, it is forced to cut its 1992 expenditures by 13% largely as a result of the inability of members of the Commonwealth of Independent States to pay current and past dues.

Changes in the structure of the United Nations Secretariat have brought the elimination of fourteen top posts, including that of Under-Secretary-General for Disarmament Affairs. The last incumbent, Yasushi Akashi, has been appointed Special Representative of the Secretary-General to Cambodia, to oversee United Nations operations there. The functions and programmes of the Department will be carried out by an Office for Disarmament Affairs, within the Department of Political Affairs headed by former Soviet Deputy Foreign Minister Vladimir Petrovsky.

b. NPT Events

- On 9 March the **People's Republic of China** deposited its instrument of accession to the NPT with the UK Government. China has notified the IAEA that it will henceforth provide it with information on exports of nuclear material in amounts exceeding one effective kilogram for peaceful purposes to any non-nuclear weapons state [In INFCIRC/153, an 'effective kilogram' is one kg of plutonium or an amount of uranium equivalent in terms of its relevance for weapons purposes – Ed.] (**IAEA Document** INFCIRC/207, December 1991; **Beijing Review**, January 13-19; **The Times** [London], 10 March; **Nucleonics Week**, March 12)

- On 30 January the **Democratic People's Republic of Korea** signed an agreement with the IAEA providing for full-scope safeguards pursuant to the NPT. According to a statement by a North Korean diplomat in Vienna, if the Supreme People's Assembly approves ratification of the agreement in April, implementation might start in June. Some observers still doubt, however, that North Korea will actually permit full safeguards implementation to start once the approval process has been completed. Developments in and around the Korean peninsula are summarized under **j.: Developments of Concern for Horizontal Proliferation** (**IAEA Press Release** PR 92/6, 30 January; **The New York Times**, January 31 and February 20 and 21; **NuclearFuel**, February 3; **International Herald Tribune**, January 31; **Financial Times**, 31 January; **Süddeutsche Zeitung**, January 31; **Nucleonics Week**, February 27)

- In **France**, the cabinet adopted on 27 January a draft law authorizing accession to the NPT. At its Spring session starting 2 April, the National Assembly is expected to endorse the measure but ratification formalities are expected to take until May or June (**Enerpresse**, 13 and 28 January; **International Herald Tribune**, 28 January)

- Upon the invitation of the **Islamic Republic of Iran**, an IAEA mission, led by the Deputy Director General for Safeguards, visited that country in February. They saw a number of facilities and sites and found the activities going on there at the time of their visit consistent with the peaceful application of nuclear energy. Iran promised to continue its 'transparent' nuclear policy. See also **j. Developments of Concern for Horizontal Proliferation** (**The New York Times**, February 8 and 13; **Nucleonics Week**, February 13)

- On his visit to the **Libyan Arab Jamahiriya** in early February, during which he was received by Colonel Muammar Quadhafi, the Director General of the IAEA received formal assurance of that country's willingness to co-operate fully with the Agency in implementing safeguards in Libya. Libya declared 'that it was ready to invite the IAEA to send inspectors to any site it might

wish to visit in the future.' It has denied reports that it was recruiting nuclear experts from the former USSR and indicated that of the approximately 100 Soviet experts in Libya before the USSR was dissolved, all but 20 to 30 had left (**IAEA Press Release** PR 92/8, 3 February; **The Washington Post** and **The Guardian**, February 4; **Neue Zürcher Zeitung**, 4 February; **Nucleonics Week**, February 13)

- On a visit to **Syria** during 6-9 February, the Agency's Director General received assurance of that country's readiness to conclude a safeguards agreement with the IAEA pursuant to the NPT, and its willingness to co-operate in the implementation of safeguards. The Chinese 30-kW research reactor to be supplied under an Agency project for technical assistance would be subject to that agreement, which was approved by the Agency's Board of Governors on 25 February (**IAEA Press Release** PR 92/9, 10 February; **The International Herald Tribune** and **The Independent**, February 11; **Frankfurter Allgemeine Zeitung**, 11 February; **Nucleonics Week**, February 13)

c. Other Non-Proliferation Developments

- The Ministerial Council of the **Conference on Security and Co-operation in Europe** (CSCE), meeting in Prague on 30 January, adopted a declaration expressing support for the NPT and stating that 'the question of nonproliferation, including the transfer of sensitive expertise...should be included as a matter of priority in the work programme for the post-Helsinki arms control process.' The complete text of the declaration is reproduced under **V. Documentation, Annex b.**

- **Algeria** has concluded a safeguards agreement with the IAEA regarding the Chinese-supplied 15-MW heavy-water research reactor at Ain Oussera. The agreement pertains to the reactor itself, its fuel and the heavy water supplied by China. Algeria has reportedly expressed its intention to accede to the NPT 'soon'. This is seen as a reaction to reports (referred to under **j. Developments of Concern to Horizontal Proliferation**) that it was cooperating with **Iraq** in the development of nuclear weapons and that the latter had sent nuclear material and scientists for this purpose (**The New York Times**, January 8; **IAEA Press Release** PR 92/13, 2 March)

- A special meeting of the **Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL)** was held in Mexico City in February, to commemorate the 25th anniversary of the Treaty of Tlatelolco. On that occasion the Presidents of **Argentina** and **Brazil** made a joint declaration in which they expressed their intention to bring the Treaty into effect for their countries, after a number of amendments were made in the text. (The declaration is reproduced in **V. Documentation, Annex c.**) Argentina's foreign minister has since clarified that one of the proposed amendments concerned the provisions in the Treaty for special inspections (**IAEA Document INF-CIRC/339**, 25 February; **Nucleonics Week**, March 12).

- **Chile** is also considering joining the Tlatelolco Treaty. This is said to have been prompted by the nuclear rapprochement between Argentina and Brazil and their joint safeguards agreement with the IAEA, the likelihood that those two countries may soon bring the Tlatelolco Treaty into effect with regard to themselves, and the general improvement in relations between Argentina and Chile (**Nucleonics Week**, March 5)

- The Commission of the **European Community** is calling for the preparation of a common list of dual-use goods and technologies subject to control, a list of non-Community destinations for which controls might have to be applied, and common criteria for the issuing of licenses for exports from the EC area (**The Financial Times**, January 23)

- After years of disclosures about the export from **Germany**, of materials, equipment and components used in the manufacture of weapons of mass destruction, the Bundestag on 23 January adopted new legislation stiffening export controls and including heavy penalties for violators. The law is to enter into force in late March. The speed with which the revised law was introduced and adopted may have been prompted by new disclosures of German nuclear-usable exports to Iraq and a seizure of American nuclear-usable equipment sent by a Dutch firm to Libya through Germany. The law, which gives authorities the right to use wire taps and open mail, is criticized from several sides. The political opposition argues against the infringement of privacy. Some experts argue that the law, which does not provide for a central organ administering export controls, is insufficiently stringent. Customs officials criticize the absence of reporting requirements for individuals with knowledge of actual or supposed violations. Industry is said to find fault with the law for being too intrusive (**The Times**, [London] 23 January; **The Guardian**, 24 January; **International Herald Tribune**, 24 January; **The New York Times**, January 24; **Frankfurter Allgemeine Zeitung**, January 24; **NuclearFuel**, February 3)

- **India** and **Pakistan** have exchanged lists of nuclear installations as required under their agreement of 31 December 1988 prohibiting them to destroy or damage each other's nuclear facilities, but each side accuses the other of failing to declare gas centrifuge enrichment facilities. Pakistan reportedly omitted from the list a second enrichment plant located at Golra, west of Islamabad; India is said not to have listed the enrichment facility it has built near Mysore. Since 1985, India has operated a 100-centrifuge cascade at Bombay and the second plant is believed to have been operational since about 1990 (**Nucleonics Week**, January 9 and March 26;**NuclearFuel**, March 30)

- In the **United States**, Mr. Robert Gallucci, former Deputy Executive Chairman of the UN Special Commission overseeing the execution of the armistice conditions pertaining to Iraq (under Security Council Resolution 687) has been appointed as the State Department's coordinator of the US efforts to deter nuclear weapons proliferation as a result of the dissolution of the USSR. He will have the rank of ambassador. The function of Deputy Executive Chairman of UNSCOM is being taken by Amb. Michael Newlin, former US Resident Representative to the IAEA (**Nucleonics Week**, February 20)

d. Nuclear Disarmament

- In his State of the Union Address on 28 January, the President of the **United States** proposed that if the **Commonwealth of Independent States** would eliminate all land-based multiple-warhead ballistic missiles, the USA would

cut the MX 'Peacekeeper' missile, reduce the number of warheads on its 500 Minuteman missiles to one and reduce the number of warheads on its sea-based missiles by about 1/3. In all, this would mean eliminating 1,500 of the 2,450 warheads on US land-based ICBMs. The production of the B-2 bomber is being halted, and the SSN-21 Seawolf submarine programme is cut to one hull. The Small Intercontinental Ballistic Missile is cancelled, and it is understood that much of the nuclear modernization programme will be discontinued. It is estimated that the reductions in US strategic forces would result in a cut in the number of warheads to 50% below the limits set by START.

- These offers have met with a positive response from the **Russian Federation**, whose president has since gone further in proposing cutting to between 2,000 and 2,500 the number of nuclear warheads on long-range missiles. The US Administration interprets the plans for the removal and dismantling of the nuclear missiles that are deployed in Belarus (54 mobile SS-25 missiles) Kazakhstan (104 SS-18 missiles) and Ukraine (176 SS-19s and SS-24s) as implying that a number of late-model strategic weapons will be scrapped which had not earlier been considered for elimination. The president of the Russian Federation has announced that nuclear missiles will no longer be targeted on American cities and has asked the USA to reciprocate (**Financial Times**, 27 and 30 January; **The Times** [London] 27 January; **Die Welt**, 29 January; **The New York Times**, January 30 and February 7; **European Wireless File** [USIA], February 4; **Jane's Defence Weekly**, 8 February)

- At a meeting of the Conference on Disarmament, on 12 February, **Russia**'s Minister for Foreign Affairs called on all nuclear powers to place their nuclear weapons on 'zero alert' and to remove their warheads (**The Daily Telegraph**, 13 February; **The Times** [London], 14 February)

- The **United States** and the **Russian Federation** are planning to have negotiations on sweeping new nuclear disarmament proposals which they hope to complete for the summit meeting planned for July 1992. Bypassing the customary detailed bargaining process, high-level negotiating sessions will be held on deep cuts in the numbers of strategic nuclear warheads held by both sides. Reportedly, the US Administration is seeking a build-down to about 4,500 warheads; Russia wants this number reduced to 2,500. Among reasons cited for the American insistence on a higher number are the concern that a greater reduction would require a basic restructuring of its nuclear triad and doubt that Russia would be able to dismantle so large a number of warheads within a reasonable time (**The New York Times**, February 19; **Defense News**, February 24 and **International Herald Tribune**, March 12)

- The Russian Federation also called on **China**, **France** and the **United Kingdom** to respond to its newest disarmament proposals but it is said to have accepted that the stage had not been reached where those smaller nuclear powers could be expected to reciprocate. China has replied that it would only discuss reducing its nuclear arsenal once the USA and Russia had stopped testing, producing and deploying nuclear weapons and reduced their nuclear arsenals to its levels. France has offered to discuss its nuclear capability with its European Community partners, as part of the development of a common defence policy. This move is interpreted as an important departure from France's traditional independent-deterrent posture. France has also announced that as long as it has nuclear weapons, it will continue testing them. The United Kingdom has announced that it intends to maintain its own minimum nuclear deterrent and will proceed with the planned deployment of Vanguard ballistic missile submarines armed with US-made Trident II missiles, carrying a total of 512 warheads. There is debate about the number of boats needed, with the Labour Party opting for three, and the other parties holding out for four. (**The Times** [London], 6 January; **The Guardian**, 15 and 30 January; **Trust and Verify**, No. 25, January; **Frankfürter Allgemeine Zeitung**, 27 and 30 January; **The New York Times**, January 23, 29, 30 and 31; **Financial Times**, 11-12, 24 and 30 January; **Süddeutsche Zeitung**, 27 January; **The Independent**, 29 January; **Neue Zürcher Zeitung**, 29 January and 1 February; **International Herald Tribune**, January 26 and 30; **Die Welt**, 30 January; **Defense News**, January 27 and February 3; **Jane's Defence Weekly**, 8 February)

- The government of **Japan** is said to consider calling an international conference on means of disposing of plutonium from dismantled nuclear weapons. A task-force has been created to investigate possible methods for the safe management and peaceful utilization of about 150 tonnes of plutonium removed from weapons. One option being considered is a 800-MW fast reactor that might burn up a total of 86 tons of plutonium over a lifetime of forty years (**Defense News**, February 24 and March 2; **Nucleonics Week**, February 27; **Atoms in Japan, 36**(2), February)

e. Nuclear Trade and International Cooperation

- **Brazil** is said to seek buyers for equipment from the Angra 3 nuclear power project, which has so far cost $1.1 billion but has not gone beyond excavation work. Reports that it is negotiating with **Iran** for the sale of this equipment have been denied (Brasilia Radio **Voz do Brazil**, 29 November 1991 and **Folha De Sao Paulo**, 2 December 1991, in **JPRS-TND-91-020**, 13 December)

- **Canada** is trying to intensify nuclear trade with **Russia**, hoping to be asked to backfit defective RBMK-type reactors in the Commonwealth of Independent States. AECL Candu Ltd. is buying two tonnes of heavy water from the Kurchatov Institute in Moscow to test its quality, as a preliminary to buying greater quantities later (**The Toronto Star**, January 9)

- **Egypt** has been offered a nuclear power reactor and a small research reactor by **Canada** (**Süddeutsche Zeitung**, 19 January)

- IVO of **Finland** has been commissioned by Atomenergoexport of the **Russian Federation** to make a study to determine whether the new 1000-MW VVER-91 nuclear power plant, which is based on the VVER-91 design that Finland will acquire, is suitable for use in Russia. The VVER-91 is derived from the initial VVER-1000 pressurized water reactor developed in the USSR and equipped by Finland with additional safety systems. Russia has meanwhile adopted stringent safety regulations and the question is whether the VVER-91 meets those. One such plant would be built at Kola to replace two of the four VVER-440s now operating there (**ENS NucNet** No.1/92, 10 January)

- **France**'s fuel-cycle company Cogema and **Germany**'s Urangesellschaft mBH (which is owned by two German energy groups, VEBA and STEAG) will merge so as to diversify their long term activities within the uranium mining field. Cogema is expected to buy a majority share in Urangesellschaft (**Ens NucNet News**, No. 21, 20 January; **Frankfurter Allgemeine Zeitung**, 21 January)

- **Indonesia**, which reportedly plans to build twelve nuclear power plants by the year 2004, will receive assistance from **Japan** in the construction of the first station. Japan's plans to promote nuclear power development in Indonesia is arousing safety concerns among South-East Asian and Pacific nations (**The Japan Times**, March 22).

- **India** is said to have given up hope of aid from **Russia** for the construction of a 2,000-MW nuclear power station at Koodankulam. It now hopes to build two indigenously designed 500-MW reactors there (**Nucleonics Week**, January 23)

- **Pakistan** and **China** on 31 December 1991 signed a contract for nuclear co-operation under which China undertakes to build a 300-MW PWR at Chashma; two subsidiary contracts were signed on 22 February. China will give Pakistan credits for the foreign exchange portion of the construction costs. Both parties have announced that the plant will be under IAEA safeguards. It seems, however, that China may not be able to provide all the components, including electronic instrumentation and control equipment and various pumps and valves; these presumably might have to be supplied by France and/or Germany. Since those countries can only make such exports if the recipient accepts full-scope safeguards, there is some doubt that China will be able to supply the reactor at all. In January it was reported that **France**'s supply of a 900-MW power station had run into financial difficulties. The French requirement of full-scope safeguards was rejected by Pakistan, but it appears that the talks are not finally closed. After an initial report that France would pay Pakistan $118-million in partial compensation for its refusal to go through with the supply of a reprocessing plant in 1978, Pakistan now says that it has agreed with France on the supply of the power station in compensation, and that if the price is too high, it would be compensated in cash and buy the reactor somewhere else (**Xinhua** [Beijing], 31 December 1991, in **JPRS-TND-92-001**, 16 January; **International Herald Tribune**, January 2; **Nucleonics Week**, January 9, 16 and 23, February 6 and March 5 and 12)

- The **Republic of Korea** is expected to opt for **Canada** as the supplier of two 700-MW power reactors (**The Toronto Star**, January 4)

f. IAEA Developments

1. General

- The Director General of the International Atomic Energy Agency has been notified by the **Russian Federation** that 'the membership of the USSR in the IAEA, in all its organs, as well as in all conventions, agreements and other international legal instruments, which were concluded within its framework or under its aegis is continued by the Russian Federation (RF) and in this connection in the IAEA the name "The Russian Federation" should be used in the place of the name "The Union of Soviet Socialist Republics".' The note states that the Russian Federation remains responsible in full for all rights and obligations of the USSR in the IAEA including the financial obligations and that it constitutes credentials to represent the Russian Federation for those holding credentials of representatives of the USSR (**IAEA Document** INFCIRC/397, 9 January)

- Russia's foreign minister has informed the IAEA that his country would try to pay its part of the contribution ($20 million) which the USSR would have had to pay to the Agency's budget. While this is not seen as a definite commitment, the Russian member of the Board of Governors, Mikhail Ryzhov, has since told press representatives that Russian 1991 dues would be paid this year. It is not thought likely that the other members of the Commonwealth will be able to contribute; **Ukraine** for one is definitely unable to meet its $2-million assessment. The Director General has informed the Board of Governors at its February meeting that if these dues are not paid the IAEA will have to curtail its activities in several areas, including safety, safeguards and waste management. While there appears to be some talk that in the field of safeguards the IAEA might do less in countries covered by Euratom controls, it is reported that the IAEA safeguards obligations with regard to areas such as **Argentina**, **Brazil**, **South Africa** and eventually **North Korea** would not be affected. Just implementing the safeguards agreement with Argentina and Brazil is estimated to cost $400,000 in 1991 and $1.5 million in 1993, apart from $850,000 in staff costs and possible further costs for installed safeguards equipment (**Nucleonics Week**, January 9 and 23, February 27 and March 5)

2. Safeguards

- At its February meeting, the Board of Governors reviewed documents prepared by the Secretariat, on the provision and use of design information; on reporting and verification of the export, import and production of nuclear material for States party to comprehensive safeguards agreements; and on reporting and verification of the export, import, and production of sensitive equipment and non-nuclear material for such States. These documents set out the practices the Director General intends to follow in the application of safeguards, to enable the IAEA to verify that the information provided by a state where it applies full-scope safeguards reflects the full extent and nature of that state's nuclear activities. In agreeing to a number of measures strengthening the Agency's safeguards system, the Board reaffirmed the Agency's right to undertake special inspections and have access to the necessary locations, to get early design information on new facilities and on major modifications to existing ones and to obtain and have access to additional information from safeguarded nations and from other sources. At its June meeting the Board will resume its review of proposals on reporting and verification of the export, import and production of nuclear material, of sensitive equipment and certain non-nuclear materials, including measures under which the IAEA could be provided with information to enable it to verify that reported inventories in a state are consistent with that state's declared nuclear activities (**IAEA Newsbriefs**, Vol.7, No.1 (53) January/February; **IAEA Press Release** PR 92/12; **Nucleonics Week**, February 27 and March 5)

- Before an audience of senior nuclear scientists and officials from Arab nations, in Tripoli, Libya, the Agency's Director General on 2 February called on all non-nuclear-weapon states party to the NPT or similar

treaties to support strengthening the safeguards regime. Proposing that, when a country was accused of conducting clandestine nuclear activities, it would be well advised to ask the IAEA to visit the location and report on it, he said that 'IAEA verification should be able to detect violations of NPT and safeguards agreements, but they should also be able to clear a country of unfounded allegations or suspicions' (**IAEA Press Release**, PR 92/7, 2 February)

- The IAEA's Director General has received a letter from the foreign minister of the **Russian Federation**, promising that the leaders of Russia will make every effort to ensure that the collaboration between that country and the Agency continues to flourish in all important areas of the Agency's activities, including safeguards (**IAEA Press Release** PR 92/5, 21 January)

g. Peaceful Nuclear Developments

- Upon the conclusion of a wide-ranging, year-long study, the IAEA has expressed the view that the ten first-generation Soviet-designed VVER-440/230 power reactors still in use in **Bulgaria**, **Czechoslovakia** and **Russia** have serious safety deficiencies. The Agency's report identifies a number of defects that make their further operation extremely risky but also points out that these reactors have features which make them 'more forgiving to disturbances'. The operators of these stations have announced that they plan to continue operating their stations for periods that vary from state to state. A variety of safety measures are being taken, as feasible, to deal with the most serious safety shortcomings. While initially the **German** government had held the view that these reactors were unsafe and should be decommissioned, it is now expected, together with **France**, at the economic summit meeting planned for April, to call for a large-scale nuclear backfitting operation in Eastern Europe, under which some of the older stations would be closed and more modern versions now operating or under construction be upgraded and completed. The **UK** is said to support the proposal. **Bulgaria** is criticised by its neighbours for resuming operation of its four old VVERs at Kozloduy, which are apparently in very poor condition and which the IAEA advised to shut down. Bulgaria hopes shortly to award contracts to four European consortia for a programme of extensive rehabilitation of these reactors to allow them to operate until 1995/96. It is noted that a newer and more powerful unit at Kozloduy, which was re-started in January, has had to shut down again because of a non-nuclear problem with a turbine. **Armenia** is also hoping to rehabilitate its two old VVER-440 reactors, which were shut down after an earthquake in 1988 for seismic and other safety reasons. Previously meant to be decommissioned, the plants are now said to be needed to help meet the severe energy shortage in Armenia and at least unit-2 might be restarted with western help

  (**Nature**, 9 January, **Nucleonics Week**, January 9, 30 and February 2 and March 12; **The Daily Telegraph**, 15 January; **Frankfurter Allgemeine Zeitung**, 25 January; **Süddeutsche Zeitung**, 26 January and 26 February; **Kurier** [Vienna] 28 January; **The New York Times**, February 24; **ENS NucNet** No.82/92, 25 February)

- A western consortium consisting of Canada, Finland, France, Germany, Italy, Sweden and the UK, is ready to begin a year-long comprehensive review of the safety of RMBK reactors in **Lithuania**, **Russia** and **Ukraine**. Previously, the German Minister for the Environment and Nuclear Safety had called for the closure of these reactors.

  Shortly after Swedish nuclear safety experts stated that two of the four RMBK power reactors at the Sosnovy Bor power station near St. Petersburg should be shut down since it would not be economical to bring them up to Western safety standards, a nuclear incident (supposedly a rupture of a fuel channel or a fuel channel seal) occurred at Unit 3, which caused radioactive contamination of the site and some, reportedly minor, increase in the radiation levels in the region. The incident – classed at Level Three of the international scale of nuclear events in which the accident at Chernobyl is given Level Seven – has added to the already serious concern about the safety of reactors of this design. Reportedly, most of the 139 unscheduled stoppages of power stations that occurred in the former USSR in 1990, involved reactors of this type, which reportedly were intended primarily for plutonium production rather than power generation. The IAEA has been asked to assist in the evaluation of operational incidents at RMBK plants in the Russian Federation.

  In **Lithuania** a worker has been arrested for tampering with computers at one of the two RMBK-1500 reactors of the Ignalina power station. Independently from this incident, the plant has had to shut down briefly, for repairs to a leaking emergency cooling system. At a meeting in Sweden the chief of the Lithuanian nuclear safety inspectorate has called for western help in checking the safety of the station.

- The IAEA has published a revised version of its report on the accident at Chernobyl-4 in which the blame is laid more on shortcomings in the design and the vague operating procedures and less on the operators than was the case initially. It is now disclosed that the turbine fire at Chernobyl-2, last October threatened the safety system of that unit.

  (**Süddeutsche Zeitung** and **Frankfurter Allgemeine-Zeitung**, 3 February; **La Libération**, [Paris], 5 February; **IAEA Press Release** PR 92/10, 14 February; **Nucleonics Week**, January 9, 16, 30, February 20 and 27, and March 12, 19 and 26; **NuclearFuel**, March 30; **International Herald Tribune**, March 23, 25, 26; **The New York Times**, March 25; **The Japan Times**, March 25 and 27; **The Economist**, March 28)

- **Japan**'s nuclear powered ship Mutsu has ended its fourth test voyage and has been formally decommissioned after travelling 64,000 km in all, during which the reactor operated 2,300 hours. The generally positive experience gained in operating Mutsu is being analyzed with a view to the possible construction of other nuclear-propelled vessels; studies are now underway for advanced-type marine reactors for an icebreaker and a deep-sea scientific research vessel. After cooling, the spent fuel will be removed from Mutsu's 36,000-kilowatt (thermal) PWR power plant for later reprocessing and the reactor room, including containment and shielding, will be cut out in a single piece and transferred onto land for final disposal (**Nucleonics Week**, January 9;**Defense News**, February 24; **Atoms in Japan**, Vol. 36, Nos. 1 and 2)

- In the **Philippines** there is talk of renting nuclear submarines from the former USSR and using their reactors to

generate electricity. While there are reportedly questions about the feasibility and the safety of the scheme, the government in Manilla appears determined to pursue the idea further (**The Daily Telegraph**, 12 February)

- The government of **Slovenia** is organizing a referendum on a possible shut-down of the Krsko nuclear plant. However, the power system is apparently hard-pressed as a result of the loss of electricity supplies from Serbia and war damage to the grid. There is some doubt that the present government will survive until 21 June, the date of the referendum (**Nucleonics Week**, February 20)

- **South Africa** has announced that its uranium enrichment plant at Valindaba is now operating on a commercial footing. [This news seems to refer to the larger of South Africa's enrichment plants. The smaller plant, which was reported to have enriched uranium to weapon grade levels, was shut down several years ago – Ed.] (**Nucleonics Week**, January 23)

- In **Taiwan** government permission has been granted for the construction of two 1,000-MW nuclear power units. These would be the seventh and eighth power reactors in the island. Construction of the units was suspended in 1982. There are plans for the construction of at least two more nuclear power stations in Taiwan, but the utility concerned has had to promise not to develop additional locations for at least two decades (**Nucleonics Week**, January 23 and March 26)

- In the **United Kingdom** four of the old twin-reactor Magnox nuclear power stations (Bradwell in Essex, Dungeness-A in Kent, Hinkley Point-A in Somerset, and Sizewell-A in Suffolk) will be allowed to continue operating under strict monitoring of the behaviour of the pressure vessel welds, which are subject to embrittlement (**Nucleonics Week**, January 9)

- In the **United States**, the 32-year-old Yankee Rowe reactor, which was to have been a test case to prove that power reactors could safely be operated for up to 60 years, and which had been shut down for safety testing, will remain shut down. The decision was taken to avoid the high costs of ascertaining whether further operation would have been feasible, against the background of a declining demand for power in the area. It is seen as a blow to the nuclear industry (**The New York Times**, February 27; **Nucleonics Week**, February 27 and March 5)

h. Events in Nuclear Weapons States

- In **China**, a senior nuclear engineer, with access to secret aspects of the country's nuclear programme, has disappeared. A three-month search has not brought explanations for his absence (**The New York Times**, January 26)

- A Euratom inspection at Dounreay in the **United Kingdom** has revealed a discrepancy of 13.7 kilograms of uranium metal, including 10.2 kg of highly enriched uranium. About 8 kg was tracked down, part of it as solid waste; some 3 kg is still missing and may have been flushed out to sea as liquid waste (**New Scientist**, 4 January and 1 February; **Nucleonics Week**, January 23; **Daily Telegraph** and **The Independent**, 25 January)

- In the **United States**, the dismantling of nuclear warheads will require the storage of between 112,000 and 150,000 pounds of plutonium. Assuming that plans to reduce the total number of warheads to 6,300 are realised, the Department of Energy expects to dismantle 2,000 warheads each year between 1993 and the end of the decade. It intends to use for this purpose the Pantex nuclear-weapons plant near Amarillo, Texas; the cores of the 14,000 to 15,000 weapons involved would also be stored there. The plan is criticised as involving safety and security risks and there is a call for greater public participation in the decision, which is to be taken by August 1993.

There have been several more tritium leaks at the Savannah River K-reactor, which was to have resumed operations by late 1991, four years after it was shut down for safety reasons. In a study of November 1991, a task group of the Department of Energy noted that the plant was prone to tritium leaks and criticised management inattention to previous leaks and to releases of tritium during maintenance and start-up tests. The Secretary of Energy on 13 December nevertheless authorised the restart. Just before Christmas a spill of 150 gallons of radioactive water occurred. This seems to have gone undetected for several days because the employee responsible for taking water samples to the laboratory was away sick. Members of the US Congress urge the definitive closure of the 37-year old plant, of which repairs have so far cost $2-billion. The issue is causing debate about the need for tritium as against the cost of rehabilitating and maintaining the installation; and local concern about the presence of a potentially hazardous operation as against the increase in unemployment that would follow final closure. The Secretary of Energy has announced that he will have new monitoring equipment installed, but that plans to restart the reactor are not otherwise affected.

The Department of Energy has released a list of accidents that have occurred at the Hanford plutonium production facility over four decades. This catalogues fires, explosions, fuel melting and safety system failures and includes a number of incidents resulting in the exposure of workers to excessive radiation and dangerous chemicals. While the report is said to mention events that had not previously been disclosed, local environmental activists still consider it incomplete. The Hanford plant is now closed but the site is extensively contaminated.

After a number of workers at nuclear-weapon plants who complained about safety conditions there were reported to have suffered retaliation at the hands of their employers, the Secretary of Energy has assured employees at government-owned plants that they are free to speak out about such concerns. Recently, however, there was a press report that a technician at Oak Ridge National Laboratory, who had spoken on television about the high cancer rate among workers there, and had himself been treated for cancer, was penalised by being made to work in places where radioactive and other noxious materials were stored. The Labor Department has upheld his complaint. Recently also a physicist who told a Congressional investigator that the radiation monitoring system at Hanford was deficient, and an engineer at Argonne National Laboratory who warned that an experimental reactor there might not be 'meltdown-proof', were dismissed.

The operator of the Rocky Flats plant for the production of plutonium triggers for nuclear bombs, which was closed in

1989 because of environmental and safety concerns and where past safety violations, mismanagement and intimidation of 'whistle blowers' keep attracting public interest, has announced that the plant is ready to resume operations in Spring 1992. The US Government has acknowledged that it shared responsibility with the operator, Rockwell International Corp., for environmental violations, although it says it was not aware of all violations. Rockwell has pleaded guilty to ten violations, five of them felonies, and has agreed to pay a fine of $18.5 million. Whether and when the facility will be reopened will depend on reactions of the President and the Congress to a military panel recommendation that the American strategic nuclear arsenal should be halved; one of the weapons that would reportedly be produced no longer is the W88 hydrogen warhead carried on the Trident-II missile.

Among weapon programmes to be cancelled or curtailed the US Department of Defense is proposing to stop building the Seawolf-class submarine. The first and so far only boat in that class, SSN 21, has been found to suffer from serious welding cracks, necessitating extensive refitting. In the US Congress, attempts are being made to retain the Seawolf programme and salvage the jobs involved.

The Department of Energy plans to cut the number of jobs at US nuclear-weapon factories from 30,000 to 14,500 in the next fifteen years. By 1998 the number of persons in nuclear waste management and environmental clean-up will increase from 10,000 to 30,000; their work will include the decommissioning and decontamination of an estimated 7,000 buildings in 20 states.

The 1993 budget request of the Department of Energy totals $19.4 billion. Of this, $7.5 billion is meant for defence-related work – $600 million less than in 1992; it includes $278.8 million for a new production reactor. $1.8 billion will go to continued weapon-research, development and testing, including recycling warhead components. For clean-up at contaminated weapon-production sites $5.3 billion is requested, which is 24% more than in 1992. In addition, $200 million would be taken from the Department's uranium-enrichment account and be used for the decommissioning of enrichment facilities. The atomic vapour laser isotope separation enrichment project (AVLIS), would get $100 million, which is 39% below last year's appropriation and, say project managers, would force the staff to be reduced by 40% and cause a delay of at least one year.

A Federal District judge has issued an injunction requiring the Department of Energy to get approval from Congress and from New Mexico before it can start using the Waste Isolation Pilot Plant at Carlsbad in that state. The facility is intended for the storage of radioactive waste from nuclear-weapon production and has so far cost $1-billion. Finding sites for nuclear-waste disposal is becoming increasingly urgent as well as difficult. Attracted by promises of Federal grants, seven communities in the US, including five Indian tribes, have notified the government of their willingness to store high-level radioactive waste, but state governments tend to resist the moves.

The reduction of the weapons budget prompts moves to find alternative employment for staff members of the national weapons laboratories. Many of those involved fear that once work is stopped on a military technology it may be impossible to meet future challenges in that area. There are suggestions that continuity might be maintained with fewer people if the Los Alamos, Livermore and Sandia National Laboratories were combined and given a single budget.

On 26 March the USA carried out an underground nuclear test in the Nevada desert, its first since November, 1991. The test, which was monitored by a team of Russian scientists, had a force of up to 150-kilotons.

(**New Scientist**, 4 January; **Jane's Defence Weekly**, 18 January; **Defense News**, January 13 and 20, February 10; **The New York Times**, January 4, 8, 9, 13, 17, 24, 25 and 26, February 4, 5 and 26 and March 27 and 28; **The Washington Post**, January 4; **The Washington Post National Weekly Edition**, January 13-19; **The Economist**, January 18; **Nucleonics Week**, January 23 and February 6; **NuclearFuel**, February 3)

i. Events in the Commonwealth of Independent States

- The total number of nuclear warheads in the **Commonwealth of Independent States**, including tactical weapons, is usually estimated in the West at roughly 27,000, although some experts use higher numbers. According to American sources, all tactical nuclear weapons of the former Soviet Union have now been concentrated in **Russia**, **Belarus** and **Ukraine**, and according to Russian information, there should be none remaining in other republics. The removal of these weapons to the territory of the Russian Federation, which was planned to be completed by July, had proceeded so well that there was hope it could be finished by May 1992. However, on 12 March the President of Ukraine suspended further transfers of tactical weapons until he received guarantees from Russia that they would be destroyed. Mr. Kravchuk has since added the demand that destruction should take place under the joint control of Russia and the republics concerned. At a CIS summit meeting held at Kiev in March, a committee of representatives of Belarus, Kazakhstan, Russia and Ukraine, was set up to consult on the matter and oversee dismantlement. According to a report from Brussels, on 31 March, Russian officials assured the United States Secretary of Defense that the hold-up was only temporary and that the transfer of tactical weapons would still be completed by 1 July. Reportedly, 70% of the tactical weapons formerly stored in Belarus have been transferred to Russia; for the Ukraine the figure of 57% is given; the American source of this report does not specify actual numbers. There are unconfirmed reports that two or three tactical nuclear weapons, possibly artillery shells or small missiles, previously stored in Kazakhstan, are missing. While some sources say that this may be due to an accounting discrepancy, there is a report that two medium-range nuclear missiles have been sold to Iran. On 16 March, a Commonwealth armed forces spokesman denied this; Iran has also rejected the allegation.

Russia has let it be known that it hopes to complete the transfer of strategic weapons by 1994 but while the three republics where they are deployed agree that they should be eliminated by the end of the decade, their preference now seems to be that they are dismantled at their present sites. Kazakhstan, where 104 SS-18s are deployed, has also said that it wishes to retain those as long as Russia has nuclear weapons; it is also reported as saying that if nuclear weapons are transferred to Russia, it will demand an undertaking that dismantlement should take place

under international supervision. Non-Russian republics are also reported to demand a say in any launch; Ukrainian president Kravchuk is quoted as saying that no missile could be fired unless several buttons were pressed simultaneously, each by a member of the Commonwealth. Belarus, Kazakhstan and Ukraine all have stated that they intend to accede to the NPT as non-nuclear-weapon states.

Present Russian plans call for early dismantling of approximately 15,000 warheads. Whether and how soon this can be realised depends on the availability of necessary technical facilities. Among western states that have promised help, France is promoting the idea of using Soviet experts in a vast warhead-dismantling project mainly funded by Western nuclear-weapons states; it proposes to provide the necessary disassembly and reprocessing installations, for which it has developed a model. Such installations would be able to process 350 warheads a year.

The question, how to ensure the security and the physical safety of the plutonium and highly-enriched uranium removed from dismantled weapons, in transport and storage, receives keen attention, both in the CIS and abroad. The United Kingdom has offered 250 transport containers and 20 special armoured vehicles, as well as know-how, mainly on transport and storage of weapons and the conversion of nuclear-weapon material into mixed-oxide reactor fuel. The United States, where Congress has voted $400 million for this and similar purposes, has offered to supply, among other things, secure railroad cars designed for the transport of nuclear weapons, specialized transport containers and storage equipment. Russia does not have enough storage facilities for the purpose. There are suggestions that the IAEA might safeguard the nuclear material (which would also presume the existence of sufficient storage facilities); for it to do so, the material would first have to be transferred from military to peaceful use. There are also proposals to use the material in power reactor fuel, which would require an extensive conversion capacity as well as up-to-date technology. In a conference in Arizona, Russia's first deputy minister of atomic power has called for western help with plans to recycle weapons-grade material, notably plutonium, as nuclear fuel. Although Russia is said to plan to construct two temporary storage facilities, it wishes to avoid long-term storage of plutonium for reasons of economy, safety, security and the environment. Objections to the use of plutonium in reactors have been voiced by German experts who warn for unknown risks in the use of mixed-oxide fuel. There is no substantiation of press reports that nuclear material has been exported from CIS territory for clandestine use abroad.

The nuclear-weapon complex of the former USSR is now known to have been much greater than that of the USA. While the latter comprises six principal sites with a personnel of some 100,000, the Soviet establishment was based on at least ten hitherto secret cities, employing up to 900,000 workers. Russian officials have said that 2,000 to 3,000 of these were directly involved in top-secret weapon-design activities and 3,000 to 5,000 have expertise in uranium enrichment or plutonium extraction. Many are out of work and others seek to leave their badly-paid jobs. This gives rise to concern that some may prefer better-paid employ helping other countries develop nuclear weapons, but Russian authorities claim that the higher-level experts are aware of their responsibilities and would not sell their know-how. Iran and Iraq deny reports that they have tried to recruit former Soviet weapons experts; Libya is said to have made several job offers that have been turned down. Malaysia has said it would ask the IAEA to help it acquire the services of former Soviet nuclear experts to help it develop its peaceful nuclear programme. Some nuclear experts have reportedly left for unknown destinations, but there does not seem to be a large-scale exodus so far. The Government of Ukraine has turned down applications from 30 nuclear-weapon scientists seeking to emigrate to Israel or the USA and has increased the salaries of weapon experts even though they are not working. The Russian Federation has asked western governments to assist in solving the problem and groups of former Soviet experts are seeking individual support for various schemes for alternative employment in the civilian sector. Among proposals made in the West for the employment of former Soviet nuclear experts is to let them oversee the dismantling of nuclear warheads and to process the weapons-grade material to make it less proliferation-prone; to employ them in cleaning up the widespread environmental pollution caused by Soviet weapon production; and to hire them for advanced scientific and industrial work in Western enterprises. The Russian Federation and a number of western states are jointly involved in the establishment of an international science and technology centre that will support scientists and engineers to 'redirect their talents to non-military endeavors'. The centre is being set up in Moscow and should branch out to other major cities in the CIS. It will function as a clearinghouse to receive, review, generate and fund proposals for scientific projects, focusing on those technologies for which former Soviet scientists and technicians are most highly qualified. Attracting foreign investment, it should eventually become commercially viable. The US is contributing $25 million; Germany, which was the original sponsor of this initiative, and the European Community are expected to donate similar amounts. Japan and Canada have also pledged their support. However, a high-level American panel of scientists and engineers has advised the US President that a much greater effort is very urgently needed to ensure that no nuclear-weapon experts will be enticed into going abroad to help develop clandestine nuclear-weapon programmes. In their view, such an effort would have to involve the active promotion of a range of scientific activities to ensure the employment of redundant nuclear weapon scientists as well as others in high-tech industries that are ceasing to function. There are reports that Western intelligence agencies are recruiting former Soviet scientists to keep track of the movement of material and sensitive technology.

Among technologies former Soviet scientists seek to develop with Western assistance are advanced methods for the propulsion of spacecraft by nuclear means. In the last several decades Soviet science has made important progress in nuclear rocket propulsion. In the view of some American scientists co-operation in this field might be useful to help preserve the nuclear infrastructure in the former USSR and keep its employees from leaving. The US Adminstration initially turned down all requests for import licenses of advanced-technology products from the CIS, supposedly to help bring the former Soviet space and military industry to the point where it can no longer compete with the United States. Most recently, however, Washington has dropped its objections to the sale by Russia of up-to-date technology, equipment and materials. This clears the way for the transfer of, among others, $6 million worth of plutonium-238 for use as a

power source in American space batteries, which had been suspended for more than a year.

During his visit to the CIS, in February, US Secretary of State Baker was shown the hitherto secret nuclear centre at Chelyabinsk-70. The area is thought to be among the most seriously polluted in the former Soviet Union and even on the entire planet. Huge amounts of radioactive waste have been dumped in open waters here; in 1957 a vessel with several hundred tonnes of radioactive waste exploded, reportedly releasing four times the amount of radioactive material as did the bombing of Hiroshima, and about twice that caused by the Chernobyl accident, over an area inhabited by 1.5-million people; residents of 200 towns in the region were relocated. Russian sources now reveal that Soviet nuclear personnel — who were subject to military discipline — were often forced to work in conditions of high radiation risk, without adequate protection.

Dismissal is sought of the petition raised with the US Commerce Department against the USSR in 1991, by US uranium producers seeking to bar the import of Soviet uranium at what they allege are dumping prices. The claim is countered with the argument that it is filed against an entity that no longer exists. A former president of the Uranium Producers of America (UPA) has formally retracted a statement he made in 1990 to a Senate Subcommittee that Soviet uranium was being sold in the United States for less than the cost of its production.

Uranium market analysts note that the Commonwealth of Independent States will not be able to reach its stated objective of tripling uranium oxide exports in 1992 from $500 million to $1.5 billion; they say that at present depressed prices this would mean exports of 150 million lbs of uranium; western requirements total 120 million lbs annually. A report of the Uranium Institute in London estimates that uranium consumption in the West will exceed production at least until 1999 and that the expected shortfall in western production could be met by increased exports from Russia, other members of the CIS, and China. The director of Moscow's central nuclear exporting authority, Techsnabexport, has said that if uranium from former Soviet republics is banned from American and European markets, it might be necessary to find other markets, where control over such material might be harder to maintain. He claimed that the Russian Federation, Kazakhstan, Ukraine and Uzbekistan together have 45% of the world's known uranium reserves and 25-30% of mining, processing and enrichment capacity. The statement was followed by assurances from the Ministry of Atomic Power and Industry (MAPI) — since abolished — that nuclear exports would be made under strict national and international control and in accordance with international obligations of Russia and the other ex-Soviet republics.

Reports that the Central Asian republic of Tadzhikistan, which like its neighbours Turkmenistan and Uzbekistan has rich uranium ore deposits, might sell enriched uranium and uranium processing technology have been denied by its government. These reports followed an account from a local news service that delegations from Iran, Iraq, Saudi Arabia, Turkey and Pakistan had been to Dushanbe to discuss nuclear cooperation; there was also talk of the creation of an Arab consortium to develop Tadzhikistan's uranium industry. The claim that there was a uranium enrichment plant in the Republic appears to have been caused by a faulty translation. The government has given an undertaking to US Secretary of State James Baker, that it would restrict the sale of weapon components and would never sell uranium for use in nuclear-weapon production. Press commentators raise doubts about the durability of this undertaking, in light of the growing strength of the country's fundamentalist Islamic Renaissance Party, which maintains close ties with Iran and Afghanistan.

By decree of 29 January Russian President Yeltsin has established a new Russian Federation Ministry for Atomic Energy (Minatom RF) to absorb all functions of MAPI as far as they concern the interests of the Russian Federation. A number of other functions including military aspects, have not yet been allocated.

Six independent republics of the former USSR reportedly have set up an new organization, Atomredmetzoloto, to run the production of uranium, rare metals and gold. Other bodies have been or will be formed to handle commercial nuclear fuel fabrication, enrichment, conversion and possibly waste treatment; for the time being, Techsnabexport will be the 'trading arm' for these companies.

The region of Krasnoyarsk, in Russia, is threatening not to store spent fuel from Ukraine if the latter fails to supply it with various foodstuffs and commodities. Reportedly, the Krasnoyarsk nuclear complex has refused so far to send Ukraine the necessary shipping casks.

(**TASS**, 9 December 1991, in **JPRS-TND-91-021**, 30 December 1991; **Trust and Verify**, No. 25, January; **The Guardian**, 2, 13, 28, 29, 30 and 31 January and 7 February; **New Scientist**, 4 January; **TASS**, 6 January; **The Globe and Mail** [Toronto], January 9 and March 13; **The Sunday Telegraph**, January 12; **The Daily Telegraph**, 14, 20 and 30 January and 7 February; **EnsNucNet News** 10/92 and 11/92, 13 January, 17/92, 17 January and 54/92, 6 February; **EnsNucNet Background** 13/92, 20 February; **The Washington Post**, January 16; **Financial Times**, January 10, 11/12, 13, 14, 15, 20, 21, 24, 28, 29 and 30 and February 12 and 18; **The Times** [London], 13 and 31 January; **The Independent**, 15, 16, 30 and 31 January and 1 February; **The Independent on Sunday**, 19 January; **Frankfurter Allgemeine Zeitung**, 27 January and 1, 6 and 22 February; **Süddeutsche Zeitung**, 17, 26, 27, 30 and 31 January and 2, 3 and 10 February; **Der Standart** [Vienna], 19 and 20 January; **Nucleonics Week**, January 23, and February 6, 13, 27 and March 5 and 12; **NuclearFuel**, January 20 and February 17; **Jane's Defence Weekly**, 11 and 18 January; **Defense News**, January 20 and February 3; **The Christian Science Monitor**, February 13; ; **Die Presse**, 25 January; **Le Monde**, 25, 27, and 28 January and 3 February; **Die Welt**, 29 January and 3 and 6 February; **Kurier** [Vienna], 25 January and 2 February; **The International Herald Tribune**, January 26, 28 and 29, February 10, March 12, 21/22, 23 and 24; **The New York Times**, January 1, 13, 14, February 8, 14, 15, 18, 24 and 28, March 1, 12, 13, 14, 16, 17, 19, 23 and 28 and April 1; **The Sunday Times**, 9 February; **U.S. News and World Report**, February 10; **Newsweek**, February 17; **European Wireless File** [USIA], February 19)

j. Developments of Concern for Horizontal Proliferation

- There are allegations that **Algeria** is working to develop nuclear weapons, with the help of **Iraq** (which is said to have sent nuclear scientists and ten tonnes of natural uranium) and **China**. Meanwhile, the reactor that is

being built at Ain Oussera has been submitted to IAEA safeguards; Agency inspectors had already visited the site twice upon invitation by the Algerians. There is still concern, however, that if Algeria does not soon carry out its announced intention to accede to the NPT, the advent of a fundamentalist Islamic government might stop it doing so. Algeria denies any allegations that it has nuclear-weapon ambitions, but there is a report, attributed to sources within the IAEA, that it has asked Iraq for assistance. (**The Sunday Times**, 5 January; **The Times**, [London], 6 and 7 January **The New York Times**, January 8; **The Economist**, January 11; **Nucleonics Week**, January 9; **L'Express**, 31 January)

- **Argentina** reportedly gives high priority to the development of its first nuclear submarine (SSN). While the modernization of its navy is held up by financial problems, plans for the nuclear boat are said to advance. A prototype reactor is being built at Sao Paolo; the uranium for the fuel is enriched at Ipero. The first SSN is expected to weigh 2800 tonnes and be driven by a 50MW reactor, at a speed of 25 kts (**Jane's Defence Weekly**, 1 February)

- On 19 February the **Democratic People's Republic of Korea** [North Korea] and the **Republic of Korea** [South Korea] exchanged instruments of ratification of the agreement they initialled on 31 December 1991, which obliges them not to 'test, produce, receive, possess, store, deploy or use nuclear weapons', bans uranium enrichment and plutonium reprocessing and provides for mutual inspections under a plan to be jointly drawn up. Discussions on the manner in which compliance with these undertakings should be verified have not so far led to agreement.

  The two Koreas have agreed that the reciprocal inspection of each other's nuclear sites would start by mid-June 1992, but the precise timing, extent and nature of these inspection is not clear. They have also set up a joint nuclear control commission. South Korea has proposed that each year there should be regular quarterly inspections of four sites at a time, and 12 special inspections of at least 40 sites, at both sides of the border. North Korea is said to be opposed to selecting the same number of inspection sites at both sides of the border; it has proposed to give access to one of its own facilities, in return for inspection of all US bases in South Korea. Also unclear is when North Korea will put its safeguards agreement with the IAEA into effect and whether it will allow the IAEA to apply safeguards to all its nuclear facilities – notably of its reprocessing plant – anytime soon; in February, a senior North Korean representative in Vienna said that IAEA safeguards implementation might begin in June, if the parliamentary procedure was completed in time. There is speculation in the western press that Pyongyang is deliberately putting off international inspection in order to have time to hide nuclear material or equipment. According to the US CIA North Korea, which has reportedly pursued a nuclear-weapons development programme since the early 1970s, will be able within a few months to start extracting plutonium from irradiated uranium and may be within a few years of being able to manufacture actual weapons. Other American sources, however, including the State Department, see this prediction as overly pessimistic. While experts agree that North Korea's nuclear programme results largely from indigenous effort, there are reports of foreign assistance, including the supply from Germany of silicium alloyed steel to produce containers for radioactive material.

  North Korea's nuclear complex at Yongbyon reportedly includes at least one 20-30 MW natural-uranium reactor that could produce about 18 pounds of plutonium a year and there are reports of two operating production reactors. A reprocessing facility is supposed to be near completion and capable of a through-put of more than 200-300 metric tonnes of spent fuel per year. South Korean sources allege that there is yet another nuclear reactor of at least 50 MW, and possibly even 200 MW either under construction or already operating.

  Thought has been given to the possibility that once safeguards application begins the IAEA should ask for a 'special inspection' to make sure that all facilities are under safeguards. North Korean officials have announced that the nuclear complex at Yongbyon will be among the sites to be notified to the IAEA for safeguards application. A defector has allegedly said that there are also secret nuclear installations at Pakchon, hidden deep underground.

  South Korea and the United States have cancelled this year's joint military manœuvers, known as 'Team Spirit 92'; this is seen as a concession to North Korea. Apparently, however, the USA has cautioned the South Korean government not to rush into concessions to the North, until there is more evidence of its readiness to end its nuclear-weapon programme. It is also reported that the USA has given North Korea a deadline for allowing inspections of the nuclear installations where weapons material might be produced; reportedly, an American air base in South Korea would be opened for inspection at the same time. Senior American officials had a meeting at the United Nations with a North Korean delegation on the question of inspecting the latter's nuclear installations. A senior North Korean diplomat is quoted as saying in Vienna that with the positive US response to North Korea's call for bilateral negotiations the basic obstacle was removed for the fair implementation of nuclear inspections

  During bilateral talks in Beijing Japan expressed its insistence that North Korea 'implement' the safeguards agreement before diplomatic relations could be normalized. The North Korean answer was that the signature of the agreement had closed the issue; that Japan had no business raising it; and that if there was any nuclear threat in the region, it came from Japan. This echoes its earlier accusation that Japan is secretly promoting the development of nuclear weapons and seems to refer to concern about Japan's fuel cycle capabilities and its impending receipt of plutonium reprocessed abroad. China has repeated its wish to see the Korean Peninsula free of nuclear weapons but does not seem to join in international pressure on Pyongyang to abandon its nuclear activities.

  (**ADN** [Hamburg], 3 November, in **JPRS-TND-91-018**, 18 November 1991; **The Korea Times** [Seoul], 8 November and **AFP**, 14 November, both in **JPRS-TND-91-019**, 2 December 1991; **Chungang Ilbo**, [Seoul], in **JPRS-TND-91-021**, 30 December 1991; **International Defense Review**, January; **The Economist**, 4 January and 22 February, **The Guardian**, January 6 and 7; **The New York Times**, January 6, 7, 15, 24 and 31, February 19, 20, 21 and 26 and March 10 and 15; **Wall Street Journal**, January 6 and 7 and February 18; **The Times** [London], 6, 7, 8 and 31 January; **Defense News**, January 13 and February

10; **International Herald Tribune**, January 8, 15 and 24 and February 9; **Reuters Wire Service**, 16 January; **Neue Zürcher Zeitung**, 24 January and 21 February; **Financial Times**, 24 January; **Süddeutsche Zeitung**, 26 and 27 January and 19 February;**The International Herald Tribune**, February 19,20,21 and 24; **Nucleonics Week**, January 9 and 16 and February 6 and 27; **NuclearFuel**, February 3; **The Washington Post National Weekly Edition**, March 2-8; **The Japan Times**, March 25)

- **India** and **Pakistan** are said to be on the verge of a nuclear arms race, aggravated by progress in the development of medium range missiles. During a visit to the United States in early February, the Foreign Minister of Pakistan publicly acknowledged that his country had 'the capability' to make nuclear weapons (reportedly saying that it had 'elements which put together would become a device') but said that it had permanently frozen production of new weapons. The Minister is also reported to have told US authorities that Pakistan would not test a nuclear device nor export its know-how but that it could not dismantle its programme unless India did so. British estimates put Pakistan's arsenal at about 15 nuclear weapons. The US Administration sees the 'Pressler Amendment' — which bans arms exports to Pakistan if it has a nuclear weapon capability — as applying only to government-sponsored sales. Several senators have asked the Administration also to stop issuing permits for private arms sales to Pakistan. India, which detonated a nuclear device in 1974, is thought to have produced enough plutonium for 100 to 200 weapons. It has allegedly been helped by clandestine supplies of 31 tonnes of Norwegian heavy water (partly re-exported by Rumania and in part shipped through Germany) as well as supplies from China and the USSR. US Senator Larry Pressler is quoted as saying that New Delhi had abandoned its nuclear weapons programme. Pakistan has made a proposal for a conference with India, China, Russia, and the United States, on the establishment of a nuclear-weapons-free zone in the area. Washington has called for five-power talks on a wider range of options, including a regional test-ban, pledges not to attack urban centres, and accession by India and Pakistan to the NPT. Similar ideas have been expressed by the British foreign secretary; support comes from France, Germany and Japan. India, however, argues that it cannot join a nuclear-weapon-free zone as long as China has nuclear weapons; it also accuses Pakistan of adopting an aggressive nuclear posture. Recently, however, it has been seen to ease its opposition to the proposal, although it has expressed preference for a bilateral over a multilateral approach to the nuclear problem (**Chungang Ilbo** [Seoul], 25 November 1991, in **JPRS-TND-92-020**, 13 December 1991; **International Defense Review**, December 1991; **The Times of India**, January 12 and 14 and February 1; **The Times** [London], 14 January and 8 February; **The Guardian**, 13, 14 and 24 January and 8 February; **The Daily Telegraph**, 14 and 18 January and 8 February; **The Hindu**, January 18; **The International Herald Tribune**, January 22 and February 8/9; **Time**, January 27; **The New York Times**, January 21 and February 8, 12, and March 8 and 15; **Nucleonics Week**, January 16; **The Independent**, 22 February)

- There are reports that **Iran** is reviving its nuclear programme, which was largely suspended when the present regime came to power. Reportedly, investments over the next three years will amount to the equivalent of $4.2 billion. Iran appears set to proceed with the Bushehr power station project, on which work was suspended in 1979. In this context, suggestions that it might wish to buy equipment from the discontinued Angra 3 project in Brazil are denied there (See **e. Nuclear Trade and International Cooperation**). Reports from **India** say that as of late 1991, that country had not made a firm offer to sell a nuclear research reactor to Iran.

There are press reports that a number of nuclear experts who left Iran after the fall of the Shah have returned; some are reputedly working on uranium enrichment and other nuclear fuel activities at several secret sites in northern Iran, but this information – some of it supposedly coming from Iranian opposition groups abroad – is not confirmed. Teheran denies reports that it is trying to recruit nuclear experts from the former USSR. It has also been alleged to seek to obtain nuclear material from the **Commonwealth of Independent States**. Western governments and Israel are said to be worried about Iran's apparent interest in the development and acquisition of nuclear weapons; the concern was fanned by quotes in the Iranian press from Vice President Mohajerani, who supposedly called for 'an Islamic bomb'. Israel has not been able to substantiate its allegation that **Germany** had made nuclear exports to Iran. American observers note that the US Commerce Department a few years ago approved the sale of $59 million worth of high-technology equipment to Iran that might be used in a nuclear weapon programme. There is a press report that the Brazilian Brigadier Piva, who allegedly advised Iraq on missile and nuclear matters, has been working in Iran; US intelligence experts have expressed concern that Brazil might provide Iran with nuclear-weapon technology. Concern is caused also by an unconfirmed report in the Cairo newspaper Al-Watan al-Arabi, that Iran has obtained three tactical nuclear warheads from one of the ex-Soviet republics, at a cost of $130 million to $150 million.

Iran has co-operation agreements with **China** — in which context China has supplied it with a small research reactor — and with **Pakistan**, where it reportedly sought help in enriching a large quantity of uranium concentrate from South Africa. Pakistan denies this and the U.S. Government is said to have confirmed that Pakistan has refused an Iranian offer of money for nuclear-weapon technology. Iran reportedly has an agreement with **Syria** which involves joint 'strategic research'. It further has an agreement for cooperation with **Argentina**. The latter is apparently reconsidering this agreement, and is holding up, or may even have cancelled, a shipment of nuclear equipment to Iran, worth $18 million.

At the invitation of the President of the Atomic Energy Organization of Iran a team of four staff members of the IAEA, headed by its Deputy Director General for Safeguards, visited that country, in order to familiarise itself with the current status of Iran's nuclear research and development programme, and discuss technical assistance, the state of the Bushehr project and the scope and objectives of research and development underway at several research centres. They also visited a uranium exploration project and a facility under construction in the mountains north of Teheran. According to a press release issued by the IAEA upon the conclusion of the mission, 'all of the facilities and sites selected by the IAEA for inclusion in the visit were accepted by the Iranian authorities', who extended the team 'all reasonable assistance and cooperation'. The IAEA further stated that

'[t]he activities reviewed by the Team at the above-mentioned facilities and sites were found to be consistent with the peaceful application of nuclear energy...', adding that '[i]t should be clear that the Team's conclusions are limited to facilities and sites visited by it and are of relevance only to the time of the Team's visit'. The Iranian authorities are quoted in the press as saying that they would continue their policy of 'transparency'.

(**Agence France Presse**, 21 November 1991, Brasilia Radio **Voz do Brazil**, 29 November 1991 and **Folha De Sao Paulo**, 2 December 1991, all in **JPRS-TND-91-020**, 13 December; **Jane's Defence Weekly**, 11 January and 1 February; Zachary Davis and Warren H. Donnelly, 'Nuclear Scientists of the Former Soviet Union: Nonproliferation Issues', **CRS Issue Brief**, January 28; **The Economist**, January 11; **The Economist Foreign Report**, January 23; **Die Woche**, 24 January; **Wall Street Journal**, January 25; **The Sunday Times**, 26 January; **Süddeutsche Zeitung**, 26 January and 9 February; **The Guardian**, 27 January; **Kurier** [Vienna], 27 January; **Financial Times**, 29 and 30 January; **Frankfurter Allgemeine Zeitung**, 28, 29 and 30 January and 8 February; **The New York Times**, January 30 and February 13; **The Christian Science Monitor**, the **Wall Street Journal** and **The Washington Post**, February 10; **Nucleonics Week**, February 13 and 20; David Albright and Mark Hibbs, 'Spotlight Shifts to Iran', in **The Bulletin of the Atomic Scientists**, Vol. 48, No. 2, March; **IAEA Press Release** 92/11, 14 February)

- **Iraq**. On the basis of evidence obtained during safeguards inspections and information arising from investigations by the German government, it has been established that a number of European companies, many of them German, have supplied Iraq with components for centrifuges for the enrichment of uranium on a much larger scale than originally supposed. Iraqi officials have confirmed buying one hundred tonnes of maraging steel for use in the fabrication of centrifuge rotors as well as several thousand aluminium forgings. The steel is said to have been melted down and the ferrite magnets were crushed. Inspectors have found a number of carbon fibre rotors for centrifuges which are thought to have been imported from Germany. Although there have been rumours that extensive experiments have taken place involving large numbers of centrifuges, no evidence has been found of the existence of an enrichment cascade or of any smaller scale pilot plant; IAEA inspectors have accounted for fewer than 30 centrifuge rotor tubes, of which only a handful are said to have been of sufficient quality for uranium enrichment. The extensive evidence obtained in particular during the ninth IAEA inspection in January, reinforced by direct admissions from Iraqi nuclear officials, clearly demonstrated the existence of an ambitious clandestine uranium enrichment programme. However, in response to recent speculations in the media that Iraq was close to achieving a nuclear-weapons capability, the IAEA announced on 17 January that, although that country's centrifuge enrichment programme would eventually have been successful, the Iraqis had not progressed to a point where it could start centrifuge production on a sizeable scale. According to expert analysis, one crucial preparatory step that did not appear to have been taken was a decision on the design of the top magnetic bearing assembly of the centrifuges; other centrifuge components were apparently also not yet produced in quantity. Specialists are said to be convinced that the highly sophisticated composite centrifuge rotors found in Iraq were made abroad. There is a growing list of foreign firms believed to have supplied materials, components or technology for Iraq's nuclear-weapon programme. Reputedly, the German intelligence service has concluded that more than 300 firms from 28 countries were involved. The list is said to include 20 firms from France, 12 from Italy, 18 from Switzerland, 17 from the UK and 25 from the US, as well as unnamed numbers of firms from Brazil, China, Japan, the Netherlands and the former USSR. In February, eight managers of the German firms H+H Metalform GmbH, Rhein-Bayern Fahrzeugbau GmbH & Co. KG, and Neue Magdeburger Werkzeugmachinenfabrik, were arrested in connection with illegal supplies to Iraq. IAEA inspectors have found equipment from these companies at various clandestine sites.

In light of the breadth of Iraq's nuclear-weapons programme, there has long been a suspicion that it might also try to follow the plutonium way to nuclear weapons and might therefore also have a production reactor and means of reprocessing. This suspicion has been fed by evidence that it had experimented with the extraction of plutonium from reactor fuel and by reports (see **Newsbrief 14**, Summer 1991) that China had supplied it with plans for the construction of a reactor that could be hidden from satellite observation. Apparently on the basis of French intelligence information, IAEA inspectors in mid-February made a search of six sites in northern Iraq but they failed to unearth the presumed reactor. US intelligence agencies have reportedly intensified their efforts to locate any possible unknown nuclear facilities, giving special attention to infrared 'signatures'. So far satellite intelligence does not seem to have found indications of an operating reactor, but it is noted that only relatively powerful underground reactors can be traced that way. There is also some talk about a hidden heavy-water facility.

During recent weeks the Iraqi authorities have stiffened their resistance to the implementation of various cease-fire conditions set by United Nations Security Council Resolution 687, with regard to the elimination of weapons of mass destruction and the means of producing them. The Security Council has called on Iraq to communicate without delay its unconditional acknowledgement of its agreement to accept and implement the Council's orders and has rejected Iraq's continuing insistence that trade sanctions should be lifted first. IAEA inspectors had reported meeting with a more co-operative attitude of their Iraqi counterparts and expected that further information will be forthcoming. Some experts, in fact, believed that most if not all aspects of Iraq's nuclear programme had been or would soon be disclosed. At Al-Atheer, however, which is thought to be Iraq's main weaponization plant, and which is supposed to be dismantled, the operators have continued to install dual-use equipment which they say is for generic materials research and which the IAEA suspects is intended for the manufacture of nuclear weapons. The IAEA plans to start dismantlement of the plant in the first half of April.

The Director of the US Central Intelligence Agency has expressed the view that even if Iraq's means of producing weapons of mass destruction are eliminated it would remain a primary proliferation threat, as long as Saddam Hussein remains in power.

(David Albright and Mark Hibbs, 'Iraq's Bomb: Blueprints and Artifacts',in **The Bulletin of the Atomic Scientists**, Vol. 48, No. 1, January/February; **Defense News**, January 6; **The Times** [London], 6 January; **Reuters News Agency**, 13 January and 10 and 13 February; **Transcript of CNN interview** with Messrs. Galucci and Zifferero, January 13; **The Guardian**, 15 January; **The Wall Street Journal**, January 15; **The Independent**, 15 and 16 January and 13 February; **The Daily Telegraph**, 15 January; **IAEA Press Release**, PR 92/4, 17 January; **US News and World Report**, January 20 and 27; **The New York Times**, January 15, 16 and 20, February 5, 10, 13, 23, 28 and 29, and March 11, 13 and 26; **Der Spiegel**, 3 February; **Time**, February 3; **Le Monde**, 7 February; **Nucleonics Week**, January 9, 16 and 23 and February 20, 27 and March 5 and 26; **NuclearFuel**, January 20 and March 2; **Japan Times**, March 27)

- According to press reports, in 1989 **Mozambique** offered the then **German Democratic Republic** six kg of highly-enriched uranium. The material was said to have come from **South Africa**. This is not the first report of illegal uranium transactions going through Maputo, the capital of Mozambique (**Frankfurter Allgemeine Zeitung**, 23 December 1991 in **JPRS-TND-92-001**, 16 January)

- Trade in nuclear material, genuine or spurious, is on the increase. Arrests were made in Italy, in late 1991, in connection with the smuggling of 'red mercury', a substance supposedly used in the production of hydrogen bombs but not considered by experts to be of nuclear significance. In December a sealed plutonium calibration source was seized at Rome airport. In two separate incidents, small quantities of natural uranium for use in Romania's CANDU reactors were offered for sale in Hungary. Some low enriched uranium from Bulgaria is reported missing. In Austria a Yugoslav trader was arrested trying to sell plutonium which turned out to be marble. Two Russians were arrested in Germany in early March, for trying to sell 1 kg of low-enriched (2.8%) uranium. Similar incidents have taken place in Augsburg and Zürich. Russian Federation officials deny the truth of mainly eastern European press reports about large-scale trade in nuclear material from the CIS. The IAEA has also concluded that so far none of the reported occurrences, involving low-enriched or depleted uranium or nanograms of plutonium, has posed a proliferation risk (**Kurier** [Vienna], 9 and 30 January; **The Times** [London], 25 January; **Wiener Zeitung** [Vienna], 29 January; **Der Standart** [Vienna], 29 January and 10 February; **Nucleonics Week**, February 13 and March 12; **Wall Street Journal**, March 11; **NuclearFuel**, March 16)

II. PPNN Activities

- Mrs. Thérèse Delpèch (France) has accepted an invitation from the Executive Chairman to become a member of the PPNN Core Group.

- On 29 January Ben Sanders attended a meeting of the Atlantic Council of the United States, in Washington, DC on 'Can the International Non-Proliferation Safeguards System Be Assured?'. On 11-14 March he participated in the Ninth Annual Ottawa Verification Symposium, Montebello, Quebec, Canada, on 'Multilateral Verification and the Post-Gulf Environment: Learning from the UNSCOM Experience'. Under the agenda item nuclear weapons proliferation he presented a paper on 'The NPT – Status and Research'. He also chaired the Symposium's Working Group on Nuclear Weapons and Ballistic Missiles.

- John Simpson and Darryl Howlett attended a workshop on nuclear non-proliferation at the Department of War Studies, King's College, London from 7-8 January. John Simpson made a presentation on 'The Dangers of Proliferation: An Overview' and Darryl Howlett one on 'The Policies of Nuclear Powers on Non-Proliferation'. John Simpson attended a meeting at the WEU Institute for Security Studies in Paris on 10 January devoted to issues arising from the dissolution of the USSR and the desire to dismantle the majority of its nuclear warheads. He was a panel member at a meeting on the same topic in London on 13 January, organised by the Centre for Defence Studies.

- PPNN has initiated a new publication, the **PPNN Issue Review**. These reviews are normally based on discussions that have taken place at PPNN Core group meetings on functional or regional nuclear non-proliferation issues. If funds permit, it is hoped to publish two of these each year through to 1995. Issue Review No.1., 'The NPT and the CTBT: an Inextricable Relationship?' by Darryl Howlett and John Simpson is based on discussions at PPNN's November 1991 Princeton Core Group meeting, and was published in March 1992.

- On 18-19 March Ben Sanders and John Simpson attended a conference organized by the Carnegie Endowment for International Peace on Strengthening the Nuclear Non-Proliferation Regime. As members of a panel during the opening session they spoke on, respectively 'Nuclear-Weapon-Free Zones Come of Age'. and 'The Non-Proliferation Treaty After the Gulf & Cold Wars'. As a member of the same panel, Harald Müller gave a presentation on 'Supplier-State Policies: Export Controls, Sanctions, and Diplomacy'. Other members of the Core Group making presentations were Thérèse Delpèch ('France and the Non-Proliferation Régime'), David Fischer ('South Africa, the NPT, and the IAEA'), Lawrence Scheinman ('Plutonium, Exports, and the IAEA') and Roland Timerbaev ('Export Controls, the NPT, and the CIS'). The conference was also attended by Emily Bailey and Darryl Howlett. From 21 to 26 March, Emily Bailey, Ben Sanders and John Simpson were in Japan to meet with officials of the Japan Atomic Industrial Forum to discuss arrangements for the twelfth Core Group meeting which will take place in that country, and to visit the site of the meeting.

III. Other Non-Governmental Groups Active in Related Areas

- In March, 1992, the **Uranium Institute** started publication of a periodic newsletter, called **Uranium Issues**.

IV. Some Recent Books, Articles and Other Materials on Nuclear Non-Proliferation

- Books:

Hans Günter Brauch, Editor, **Controlling Military Research and Development and Exports of Dual Use**

Technologies as a Problem of Disarmament and Arms Control Policy in the 1990s (Mosbach: The Results of the Seventh AFES-PRESS Conference, Abstracts and Discussions, AFES-PRESS, 1992), 230 pp.

David Fischer, **Stopping the Spread of Nuclear Weapons: the Past and the Prospects**, (New York and London: Routledge, 1992), 336pp.

Paul L. Leventhal and Sharon Tanzer, Editors, **Averting a Latin American Nuclear Arms Race: New Prospects and Challenges for Argentine-Brazil Nuclear Cooperation**, (New York: St. Martin's Press, 1992), 257 pp.

Ziba Moshaver, **Nuclear Weapons Proliferation in the Indian Subcontinent,** (London: Macmillan, 1991), 218pp.

Uranium Institute, **Uranium in the New World Market - Supply and Demand 1990-2010**, (London: Uranium Institute, 1991), 120 pp.

- Articles and Other Materials:

Arms Control Today, Volume 22, Number 1, January/ February 1992: Special Edition on **Nuclear Weapons In the Former Soviet Union**. Articles by Spurgeon M. Keeny and Wolfgang. K.H. Panofsky: 'Warhead Control Regimes'; Ashton B. Carter: 'Steps to Reduce the Dangers'; Christopher Paine and Thomas B. Cochran: 'Verifying Dismantlement'; Richard L. Garwin: 'Post-Soviet Nuclear Control', Robert S. Norris: 'The Nuclear Archipelago'; and William C. Potter: 'Proliferation Risks'.

Kurt M. Campbell et. al., 'Soviet Nuclear Fission,' **CSIA Studies in International Security, No. 1**, John F. Kennedy School of Government, Harvard University, Cambridge, Mass., November, 1991, 129 pp.

Zachary Davis and Warren H. Donnelly,'A Nuclear-Weapons-Free Zone in the Middle east: Background and Issues', **CRS Issue Brief**, Order Code IB92041, 13 March 1992.

Jonathan Dean and Kurt Gottfried, 'A Program for World Nuclear Security', **Union of Concerned Scientists**, Cambridge, Mass., February 1992, 30 pp.

Lewis A. Dunn, 'Containing Nuclear Proliferation', **Adelphi Papers 263**, IISS, London, Winter 1991, 75 pp.

Daniel Ellsberg, 'Nuclear Security and the Soviet Collapse', interview by Jerry Sanders and Richard Caplan, **World Policy Journal**, New York, Winter 1991-92, pp. 135-156.

Virginia Foran, editor, 'Nuclear Non-Proliferation, 1945-1990', **The Making of U.S. Policy** series, The National Security Archive, Washington D.C., March 1992 (documentation on microfiche).

Peter Gizewski, editor, 'Toward Minimum Deterrence: How Low Can We Go?'; The Canadian Centre for Arms Control and Disarmament, **Aurora Papers 11**; Ottawa, December 1991, 74 pp.

Jeffrey A. Larsen and Patrick J. Garrity, 'The Future of Nuclear Weapons in Europe - Workshop Summary', Center for National Security Studies, Los Alamos National Laboratory, **CNSS Report No. 12**. Los Alamos, December 1991, 26 pp.

Harald Müller, 'Das nukleare Nichtverbreitungsregime im Wandel. Konsequenzen aus einem stürmischen Jahr' ('The Nuclear Non-Proliferation Regime in Transition: Conclusions from a Turbulent Year'), in **Europa Archiv**, No. 2, 47th year, 25 January 1992, pp. 51-58.

Orbis, **36**(2), Spring 1992: special section on Nuclear Proliferation. Articles by Paul L. Leventhal, 'Why bother plugging Export Leaks'; William C. Potter, 'The New Nuclear Suppliers'; Leonard S. Spector, 'Nuclear Proliferation in the Middle East'.

George Perkovich and William C. Potter, 'Coping with the Soviet Nuclear Brain Drain: An Environmental Approach', **Monterey Institute of International Studies**, News Bulletin, Monterey, December 31, 1991.

Jean-Francois Rioux, 'Arms Export Controls to Limit Weapons Proliferation', **Working Paper 39**, (Ottawa: Canadian Institute for International Peace and Security, December 1991), pp. 64.

Joseph A. Yager, 'Prospects for Nuclear Weapons Proliferation in a Changing Europe', **CNSN Paper**, Volume 4, No.1, McLean, VA 22102, February 1992, 83 pp.

V. Documentation

a. UN Security Council Declaration on Disarmament, Arms Control and Weapons of Mass Destruction, 31 January 1992

(Text reproduced from S/PV.3046)

The members of the Council, while fully conscious of the responsibilities of other organs of the United Nations in the fields of disarmament, arms control and non-proliferation, reaffirm the crucial contribution which progress in these areas can make to the maintenance of international peace and security. They express their commitment to take concrete steps to enhance the effectiveness of the United Nations in these areas.

The members of the Council underline the need for all Member States to fulfil their obligations in relation to arms control and disarmament; to prevent the proliferation in all its aspects of all weapons of mass destruction; to avoid excessive and destabilizing accumulations and transfers of arms; and to resolve peacefully in accordance with the Charter any problems concerning these matters threatening or disrupting the maintenance of regional and global stability. They emphasize the importance of the early ratification and implementation by the States concerned of all international and regional arms control arrangements, especially the START and CFE Treaties.

The proliferation of all weapons of mass destruction constitutes a threat to international peace and security. The members of the Council commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end.

On nuclear proliferation, they note the importance of the decision of many countries to adhere to the Non-Proliferation Treaty and emphasize the integral role in the implementation of that Treaty of fully effective IAEA safeguards, as well as the importance of effective export controls. The members of the Council will take appropriate measures in the case of any violations notified to them by the IAEA.

On chemical weapons, they support the efforts of the Geneva Conference with a view to reaching agreement on the conclusion, by the end of 1992, of a universal convention, including a verification regime, to prohibit chemical weapons.

b. Declaration of the CSCE Council on Non-Proliferation and Arms Transfers, Prague, 30 January 1992

The Ministers reiterated the commitment of their Governments to the prevention of the proliferation of weapons of mass destruction and the control of missile technology. They underlined their willingness to contribute to the ongoing efforts and international co-operation to this end. In this context, they expressed their support for the Treaty on the Non-Proliferation of Nuclear Weapons and for universal adherence to it. They welcomed the intention of all those CSCE-States not yet party to the NPT to accede to it and urged other States, who are not yet party to it, to do so as well. They also renewed their support for a global, comprehensive and effectively verifiable chemical weapons convention to be concluded in 1992. They also reaffirmed their support for the biological weapons convention, welcomed the results of the September 1991 review conference and called for universal adherence to it.

They expressed their view that excessive build-ups of conventional weapons beyond legitimate defensive needs pose a threat to international peace and security in particular in regions of tension. Based on the principles of transparency, consultation and restraint, they declared their commitment to address the threat of excessive accumulations of conventional weapons and committed themselves to exercise responsibility, in particular with regard to arms transfers to States engaging in such excessive accumulations and to regions of tension.

They confirmed their support for and firmly committed themselves to provide full information to the United Nations Register of Conventional Arms. They called upon all other States to take the same action.

They agreed that effective national control of weapons and equipment transfer is acquiring the greatest importance. They declared their readiness to exchange views and to provide mutual assistance in the establishment of efficient national control mechanisms.

They agreed that in this connection the conversion of arms production to civilian production is also acquiring special importance.

The Ministers decided that the question of non-proliferation, including the transfer of sensitive expertise and the establishment of a responsible approach to international armaments transfers should be included as a matter of priority in the work programme for the post Helsinki arms control process.

c. Declaration by the Presidents of the Republic of Argentina and the Federative Republic of Brazil on the 25th Anniversary of the Signing of the Treaty of Tlatelolco, 14 February 1992

(Text reproduced from INFCIRC/399 – attachment)

Since assuming the office of President in our two countries we have given a fresh and powerful impetus to the adoption of a common nuclear policy, among other things in questions relating to non-proliferation. We have always been prompted by the aim of endowing our nuclear programme with both internal and external transparency and of demonstrating to the international community the exclusively peaceful objectives which guide them, in conformity with the spirit of the Treaty of Tlatelolco, the 25th anniversary of which we are celebrating today.

That programme reflects the determination and the political will of our Governments to strengthen regional and international peace and security, among other things through the adoption of clear verification mechanisms.

In that context we agreed, in the Declaration on Common Nuclear Policy signed on 28 November 1990 at Foz do Iguaçu, on three concrete steps:

- The establishment of a Common System of Accounting and Control of Nuclear Materials;
- the conclusion of a joint safeguards agreement with the International Atomic Energy Agency; and
- the adoption of pertinent measures leading to the full entry into force for both countries of the Treaty of Tlatelolco, including whatever steps are necessary to update and improve the text of the Treaty.

The international community has been witness to the speed and efficiency with which these goals were achieved. The results are familiar to all:

- The Agreement between Argentina and Brazil for the Exclusively Peaceful Use of Nuclear Energy, signed on 18 July 1991 in the city of Guadalajara, which has already been approved by the Congresses of our two countries and ratified by the two Governments. This Agreement reflects the practical achievement of the first step; and
- the signature of 13 December 1991 of the Agreement between Argentina, Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials and the International Atomic Energy Agency for the application of safeguards.

Today we are taking effective steps to fulfil the third and final commitment mentioned in the Foz do Iguaçu Declaration. As soon as possible we shall be submitting for the consideration of OPANAL a number of amendments to the text of the Treaty of Tlatelolco, amendments which are highly technical in nature and which in no way affect the principles and objectives of the Treaty.

We ask all the countries of our region to grant us the support necessary to make this initiative successful, since its aim is to facilitate application of the Treaty.

We congratulate the Government of France on its decision to ratify Additional Protocol I to the Treaty of Tlatelolco, a step which should, we hope, in the near future, establish definitively its legal force for the whole region for which it is intended.

All these recent developments, which point to the profound desire shared by all of us to consolidate Latin America and the Caribbean as a zone free of nuclear weapons, have led us to the common conviction that completion of the process just referred to of approving amendments to the text of the Treaty will definitively open the way to its entry into force in our countries.

...

d. Joint Declaration for a Non-Nuclear Korean Peninsula – Initialled December 31, 1991 and Signed January 20, 1992

(Text supplied by South Korean Embassy, London)

In order to create conditions and an environment favourable to peace and the peaceful unification of our land and to contribute to the peace and security of Asia and the world at large by eliminating the danger of nuclear war through its denuclearization, the South and the North declare as follows:

1. The South and the North will not test, produce, receive, possess, store, deploy or use nuclear weapons.
2. The South and the North will use nuclear energy solely for peaceful purposes.
3. The South and the North will not possess facilities for nuclear reprocessing and uranium enrichment.
4. In order to verify the denuclearization of the Korean Peninsula, the South and the North will conduct inspection of objects chosen by the other side and agreed to by both parties. Such inspection will be implemented according to the procedures and methods prescribed by a South-North Joint Nuclear Control Committee.
5. In order to ensure the implementation of this Joint Declaration, the South and the North will organize a South-North Joint Nuclear Control Committee within one (1) month of the coming into force of this Declaration.
6. This Joint Declaration will enter into force the day appropriate instruments are exchanged following the completion by the South and the North of the necessary procedures to bring this Declaration into effect.

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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