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Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 20

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Summary:

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

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NEWSBRIEF

Winter 1992

Editorial note

The present issue of the *Newsbrief* covers developments relating to the non-proliferation of nuclear weapons during the period October-December 1992. Readers are reminded that questions of international security — including the issue of nuclear non-proliferation — tend to have long histories and that the import of current developments can be fully understood only against the background of that history. The *Newsbrief* obviously cannot present the histories of all the items reported. This is one reason why a bibliography of new publications is included, to help provide such a background.

The *Newsbrief* is published four times a year, as part of the effort of the Programme for Promoting Nuclear Non-Proliferation (PPNN) to foster awareness of the issues related to the spread of nuclear weapons and of national and international developments that may help constrain that spread. PPNN's *Newsbrief* seeks to present an accurate and balanced picture of current events in the area, including relevant aspects of the peaceful uses of nuclear energy.

The *Newsbrief* is based on publicly available information derived from reputable and generally reliable sources which in the opinion of the editor deserves the readers' attention. Its limited size makes it necessary to choose among items of information and to present them in condensed form. This applies in particular to topics which the world press considers of special interest about which, at times, reports appear almost daily in the major newspapers.

Subheadings used in the *Newsbrief* are meant to facilitate presentation and assist clarity; they are not intended as judgments on the nature of the events covered. Related items of information may be combined under one subheading, even though some might fit also into other categories of subjects identified in the *Newsbrief*.

Circumstances beyond the control of the *Newsbrief*'s usual editor, PPNN's Executive Chairman Ben Sanders, prevent

him from acting as the editor of the present issue. Exceptionally, this issue is prepared by Darryl Howlett, PPNN's Information Officer at the University of Southampton, who takes responsibility for its contents. The inclusion of an item in the *Newsbrief* does not necessarily imply the agreement of PPNN's Core Group, collectively or individually, either with its substance or with its relevance to PPNN's work. Readers who wish to comment on the substance of the *Newsbrief* or on the manner of presentation of any item, or who wish to draw attention to information they think should be included, are encouraged to send their remarks to the editor for possible publication.

Unless otherwise stated, sources referred to date from 1992.

I. Topical Developments

a. Background

- Fifty years ago, at 3.25 pm on 2 December 1942, in a squash court underneath the Stagg Field football stadium at the University of Chicago, the world's first atomic pile (containing 385 tons of graphite and 50 tons of uranium) sustained a controlled chain reaction.
- In the **United States**, the new administration of President-elect Bill Clinton, which will take office on 20 January, is expected to continue the nuclear arms control process with **Russia** and strengthen efforts for the non-proliferation of weapons of mass destruction. (*International Herald Tribune*, November 13; *The New York Times*, December 9).
- On 1 October, the **United States'** Senate voted in favour of ratification of the Strategic Arms Reduction Treaty (START-I) by a majority of 93-6. This was followed on 4 November by ratification in **Russia's** Parliament by a vote of 157-1, with 26 abstentions. START-I establishes numerical limits on deployed strategic nuclear delivery

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vehicles (SNDVs, these are sea-launched and land-based ballistic missiles, and bombers). Following a seven year implementation period involving three phases, the United States and Russia can deploy a maximum of 1,600 SNDVs carrying a total of 6,000 accountable warheads, of which no more than 4,900 can be deployed on ballistic missiles. On 29 December, United States' Secretary of State, Eagleburger, and Russia's Foreign Minister, Kozyrev, agreed a text for a follow-on agreement on the Further Reduction and Limitation of Strategic Offensive Arms (START-II). The text was approved the next day by Presidents' Bush and Yeltsin and signed by them in Moscow on 3 January 1993. Discussions for this agreement had been underway since the two presidents reached a Joint Understanding at the Washington Summit on 17 June. START-II requires both states to reduce their strategic nuclear arsenals to between 3,000-3,500 warheads, eliminate all their inter-continental ballistic missiles with multiple independently-targetable re-entry vehicles (MIRVed ICBMs) by the year 2003, and places a sublimit of 1,700-1,750 on warheads deployed on submarine-launched ballistic missiles (SLBMs). START-II reductions will be implemented in two phases. The first phase will be completed seven years after START-I enters into force, the second by 2003 or by the end of the year 2000 if the United States is able to provide financial aid to assist Russia in the dismantling of its strategic nuclear forces. The entry into force of START-I is a precondition for the entry into force of START-II.

The United States' Senate ratified START-I with the condition that if any of the four Soviet successor states with nuclear weapons on their soil, Russia, **Belarus**, **Kazakhstan**, or **Ukraine**, failed to implement the Treaty and its accompanying Lisbon Protocol, the United States would consider it a Treaty violation. Russia has made implementation of START-I dependent on Belarus, Kazakhstan and Ukraine ratifying this Treaty and acceding to the NPT as non-nuclear weapon states. Kazakhstan's parliament has consented to START-I ratification, but Belarus and Ukraine have not yet done so and none of the three republics has acceded to the NPT. During the debate in Russia over START-I, concerns were expressed about its ability to implement the agreement due to financial and technical difficulties.

(**The New York Times**, October 2, 15, November 5, December 8 and 14; **Arms Control Today**, October; **Nucleonics Week**, October 29; **The Washington Post**, November 5, 26, December 8 and 14; **International Herald Tribune**, November 5, 14 and December 16; **The Christian Science Monitor**, November 17; **European Wireless File**, December 9, 15, 22, 30 and 31; **Defense News**, December 21-27; **The Independent**, 30 December; **Financial Times**, 31 December).

- In commemoration of Disarmament Week 1992, United Nations' Secretary-General Boutros Boutros-Ghali on 28 October presented a report entitled, 'New Dimensions of Arms Regulation and Disarmament in the Post-Cold War World'. This emphasizes the potential for the United Nations to play an increased role in arms regulation and disarmament in the new international environment and complements the Secretary-General's, 'An Agenda for Peace', presented earlier. In his presentation, the Secretary-General called for the NPT to be 'extended indefinitely and unconditionally' in 1995 and that 'All

states should adhere to the Treaty'. Extracts from the Report are reproduced in **Section V.a. (Disarmament Times, 9 November)**.

- On 30 November, the United Nations' 47th General Assembly adopted by consensus a resolution approving the Chemical Weapons Convention, which bans the production, stockpiling and use of chemical weapons. During discussions, several developing states expressed concern that the treaty provisions could place an undue burden on national chemical industries and restrict international trade. There has also been unease that certain definitions of chemicals could complicate challenge inspection procedures. The treaty is scheduled to be signed in Paris on 13-15 January 1993. A minimum of 65 states must ratify the agreement before it enters into force. (**Defense News**, October 19-25; **Disarmament Times**, 9 November; **Trust and Verify**, December).
- For the first time, **Russia, Ukraine, Kazakhstan, Armenia** and other republics of the former USSR have attended a meeting of the Coordinating Committee for Multilateral Export Controls (CoCom). The meeting, on 23-24 November, marked a shift in focus for CoCom, with the prospect that restrictions on transfers of technology to the new republics would be lifted provided agreement could be reached on end-use and re-transfer to other states. (**International Herald Tribune**, November 25).

b. NPT Events

- In **Newsbrief 19** it was reported that **Niger** acceded to the NPT on 4 September. The date should have been 9 October.
- **Namibia** acceded to the NPT on 2 October. The following states also acceded to the NPT between 1 January and 9 November: Estonia (7 January), Latvia (31 January), China (9 March), Slovenia (7 April), Uzbekistan (7 May), France (3 August), Azerbaijan (22 September) (Written Answer, **Hansard**, 9 November 1992, c546-7).
- **Myanmar** (formerly **Burma**) acceded to the NPT on 2 December. (**Direct Information**). Myanmar's accession brings the number of parties to the NPT to 156.
- On 16 November, a Draft Resolution was adopted by the First Committee of the United Nations 47th General Assembly concerning the Preparatory Committee for 'a Conference to review the operation of the Treaty and to decide on its extension'. The Committee is to meet in New York on 10-14 May 1993. The Resolution was adopted with 133 votes in favour, none against and two abstentions (**Cuba** and **India**). The text of the Draft Resolution is reproduced in **Section V.b**.
- During a meeting in August between the External Affairs Minister of **Mauritius**, Mr A. Berenger, and leaders in **India**, including the Prime Minister, Mr P. V. Narasimha Rao, and the Minister for External Affairs, Mr E. Faleiro, interest was expressed in a proposal submitted by Mr Berenger for an informal dialogue between parties to the NPT and non-parties. The idea is to establish informal contacts to discuss differences and give new impetus to the non-proliferation debate before the 1995 NPT Conference. (**The Hindu**, 7 August, in **JPRS-TND-92-036**, 7 October).

c. Other Non-Proliferation Developments

- In **Argentina**, the National Atomic Energy Commission (CNEA) has expressed its 'full satisfaction' with the process which could lead to Argentina's Congress ratifying the Tlatelolco Treaty. A communique issued by Manuel Mondono, CNEA Chairman, stated that such a development would be 'the culmination of a process that began on 28 November 1990 with the joint Argentine-Brazilian declaration of Foz du Iguazu'. (*Noticias Argentinas*, 21 October, in **JPRS-TND-92-039**, 28 October).
- A new clause has been added to the Treaty of Tlatelolco stating that all parties involved will impose the stipulations on nuclear weapons as set out in the Treaty in any territory over which they have jurisdiction, whether *de facto* or *de jure*, and which falls within the geographical limits of the Treaty. (*Enerpresse*, 20 October).
- The Foreign Minister of **Syria**, Faruq al-Shar', has stated that following a meeting of Arab foreign ministers, Arab states have agreed to link their endorsement of the Chemical Weapons Convention to **Israel's** endorsement of the NPT. (*Damascus Syrian Arab Television Network*, 2 October, in **JPRS-TND-92-037**, 9 October).
- New regulations to govern exports of dual-use items from the European Community are reportedly not expected to be in place when the single internal market starts on 1 January 1993, raising concerns about controls on potential militarily-useful goods after that date. A draft regulation tabled by the European Commission in August for dual-use products is unlikely to be fully implemented within the 12 month transition period envisaged. In the interim, a system of 'general licences' for monitoring transfers is expected to be retained. (*Financial Times*, 11 December).
- Following the decision at the Maastricht European Council that nuclear non-proliferation was an area where member states might take joint action under the Maastricht Treaty, preparatory work has begun on specific initiatives. This work is to be completed by the time the Treaty enters into force. In addition, the European Non-Proliferation Working Group has met twice since the beginning of July. It has specifically decided that in order to assist the IAEA to fulfil its safeguards obligations, the European Community and its member states will provide the IAEA with additional information on production inventories, international transfers of nuclear material and on exports of certain relevant equipment and non-nuclear material. This information will be provided on a voluntary basis, starting in 1993. (*Trust and Verify*, December).

d. Nuclear Disarmament

- **Japan** has proposed forming an international regime involving the IAEA and the Nuclear Energy Agency (NEA) to control and utilize nuclear materials from dismantled warheads. The suggestion emanated from a Japanese symposium, held on 8 October, on how to convert nuclear warheads to peaceful uses. Representatives from the **United Kingdom**, **France**, **Germany** and **Russia** also attended. (*Nihonkeizai Shimbun*, October 9).

- The ability of **Russia** to dismantle nuclear warheads is reportedly being hampered by lack of facilities and money. **France** has signed a technical assistance agreement with Russia, similar to those Russia has made with the **United States** and the **United Kingdom**. These cover warhead transportation, protection and accident control equipment, but the French agreement goes one stage further by including sophisticated machines to cut open the weapons and extract the fissile material.

An international debate is evolving over the methods for dealing with the fissile material resulting from warhead dismantling. William Dircks, Deputy Director-General of the IAEA, estimates there is 100 to 110te of plutonium (Pu) and 500 to 550te of highly enriched uranium (HEU) to be isolated from **United States'** nuclear weapons and about 100te of Pu and 500te of HEU to be isolated from nuclear weapons belonging to the Commonwealth of Independent States (CIS). The Deputy Director General has proposed revisiting the International Plutonium Storage (IPS) concept, studied by the IAEA between 1978-84, because it will take a long time to find safe and secure ways to use all the Pu in power generation. The United States favours the creation of national stockpiles of separated Pu although no official decision has been reached. **Russia** prefers the option of converting the Pu into fuel for use in reactors, but lacks the facilities to achieve this quickly. To overcome future problems, some in Russia have advocated converting its fast reactors to use MOX fuel, and completing the industrial scale MOX plant at Chelyabinsk and the RT-2 reprocessing plant at Krasnoyarsk, which can reprocess 1,500te of spent fuel a year and fabricate MOX fuel. (*Daily Yomiuri*, October 7; *Reuter*, 12 November; *The Washington Post*, October 7; *Arms Control Today*, October; *NuclearFuel*, October 26; *Nuclear News*, November; *Le Monde*, 12 November).

- In a speech on 23 November, President Yeltsin stressed that for the foreseeable future **Russia** will rely on a nuclear deterrent, although still committed to radical reductions in nuclear forces. This is in contrast to former Soviet leader Mikhail Gorbachev, who advocated a policy of total nuclear disarmament by the year 2000, and reflects what a report calls a trend towards the 'rehabilitation' of nuclear weapons into Russia's future strategic thinking. (*The Washington Post*, November 30-December 6; *Defense News*, December 21-27).

e. Nuclear Testing

- According to a report, **China** could accept a moratorium on nuclear testing for a maximum of 2 years, but a longer moratorium would present difficulties and one beyond 5 years would be impossible. (*Foreign Report*, 10 December).
- **France** is discussing the possibility of extending its moratorium until July 1993 and is seeking talks with the **United States**, **Russia**, **China** and the **United Kingdom** on future policies for nuclear weapon testing. In a proposal outlined by Foreign Minister, Roland Dumas, the talks would take place in the Conference on Disarmament in Geneva after the conclusion of the moratoria adopted by France, Russia and the United States. The idea for talks on testing policy was reiterated by Admiral Jacques Lanxade, the Chief of Staff of the Armed Forces, who is reported as saying that the adoption of nuclear testing moratoria by the United

States and Russia should allow the nuclear weapon states to consider how to find a concerted means of limiting the number of nuclear tests. (*Le Monde*, 14 October and 6 November; *L'Express*, 3 November; *Agence France Presse*, 3 November, 10 December; *Les Echos*, *l'Humanite*, *Financial Times*, 4 November).

- The **United States** has implemented a nine-month moratorium on nuclear testing, beginning 1 October, as a result of the enactment by President Bush on 2 October of the Fiscal Year 1993 Energy and Water Development Appropriations Bill. This followed speculation that the President might veto the Bill. The moratorium is scheduled to end on 1 July 1993, after which the new law limits the number of tests that the United States may conduct in the period to 30 September 1996. Beyond that cut-off date, no nuclear tests will be undertaken unless another foreign state tests a device. The legislation also directs the United States to resume testing talks with **Russia** and devise a strategy for achieving a multilateral comprehensive test ban. The legislation requires the President to submit an annual report to Congress on nuclear testing, which includes a schedule of up to 5 tests to be carried out for safety purposes. The President may also certify during an annual report period that a reliability test is required. Both the annual report and any proposed reliability test may be 'disapproved' by Congressional resolution. The new law also contains a funding provision of \$517 million for the Super Collider Project based in Texas, which is expected to cost \$8 billion when complete. The text of the legislation relating to testing is reproduced in **Section V.c. (Congressional Quarterly Weekly Report, The New York Times, September 26; The Independent, 3 and 5 October; Süddeutsche Zeitung, 5 October; Defense News, October 5-11; Nuclear Engineering International, October; Trust and Verify, October; Arms Control Today, October; Pacific Research, November)**.
- The **United Kingdom** has not declared a testing moratorium, but is constrained by the **United States'** legislation as it uses the Nevada Test Site. Under that legislation, it may be permitted to conduct one test per annual report period, in lieu of a United States' test. This provision enables the United Kingdom to conduct up to 3 tests before 30 September 1996. Testing of the United Kingdom's Trident warhead has been completed, although the testing programme for the warhead on the proposed tactical air-to-surface missile (TASM) appears to be less advanced and may be affected by any future testing restrictions. Speaking at a meeting of NATO's Nuclear Planning Group, the Defence Secretary, Malcolm Rifkind, stated that it would be desirable for testing to continue to ensure the safety and credibility of the United Kingdom's deterrent. (*The Daily Telegraph*, 3 October; *Financial Times, The Times, The Guardian*, 22 October; *Hansard*, 12 November).
- On 19 October, President Yeltsin signed a Decree to extend the moratorium on nuclear tests in **Russia**, which has been in force since October 1991, until 1 July 1993. The decision to prolong the moratorium was taken in response to similar measures adopted by the **United States and France**. The Decree also calls for further proposals to extend the moratorium and create favourable conditions for the complete prohibition of nuclear tests by all states. Earlier, Defence Minister Pavel Grachev, had indicated that Russia might not be

able to continue its unilateral moratorium indefinitely and that if tests were resumed, a limited number might be required at the Novaya Zemlya test site. Atomic Energy Minister, Victor Mikhaylov, is also reported as saying that Russia is preparing a few tests in the event of the United States resuming testing. (*TASS (Moscow)*, 19 and 20 October; *The Washington Post, The New York Times, The Guardian*, October 20; *Neue Zürcher Zeitung*, 21 October; *ITAR-TASS World Service (Moscow)*, 13 October, in *JPRS-TND-92-038*, 21 October; *Rossiyskaya Gazeta*, 20 and 21 October, *Krasnaya Zvezda*, 21 October, in *JPRS-TND-92-039*, 28 October; *Aftenposten (Oslo)*, 6 October, in *JPRS-TND-92-040*, 30 October; *Defense News*, December 14-20).

- In **Kazakhstan**, an official at the national nuclear centre for research and test work has denied a report that an unexploded nuclear weapon, which is impossible to remove, remains underground at the Semipalatinsk-21 test site. The official did confirm that a physical device designed to study the process of radiation was left there following the Kazakh president's decree to close the test site. Scientists are studying methods for its safe removal. (*Alma-Ata Kazakh Radio Network*, 16 September, in *JPRS-TND-92-034*, 22 September).
- The Pugwash Conference on Science and World Affairs, held in Berlin, called for the complete elimination of nuclear tests in letters to Presidents Bush and Yeltsin. (*International Herald Tribune*, September 25).

f. Nuclear Trade and International Cooperation

- The large-scale transportation of plutonium by sea between **France and Japan** has been initiated. The *Akatsuki Maru* left Japan in August to collect a cargo of plutonium oxide from France. The plutonium had been extracted from spent nuclear fuel of **United States'** origin irradiated in Japanese nuclear reactors and sent for reprocessing to the Cap la Hague plant, near Cherbourg. The material, estimated to be between 1 and 1.7 tons, was loaded at Cherbourg before the *Akatsuki Maru* and its escort ship from Japan's Maritime Safety Agency, the *Shikishima*, set sail on 7 November for the 17,000 mile return journey. The plutonium being shipped is intended for use in the Monju prototype Fast Breeder Reactor run by Japan's Power Reactor and Nuclear Fuel Development Corporation (PNC). Japan's intention is to create a self-sustaining fuel cycle to overcome its dependence on external fuel sources for energy production. Japan has plans to undertake all reprocessing on its own soil, but for the immediate future is reliant on reprocessing in the **United Kingdom and France**. Japan's demand for plutonium up to 2010 has been assessed at between 80 and 90 tons. Approximately 30 tons will come from reprocessing spent fuel in France and the United Kingdom under existing contracts and this will require regular shipments from Europe to Japan.

The shipment of plutonium aboard the *Akatsuki Maru* has led to international concern about safety and security arrangements for this and future shipments. The *Akatsuki Maru* is one of a fleet of five ships operated by Pacific Nuclear Transport Ltd (PNTL). Up to 1989, the PNTL fleet had undertaken 100 voyages transporting over 5,000 tons of spent fuel. The *Akatsuki Maru* has been designed to carry plutonium and has a range of safety features including anti-collision equipment, and a reinforced double-hulled and double-bottomed structure.

The plutonium is being sealed within 133 lead-lined casks. These casks have been tested to resist pressure at depths of up to 10,000 metres and a fire of 800 degrees Celsius for 30 minutes. This is commensurate with the IAEA's stipulations for 'fissile packages' in its 'Regulations for the Safe Transport of Radioactive Materials'. The escort for the shipment is provided by the 6,500 ton *Shikishima*, specially designed for the task, with a crew of 100 and armed with two Super Puma helicopters, high-speed boats, and two 25-millimetre and two 35-millimetre guns.

Greenpeace and other critics of the safety measures have drawn attention to International Maritime Organisation (IMO) statistics which suggest that the average maritime fire burns in excess of 20 hours. The prospect of nuclear theft, attacks by pirates and accidents, has led to a number of states opposing passage of the ship through territorial and adjacent waters. **Malaysia, Indonesia, Singapore,** and the **Philippines** are said to have expressed concern that the ship might pass through their territorial waters or the Malacca Straits, where there have been frequent shipping accidents and incidents of piracy. The escort ship has also been described as inadequate for the purposes of guarding against attack. Japan declined to make public the return route of the ship for security reasons, but the government is expected to provide more detailed general information about plutonium transportation to promote greater public understanding of the issues. Greenpeace tracked the *Akatsuki Maru* around the Cape of Good Hope into the Indian Ocean, before abandoning its monitoring of the shipment. The expected arrival date of the shipment in Japan is early January.

(**Far Eastern Economic Review**, October 8; **Canberra Times**, October 9; **The Advertiser**, October 10; **The Guardian**, 10 and 16 October; **The Sunday Times**, 11 October; **The Washington Post**, October 17 and November 2; **Financial Times**, 20 October; **Frankfurter Allgemeine Zeitung**, October 20 and 31; **International Herald Tribune**, October 21; **The New York Times**, October 27; **Nature**, October 31; **Atoms in Japan**, October, November and December; **Mainichi Shimbun**, October 26; **Kurier**, November 3 and 4; **Süddeutsche Zeitung**, November 4; **Enerpresse**, October 7, 9, 20, 26, November 2, 9, 10 and 16; **L'Espresso**, October 23; **L'Usine Nouvelle**, October 22; **Liberation**, October 30, November 1, 2, 9 and 11; **L'Humanite**, November 3; **La Tribune**, November 3; **Le Parisien**, November 9; **Le Monde**, November 10; **The Economist**, 21 November; **Reuter**, 30 November; **Nucleonics Week**, November 19, December 3 and 10; **The Japan Times**, November 24, 25 and December 9; **UIC Newsletter**, November/December; **Nihonkeizai Shimbun**, December 22).

- The first major consignment of plutonium and uranium, reported to be 3.5kg, from the atomic research centre at Karlsruhe, **Germany** has been flown from Frankfurt to Dounreay in the **United Kingdom** for reprocessing. The material will be processed for use in research reactors and any waste returned to Germany. The flight has provoked concern in the Parliament of the Hesse Länder about the safety risks involved. (**Reuter**, 15 December; **ENS NucNet**, 16 December).
- **China** and **Iran** have signed an agreement on cooperation in the peaceful uses of nuclear energy.

China's Premier Li Peng said that its implementation is subject to Iran accepting IAEA safeguards and **China's** principles on nuclear exports, which Iran has agreed to. The cooperation agreement, announced on 10 September, is said to involve **China** supplying Iran with a 300-MW nuclear power reactor. (**XINHUA (Beijing)**, 10 September, in **JPRS-TND-92-033**, 16 September).

- **China** has reportedly ordered general and detailed designs for two more 600-MW pressurized water reactors for the Qinshan nuclear power station from **France's** FRAMATOME. (**Nikkeisangyo Shimbun**, November 13).
- **China** and **Pakistan** are reported to be making progress on the proposed transfer from **China** of a 300-MW nuclear power reactor, modeled on its own Qinshan-1 reactor, for use at **Pakistan's** Chasma site. It was thought that this transfer might not go ahead because key components in the Qinshan reactor are imported and the supplier states would prohibit their use in any reactor exported to **Pakistan**. This is not now seen as a problem, according to an official of the **China Zhongyuan Engineering Corporation (CZEC)**, as **China** would be able to manufacture some of these components and find alternative suppliers for the remainder. (**Nucleonics Week**, December 17).
- **Pakistan** will purchase 1000-MW of electricity from **Tajikistan** as a result of a recently concluded agreement. (**The Frontier Post**, 9 September, in **JPRS-TND-92-033**, 16 September 1992).
- **Iran** has stated that **Russia** is to assist in the construction and operation of two new nuclear power plant units in **Iran**. These units are expected to have pressurized water reactors of the ex-Soviet VVER-440 type. According to **Iran's** National Atomic Energy Organisation (NAEO), co-operation would be conducted in accordance with the **Teheran** bilateral agreement of 24 August which extends over a 15 year period. **Iran** and **Russia** have agreed to strengthen co-operation in the areas of: radiological protection and nuclear safety; the production and application of radio-isotopes in medicine, industry and agriculture; nuclear power plant construction and operation; and in training, research and development. (**ENS NucNet**, September 30; **Nucleonics Week**, October 8; **NuclearFuel**, October 12).
- **Argentina** is to supply **Egypt** with an experimental nuclear reactor to be installed at the Anshas site. A communique released by **Argentina's** National Commission for Atomic Energy (CNEA) states that the reactor will be used for nuclear medicine, material radiation, scientific research, atomic technology and personnel training. The contract contains a guarantee that the reactor will be used exclusively for peaceful purposes and be covered by the existing IAEA-Egypt safeguards agreement. **Egypt** has also just started operating a new experimental 20-MW reactor at Anshas, which will be used for agricultural, industrial and medical research projects. (**Noticias Argentinas**, 21 September, in **JPRS-TND-92-035**, 23 September; **Al-Wafd (Cairo)**, 29 September, in **JPRS-TND-92-038**, 21 October).
- Nuclear experts from **Sweden** are helping to evaluate problems at the Ignalina-2 plant at the request of **Lithuania's** Nuclear Safety Inspectorate (Vatesi). The

1,500-MW RBMK was shut down on 15 October following an increase in radioactivity in the drum separator compartment and a primary steam leak. (*Nucleonics Week*, October 29).

- Westinghouse Electric has announced that it has been selected by the Czech national utility Cezke Energeticke Zavody (CEZ) to supply instrumentation, control systems and fuel for the two Temelin VVER-1000-MW reactors currently under construction. The order is reported to be worth \$345 million. (*Nucleonics Week*, October 8; *Nuclear Engineering International*, December).
- When the present contract between France and India relating to the supply of low-enriched uranium for India's Tarapur Atomic Power Station expires in 1993, it will not be renewed unless India accepts full-scope safeguards (FSS). France has been supplying uranium for the reactors since 1983 following the suspension of an agreement with the United States in 1982. France stated in April that it would not be renewed unless India altered its opposition to FSS. India's Atomic Energy Commission Chairman, P.K. Iyengar, has reportedly said that the decision will not disrupt Tarapur's operation and an alternative supply source would be found to keep the reactors running. The Department of Atomic Energy (DAE) has the option of using either its own enriched uranium or domestically produced mixed-oxide (MOX) fuel, Iyengar commented. Enough plutonium for such fuel is said to be available from reprocessing at Tarapur of spent fuel from the Rajasthan and Madras reactors, which are not under international safeguards. The DAE had been preparing to produce the substitute MOX fuel since 1980, according to Iyengar. India is also reported to have found a large deposit of uranium ore in the northeast of the country in the West Khasi hills. (*Enerpresse*, 8 October; *Nucleonics Week*, October 8; *Far Eastern Economic Review*, October 29; *Nature*, 26 November; *Frontline*, 4 December; *Nuclear Engineering International*, December).
- Russia will not supply India with two 1000-MW nuclear reactors due to unfavourable economic developments relating to the costs of the proposed transaction, according to a report. (*Enerpresse*, 8 October).
- Russia and Ukraine are discussing a nuclear cooperation agreement. This would involve Ukraine supplying natural uranium to Russia, with the latter providing fuel for nuclear power plants in Ukraine. The spent fuel would then be returned to Russia. (*Interfax (Moscow)*, 9 October, in *JPRS-TND-92-038*, 21 October; *ENS NucNet*, October 16).
- Russia and France are to extend co-operation in the nuclear power field. A 'protocol of intention' has been signed by the two states providing for greater co-operation between their nuclear power plant operators. It calls for the 'twinning' of French and Russian plants and the exchange of operating experience. (*ENS NucNet*, October 2; *Nuclear Engineering International*, October and December).
- In December, personnel from Russia's nuclear industry and its regulatory organization, Gosatomnadzor, attended a seminar in the United Kingdom on the development of systems for the control of nuclear materials at reprocessing plants. The aim was to assist the development of safeguards in Russia. This initiative is being coordinated with Sweden's Nuclear Safety Inspectorate and EURATOM's Safeguards Directorate. (*ENS NucNet*, 15 December).
- Viet Nam is reported to be interested in a technology transfer arrangement with India to obtain a 5-10-MW research reactor. The Director of India's Bhabha Atomic Research Centre has said that India could supply the reactor under IAEA supervision. (*Nuclear Engineering International*, December).
- Waste management organizations in Western Europe are exploring the possibility of exchanging wastes among themselves. This is reportedly being mooted to avoid unnecessary transportation of radioactive wastes and to optimize its final disposal. In the long-term, a regional approach could avert the spread of small radioactive waste repositories, European officials have stated. They say that Europe's first waste exchange of this kind has been agreed between Ondraf/Niras, Belgium's national nuclear waste management agency, and Ciemat, Spain's energy research and development organization. (*NuclearFuel*, September 28).
- The Group of 24 (G-24) has established a special steering committee to co-ordinate western aid for improving nuclear safety in Eastern Europe. The G-24 was tasked to co-ordinate this aid, following the Group of 7 (G-7) economic summit in July. The special steering committee, which includes West and East European representatives, has set up two working groups: one to co-ordinate technical assistance to Eastern European nuclear programmes; the other to assist the Kozloduy nuclear site in Bulgaria, where it is reported progress has been made in upgrading safety measures on Unit One, while Unit Two is said to be ready for re-start. Unit Four at the site went into operation in October after a safety upgrade. Specialists from Russia have been assisting with Units Five and Six, which required urgent measures following breakdowns. The special steering committee secretariat has also been requested to improve the co-ordination of assistance programmes relating to RBMK reactors operating in the former USSR. A joint proposal from France and Germany to establish a multilateral fund for improvements to the safety of nuclear reactors in Eastern Europe, especially the older VVER-440 reactors, is to be discussed again. The idea was first raised in July but received little support from the other G-7 members. A meeting hosted by the IAEA in Vienna between 30 November and 2 December, established that the IAEA should continue its role in assessing safety at plants in Eastern Europe and should endorse direct financial support for safety improvements by institutions in the region, while others, such as the G-24, should deal with the industrial aspects of aid. The German Nuclear Forum has called for the urgent introduction of an international convention on nuclear safety to achieve international standardization at the highest level. (*Nucleonics Week*, September 24 and December 10; *Sofia Khorizoni Radio Network*, 8 October and *Sofia BTA*, 20 October, both in *JPRS-TND-92-039*; *ENS NucNet*, 1 and 11 December; *NEA Newsletter*, Fall).
- Reports indicate that the government in the United Kingdom has begun a cabinet level enquiry over the

future of the Thermal Oxide Reprocessing Plant (THORP) at Sellafield. The Pollution Inspectorate has granted draft Certificates of Authorization subject to an eight week public consultation process, and final approval by the Department of the Environment. British Nuclear Fuels Ltd (BNFL), the operators of the facility, consider that it will make a minimum of \$500 million profit in its first 10 years. Two-thirds of THORP's business will come from abroad, notably **Germany** and **Japan**. The facility has already secured \$9 billion in orders. Virtually all its capacity for the first 10 years has been booked together with 40 per cent in the next decade. Set against this, the case for reprocessing is being questioned on environmental, economic and non-proliferation grounds. Fast breeder reactor programmes are being wound down all over the world, except in Japan. The Radioactive Waste Management Advisory Committee (RAWMAC), which advises the government, reportedly opposes reprocessing on the grounds that it converts a small package of nuclear waste (a fuel rod) into large quantities of lower activity waste. RAWMAC proposes the alternative of disposing of spent fuel in an underground repository, and claims that reprocessing may not be the cheapest option. (*The Times*, 8 October, 2, 16, 17, 18 and 20 November; *Enerpresse*, 27 October; *ENS NucNet*, October 20; *International Herald Tribune*, November 4; *The Economist*, 14 November and 19 December; *The Daily Telegraph*, 10 October and 17 November; *ATOM*, November/December; *The Times*, 16 December).

- Nuclear Electric in the **United Kingdom** has embarked on a major export drive, with bids to build nuclear power plants in conjunction with Westinghouse in **Thailand** and **Taiwan**. The reactor offered is the same pressurized water design as Nuclear Electric's Sizewell B plant in Suffolk. (*The Independent*, 27 November).
- AEA Technology in the **United Kingdom** and the Power Reactor and Nuclear Fuel Development Corporation in **Japan** have signed a cooperation agreement covering research and development of advanced nuclear technology and radioactive waste treatment. (*ATOM*, November/December).
- The CEA in **France** has signed an agreement with the Japan Atomic Energy Research Institute for general cooperation in nuclear energy, including research, safety and fuel cycle technologies. (*ATOM*, November/December).
- Six CIS republics have signed agreements with the **United States** to suspend the uranium anti-dumping investigation, which threatened a punitive duty of 116 per cent on CIS uranium. The key provision of the suspension agreements establishes a price-based quota when the observed price in the United States' market reaches \$13 a pound U₃O₈. At that level, 2.9 million pounds of U₃O₈ could be imported from **Russia**, **Kazakhstan**, **Uzbekistan** and **Ukraine**, the four CIS producers. At \$20 per pound, 15.8 million pounds could be imported, and over \$21 per pound, quotas are essentially removed except at a limit of 5.5 million pounds on Russian exports. (In 1991, 14.5 million pounds were imported from the CIS). The observed market price will be determined from data supplied by the Uranium Price Information System (UPIS) Spot Price, the Uranium Exchange Spot Price and the long

term contract price based on the UPIS system. This will permit a degree of flexibility for the Commerce Department in determining the market price. **Tajikistan** and **Kyrgyzstan** are outside the quota system because they only operate mills, although the agreements allow for the imposition of a quota should they re-open any mines. These limits are to remain in force until 15 October 2000, followed by a two year period in which they could be re-imposed. The republics could terminate the agreements at any time but the investigation would then resume. They also provide for increased licensing and for information to permit control of the flow of uranium from the republics, including to third parties, since uranium ore that is milled or converted in a third country is still covered by the agreements. The agreement with Russia allows for the sale of highly-enriched uranium to the United States Uranium Enrichment Corp. as well as 4.1 million pounds of U₃O₈ equivalent as low-enriched uranium, and allows the four republics to sell another 4.5 million pounds under long term existing contracts. (*The New York Times*, October 20; *NuclearFuel*, October 21).

g. IAEA Developments

1. General

- Mr Ramtane Lamamra of Algeria has been elected Chairman of the newly-constituted Board of Governors for 1992-93. Mr Lamamra has been Algeria's Ambassador to Austria and Permanent Representative to the United Nations organizations in Vienna since January 1992. Mr Ramon Perez-Simarro, the Governor from Spain, and Mr Mihai Balanescu of Romania, were elected Vice-Chairmen. The 35 Member States on the Board for 1992-93 are: Algeria; Argentina; Australia; Brazil; Bulgaria; Canada; Chile; China; Ecuador; Egypt; Finland; France; Germany; Greece; Hungary; India; Japan; Republic of Korea; Libyan Arab Jamahiriya; Malaysia; Mexico; Nigeria; Norway; Pakistan; Paraguay; Romania; Russian Federation; Saudi Arabia; Spain; Sweden; Syria; United Kingdom; United States; Viet Nam; and Zaire. (*IAEA Newsbriefs*, October/November).
- The IAEA convened a Review Conference on the Convention on the Physical Protection of Nuclear Material from 29 September to 1 October in Vienna. The Convention entered into force in 1987 and currently has 42 parties. Under the Convention, parties must take steps to ensure that nuclear material when being transported internationally must be protected at the agreed level while it is within the territory of a party or being transported by ship or aircraft under its jurisdiction. The Convention does not apply to military nuclear material. In reaffirming full support for the Convention, the parties urged all states which have not already done so to accede. The IAEA press release concerning the Conference is reproduced in **Section V.d.** (*IAEA Bulletin*, 3 and 4).
- The United Nations General Assembly has commended the IAEA for its work in detecting and rendering harmless equipment and material which could have enabled Iraq to develop nuclear weapons. The General Assembly also urged all states to co-operate with the IAEA in strengthening technical assistance for developing countries, promoting the peaceful uses of

nuclear energy, and improving safety at nuclear installations. (UNIS/GA/726, October 23).

- On 7-8 December, the IAEA convened a meeting of China, France, Russia, United Kingdom, United States, Japan and Germany, to discuss proposals for managing surplus plutonium. The IAEA estimates that there is currently a surplus of separated plutonium available for civil use, with 80 tonnes stored in 1992, reaching a peak of 140 tonnes in 2000 and later stabilizing at around 120 tonnes. The estimate also suggests the United States and Russia each have about 100 tonnes of plutonium in military use. The concept of International Plutonium Storage (IPS) is being re-assessed as part of the IAEA discussions. (Mainichi Shimbun, December 9).

2. Safeguards

- A safeguards agreement has been approved by the IAEA for the Chasma 300-MW plant supplied to **Pakistan** by **China**. The plant's fuel, which will also be supplied by China, will be covered by the agreement. (Nuclear Engineering International, October).
- **Pakistan** has informed the IAEA that it has increased the power of the 5-MW research reactor at Nilore to 10-MW and it is now operational, according to a report. The reactor is subject to IAEA safeguards. (The News (Islamabad), 13 September, in JPRS-TND-92-033, 16 September).
- The **United Kingdom**, the IAEA, and EURATOM have signed a safeguards agreement related to Protocol I of the Treaty of Tlatelolco. (Direct Information and INFCIRC/412 [text reproduced in Section V.e.]).

h. Peaceful Nuclear Developments

- The European Parliament has adopted a plan to establish strict guidelines relating to the design, construction, use and dismantling of nuclear reactors as well as for the disposal of radioactive waste. (Enerpresse, 30 September).
- Asia is poised to become the new world centre of nuclear power, according to views expressed at a regional seminar. The seminar promoted nuclear power as a means of diversifying energy supply, and as a power source which would not add to carbon dioxide levels in the atmosphere. Asia is an expanding market for the nuclear industry at a time when most European states have halted their nuclear programmes. **Indonesia** is considering the use of nuclear power generation because of increasing domestic electricity demands, according to Djali Ahimsa of the National Atomic Energy Agency. Between 1968 and 1988 electricity demand climbed at an annual rate of 15% and further rapid growth is anticipated. The only non-nuclear alternative capable of meeting demands would be coal, but this would require exceeding national guidelines on coal consumption, which limit coal capacity to 15 gigawatts, or the equivalent of 40 million tons of coal consumption annually. The environmental and technological benefits of nuclear power are becoming increasingly apparent, according to Ahimsa. Last year the Indonesian government commissioned a four-year feasibility study to evaluate options and sites, and aims to be producing nuclear energy within a decade. To this end, Indonesia has been negotiating a Nuclear Science and Technology Cooperation Agreement with **Australia**. Environmentalists argue that geological instability makes **Indonesia's** strategy a risky policy. **Malaysia** is also currently exploring peaceful uses of nuclear science, especially for medical purposes. The Electricity Generating Authority of **Thailand** (EGAT) is planning up to six nuclear power plants between 1997-2001 as part of the state's Eighth National Plan which calls for the eventual installation of 13,526-MW of capacity. The Fourth International Conference on Nuclear Co-operation in the Asian Region is due to be held in Tokyo in March 1993. (Bangkok Post, 18 September, in JPRS-TND-92-035, 23 September; Energy Daily, September 24; Sydney Morning Herald, October 7; New Straits Times, November 11, 18 and 26; The Australian, November 12 and 16; Canberra Times, November 13 and 18; Age, Sydney Morning Herald, November 18; Nikkankogyo Shimbun, November 23).
- A report has suggested that Urenco has abandoned development work on laser uranium enrichment technology. If confirmed, Urenco would be the third enrichment enterprise to have cut back laser enrichment activities recently. The **United States** Department of Energy's programme for atomic vapour laser isotope separation (AVLIS) had its funding reduced for the 1993 Fiscal Year and **Japan's** Atomic Energy Commission decided this summer to emphasize gas centrifuge development. (NuclearFuel, October 12; Nuclear Engineering International, November).
- A court in **Brazil** has ruled that the Angra-1 nuclear plant should be de-activated. This endorses a 1988 action filed by former State Deputy Alexandre Jose Farah and means that the plant can only resume operation by Congressional authorization. The ruling was based on Article 49 of the constitution, which requires that Congress authorize all nuclear energy activities of the executive branch. The plant has been de-activated on two previous occasions by court ruling since it began operation in 1982, but has subsequently resumed operation. Furnas Electric Power Plants Inc., which operates the plant, has appealed against the ruling. (O Globo, 6 and 7 October, in JPRS-TND-92-038, 21 October).
- The production of nuclear-generated electricity in OECD Europe rose by 3.3% in 1991 to 725TWh and a share of 31.4% of overall electricity production, according to data released by OECD's Nuclear Energy Agency (NEA). It is forecast that the nuclear share of overall production in the OECD area will begin a steady downturn by 1995, by which time the proportion it accounts for will be 29.2%, or 724TWh. Future reductions in nuclear production are foreseen in **Spain** and the **United Kingdom**, but in **France** production is expected to expand. **Finland**, intends to keep its option open to build a fifth nuclear unit despite a parliamentary resolution prohibiting nuclear power from its energy strategy. In **Sweden** a hearing has debated whether it should begin the process of phasing out nuclear power by 2010. This is in contrast to the original date for decommissioning which was 1995-96. This decision was subsequently rescinded by parliament. The hearing was called following a ban imposed on 17 September on the start-up of 5 of Sweden's 12 nuclear power plants, due to concern over their emergency cooling systems. In **Italy**, which does not have an operating nuclear power plant following a 1987 moratorium, there have been calls for the Caorso

and Trino Vercellese nuclear plants to reopen because the 5-year moratorium officially ended on 18 December. Two older plants at Garigliano and Latina have been permanently shut down. Italy is undertaking research on a new generation of nuclear reactors. (**EER 371/8**, September 18; **ATOM**, November/December; **Nucleonics Week**, December 3 and 10; **ENS NucNet**, 4 and 9 December).

- The Atomic Energy Commission in **Hungary** has granted approval for an intermediate modular vault dry store, for spent fuel from its VVER-type reactors. It is scheduled for commissioning in 1995. (**ENS NucNet**, 9 December).
- The separation of the **Czech and Slovak Federal Republic** (CSFR) into two states on 1 January 1993 will create additional problems for nuclear waste management, according to reports, and could lead to the shut down of the Czech nuclear power plant at Dukovany and the Slovak plant at Bohunice. The former USSR used to take back spent fuel produced by the two plants, but this no longer occurs. There is concern that waste produced by the plants, which is currently stored at the Bohunice site, will become an even greater problem after 1 January when the two republics formally separate. The intermediate storage site at Bohunice, which reportedly already nears capacity, is not accepting waste from Dukovany. This is currently being stored in special pools attached to the reactor. These pools will reach capacity in 1994, and unless an alternative site for the waste can be found, the four reactors at Dukovany will gradually have to be shut down. (**Mlada Fronta Dnes (Prague)**, 18 September, in **JPRS-TND-92-034**, 22 September; **The New York Times**, November 22; **International Herald Tribune**, November 23).
- Reports that the heads of the two largest utilities in **Germany** have proposed that the country should gradually phase-out its existing nuclear power plants on condition that future construction of advanced designs remains an option and that spent fuel should be directly disposed of, not reprocessed, have been described as inaccurate. The reports had raised questions about the continuation of existing contracts for reprocessing with **France** and the **United Kingdom**, but it was later confirmed that these would be honoured. The chairman of the utility association said that the existing nuclear power plants were 'indispensable' for Germany and formed part of a sensible energy mix related to an economical use of resources. (**Süddeutsche Zeitung**, 5 and 6 December; **Enerpresse, Frankfurter Allgemeine Zeitung**, 8 December; **ENS NucNet**, 4 and 9 December; **NuclearFuel, Nucleonics Week**, December 10).
- The opening on 8 December of the first phase of a storage centre for low-level nuclear waste at **Japan's** Rokkasho-mura nuclear fuel cycle complex has been announced. Work began on the storage centre in November 1990 which, when finally completed, will have a reported capacity for storage of 3 million drums (each with 200-litre capacity) for up to 300 years. (**Atoms in Japan**, November and December; **The Japan Times**, 1 December; **ENS NucNet**, 9 December; **Nucleonics Week**, December 10).
- The Power Reactor and Nuclear Fuel Development Corporation (PNC) of **Japan** has said it plans to operate the Monju prototype fast breeder reactor (280-MW) until the turn of the century, when a re-assessment will be made. Monju is now expected to reach criticality in October 1993, one year later than originally planned. The postponement is due to fuel fabrication delays for the initial loading core fuel assemblies, which are being manufactured in Japan. Later fuel assemblies will be provided by the shipment of plutonium from Europe aboard the *Akatsuki Maru*. Concern has been expressed that the delay to the Monju reactor will mean that separated plutonium will now have to be stored at the site as the replacement fuel load is not expected to be used until 1995. The Monju prototype is designed to produce 1.2 times more plutonium than it uses, but the head of PNC has indicated that Japan may try to develop another reactor which burns plutonium, rather than breeding it, if plutonium eventually becomes unnecessary. Japan's Science and Technology Agency (STA) has said it is planning to issue regular annual reports to clarify any misunderstandings about Japan's future nuclear policy. It has not been confirmed whether this will include details of the amount of plutonium held in Japan. (**Atoms in Japan**, November; **The New York Times**, November 28; **Asahi Shimbun, The Japan Times, Mainichi Shimbun, Nihonkeizai Shimbun**, 27-29 November; **International Herald Tribune**, November 28; **Reuter**, 30 November; **Plutonium. A Renewable Source of Energy**, Ministry of Foreign Affairs, Japan, November; **ENS NucNet**, 1 December; **Nucleonics Week**, December 3).
- On 10 December, the Nuclear Safety Commission in **Japan** presented a favourable safety report for the country's first commercial reprocessing plant to be built at Rokkasho-mura by Japan Nuclear Fuel Ltd (JNFL). Following the report, the Prime Minister gave official authorization on 24 December for construction of the plant to proceed. This is expected to begin in March 1993 with start-up scheduled for January 2000. (**Asahi Shimbun, Mainichi Shimbun, Nikkeisangyo Shimbun**, 11 December; **Atoms in Japan**, December).
- **Syria** has reportedly decided against building a small nuclear reactor for electricity generation because of technical and economic reasons. A technical study has apparently determined that Syria may not have sufficient water supplies for reactor cooling purposes. Syria also has an alternative source of energy, natural gas, which, the report suggests, might be favoured as a more viable short term prospect although nuclear energy does remain a long term option. (**Al-Hayah**, 21 October, in **JPRS-TND-92-039**, 28 October).
- On 25 November, **India's** latest nuclear power plant, the Kakrapar-1 220-MW pressurized heavy water reactor, was synchronized with the national power grid, having attained criticality on 3 September. (**ENS NucNet**, 30 November).
- In **Ukraine**, despite reported reservations by the State Committee for Nuclear and Radiation Safety, two reactors at the Chernobyl nuclear power station, Chernobyl 1 and 3, have resumed operation and been re-connected to Ukraine's power grid. This follows the reported replacement of fuel channel throttle valves in both reactors. The units were shut down in the Spring after an analysis of an incident at the Leningrad-3 RBMK unit in March, which suggested weakness in the fuel

channel isolating control valve design. Units 1 and 3 of the Chernobyl station are expected to operate until the end of 1993, provided no further problems arise, when they are due to be shut down permanently by Ukraine's Parliament. Unit 2, which was damaged by a turbine fire late in 1991, will not be restarted, while Unit 4 was destroyed in the 26 April 1986 accident. There has also been a report of another safety-related incident at the South Ukraine Atomic Energy Station near Yuzhnoukrainsk where automatic safety systems were switched off in an attempt to boost power output. This comes at a time of concern about future shortfalls in energy production for Ukraine if three of six planned nuclear power plants are not brought on line. The plants, Zaporozhe-6, Rovno-4 and Khmel'nitski-2 are partially complete, but a moratorium initiated by Parliament on commissioning new nuclear plants would need to be revoked before the plants could be completed. Ukrainian officials estimate that in Winter, 40 per cent of the country's electricity is generated by its operating nuclear power plants. (*Nucleonics Week*, October 1, December 3 and 17; *ENS NucNet*, 2, 12 November and 15 December; *Financial Times*, 4 November; *The Japan Times*, 29 November; *Reuter*, *The Washington Post*, *The Daily Telegraph*, December 14).

- **Russia** has decided to replace fossil-fuelled power plants and ageing nuclear power reactors with new nuclear facilities over the long term, although the government does not expect nuclear capacity to grow quickly. The Ministry of Atomic Energy (Minatom) inherited 80 per cent of the industrial, and 90 per cent of the scientific and technical potential of the former USSR's nuclear programme. Reports suggest that in the short term, depending on resources, work will continue on nuclear plants under construction. A number of sites have been identified as major construction projects in Russia's state investment programme: Balakovo, where work started on three VVER-1000s in the mid 1980s; Smolensk; Bilibino; South Urals, where a third VVER-1000 is due for start up and a fourth is being constructed; and Kola, home to four VVER-440s which are already operating and where two VVER-1000s are planned. It is hoped to construct further nuclear power plants at Novovoronezh, Kostroma, Kalinin, and Kursk as well using them for district heating at Voronezh. Minatom's strategic plan for Russia's nuclear programme, due to be completed by the end of 1992, will consider nuclear power development and safety improvements in the periods to 2000 and 2010. Senior Russian nuclear officials have also stated that the older RBMK reactors will continue to operate but with improved safety provisions. Russia currently obtains 11 per cent of its electricity from a nuclear power programme involving: 12 PWR units of the VVER-440 and -1000 type; 15 light water-cooled, graphite-moderated, channel-type units, including 11 RBMK-1000 reactors; and one fast-breeder reactor, the BN-600. (*Nuclear Engineering International*, October; *The New York Times*, November 8; *International Herald Tribune*, November 9; *ENS NucNet*, 3 December).
- Minatom has revealed details of how **Russia** manages its spent nuclear fuel. There is no reprocessing of spent fuel from its RBMK reactors due to costs, and 5,000 tons is currently stored in special pools at the nuclear power sites. Minatom does reprocesses spent fuel from its VVER-440 reactors at the RT-1 plant near Chelyabinsk.

Plutonium from the spent fuel is temporarily stored, while the recycled uranium provides fuel for the RBMK reactors. A new RT-2 reprocessing plant is under construction at Krasnoyarsk for the VVER-1000 reactors. Over 3,000 tons of spent fuel is awaiting reprocessing from this source. (*ENS NucNet*, 1 December).

- **Kazakhstan** is planning a major development of its own nuclear infra-structure and also aiming to become a supplier of beryllium metal and nuclear fuels. Two new organizations have been established to oversee this development: the Kazakh State Atomic Power Engineering & Industry Corporation (Katep), responsible for uranium production, project management and facility construction; and the Kazakh Atomic Energy Agency, which will develop export controls, safety regulations, transportation policy and have some safeguards functions. Kazakhstan plans to build a second fast-breeder reactor (350-MW) to follow-on from the BN-350 breeder reactor at Shevchenko, which has a licence to operate until 2003. It is also considering importing Light Water Reactors. An agreement with Minatom in **Russia** for the supply of 20-21 per cent enriched fuel for BN-350 between 1993-2003 is under discussion. Reports suggest that until 1991, all spent fuel was sent for reprocessing to Chelyabinsk-40 in Russia. The pending agreement would allow this arrangement to continue. (*NuclearFuel*, October 26; *Nucleonics Week*, October 29)

i. Events in Nuclear-Weapon States

- Prime Minister Pierre Beregovoy of **France** has suggested talks should begin with the **United Kingdom** to coordinate their nuclear policies as a first step towards a European Community nuclear force. This followed an earlier proposal on the same theme by the Defense Minister, Pierre Joxe, and one made in January by President Mitterrand on the possibility of establishing a joint European deterrence doctrine. M. Beregovoy acknowledged the problems of creating a European nuclear force, but considered that it would be useful for the Community's two nuclear weapon states to hold preliminary discussions. Reports suggest that some exchange of strategic information already occurs between the two states and that limited exchanges on future joint technology development have taken place. Calls for closer cooperation with France, within the context of the NATO Alliance, have also been made by Malcolm Rifkind, the United Kingdom's Defence Secretary, following indications that France is re-assessing its role in the Alliance as a result of the changing strategic environment. (*The Times*, *The Guardian*, *International Herald Tribune*, 2 October; *Defense News*, October 19-25).
- Funding for nuclear forces in **France** is scheduled for a cut of 11.5 per cent in its draft 1993 defence budget. The number of new ballistic missile submarines to be built has already been cut, with only four now to be deployed, together with 6 instead of 8 nuclear-powered attack submarines. Production of the Hades short-range nuclear missile has already been cancelled, as has development of the S-45 strategic ballistic missile. The Chief of Naval Staff, Admiral Alain Coatanea, has called for a second nuclear-powered aircraft carrier to enter service alongside the *Charles de Gaulle*, due to be commissioned in 1998. Adm. Coatanea said France needed a second carrier because the *Charles de Gaulle*

was likely to spend a third of its service life laid up for maintenance, like other vessels of its type. (**Jane's Defence Weekly**, 3 and 10 October; **Defense News**, October 19-25).

- Reports have alleged a **United Kingdom** involvement in **Iraq's** armament programme following the collapse of the trial of three personnel connected with a machine tool firm. The company sought export licences to Iraq for computer controlled machine tools which had a potential dual use in the arms industry. The end of the **Iran-Iraq** war prompted the relaxation of government controls on a number of categories of exports. In November 1989, the export licences were approved, on the strength of the machine tools being used for making precision measuring instruments for the state Electrical Industries Establishment. Reports suggest they went instead to a weapons factory outside Baghdad. IAEA inspectors are reported to have discovered some of these machine tools in a factory for producing centrifuges for uranium enrichment. The government has stated that its obligations under the NPT were adhered to. The collapse of the trial has prompted a judicial inquiry into the operation of export licensing rules. (**The Times**, 11 November and 3 December; **The Independent**, 12 November; **The Sunday Times**, 15 November; **The Observer**, 29 November; **Trust and Verify**, November).
- The first **United Kingdom** Trident ballistic missile submarine, *HMS Vanguard*, began sea trials on 23 October and is due to be handed over to the Royal Navy in 1993. The Royal Navy is said to be assessing whether its next generation of nuclear-powered attack submarines should be equipped with 'core for life' reactors, instead of the current type which requires a new core every 8-9 years. The Royal Navy has so far decommissioned 7 nuclear-powered submarines. All have been de-fuelled and are currently moored in the dockyards at Rosyth and Devonport, although a decision on their eventual disposal is not expected until the berths they occupy are needed. (**Defense News**, October 26-November 1; **International Defense Review**, December).
- In the **United States**, authorities are investigating the provision of \$5 billion in loans to **Iraq** by the Atlanta branch of the Banca Nazionale del Lavoro, some of which was allegedly used for military purposes. In December, the Attorney General ruled out appointing an independent prosecutor to examine the government's role in the loans, following a seven week investigation by the Justice Department which found no evidence of wrongdoing by officials. (**The Washington Post**, October 1, 10 and 22; **International Herald Tribune**, October 2 and December 11; **New York Times**, October 7, 9, 14, 21, 22, 28, November 13 and December 10; **Financial Times**, **The Guardian**, 12 October; **U.S. News & World Report**, December 21).
- A new Nonproliferation, Arms Control and International Security (NAI) organization has been established at the Lawrence Livermore National Laboratory in the **United States**. The creation of the NAI represents a major shift in priorities for the Laboratory after the Cold War. The new organization will be responsible for addressing global nuclear non-proliferation issues, problems of locating terrorist weapons, and responses to nuclear

accidents. (**Aviation Week & Space Technology**, November 2).

- In the **United States**, concern has been expressed over the proposed shipment of 560 slightly irradiated uranium fuel rods from the nearly decommissioned Shoreham nuclear power plant, Long Island, to **France** for reprocessing. Although the rods are said to contain little plutonium, the fear is that the shipment could lead to further exports of rods from other reactors which contain higher concentrations of plutonium, thus heightening risks of nuclear proliferation. There are also reports of disagreements between Federal agencies over granting a license for the proposed transfer. (**The New York Times**, November 26, December 11 and 13; **Le Monde**, **Reuter**, 30 November).
- The **United States** is continuing development of space-based nuclear technology for use in electricity generation and rocket propulsion. Under the Strategic Defense Initiative, the United States Air Force's Space Nuclear Thermal Propulsion (SNTP) programme, and the civilian Space Exploration Initiative (SEI) of 1989, nuclear power is seen as a potential source for electricity production in space and for generating the high propulsion speeds necessary for space travel. These developments are a renewed phase of research that produced test models in the 1960s and early 1970s, which were then cancelled. The United States launched its SNAP-10A (Systems for Nuclear Auxiliary Power) into orbit on 3 April 1965, which operated for 43 days. The NERVA (Nuclear Energy for Rocket Vehicle Application) rocket propulsion project, which resulted in successful ground tests, was terminated in 1972. The former USSR also propelled several small nuclear reactors into space between 1970 and 1988.

Renewed interest in space-based nuclear technology has been motivated by the range of missions this technology could be used for, including: space-based radar systems; laser communications; moving satellites to different orbits; high-powered remote sensing; rocket propulsion for probes and human space flight; and producing electricity for human expeditions to the moon and Mars. In September, scientists from the Commonwealth of Independent States and the United States discussed cooperation on nuclear rocket engines at a conference at Semipalatinsk in **Kazakhstan**, where research for such engines began in 1962.

On 8 December, the United States' Department of Energy and the Mayak Production Association of **Russia's** Minatom, signed an agreement, worth \$57.3 million, for the United States to purchase 40 kilogrammes of plutonium-238 from Russia for use in its space programme. Critics of space-based reactor development maintain that the research could jeopardize other civilian programmes, is unsafe environmentally, and its feasibility is debatable.

(Special Report-Outlook on Space Reactors, **Nucleonics Week**, September 24; **NuclearFuel**, September 28; **Inside N.R.C.**, October 3; **The New York Times**, December 6; **Reuter**, 28 December; **European Wireless File**, December 30; **Nuclear Engineering International**, December).

j. Events in the Commonwealth of Independent States (CIS)

- Further disagreements over the control of strategic nuclear weapons are reported to have broken out between **Ukraine** and **Russia**. In an interview with 'Nezavisimaya Gazeta', the CIS Commander-in-Chief, Air Marshal Yevgeni Shaposhnikov, said that nuclear weapons could only be under the control of a nation-state and that, in agreement with President Yeltsin, he was ready to turn all weapons over to Russia immediately. These statements followed Ukraine's assertion that it had administrative control of its share of the strategic arsenal and a veto over use of the weapons. Ukraine's Defence Minister, Konstantin Morozov, has said that all troops servicing and guarding nuclear weapons in Ukraine would be sworn into his republic's defence forces. Russia, Ukraine, **Kazakhstan** and **Belarus** had previously agreed in the 1991 Minsk Strategic Forces Agreement that nuclear weapons should be collectively controlled through the CIS joint command. President Leonid Kravchuk has reportedly claimed that Ukraine has the right, and the technical ability, to block the launch of nuclear weapons from its territory, but has stressed that Ukraine is not seeking the right to 'press the button'. (ITAR-TASS (Moscow), 10 September, **Ukrayinske Radio First Program Network (Kiev)**, 13 September, in JPRS-TND-92-033, 16 September; **Interfax (Moscow)**, 30 September, **ITAR-TASS (Moscow)**, 2 October, in JPRS-TND-92-036, 7 October; **ITAR-TASS (Moscow)**, 2 October, in JPRS-TND-92-037, 9 October; **Financial Times**, **The Daily Telegraph**, **The Times**, 9 October; **Molod Ukrayini (Kiev)**, 25 September, in JPRS-TND-92-038, 21 October; **U.S. News & World Report**, November 2; **International Herald Tribune**, November 11).
 - **Ukraine** is reported to be asking for more aid and political assurances before it will ratify START-I and accede to the NPT as a non-nuclear weapon state. This has also been linked to a demand for international security guarantees to compensate for the elimination of the strategic missiles under START-I which are currently based on Ukraine's territory. These emerged as key elements affecting Ukraine's decision to proceed with START ratification and NPT accession during a debate in its parliament in December. The **United States** has offered a package, involving economic and political incentives, to assist Ukraine if it ratifies both Treaties, but there is increasing concern that failure by Ukraine to do so could complicate the nuclear disarmament process. In response, Ukraine has given further assurances that it remains committed to the goal of gradually becoming nuclear free and that it will honour START-I and its associated Lisbon Protocol signed in May. All tactical nuclear weapons based in Ukraine have already been transferred to **Russia**, but 176 land-based ICBMs, 1,200 warheads and 34 nuclear-armed strategic bombers remain on its territory. (**Rossiyskaya Gazeta**, 1 October, **Interfax (Moscow)**, **ITAR-TASS (Moscow)**, 6 October, in JPRS-TND-92-037, 9 October; **Financial Times**, 5 November and 21 December; **Defense News**, November 9-15, 23-29 and December 14-20; **The Daily Telegraph**, 11 November; **Süddeutsche Zeitung**, 12 November; **The New York Times**, November 13; **Jane's Defence Weekly**, 14 November; **International Herald Tribune**, November 14 and December 21; **The Christian Science Monitor**, November 19 and December 1; **Associated Press**, **The Japan Times**, November 23; **The Wash-**
- ington Post, December 10; **European Wireless File**, 22 December).
 - Efforts to strengthen export controls on nuclear technologies and dual-use items in **Russia** are said to be continuing. Export controls are now the responsibility of the Department of Export Controls in the Ministry of Economics, with an oversight provided by the Ministry of Foreign Affairs and Ministry of Defence. Exports are permitted if the recipient state implements full-scope safeguards, is not involved in development of non-conventional weaponry, and provides satisfactory guarantees about end-use. New export control lists have also been compiled and distributed to local customs authorities. (**NuclearFuel**, October 12 and November 9).
 - An official in **Russia** has denied reports that it sold missiles, tanks and nuclear technology to **China**, but stated that an agreement signed by the former USSR and China on military cooperation would be upheld and that the two states also had an agreement for peaceful cooperation in space and nuclear power engineering. In December, President Yeltsin visited China to herald a 'new era' in Sino-Russian relations and sign agreements on trade, cooperation and nuclear plant construction. Part of the agreement is reported to involve Russia building two 1,000-MW water-cooled reactors in the city of Liaoning, China. (**Associated Press**, October 19 and December 16; **Nihonkogyo Shimbun**, December 17; **The Times**, 19 December).
 - **Russia** is to receive up to \$15 million from the **United States** for a facility, to be located at Tomsk, to store fissile material resulting from the dismantling of Russia's nuclear warheads. The agreement, signed on 6 October, is part of a United States' aid package to Russia for the transportation, storage and dismantling of nuclear and chemical weapons. For Fiscal Year 1993, the United States' Congress has increased the \$400 million allocated for this package in Fiscal Year 1992 by an additional \$400 million. It is reported that Russia may be reluctant to accept the additional aid because of the conditions contained in the United States legislation. These call for the recipient state to make substantial investment in weapons dismantlement, forgo military modernization, and comply with arms control agreements and human rights standards. (**Arms Control Today**, October; **The Washington Post**, October 7; **NuclearFuel**, December 7).
 - **Russia** is reported to have proposed that plutonium released from its nuclear warheads should be used for peaceful purposes in a joint project with **Japan**. In another development, during bilateral talks between the two states, Russia is said to have offered enriched uranium from its dismantled warheads as fuel sources for Japan's nuclear power plants. Reports suggest that Japan has declined to buy the material because it has sufficient supplies as a result of existing contracts, but continues to promote international cooperation as the best method for dealing with the material released from Russia's dismantled warheads. (**Daily Yomiuri**, 5 October; **Mainichi Shimbun**, 25 November; **International Herald Tribune**, November 26; **The Japan Times**, 27 November).
 - On 10 November, a Memorandum of Understanding was signed under which the **United Kingdom** will provide

Russia with 250 nuclear weapons containers and 20 nuclear weapons transport vehicles. First deliveries are expected in 1993, with completion due by the end of 1994. (**Trust and Verify**, November).

- During a visit to the **Republic of Korea**, President Yeltsin indicated that **Russia** had withdrawn its strategic nuclear missiles from the region, including sea-based ones. He also indicated that production of nuclear submarines would be cut by half, with the possibility that future production would be halted completely. This statement was later reportedly qualified by Russian Deputy Prime Minister, Valary Makharadze, who said that submarines are only due to be phased out in the Far East, and that they would continue to be manufactured at the northern port of Severodvinsk. (**The Washington Post**, **The New York Times**, **International Herald Tribune**, November 20; **The Independent**, 1 December).
- **Tartarstan** has declared itself a nuclear free zone and free of weapons of mass destruction. The resolution, which was passed by the Republic's parliament, states that it will neither produce nor store fissionable materials nor components related to the construction of nuclear weapons. (**Interfax (Moscow)**, 2 October, in **JPRS-TND-92-037**, 9 October).
- Concern has been expressed about the possible release of radioactive material into the sea from the **Russian** nuclear-powered submarine, *Komsomolets*, which caught fire and sank off Norway in April 1989. The submarine contains approximately 10 kilogrammes of plutonium in its reactor and two nuclear-armed torpedoes. A report has suggested that the submarine's hull has been shattered, an outer door of one torpedo tube damaged and caesium-137 is leaking from its reactor. This is one of the world's richest fishing grounds and the fear is that eventually plutonium could get into the food chain. Officials in **Norway** are said to be sceptical of this claim because there is little marine life at the depth the submarine sank (approximately 2,000 metres) and they consider that it poses little threat whilst it remains on the seabed. **Russia's** naval authorities have also reportedly denied the submarine poses an environmental threat.

In another development, **Russia** has informed the **United States** of the whereabouts of four submarines carrying ballistic missiles and torpedoes which have sunk, and the locations of nuclear reactors and waste dumped off the island of Novaya Zemlya. The latter includes: four submarine reactor compartments dumped in shallow water in the Abrosimov Gulf in 1965 and 1966; three reactors from the icebreaker *Lenin*, dumped in 1967 in the Sivolky Gulf; a barge with a submarine reactor which was sunk in 1972 in the Kara Sea; two reactors from the submarine *K-27* which sank in the Stepovov Gulf following an emergency in 1982; another reactor dumped in 1988 in the Techeniya Gulf; and, an estimated 11,000-17,000 containers of nuclear waste dumped off Novaya Zemlya during the period 1964 to 1990. The **United States** has lost two submarines, the *Thresher* and the *Scorpion*, and a reactor from the *Seawolf* was dumped in 1959. The release of this information is part of joint **Russia-United States** negotiations to monitor dumped radioactive materials. The **United States** has also allocated \$10 million in its Fiscal Year 93 appropriations

bill for the study of nuclear waste disposal in the Arctic region of Northern **Russia**.

Details have also been reported of a nuclear accident involving Soviet submarine *K-19* in 1961. One of the two reactors on the boat, on its maiden voyage, leaked radioactive coolant and then caught fire. Emergency repairs were carried out at sea before the submarine returned to port.

(**Reuter**, 23, 24 and 25 November; **The Japan Times**, November 25 and 26; **Associated Press**, November 24 and 25; **The New York Times**, November 24; **Wiener Zeitung**, **The Guardian**, 25 November; **The Daily Telegraph**, **International Herald Tribune**, 25 November and 28 December; **Der Spiegel**, 30 November; **Jane's Defence Weekly**, 5 December; **Nuclear Fuel**, **Time Magazine**, December 7).

- On 27 November, **Japan**, the **United States** and the European Community signed an agreement with **Russia** for the establishment of an International Science and Technology Center, to be opened early in 1993 at the Impulse Research Institute in Moscow. **Japan** will provide \$20 million for the Center, the **United States** and the European Community have allocated \$25 million each. The Center will support scientific projects on nuclear safety, environmental protection and energy production. In the **United States**, Congress has allocated \$25 million from the 1993 military budget to create the AmeRus Foundation, a non-governmental organization, as an additional initiative to the International Science and Technology Center. The European Community has approved ECU4 million (\$5.2 million) for scientific collaboration between researchers in the Community and those in the former **USSR**. These developments are set against further reports that scientists from the latter are seeking to work in nuclear programmes abroad. (**Nature**, 29 October; **Süddeutsche Zeitung**, 12 December; **The Sunday Times**, 20 December; **Atoms in Japan**, December; **Nihonkeizai Shimbun**, 12 December).
- An agreement was signed on 22 October for the **United States** to provide **Belarus** with financial assistance of \$1 million towards the development of export control measures and up to \$5 million for specialized equipment to deal with nuclear accidents or emergencies. (**Arms Control Today**, October).
- **Kazakhstan** and the **United Kingdom** have agreed to cooperate on measures to prevent the proliferation of all types of weapons and restrict exports of related technology. (**The Independent**, 21 November).

k. Developments of Concern for Horizontal Proliferation

- Reports from Europe on smuggling activities involving radioactive materials are increasing. **Germany** is calling for tougher measures to combat the problem. This year, 100 cases are said to have been discovered involving uranium, tritium, osmium, caesium and strontium, though there is no indication that any weapons-usable uranium or plutonium is involved. A number of arrests have been made, including one smuggling ring allegedly involving several nationalities. This has led to calls for tighter customs control in **Poland**, **Russia**, **Ukraine**, **Estonia**, **Latvia**, **Belarus** and **Lithuania**. **Poland** has recently installed radiation control devices at some

border checkpoints. In the German Bundestag there have been calls for better cooperation between authorities, Federal Government, and Länder, whilst harsher sentences are to be introduced for those convicted of smuggling. Bacteriological weapons are also reported to have been offered for sale. In **Bulgaria**, authorities have reportedly seized 140 radioactive capsules each containing 0.2g of plutonium after earlier reports had indicated that a much larger quantity of the fissile material was being smuggled. The capsules are apparently used for analysis of chemical warfare agents. Thirteen people are reported to have been arrested in Russia for allegedly attempting to smuggle 80kg of uranium to the West. (**JPRS-TND-92-039**, 28 October; **Enerpresse**, October 20; **The Sunday Express** (London), 1 November; **Liberation**, 3 November; **Agence France Presse**, 4 November; **The Washington Post**, November 26 and 29; **International Herald Tribune**, November 30 and December 9; **Associated Press**, **Die Presse**, **Die Welt**, **Financial Times**, **Süddeutsche Zeitung**, **Standard**, **Frankfurter Allgemeine Zeitung**, **Kurier**, **Wiener Zeitung**, December 9; **Reuter**, 9 and 23 December).

- Negotiations to normalize relations on the Korean Peninsular have run into difficulties. Talks between the **Democratic People's Republic of Korea (DPRK)** and the **Republic of Korea (ROK)** have reached an impasse reportedly following the proposed resumption of the 'Team Spirit' military exercise next year involving **United States** and **ROK** forces. The United States is concerned that the DPRK might still be pursuing a nuclear weapons programme, despite opening its facilities to IAEA inspections. United States' Defense Secretary, Dick Cheney said on 8 October that the second phase of a drawdown of its troops from the ROK would be delayed until all uncertainties regarding the DPRK nuclear programme were resolved. He also emphasized that challenge inspections are essential to any agreement between the two Koreas.

The DPRK has called for the United States and the ROK to dismantle a nuclear submarine base at Chinhae, ROK, where United States' nuclear submarines allegedly continue to make port calls, and for all suspicious nuclear facilities and military bases to be subject to inspection. Reports of new but undeclared construction work at the DPRK's Yongbyon nuclear complex have served to emphasize the current difficulties over normalizing relations on the Korean peninsula. The DPRK abandoned talks between itself and **Japan** in early November, reportedly following exchanges over the respective nuclear programmes being pursued by the two states. Japan has insisted that bilateral inspections of DPRK facilities, such as the 'radiochemical laboratory' in Yongbyong, are necessary before doubts regarding the DPRK's nuclear programme can be removed. The DPRK has opposed this request, maintaining that inspections carried out by the IAEA are sufficient. Leaders in **China** and **Russia** have said they will support efforts to achieve denuclearization of the Korean peninsula based on the declaration signed by the DPRK and the ROK in December 1991.

The Arms Control and Disarmament Agency (ACDA) in the United States considers that the nuclear programme at Yongbyon has been halted by recent developments and that the ability of the DPRK to manufacture a

sizeable number of nuclear weapons has been blocked, according to reports. Although there was still concern about the possibility of a secret weapons programme producing small amounts of nuclear material, the possibility of a major DPRK programme was now considered unlikely. This is reported to be in keeping with the ROK's assessment of the situation.

President-elect of the ROK, Kim Young-sam, who is due to take office on 25 February 1993, is reported to have said that he would request the United Nations to assist in breaking the impasse with the DPRK over mutual inspections of nuclear installations.

(**KCNA (Pyongyang)**, 9 September, and **Xinhua (Beijing)**, 11 September, both in **JPRS-TND-92-033**, 16 September; **Yonhap (Seoul)**, 28 and 29 September, in **JPRS-TND-92-036**, 7 October; **The Christian Science Monitor**, October 22; **International Herald Tribune**, November 2, 20 and December 2; **NuclearFuel**, November 9; **Defense News**, November 9-15; **Izvestia**, 12 November; **Financial Times**, 19 and 20 November; **The New York Times**, November 22; **Associated Press**, December 1; **Reuter**, 28 December).

- There is concern that **Iraq** is becoming less willing to cooperate with United Nations' inspection teams in compliance with the Persian Gulf War ceasefire Resolutions. Failure to establish details of Iraq's procurement network has also emerged as a major obstacle to the United Nations lifting sanctions on Iraq. The unveiling of Iraq's supply network is regarded as essential for a full comprehension of its nuclear programme, and because the picture is still considered incomplete, the United Nations was not ready to give Iraq a 'clean nuclear health bill'. Recent inspections in Iraq has led to the seizure of 200 drums of yellowcake, and about 100 tons of special high-strength maraging steel, used for the fabrication of centrifuge rotors, has been melted and mixed with scrap. Analysis of samples from various waterways, as part of a long-term monitoring programme, has also been undertaken and nothing suspicious reported. Authorities in **Germany** have arrested one person in connection with the suspected supply of 20 carbon fibre rotor tubes which could have been used in centrifuges to enrich uranium in Iraq. According to the prosecutors, export permits for two transactions in 1989 and 1990 involving rotors were not issued. Carbon fibre rotors can spin faster than rotors made from other materials, such as steel, and hence can achieve separation more quickly. Western governments are said to be concerned that Iraq may have acquired a carbon fibre production capability in addition to the rotors and may seek to resurrect its centrifuge programme. A report published in Iraq has called for the establishment of a nuclear arms free-zone as one option for security in the region. (**Arms Control Today**, September; **The Washington Post**, October 9, November 29, December 1 and 12; **The New York Times**, October 10, 16 and November 11; **INA-Al-Qadisiyah (Baghdad)**, 17 October, in **JPRS-TND-92-039**, 28 October; **The Daily Telegraph**, 19 October; **International Herald Tribune**, November 9, 19, December 14 and 17; **Süddeutsche Zeitung**, November 9; **Die Presse**, November 9; **NuclearFuel**, November 9; **New Scientist**, 14 November; **Financial Times**, 19 November; **Reuter**, 8 and 9 December; **Nuclear News**, December).

- Reports increasingly express concern about the implications of **Iran's** nuclear programme following recently concluded nuclear cooperation agreements. Some assessments suggest that Iran is pursuing a research programme for fissile material production. Iran has repeatedly denied any non-peaceful intentions, stating that it accepts full-scope IAEA safeguards, is a signatory to the NPT and requires the nuclear plants for electricity generation and desalination. **Russia** has reportedly agreed to make the sale of nuclear reactors to Iran conditional on non-proliferation measures 'deemed by both sides to be reasonable'. Iran has indicated it is prepared to accept enhanced safeguards measures on both nuclear cooperation agreements with **Russia** and **China**, as well as having no objections to the return of the spent fuel to the country of origin as a similar agreement had been concluded with **Germany** during the 1970s. An Iranian official has also denied reports that it is cooperating with **Pakistan** on the development of nuclear technology, stating that the cooperation is in the fields of communication, transport, industries and agriculture. (*The Muslim (Islamabad)*, 13 October, in **JPRS-TND-92-039**, 28 October; *The Japan Times*, November 29; *The Independent*, 30 November; *International Herald Tribune*, *Corriere della Sera*, December 1; *Le Monde*, *El Pais*, 2 December; *Welt am Sonntag*, 6 December; *NuclearFuel*, December 7).

- **India** has rejected a **United States** proposal for a production freeze on nuclear weapons grade fissile material in South Asia as a means for reducing nuclear tensions in the region, say Indian officials. India has suggested that an international treaty banning all production of fissile material for military purposes would be more appropriate. At the United Nations, an Indian delegate has called for an international convention on non-use of nuclear weapons and a cut-off in the production of fissile material for weapons, as steps to achieve a nuclear weapons-free world by the end of the century. India's position on a regional freeze is said to be similar to that of its stance on the NPT: that any prohibition should be non-discriminatory and applicable to all states. Its government has also insisted that bilateral negotiations with **Pakistan** are insufficient as it has security concerns relating to neighbouring **China**. The **United States** has been attempting to hold separate, but parallel, talks between India and **Pakistan**. **Pakistan** has been urging for a multinational approach centred around a five-nation conference to address the nuclearization of South Asia, a concept that has met with **United States** approval. **Russia** is also keen for India to sign the NPT, according to a report, but India remains opposed, insisting that the NPT requires reform. A former Indian Army chief, General K. Sundarji, has called for an informed public debate on India's nuclear policy options, including an evaluation of its position on the NPT. (*Times of India*, 21 October; *Nucleonics Week*, October 22; *United Press International*, November 2 and 16; *Jane's Defence Weekly*, 7 November; *Indian Express*, 20 December).

- There are indications that the relationship between **Pakistan** and the **United States** is still being re-assessed. Since October 1990, a **United States** military and economic aid ban to **Pakistan** has been in place, following the refusal of President Bush to provide certification, under the Pressler Amendment, that **Pakistan** did not possess or plan to acquire nuclear

weapons. **Pakistan** has stated that it has the ability to make nuclear weapons but has not done so and has denied reports that it has components for seven nuclear weapons designed for quick assembly. It has also been reported that the **United States** will not renew the leases on eight frigates transferred to the **Pakistan Navy** in 1989 unless **Pakistan** complies with the conditions of the Pressler Amendment. (*Far Eastern Economic Review*, October 29; *The Washington Times*, December 2; *International Herald Tribune*, December 3; *Jane's Defence Weekly*, 12 December).

II. PPNN Activities

- The PPNN Core Group held its twelfth semi-annual meeting from 27 to 29 November at the Keidenren Guest House, Sunto-gun, Shizuoko Prefecture, Japan. The meeting was organized for PPNN by the Mountbatten Centre for International Studies, Southampton, United Kingdom and the Japanese Atomic Industrial Forum, Tokyo, Japan. The latter also provided partial funding for the meeting. All members of the PPNN Core Group were present, with the exceptions of Ambassadors Olu Adeniji and Oleg Grinevsky.

Between 28 and 29 November, the Core Group convened an International Seminar on **East Asia and Nuclear Non-Proliferation** attended by: 11 senior government officials and researchers from **China**, **Japan**, **Republic of Korea**, **Russia**, the **Philippines** and **Viet Nam**; 10 industrial representatives from **Japan**; and 4 observers from extra-regional states and international organizations.

The Seminar was divided into four sessions: **The Peaceful Applications of Nuclear Energy In East Asia**; **The Nuclear Non-Proliferation Situation in East Asia**; **Approaches to Regional Nuclear Issues in East Asia**; and **Global Non-Proliferation, the NPT and East Asia**. Ten Papers were discussed during the course of the Seminar: **Nuclear Developments in Japan and Other East Asian Countries** by Atsuyuki Suzuki; **Russian Policies On The Disposal Of HEU And Plutonium From Retired Warheads And Other Sources** by Victor Slipchenko; **Review Of New Mechanisms To Stem Nuclear Proliferation** by Ryukichi Imai; **National Security And Stability In East Asia: the Korean Peninsula** by Seong Cheon; **National Security And Stability In East Asia: A Japanese Perspective** by Yoshio Okawa; **Nuclear-Weapon-Free Zones: Lessons From The Existing Agreements** by Jozef Goldblat; **Regional Nuclear Co-operation And Non-Proliferation Arrangements: Models From Other Regions** by Darryl Howlett; **The Use Of International Fuel Storage Schemes And International Fuel Cycle Activities In A Regional Context** by Jiri Beranek; **Reform Of The System For Nuclear Export Control** by Harald Müller; and **The NPT Extension Conference In 1995** by John Simpson. In addition, Lawrence Scheinman and David Fischer made a presentation on **The Evolving IAEA Safeguards Regime**. A bound volume containing copies of all the papers from the conference will be available at the end of February 1993 from PPNN's Southampton office at a price of £10 or \$16.

- At the meeting in Japan, Jan Murray announced her resignation from the PPNN Core Group.
- PPNN plan to hold three major meetings in 1993: a regional workshop on non-proliferation for representatives of African states on 2-4 April in Harare, Zimbabwe; a Core Group meeting and conference, focusing on the 1995 NPT extension and review, in Southampton, United Kingdom on 9-12 July; and a Core Group meeting and regional seminar on non-proliferation for representatives of South Asian states in Sri Lanka in mid-November.
- On 8 October, Ben Sanders attended the Program Committee of the NGO Committee on Disarmament at the United Nations and a discussion on science, and public policy at the New York Academy of Sciences. He participated in a working-luncheon on the situation in Iraq at the Brookings Institution in Washington D.C., on 26 October, and a seminar on Non-Proliferation hosted by the Netherlands Advisory Council on Peace and Security held in The Hague from 5 to 7 November. On 10 November, he attended the Program Committee of the NGO Committee on Disarmament, and on 11 November, a Meeting of the Steering Committee of IAUP/UN Commission on Arms Control Education, both at the United Nations. On 11-12 November, he participated in a Conference of IRIS (Incorporated Research Institutions for Seismology) on 'The Proliferation of Nuclear Weapons and the Role of Nuclear Testing'. Between 19 and 21 November he participated, with John Simpson, in an international conference in Stockholm on non-proliferation, organized by the Swedish Initiative for the Prevention of Nuclear Proliferation Risks and New Nuclear Threats. On 7 December, he attended a discussion on 'Verifying the Non-Proliferation Treaty: Challenges for the 1990's', at the United Nations.
- John Simpson organised a one day conference in London on 9 October on the United Nations' role in Disarmament, Arms Control and Non-Proliferation. From 21 to 28 October, with Emily Bailey, he visited Zimbabwe to make arrangements for the PPNN workshop on nuclear non-proliferation to be held in Harare in 1993 for representatives from African states. He attended a workshop on 'The Proliferation of Nuclear weapons: Past, Present and Future' between 3 and 6 December at the University of Chicago, during which he gave a public lecture on 'A European view of the first 50 years of nuclear weapons and nuclear non-proliferation'. Between 9-11 December, he attended a UNIDIR Conference in Paris on 'Nuclear Deterrence: Problems and Perspectives for the 1990's'.
- On 16 October, Darryl Howlett presented a paper entitled, 'The Future of the Nuclear Non-Proliferation Regime', at a conference on security and non-proliferation organized by the Rand Corporation and the Monterey Institute of International Studies in Alma Ata, Kazakhstan. Emily Bailey also presented a paper on 'The Evolving Context of UN Peacekeeping' at the same conference.

III. Other Non-Governmental Groups Active in Related Areas

- A Commission supported jointly by the International Association of University Presidents and the United

Nations is creating a global programme for arms control education. The programme of the **IAUP/UN Commission on Arms Control Education** includes a variety of projects, among them development of prototype undergraduate and professional courses in arms control and a series of seminars for university presidents, scholars from developing countries, journalists and religious and business leaders. A main focus of the Commission, said its chairperson, Dr. Leland Miles, is education in the 'new realities' of arms control in the post-Cold War environment, which include a stress on regional conflict and the diversion and proliferation of biological, chemical and nuclear weapons.

- On 11-13 November, **Incorporated Research Institutions for Seismology (IRIS)** hosted a conference at Princeton University on 'The Proliferation of Nuclear Weapons and the Role of Underground Testing'. The purpose of the conference was to assess concerns regarding the proliferation of nuclear weapons and to determine how networks of open seismic stations can best contribute to deterring the testing activities of countries secretly attempting to develop or obtain nuclear weapons.
- On 1-2 December, the **Woodrow Wilson International Center for Scholars** convened a conference entitled, 'Nuclear Proliferation in the 1990s: Challenges and Opportunities' at the Smithsonian Institution. The conference brought together specialists from the United Nations, the United States, India, Pakistan, Israel, South Korea and Western Europe.
- The **United Kingdom National Nuclear Non-Proliferation Study Group** held its tenth meeting on 18 December. Among subjects discussed were the negotiating history of Article X.2 of the NPT, the 1995 NPT Conference, non-proliferation issues in North East Asia and French perspectives upon plutonium.

IV. Recent Publications

- Books:

Graham Allison, Ashton B. Carter, Steven E. Miller & Philip Zelikow (eds.), **Cooperative Denuclearization**, CSIA Studies in International Security No. 2, Harvard University, 303 pp.

George Bunn, **Arms Control By Committee: Managing Negotiations With The Russians**, (Stanford, Ca.: Stanford University Press), 349 pp.

Final Document: Part 3, Summary Records, Review Conference of the Parties to the Treaty on Non-Proliferation of Nuclear Weapons, (Geneva: UN, Ref. No. NPT/CONF.IV/45/III.)

Patrick J. Garrity and Steven A. Maaranen (eds.), **Nuclear Weapons in the Changing World**, (New York: Plenum Press).

GRIP, Institut Europeen De Recherche Et D'Information Sur La Paix Et La Securite, **Memento Defence-Desarmement 1992: L'Europe et la Securite Internationale**, (Bruxelles: GRIP), 328 pp.

Peter Herby, **The Chemical Weapons Convention and Arms Control in the Middle East**, (Oslo: International Peace Research Institute), 127 pp.

Implications of the Dissolution of the Soviet Union for Accidental/ Inadvertent Use of Weapons of Mass Destruction, (Tallin: Proceedings of an International Conference held in Parnu, Estonia, April 23-25, 1992, by the Estonian Academy of Sciences, Tallin, the Swedish Initiative for the Prevention of Accidental Nuclear War, Stockholm, and

the Center for International and Strategic Affairs, University of California, Los Angeles), 276 pp.

Gregory S. Jones, **The Iraqi Ballistic Missile Program: The Gulf War and the Future of the Missile Threat**, (Marine Del Rey, Ca.: American Institute for Strategic Cooperation), 88 pp.

Matthias Kuntzel, **Bonn Und Die Bombe: Deutsche Atomwaffenpolitik von Adenauer Bis Brandt**, (Campus Verlag), 333 pp.

Marie-Helene Labbe, **La Proliferation Nucleaire en 50 Questions**, (Jacques Bertoin), 347 pp.

Albert Legault and Michel Fortmann, **A Diplomacy Of Hope: Canada and Disarmament, 1945-1988**, (Montreal: McGill-Queen's University Press), 632 pp.

Steven Mataija and J. Marshall Beier (eds.), **Multilateral Verification and the Post-Gulf Environment: Learning from the UNSCOM Experience**, (Toronto: Symposium Proceedings, Centre for International and Strategic Studies, York University, December), 204 pp.

Jonathan Medalia, Paul Zinsmeister and Robert Civiak (eds.), **Nuclear Weapons and Security: The Effects of Alternative Test Ban Treaties**, (Boulder, Co.: Westview Press, 1991), 275 pp.

Jean-Francois Rioux, **Limiting the Proliferation of Weapons: The Role of Supply-Side Strategies**, (Ottawa: Carleton University Press), 275 pp.

Johan Swahn, **The Long-Term Nuclear Explosives Predicament: The Final Disposal Of Militarily Usable Fissile Material In Nuclear Waste From Nuclear Power And From The Elimination Of Nuclear Weapons**, (Goteborg: Technical Peace Research Group, Institute Of Physical Resource Theory), 247 pp. (This item was listed under 'articles' in *Newsbrief 19*, and should in fact have been listed as a book.)

United Nations, **Yearbook of the United Nations 1991, Volume 45**, (Dordrecht/London/Boston: Martinus Nijhoff Publishers).

Uranium Institute, **Uranium and Nuclear Energy: 1992**, (London: Proceedings of the Seventeenth International Symposium held by the Uranium Institute).

- Articles and Other Materials:

David Albright and Mark Hibbs, 'North Korea's Plutonium Puzzle', **The Bulletin Of The Atomic Scientists**, November, pp. 36-40.

'An Annotated Bibliography Of Soviet And CIS Studies On Nuclear Non-Proliferation', **Occasional Paper No 1**, Center For Russian And Eurasian Studies, Monterey Institute of International Studies, (Monterey, California, August) 16 pp.

Doug Bandow, 'A New Korea Policy for a Changed World', **The Korean Journal of Defense Analysis**, IV(2), Winter, pp. 259-77.

Frans Berkhout, Anatoli Diakov, Harold Feiveson, Marvin Miller and Frank Von Hippel, 'Plutonium: True Separation Anxiety', **The Bulletin Of The Atomic Scientists**, November, pp. 28-34.

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V. Documentation

- a. **NEW DIMENSIONS OF ARMS REGULATION AND DISARMAMENT IN THE POST-COLD WAR ERA**
Report of the Secretary-General of the United Nations, Mr. Boutros Boutros-Ghali, on the occasion of Disarmament Week, 27th October 1992, UN Ref. A/C.1/47/7. [extract]

III. REVITALIZATION. BUILDING ON PAST ACHIEVEMENTS

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B. Proliferation control.

27. Current international trends should help immeasurably in achieving a priority which is of growing importance to the global community - the non-proliferation of weapons. At a moment when substantial disarmament is finally beginning to occur, there can be no justification for any State, anywhere, to acquire the tools and technologies of mass destruction. This judgement, I believe, is widely shared by States. It was articulated clearly at the Security Council Summit last January, when the Council declared that the proliferation of nuclear, and indeed all weapons of mass destruction, constituted a threat to international peace and security. The question is how to turn the logic of non-proliferation into concerted action.
28. In the nuclear realm, the Non-Proliferation Treaty continues to provide an indispensable framework for our global non-proliferation efforts. All of us know all too well that the Treaty has its contentious aspects. and yet the broad adherence, which now includes all the nuclear-weapon States, emphasizes its fundamental validity. It is clear, however, that verification and safeguards arrangements for the Treaty need to be strengthened. When the Treaty itself comes up for extension in 1995, it should be extended indefinitely and unconditionally. All States should adhere to the Treaty.
29. Over the longer term, it is my hope that we may achieve more equitable and comprehensive approaches to responsible proliferation control, not only of weapons but also of long-range delivery systems and dual-use technologies. To be fully effective, such controls must be balanced and fair; they must not unduly hamper the peaceful uses of science and technology and they should not divide the world into the invidious categories of 'haves' and 'have-nots'.

IV. CONCLUSION. NEW CHALLENGES

...

B. New machinery

...

44. I support greater Security Council involvement in disarmament matters, and in particular, the enforcement of non-proliferation. In this regard, it should be recalled that under the Charter of the United Nations the Military Staff Committee is to provide assistance to the Security Council on all questions relating, *inter alia*, to the regulation of armaments and possible disarmament.

b. Draft resolution adopted by the First Committee of the United Nations General Assembly on the 1995 extension of the NPT

(Text reproduced from A/C.1/47/L.6)

GENERAL AND COMPLETE DISARMAMENT: TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS: 1995 CONFERENCE AND ITS PREPARATORY COMMITTEE

The General Assembly,

Recalling its resolution 2373 (XXII) of 12 June 1968, the annex to which contains the Treaty on the Non-Proliferation of Nuclear Weapons,

Noting the provisions of article X, paragraph 2, of that Treaty, requiring the holding of a conference twenty-five years after the entry into force of the Treaty, to decide whether the Treaty shall continue in force indefinitely or shall be extended for an additional fixed period of periods,

Noting also the provisions of article VIII, paragraph 3, concerning the convening of review conferences, which provides for quinquennial review conference,

Noting further that the last review conference took place in 1990, Recalling that the Treaty entered into force on 5 March 1970,

Recalling also its decision 46/413 of 6 December 1991, by which it took note of the intent of the parties to form a preparatory committee in 1993 for the conference called for in article X, paragraph 2, of the Treaty.

1. Takes note of the decision of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons, following appropriate consultations, to form a Preparatory Committee for a Conference to review the operation of the Treaty and to decide on its extension, as called for in article X, paragraph 2, and also as provided for in article VIII, paragraph 3, of the Treaty;
2. Notes that the Preparatory Committee will be open to all the parties to the Treaty and, if the Preparatory Committee so decides at the outset of its first session, to States not parties, as observers, and will hold its first meeting in New York from 10 to 14 May 1993;
3. Requests the Secretary-General to render the necessary assistance and to provide such services, including summary records, as may be required for the 1995 Conference and its Preparatory Committee.

c. Extracts from the US Energy and Water Development Appropriations Act, 1993 relating to nuclear testing

Sec.507. (a) Hereafter, funds made available by this Act or any other Act for fiscal year 1993 or for any other fiscal year may be available for conducting a test of a nuclear explosive device only if the conduct of that test is permitted in accordance with the provisions of this section.

- (b) No underground test of a nuclear weapon may be conducted by the United States after September 30, 1992, and before July 1, 1993.
- (c) On and after July 1, 1993, and before January 1, 1997, an underground test of a nuclear weapon may be conducted by the United States:-
 - (1) only if:-

(A) the President has submitted the annual report required under subsection (d);

(B) 90 days have elapsed after the submittal of that report in accordance with that subsection; and

(C) Congress has not agreed to a joint resolution described in subsection (d) (3) within that 90-day period; and

(2) only if the test is conducted during the period covered by the report.

(d) (1) Not later than March 1, of each year beginning after 1992, the President shall submit to the Committees on Armed Services and Appropriations of the Senate and the House of Representatives, in classified and unclassified forms, a report containing the following matters:

(A) A schedule for resumption of the Nuclear Testing Talks with Russia.

(B) A plan for achieving a multilateral comprehensive ban on the testing of nuclear weapons on or before September 30, 1996.

(C) An assessment of the number and type of nuclear warheads that will remain in the United States stockpile of active nuclear weapons on September 30, 1996.

(D) For each fiscal year after fiscal year 1992, an assessment of the number and type of nuclear warheads that will remain in the United States stockpile of nuclear weapons and that -

(i) will not be in the United States stockpile of active nuclear weapons;

(ii) will remain under the control of the Department of Defence; and

(iii) will not be transferred to the Department of Energy for dismantlement.

(E) A description of the safety features of each warhead that is covered by an assessment referred to in subparagraph (C) or (D).

(F) A plan for installing one or more modern safety features in each warhead identified in the assessment referred to in subparagraph (C), as determined after an analysis of the costs and benefits of installing such features or features in the warheads, should have one or more of such features.

(G) An assessment of the number and type of nuclear weapon tests, not to exceed 5 tests in any period covered by an annual report under this paragraph and a total of 15 tests in the 4-fiscal year period beginning with fiscal year 1993, that are necessary in order to ensure the safety of each nuclear warhead in which one or more modern safety features are installed pursuant to the plan referred to in subparagraph (F).

(H) A schedule, in accordance with subparagraph (G), for conducting at the Nevada test site, each of the tests enumerated in the assessment pursuant to subparagraph (G).

(2) The first annual report shall cover the period beginning on the date on which a resumption of testing of nuclear weapons is permitted under subsection (c) and ending on September 30, 1994. Each annual report thereafter shall cover the fiscal year following the fiscal year in which the report is submitted.

(3) For the purpose of paragraph (1), 'joint resolution' means only a joint resolution introduced after the date on which the Committees referred to in that paragraph receive the report required by that paragraph the matter after the resolving clause of which is as follows: 'The Congress disapproves the report of the President on nuclear weapons testing, dated .' (the blank space being appropriately filled in).

(4) No report is required under this subsection after 1996.

(e) (1) Except as provided in paragraphs (2) and (3), during a period covered by an annual report submitted pursuant to subsection (d), nuclear weapons may be tested only as follows:

- (A) Only those nuclear explosive devices in which modern safety features have been installed pursuant to the plan referred to in subsection (d)(1)(F) may be tested.
- (B) Only the number and types of tests specified in the report pursuant to subsection (d)(1)(G) may be conducted.
- (2) (A) One test of the reliability of a nuclear weapon other than one referred to in paragraph (1)(A) may be conducted during any period covered by an annual report, but only if -
- within the first 60 days after the beginning of that period, the President certifies to Congress that it is vital to the national security interests of the United States to test the reliability of such a nuclear weapon; and
 - within the 60-day period beginning on the date that Congress receives the certification, Congress does not agree to a joint resolution described in subparagraph (B).
- (B) For the purposes of subparagraph (A), 'joint resolution' means only a joint resolution introduced after the date on which the Congress receives the certification referred to in that subparagraph the matter after the resolving clause of which is as follows: 'The Congress disapproves the testing of a nuclear weapon covered by the certification of the President dated .' (the blank space being appropriately filled in).
- (3) The President may authorise the United Kingdom to conduct in the United States, within a period covered by an annual report, one test of a nuclear weapon if the President determines that it is in the national interests of the United States to do so. Such a test shall be considered as one of the tests within the maximum number of tests that the United States is permitted to conduct during that period under paragraph (1)(B).
- (f) No underground test of nuclear weapons may be conducted by the United States after September 30, 1996, unless a foreign state conducts a nuclear test after this date, at which time the prohibition on United States nuclear testing is lifted.
- (g) In the computation of the 90-day period referred to in subsection (c)(1) and the 60-day period referred to in subsection (e)(2)(A)(ii), the days on which either House is not in session because of an adjournment of more than 3 days to a day certain shall be excluded.
- (h) In this section, the term 'modern safety feature' means any of the following features:
- (1) An insensitive high explosive (IHE)
 - (2) Fire resistant pits (FRP)
 - (3) An enhanced detonation safety (ENDS) system

d. IAEA Press Release on the Review Conference of the Convention on Physical Protection of Nuclear Material

(PR 92/36, 1 October 1992)

A Review Conference in Vienna on the Convention on the Physical Protection of Nuclear Material has unanimously affirmed that the Convention - which entered into force in 1987

- provides a sound basis for physical protection during international transport and is acceptable in its current form.

Specifically, the existing Parties to the Convention:

- agreed that it provides an appropriate framework for co-operation between States not only in protection, but also in the recovery and return of any stolen nuclear material;
- reaffirmed its central role for the physical protection of nuclear material, and their belief that the convention provides an appropriate framework for international co-operation in the application of criminal sanctions against any person who may commit criminal acts involving nuclear material;
- recognized that bilateral consultations recommended in the Convention provided an important basis for co-ordinating parties' responsibilities under the Convention; and
- reaffirmed their full support for the Convention, while urging all States which have not already done so to accede.

The Review Conference of parties to the Convention was held in Vienna on 29 September 1992. The Conference was, as required by the Convention, convened by the Director General of the International Atomic Energy Agency, the depositary of the Convention, and was attended by representatives of 35 of the 42 States to the Convention.

e. Statement by the Permanent Mission to the IAEA of the Republic of Argentina

(Text reproduced from INFCIRC/412)

1. On 16 September 1992, the Agency's Board of Governors considered the draft of an agreement between the United Kingdom of Great Britain and Northern Ireland, the European Atomic Energy Agency for the application of safeguards in connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America.
2. In that connection, the Permanent Mission of the Republic of Argentina made the following statement, which is being circulated for the information of Member States at the Permanent Mission's request.

'The Permanent Mission of the Republic of Argentina to the International Atomic Energy Agency states, in the name of its Government, that it rejects the inclusion by the United Kingdom of Great Britain and Northern Ireland of the Falkland Islands, South Georgia and South Sandwich Island (Las Islas Malvinas, Georgias del sur y Sandwich del Sur), in the agreement between that Government, the European Atomic energy Community and the International Atomic energy Agency for the application of safeguards under Additional Protocol I of the Treaty for the Prohibition of Nuclear Weapons in Latin America and reaffirms its sovereignty over the said islands, which constitute an integral part of its national territory.

The Republic of Argentina recalls that the General Assembly of the United Nations has adopted resolutions 2065 (XX), 3160 (XXVIII), 31/49, 37/9, 38/12, 39/6, 40/21, 41/40, 42/19 and 43/25, by which it recognizes the existence of a dispute concerning sovereignty and has requested the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland to enter into negotiations with a view to finding a way of resolving, peacefully and definitively, all aspects of the future of the Falklands Islands, South Georgia and South Sandwich Island (Las Islas Malvinas, Georgias de sur y Sandwich de Sur), in accordance with the United Nations Charter.'

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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