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PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 28 **NEWSBRIEF** **4th Quarter 1994**

Editorial Note

This issue of the **Newsbrief** reports on events relating to the non-proliferation of nuclear weapons that took place, or that came to the editor's attention, in the period starting 1 October and ending on 31 December 1994.

The **Newsbrief** is a quarterly publication of the Programme for Promoting Nuclear Non-Proliferation (PPNN) intended to present information about issues related to the spread of nuclear weapons and about moves to prevent that spread. Using publicly available material derived from reputable and generally reliable sources, the **Newsbrief** aims to give an accurate and balanced picture of pertinent developments, including events relating to the peaceful uses of nuclear energy.

The limited size of the **Newsbrief** makes it necessary to choose among items of information and to present them in condensed and simplified form. Subheadings serve to facilitate presentation and do not imply judgements on the events referred to.

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

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

Unless otherwise stated, sources referred to in this issue, and publications listed, date from 1994.

I. Topical Developments

a. Background

- After several weeks of reports about persistent disagreement and lack of progress in the discussions between the **Democratic People's Republic of Korea (DPRK)** and the **United States**, it was announced on 18 October that the two sides had concluded an 'Agreed Framework' for action, of which the most important provisions are that:

  — the DPRK will revert to full compliance with its obligations under the NPT, affirms its status as a party to the NPT, and will allow implementation of its safeguards agreement with the IAEA;

  — the US will make arrangements for the provision to the DPRK of a light-water-reactor (LWR) project with a total generating capacity of approximately 2000 MWe by 2003;

  — the DPRK terminates operation of the 5-MW experimental reactor, a nuclear fuel rod fabrication plant at Yongbyon and the radiochemical laboratory/reprocessing facility there, and stops construction of its graphite-moderated 50- and 200-MW reactors, with the intention to dismantle these once the LWR project is completed;

  — the parties will cooperate in finding a method for the safe storage of the spent fuel from the 5-MW experimental reactor and to dispose of that fuel in a manner that does not involve reprocessing in the DPRK once the LWR project is complete;

  — the US organises an international consortium to finance and supply the LWR project, with principal contributions from Japan and the Republic of Korea;

  — alternative energy will be provided to the DPRK, with deliveries of heavy oil for heating and

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electricity production starting within three months, up to 500,000 tonnes annually;

— liaison offices will be established in Pyongyang and Washington once 'consular and other technical issues' are resolved through expert-level discussions, and eventually bilateral relations will be raised to the Ambassadorial level;

— the United States will provide negative security guarantees to the DPRK;

— the DPRK will take steps to implement the North–South joint declaration on the denuclearisation of the Korean Peninsula and will engage in North–South dialogue.

The Agreed Framework, which was signed in Geneva on 21 October, includes a time-table for its implementation; it should be fully implemented in approximately ten years. Among its terms is the provision that the US will do its utmost to secure the conclusion of a supply contract within six months of the signature of the agreement; upon conclusion of that supply contract the IAEA will be permitted to resume *ad hoc* and routine inspections with respect to the facilities not subject to the freeze. Further, before delivery of key nuclear components 'the DPRK will come into full compliance with its safeguards agreement with the IAEA...'; this provision is understood to mean that when a significant portion of the LWR project is completed the IAEA should be able, if it so wishes, to make special inspections at the two sites where allegedly evidence of undeclared reprocessing campaigns may be found. The text of the Agreed Framework is reproduced below under section **IV. Documentation**.

The removal of the spent fuel rods from the DPRK is not expected to occur sooner than about eight years from now; China is mentioned as a possible destination. It is estimated that the two light-water reactors, which should be completed in about ten years, will cost around $3.5 billion and will come from South Korea, although the DPRK is said to favour reactors of American, German or Russian origin. Dismantling the graphite-moderated reactors is expected to cost about $500 million and the provision of alternative power in the interim should take up another $500 million, so that the cost of the entire project should be about $4.5 billion. Japan has said it would contribute 25 per cent towards their cost (one source speaks of 30 per cent [$1.2 billion]), but it has added that its contribution would depend on European nations also contributing. South Korea, which originally was expected to contribute 70 per cent of the cost, is now said to have decided to pay only 55 per cent ($2.3 billion). The US share is thought to be 10 per cent ($400 million). Australia has said that it would consider how it could contribute; the possibility of its providing alternative energy sources has been mentioned. Some analysts doubt that total costs can indeed be kept at $4.5 billion; for one thing, means of power transmission may have to be constructed, since the North is not believed to have the electric grid needed. Apparently, also, roads and railways will have to be upgraded before reactor construction can begin. Some government officials have been heard to say that the total cost may well rise to ten billion dollars.

Reportedly, the transaction between the DPRK and the USA includes a 'Confidential Minute' on conditions to be met before the IAEA can declare the DPRK to be in compliance with its safeguards agreement and to have frozen the activities it has promised to stop. Apparently, this leaves open the possibility that, rather than giving access to the two suspected waste sites, the DPRK would give the IAEA other information that might help resolve the discrepancy between the information it initially gave the Agency, and the conclusions the latter has reached about Pyongyang's actual plutonium production. It is also understood to provide for the sealing of both production lines at the reprocessing facility.

At an informal meeting of the IAEA's Board of Governors, on 25 October, the Director General announced that the Secretariat had begun to analyse the effect the Agreed Framework would have on its safeguards activities in the DPRK. Reportedly, a draft schedule for the implementation of full-scope safeguards in the DPRK was being worked out, and a plan for scheduling inspections and overseeing the planned shutdown of various facilities was submitted for approval by the Board and eventually by the DPRK. At the same time, the IAEA asked the Security Council for a mandate to conduct verification activities pursuant to the Framework Agreement, in addition to its safeguards agreement with the DPRK, with which the latter is also obliged to comply. Reportedly, a number of members of the Agency's Board, including France, the Republic of Korea and the United Kingdom, expressed doubts about the Agreed Framework, especially because it accepts that full inspection in the DPRK will not take place for a long time.

On 4 November the Security Council adopted a statement by its Chairman on the subject. The statement reaffirms the critical importance of IAEA safeguards; notes with satisfaction the Agreed Framework; takes note of the DPRK's decision to remain a party to the NPT; notes its decision to come into full compliance with its safeguards agreement; underlines that this agreement remains binding and in force and requests the IAEA to take all steps it may deem necessary to verify full DPRK compliance; notes with approval the DPRK's decision to freeze its graphite-moderated reactors and related facilities, which it calls a 'voluntary measure' beyond what was required by the Treaty; notes that IAEA monitoring activities with such a voluntary measure are within the scope of the safeguards agreement; requests the IAEA to take all steps it may deem necessary to monitor the freeze; and asks the IAEA to report to it on implementation of the safeguards agreement until the DPRK has come into full compliance with that agreement. At a special session on 11 November the Agency's Board of Governors authorized the Secretariat to act on the Security Council's ruling.

The Agreed Framework has met with criticism in the US Congress, where many see it as containing too many concessions to the DPRK. The new Senate majority leader, Robert Dole, and Senator Jesse Helms, who was expected to assume the influential position of Chairman of the Senate Foreign Relations Committee, have expressed serious dissatisfaction with the instrument, which the former has said may not be in the national interest. One item considered particularly hard to accept is the postponement of IAEA special inspections until most of the civil engineering for the LWR project has been completed. Another aspect to have come under fire is the promised reduction of US barriers to trade and investment with the DPRK. Many American politicians disparage the promise to provide the DPRK with reactors and interim sources of energy as a reward for bad behaviour and a dangerous precedent that undermines the non-proliferation regime. Upon further consideration, however, a number of previously negative senators, including several influential members of the new Republican majority, now appear to feel that the conditions that were obtained are as favourable as might have been expected under the circumstances. It is noted, for instance, that after a visit to North Korea the incoming Chairman of the Subcommittee for East Asian and Pacific Affairs of the Senate Foreign Relations Committee, who had initially been highly skeptical of the Agreed Framework, said that it should be examined thoroughly but not necessarily overturned.

On 1 November the DPRK's foreign ministry announced formally that it had begun to implement the Agreed Framework by stopping the construction of the two large reactors and the operation of the 5-MW experimental reactor and that the new fuel rods for that reactor were being 'withdrawn'; it said that steps had also been taken to 'keep the radioactive chemical laboratory and other related facilities frozen'. The IAEA has confirmed that it has verified the fact that the DPRK has frozen its nuclear programme and has stopped construction on the two large graphite-moderated reactors.

The US has also begun to carry out its part of the Agreed Framework. To cover initial expenses the Clinton Administration is said to use discretionary funds for which Congress need not make a special appropriation. From 12 to 19 November talks took place in Pyongyang between the DPRK and the US on the dismantling of the DPRK's nuclear programme and safekeeping of the 8,000 spent fuel rods in storage. North Korean sources have qualified the meeting as 'useful and constructive'. In Beijing, from 30 November until 3 December, the first bilateral discussions were held about the supply contracts with respect to the LWR project. A joint statement after this session called it 'serious and useful'. On 6–10 December consultations were held in Washington between officials from the DPRK and the US on the establishment of liaison offices in the respective capitals. While some technical issues, such as freedom of travel, still have to be resolved it appears that many of the obstacles have been cleared away. The various discussions are expected to be resumed in early 1995.

For some time during December it appeared that implementation of the Agreed Framework might be at risk, following the crash, on the 17th of that month, of an American army helicopter north of the Demilitarized Zone in Korea. According to reports from Washington, the unarmed aircraft was on a routine training mission when it inadvertently strayed into DPRK airspace, where it is thought to have been brought down by soldiers of the Korean People's Army: the North claims the crew disregarded warning shots whereupon it forced the helicopter down, but this has not been confirmed by US sources. The co-pilot is said to have been killed when the aircraft was fired at; his body was promptly handed back to US forces. The surviving pilot was held by the DPRK military, accused of spying. Trying to obtain his release, Washington expressed regret that the helicopter had crossed the border, which it said was due to a map reading error. Thirteen tense days followed, during which Washington issued several warnings that failure to release the captive could jeopardise implementation of the Agreed Framework — no specific elements were mentioned, but the US statements were generally understood to allude to a cancellation of the supplies of heavy heating oil, which were scheduled to start in January. In Congress, the latent criticism of the Agreed Framework quickly grew more strident. The pilot's release was secured after a vigorous diplomatic effort, at the end of which the US expressed 'sincere regret' at the incident, acknowledged there was 'no legal basis' for the helicopter to have been in the DPRK's airspace, and agreed to contacts 'in an appropriate forum' to help avoid the repetition of such incidents. Although there seems to be concern in Seoul that South Korea may have been disregarded in the establishment of what some there fear may be a new venue for bilateral consultations between the US and the DPRK, Washington has let it be known that this formulation did not imply any substantive concessions on its part but was designed to enable Pyongyang to claim that it had received an American apology and that it had indeed achieved its aim of establishing more direct contact with the US military. Some political analysts in Washington believe this to have been the main purpose of the North's actions. Others see the event as reflecting dissension between civil authorities in Pyongyang, which wanted to downplay the issue, and the armed forces, which wished to take a firm stand towards the US. There were suggestions that the apparent conflict pointed to a continuing lack of firm control at the top.

There is as yet no sign of significant improvement in the relations between the two Koreas, even though the Republic of Korea has announced a gradual easing of restrictions on economic transactions. South Korean businessmen may once again visit the North to discuss investments, and direct investments not exceeding $5 million will again be permitted. The DPRK, on the other hand, was believed to have expected the commencement of larger investments, but reportedly Seoul is reserving the establishment of full-scale economic relations as an incentive for a resumption of talks on reciprocal nuclear inspections. However, Pyongyang is still expressing dissatisfaction with the way Seoul reacted to the death of President Kim Il-Sung, and has said it would find it difficult to reopen

bilateral talks with the South until it apologises for its behaviour. Pyongyang has also reacted with angry threats to the announcement that South Korean and US forces will go ahead with their annual *Foal Eagle* exercise, which reportedly will involve most of the South's standing army and 4 million reservists, and a portion of the American troops stationed in South Korea. This year's *Team Spirit* maneuvers, which would have involved larger numbers of US troops, flown in for the purpose, have been cancelled. During a visit to Seoul by China's Prime Minister Li Peng, shortly after the conclusion of the Agreed Framework, the two states agreed to work together for inter-Korean peace. China has let it be known that it favours an early resumption of the dialogue between the two Koreas. It is generally expected to exert its influence with the DPRK in this regard.

Contrary to previous assessments, some American experts now seem to believe that the 200 MWe graphite-moderated reactor under construction at Taechong may not be intended in the first place to produce plutonium, but is meant to be connected to the electric grid. Among factors that have lead to this conclusion are the distance of the site from the reprocessing facilities at Yongbyon and the fact that the fuel fabrication facility there would not be adequate to provide fresh fuel for the large reactor at a rate that would enable fast withdrawal of the fuel for large scale weapons-grade plutonium production. On the other hand, such indications as the DPRK's efforts to obtain physics data to support nuclear weapon development, and the large number of high-explosive tests carried out are adduced to support intelligence evidence that the country does have a nuclear weapon programme. The same allegation is contained in a book recently published in Japan, by a defector who claims that the DPRK has repeatedly tested 'triggering devices' in underground testing sites in the North Korean mountains, and has actually carried out nuclear tests in Russia and Ukraine (sic).

(**Korean Radio System** (Seoul), 25/9, in **JPRS-TND**-94-019, 17/10; **Daily Telegraph**, 26/9, 8/11; **Choson Ilbo** [Seoul], 27/9, in **JPRS-TND**-94-019, 17/10; **International Herald Tribune**, 27/9, 28/9, 4/10, 20/10, 26/10, 27/10, 29/10, 2/11, 8/11, 16/11, 23/11; **Süddeutsche Zeitung**, 28/9, 20/10, 21/10, 27/10; **Financial Times**, 28/9, 19/10, 22-23/10, 8/11; **Kyodo** [Tokyo], 19/10, 21/10, 28/10; **Reuter's**, 20/10, 28/10, 2/11, 3/11, 5/11, 7/11, 18/11; **Le Monde**, 21/10, 3/11; **New York Times**, 30/9, 2/10, 6/10, 8/10, 15/10, 18/10, 19/10, 20/10, 21/10, 22/10, 23/10, 26/10, 27/10, 6/11, 8/11, 15/11, 27/11, 29/11, 2/12, 7/12, 10/12, 12/12, 13/12, 18/12, 21/12, 22/12, 23/12, 24/12, 25/12, 27/12, 28/12, 29/12, 30/12, 31/12; **IAEA Newsbriefs**, Vol. 9, No. 4, October; **Washington Post**, 2/10, 18/10, 19/10, 20/10, 11/11, 1/12, 2/12; **Frankfurter Allgemeine Zeitung**, 11/10; **Nucleonics Week**, 13/10, 20/10, 27/10; **Associated Press**, 18/10, in **Uranium Institute Newsbriefing**, 12-18/10; **Kurier**, 19/10; **IAEA Press Release** PR 94/45, 20/10, PR 94/47, 11/11; **United Press International**, 19/10, 27/10, 9/11; **Economist**, 22/10; **Tribune de Genève**, 26/10; **Yomiuri Shimbun**, 27/10; **Associated Press**, 27/10, 5/11, 18/11, 19/11, 27/11, 3/12; **Asahi Shimbun**, 27/10, 2/11; **KCNA** [Pyongyang], 1/11; **Times** [London], 1/11, 2/11; **Guardian**, 2/11; **Mainichi Shimbun**, 5/11, 8/11; **Nikkankogyo Shimbun**, 7-8/11; **Die Welt**, 8/11; **Agents France Presse**, 16/11; **CRS Issue Brief**, 'North Korea's Nuclear Weapons Program', 12/12)

- In **Germany**, anti-nuclear demonstrators have committed a series of acts of sabotage to power lines, poles and railroad tracks, constructed barricades and carried out other violent actions against police and against rolling stock, to protest and hold up the rail shipment of spent fuel to interim storage in Gorleben. Law enforcement authorities are investigating whether the actions should be ascribed to, or may have been provoked by, terrorist groups. The actions have apparently resulted in serious danger and injury to members of the public and to property. A ban imposed on demonstrations along the route is said to have been widely ignored. The first transport is anticipated to take place in January 1995. It is seen as an important precedent, which would be followed by a series of similar shipments. There are reports that the German population is frightened by such transports and more than half of a sample group polled said that protests should continue. (**Süddeutsche Zeitung**, 11/11, 23/11, 24/11, 25/11; **Neue Zürcher Zeitung**, 24/11; **Frankfurter Allgemeine Zeitung**, 21/11, 23/11; **Die Welt**, 23/11; **Nucleonics Week**, 24/11; **NucNet News**, 24/11; **NuclearFuel**, 5/12)

- On 7 November, a man threatening to blow up the Ignalina RBMK nuclear power station in **Lithuania** was arrested in **Sweden**. A letter demanding $8 million is said also to have threatened Swedish officials involved in upgrading safety at Ignalina. Reportedly, German police sources had warned the Lithuanian authorities that an attempt to blow up the station would be made on 15 November if the death sentence was pronounced in Vilnius against a supposed crime boss. Both 1500-MW units of the Ignalina station were closed down on 14 November, so that Lithuanian and Swedish bomb experts could inspect them for signs of sabotage. None were found and the deadline passed without incident. Operation of the station has been resumed, at well over half of net capacity. Meanwhile, sentence was pronounced as expected on the criminal in question. A pardon is rumoured to be sought and there is concern that another sabotage attempt may be initiated if no pardon is extended. Authorities in Vilnius reportedly believe that the threat may have been part of a terrorist campaign that began in early November, when a railway bridge was blown up. There was also talk that plant staff may be involved. The government of Lithuania has initiated a crash programme to improve physical protection at the plant. The shutdown of Ignalina, which provides 87 per cent of the country's power, is estimated to have caused the expenditure of the equivalent of $10 million for the supply of alternative power by Belarus and Russia. A report from **Russia**, citing the person who was supposed to have threatened to blow up the plant as denying he ever said so, implies that the whole thing is a hoax. Experts from Russia's Atomic Energy Ministry claim that any threat to blow up a nuclear power plant is a bluff. Since then, security officials in **Ukraine** are

said to have arrested a man who threatened to detonate a bomb in a nuclear power plant unless he was given $1 million. American intelligence sources have reportedly warned Russia and other members of the Commonwealth of Independent States of the possibility that commandos from **Chechnya** might undertake terrorist attacks against their nuclear power plants, in retaliation for the Russian armed action to suppress that nation's breakaway move. (**Nucleonics Week**, 10/11, 17/11, 24/11, 22/12; **Associated Press**, 14/11, 15/11; **New York Times**, 15/11; **Reuter's**, 12/11, 16/11; **NucNet News**, 15/11, 16/11, 17/11; **Izvestia**, 16/11; **Enerpresse**, 16/11, 17/11; **Süddeutsche Zeitung**, 18/11; **NucNet News**, 30/11; **Associated Press**, 2/12)

- A plan of the **United States** Postal Service to issue in 1995 a commemorative stamp depicting the atomic bombing of Hiroshima and Nagasaki, fifty years ago, has brought sharp reactions from **Japan** and has drawn much attention by the international media. The design showed a mushroom cloud above the phrase '*Atomic bombs hasten war's end, August 1945*'. Following a request from the Japanese government, the Postal Service has withdrawn the stamp. The incident is seen in the context of an earlier controversy that arose over the display at the Smithsonian Institution in Washington of the *Enola Gay* , the aircraft from which the A-bomb was dropped on Hiroshima. The way the exhibition was arranged was faulted by US war veterans, who claimed it did not adequately represent their point of view. (**Washington Post**, 3/12; **Frankfurter Allgemeine Zeitung**, 3/12; **Financial Times**, 3/12; **New York Times**, 4/12, 9/12; **Independent**, 5/12; **Libération**, 5/12; **Kurier**, 6/12)

- At a conference in the **United States**, senior officials from the Ministry of Foreign Affairs of the **Russian Federation** have expressed their country's opposition to the US Counter-Proliferation Initiative, as being too militaristic. Russian Deputy Foreign Minister Mamedov is quoted as saying that the use of military force against weapons of mass destruction may be considered only when sanctioned by the UN Security Council. Reportedly, Russia is concerned at the possibility of the US taking preemptive action, which is said to have been mentioned by the deputy director of the Lawrence Livermore National Laboratory as one option. According to a study released in December by the US Department of Defense, counterproliferation may cost as much as $10 billion a year. This includes the cost of theater missile defence programmes, the Pentagon's programme for the detection, identification and defense with regard to weapons of mass destruction, and the protection of US forces against such weapons, but also US funding for the IAEA and for the US–Russian Cooperative Threat Reduction, or Nunn–Lugar programme. Uncertainty as to what items should be included in an estimate of the total expense reflect continuing disagreement about the meaning of counterproliferation and the nature of its mission. (**Jane's Defence Weekly**, 26/11; **Defense News**, 5–11/12)

- Media reports in the **United States**, according to which the Administration is thinking of abolishing the Department of Energy for reasons of economy have brought negative reactions, also among critics of the Department. (**Nucleonics Week**, 15/12; **SpentFUEL**, 19/12)

b. NPT Events

- On 21 September the President of **Algeria** issued a decree regarding his country's accession to the Treaty on the Non-Proliferation of Nuclear Weapons. (**Presidential Decree No. 94-287** of the Democratic and People's Republic of Algeria)

- The Foreign Minister of **Argentina** has reiterated that his country will accede to the NPT before the 1995 Conference. Argentine diplomatic sources are said to have reacted positively to a report that the President-elect of **Brazil** has said that he will study the possibility of signing the NPT. (**Gazeta Mercantil** [Sao Paolo], 2/11 in **JPRS-TND-**94-20, 17/11)

- On 29 September **Turkmenistan** deposited a letter of accession to the NPT; on 11 October **Moldova** did so too. (**Arms Control Today**, Vol. 24, No. 9, November)

- On 16 November the parliament (Rada) of **Ukraine** adopted, with 301 votes in favour, 8 against and 20 abstentions, a resolution approving that country's accession to the NPT. It placed six reservations on the decision, of which the most notable were the declaration that Ukraine owns the weapons that used to belong to the Soviet Union and thus retains the right to use the nuclear material contained in it for peaceful purposes, and the statement that the pertinent law would come into effect only once Ukraine received formal and written security guarantees from the nuclear-weapon states.

  In the week of 21 November, Ukraine's President Kuchma was in Washington on what had initially been planned as an 'official visit' but was upgraded to a 'state visit'. On that occasion a 'Charter of US–Ukrainian Partnership, Friendship and Cooperation' was signed, defining the relationship between the two states, and agreements were concluded providing for cooperation in 'a range of new areas', including space exploration, civil aviation and crime prevention, and plans were adopted for assistance by Washington in a variety of fields. President Clinton announced that, in consideration of Ukraine's moves towards a free market and the elimination of nuclear weapons, it would receive a $100-million emergency grant for the purchase of food and fuel, and that $100 million was being granted for student exchanges, support of small businesses and privatisation. This additional $200 million raised total US aid to Ukraine in 1994 and 1995 to $900 million. The two Presidents further agreed on a schedule to speed up the disbursement of $350 million in Nunn–Lugar assistance. The bulk of those funds will be used to deactivate nuclear weapons and to convert conventional weapons and factories for the production of such weapons and munitions to other uses. A private enterprise, the Overseas Private Investment Corp. (OPIC), has been set up in Washington to fund these projects in Ukraine, and elsewhere in the former USSR. Work on the dismantling of the 130 SS-19

liquid-fuelled strategic ballistic missiles in Ukraine is said to proceed apace, in close cooperation between specialists from Ukraine and the United States. However, an American firm working in Ukraine on the conversion of munitions reports continually running up against bureaucratic obstructions, such as difficulties in gaining access to drawings and the sudden imposition of new export restrictions on the scrap produced.

On 5 December, at the summit meeting of the Conference on Security and Cooperation in Europe (CSCE) in Budapest, President Kuchma formally signed three copies of Ukraine's instrument of accession to the NPT and presented them to the leaders of the three depositary powers, thereby making his country the 168th party to the Treaty. Ukraine also undertook to abide by the MTCR.

At the ceremony, Presidents Clinton and Yeltsin and Prime Minister Major, on behalf of the depositary nations of the NPT, gave positive and negative security assurances to the non-nuclear-weapon states parties to the Lisbon Protocol, i.e., Belarus, Kazakhstan and Ukraine. As had been pointed before out by a spokesperson in Washington, as far as the US Administration was concerned those assurances were not to be seen as identical to the 'security guarantees' which the United States extends to its NATO partners. They did, however, include assurances by the Russian Federation, the United Kingdom and the United States, that they would seek UN Security Council assistance in the event of an act, or threat of nuclear aggression; respect these states' independence, territorial integrity and sovereignty; refrain from the threat of economic coercion and the use of military force against them; and consult with them if a question should arise concerning the fulfillment of these commitments. The creation of a consultative mechanism was said to be under discussion.

France also extended a negative security assurance, specifically to Ukraine. In addition, as a permanent member of the Security Council, it gave Ukraine the positive security assurance that it would act through the Council if Ukraine became victim of, or was threatened by, an act of aggression with nuclear weapons. It further gave the same assurances with regard to Ukraine's independence, territorial integrity and sovereignty as had been extended by the three depositary states.

On the same occasion in Budapest, Belarus, Kazakhstan, the Russian Federation, Ukraine and the United States exchanged documents causing the START I Treaty to formally enter into force. This is to be followed by action on the part of the Russian parliament and the United States Congress to ratify START II. Once this has occurred, the two powers have undertaken to deactivate all strategic nuclear delivery systems to be reduced under the agreement, by removing their warheads or taking other steps to remove them from combat status. Both in Moscow and in Washington suggestions were heard that once START II has been ratified, discussions should begin on an agreement on still deeper reductions of strategic nuclear weapons. (**Asahi Shimbun**, 23/10; **New York Times**, 16/11, 23/11, 6/12, 9/12, 27/12; **Washington Post**, 17/11; **Radio Ukraine World Service**, 16/11; **Wall Street Journal**, 17/11; **Libération**, 17/11; **USIA European Wireless File**, 18/11; **Le Monde**, 18/11; **Nucleonics Week**, 24/11; **Defense News**, 28/11–4/12; **USIA European Wireless File**, 25/11, 28/11 [OPIC Press Release], 2/12, 6/12, 12/12; **NuclearFuel**, 5/12; **Times** [London], 6/12)

- The **UN General Assembly** adopted, at its Forty-ninth regular session, several resolutions with direct relevance to the forthcoming Review and Extension Conference of the NPT. One of these, sponsored by Indonesia, Mexico, Namibia, Nigeria, the United Republic of Tanzania, Zambia and Zimbabwe, noted:

  > the necessity of giving careful consideration to all possible options in order to take a decision that is appropriate and capable of strengthening the non-proliferation regime in the pursuit of the ultimate objective of the elimination of nuclear weapons.

  Referring to 'the fact that there are various interpretations which have been expressed concerning the application of article X, paragraph 2, of the Treaty', the resolution invites NPT parties:

  > to provide their legal interpretations of article X, paragraph 2, and their views on the different options and actions available, for compilation by the Secretary-General as a background document of the 1995 Review and Extension Conference...

  The resolution was adopted by 103 votes in favour, 40 against (mostly east and west European delegations) and 25 abstentions. There appears to be some disagreement about its effects. Supporters now expect action to precede as requested; opponents hold that a request such as this can only validly be made by the Preparatory Committee. (**UNGA Document** A/49/699, **GA/RES/75 F**; see below, **Documentation**)

  Another draft resolution was sponsored by Japan. This urges states not parties to the treaty to accede to it at the earliest possible date and calls upon the nuclear-weapon States:

  > to pursue their efforts for nuclear disarmament with the ultimate objective of the elimination of nuclear weapons in the framework of general and complete disarmament, and also calls upon all States to fully implement their commitments in the field of disarmament and non-proliferation of weapons of mass destruction.

  The resolution was adopted by 163 votes in favour, none against and 8 abstentions: Brazil, Cuba, DPRK, France, India, Israel, UK and US.(**UNGA Document** A/49/699, **GA/RES/75 H**; see below, **Documentation**)

  Among other resolutions adopted, there was one sponsored by a number of non-aligned nations reaffirming 'the urgent need to reach an early agreement on effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons' and *inter alia* appealing 'to all States, especially the nuclear-weapon States, to work actively towards an early agreement on a common approach and, in particular, on a common

formula that could be included in an international instrument of a legally binding character'. The resolution was adopted with 168 votes to none, with three abstentions: France, UK and US. (**UNGA Document A/RES/49/73**; see below, **Documentation**)

One resolution, sponsored by a large group of non-aligned western and east European states, called upon the Conference on Disarmament to give priority to the conclusion of a Comprehensive Nuclear Test Ban Treaty. This was adopted without a vote. (**UNGA Document** A/49/694, **A/RES/49/70**; see below, **Documentation**).

Another resolution, sponsored by a group of non-aligned nations, referred to the initiative. of converting the Partial Test Ban Treaty into a Comprehensive Nuclear Test Ban Treaty and, among other things, noted:

> the intention of the President of the Conference to convene, after appropriate consultations and in the light of the work carried out by the Conference on Disarmament, another special meeting of the States parties to the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and under Water, as envisaged in resolution 48/69, to review developments and assess the situation regarding a comprehensive test ban and to examine the feasibility of resuming the work of the Amendment Conference.

Voting results were 116 in favour, four against (Israel, Russia, UK, US) and 49 abstentions. (**UNGA Document**, A/49/693, **A/RES/49/69**; see below, **Documentation**)

c. Other Non-Proliferation Developments

- **Japan** has for the first time publicly disclosed how much plutonium it holds. The 1994 Atomic Energy White Paper of the Atomic Energy Commission states that on 31 December 1993, the plutonium stockpile in Japan consisted of 7,607 kg of the material in various forms, of which 4,684 kg was separated plutonium, and was held at the Tokai reprocessing plant (326 kg), at the Tokai fuel facility (3,269 kg) and at the two fast reactors, the Fugen advanced reactor and the NUCEF research facility. Of the total amount of plutonium in Japan, 3,396 kg was in the fissile isotopes Pu-239 or Pu-241. In addition, Japan owned 6,197 kg of separated plutonium oxide which was stored in France and in the United Kingdom, making the total of separated plutonium owned by Japan 10,881 kg. As underlined also at a news conference of the Science and Technology Agency, the White Paper stated that the material was intended exclusively for peaceful uses, and pointed out that the stocks held in Japan were under IAEA safeguards. The White Paper also announces that Japan will heighten the transparency of its plutonium usage and the current status of the plutonium under its control and will 'positively participate in international studies on an international management framework of plutonium...' Also from Japan comes news that **Belgium**, **France**, **Germany**, **Switzerland**, the **UK** and the **US** have agreed in principle to make an annual disclosure of the stocks of plutonium they hold for civilian use. A formal agreement is expected in 1995. **China** has not revealed whether it will do so too, and the **Russian Federation** is said to be reluctant. (**Atoms in Japan**, November; **Neue Zürcher Zeitung**, 26/11; **Financial Times**, 26/11; **Defense News**, 28/11-4/12; **NucNet News**, 29/11; **Nucleonics Week**, 1/12, 22/12)

- There is a report that **Austria**, **Germany** and **Switzerland** have tried, during a working group meeting of the Nuclear Suppliers Group, to eliminate a wide range of controls over dual-use nuclear machine tools. The working group is said to have been created to discuss a US proposal to modify controls for nuclear dual-use machine tools that were taken over unchanged from the Coordinating Committee on Export Controls (CoCom). If that proposal is adopted, there will reportedly be a discussion about the modifications to be made. The move by the three countries is thought to have been in preparation for that discussion. There are reports that along the same lines, industry in Germany in particular is trying to get the European Union to weaken its controls on dual-use goods. It also seems German industry is trying to get the federal government in Bonn to reduce the stringency of its export controls. The German government has reduced the number of states to which export restrictions now apply, from 33 to nine; among the 24 countries deleted from the list are China, India and Pakistan. This move is seen as having been made at the urging in particular of German industry. Attention is drawn in the media to the fact that Iran has been left on the list of excluded countries, although apparently Germany is trying to obtain US concurrence for an arrangement whereby it would be able to resume construction of the two power reactors at Bushehr in that country — see below under **Nuclear Proliferation** . The other eight countries still listed are Afghanistan, DPRK, former Yugoslavia, Libya, Iraq, Myanmar, Somalia and Syria. (**NuclearFuel**, 5/12; **Nucleonics Week**, 15/12)

- On 4 October, **China** agreed with the **United States** that it would cease the export of surface-to-surface missiles featuring the primary parameters of the Missile Technology Control Regime (MTCR) (including, notably, M-11 missiles which it had been exporting to Pakistan). In return, the the US has lifted the sanctions it had imposed on China for violation of the MTCR. The two states agreed to work together to promote non-proliferation of missiles and a production ban of fissile material for nuclear weapons. (**Times of India**, 6/10, 7/10)

d. Nuclear Disarmament and Arms Limitation

- The removal of nuclear warheads from **Kazakhstan**, pursuant to the START I treaty and an agreement with Russia, is apparently delayed over the question of compensation. Kazakhstan is said to have suggested that Russia might pay for the uranium in the warheads by forgiving part of Kazakhstan's debt. In September Kazakhstan concluded an agreement with **Japan** under which that country will help it in setting up a system to control nuclear materials and dismantling some of the nuclear weapons on its territory. In November, in a secret operation codenamed *Project Sapphire*, the **United States** has taken custody of 600 kgs of uranium

of various levels of enrichment that had been stored at a Soviet fuel fabrication plant at Ulba, near Ust-Kamenogorsk in Kazakhstan. The uranium was initially characterised in Washington as 'weapons-grade material', which might have served to make two to three dozen nuclear weapons. As has transpired since the first announcement was made, however, the material seems to have been mostly naval reactor fuel stock and appears to have included only a small portion of weapons-grade uranium, the bulk of it being of various lower enrichments, ranging between 30 per cent and 60 per cent and thus for the most part not directly suitable for the manufacture of nuclear weapons. It is said to have been at the site for 20 years and according to American press reports was considered to be badly secured and representing a proliferation risk. Some press reports mention a concern that Iran might have been interested in obtaining the material. Reportedly, the move started in 1993 when Kazakh officials, who reacted to an offer from the Clinton Administration to buy highly-enriched uranium abroad in order to prevent illicit sales or theft, approached the US Ambassador with the suggestion that Washington might be interested in purchasing the material. As reported, this was followed by months of consultations between Washington, Almaty and Moscow, about, among other things, the price to be paid for the material. During several weeks in October and November, an American team of about 30 technicians prepared the uranium for transport, transferring it from more than 7,000 containers to 1,400 canisters, in a small workshop they had built on-site for the purpose. The job is said to have included some on-site processing of material contained in fuel elements. The removal took place with the approval of the IAEA, which applies safeguards in Kazakhstan, among other places at the fuel fabrication plant at Ulba. In a secret airlift the material was flown in American cargo planes to the United States and then transported by road to the US weapons plant at Oak Ridge, Tennessee, for temporary storage, to be later transferred to a commercial facility for blending to a lower enrichment for use in power reactor fuel. Reportedly, however, since the uranium came from a fuel cycle that used reprocessed fissile material, and is therefore contaminated by a variety of other isotopes, the cost of cleaning it up may be relatively high. The price Kazakhstan will receive for the material has not been revealed, but it is said to be several tens of millions of dollars. Critics of the Clinton Administration point out that at this level of cost, it may be difficult in future to conduct further transactions of this kind. The event has also raised questions in Washington about the price to be paid for the 500 tons of highly-enriched uranium which the US has committed itself to purchase from Russia. (**Kyodo** [Tokyo], 6/9 in **JPRS-TND**-94-019, 17/10; **Associated Press**, 23/11; **Washington Post**, 23/11, 24/11, 4/12, 12/12; **New York Times**, 23/11, 24/11, 25/11; **Financial Times**, 24/11; **Independent**, 24/11, 26/11; **Standart** [Vienna], 24/11; **International Herald Tribune**, 24/11; **Die Presse**, 24/11, 26/11; **Times** [London], 24/11; **El Pais**, 24/11; **Reuters**, 24/11; **Nucleonics Week**, 24/11, 1/12; **Le Monde**, 25/11; **Enerpresse**, 25/11; **USIA European Wireless File**, 25/11; **Evening Standard** [London], 27/11; **SpentFUEL**, 28/11)

- According to a declassified CIA report, as of September 37 SS-24 and 40 SS-19 ICBMs in **Ukraine** and 44 S-18 ICBMs in **Kazakhstan** were deactivated by the removal of their warheads. 45 SS-25s had been with withdrawn from **Belarus**. **Russia** was said to have deactivated 260 submarine-launched ballistic missiles and 25 older gravity-bomb carrying *Bear* bombers. This reportedly leaves Ukraine with nine not-yet deactivated SS-24s and 90 SS-19s, as well as 42 nuclear-weapon-carrying bombers; Kazakhstan with 60 SS-18s; and Belarus with 36 SS-25s. (**Arms Control Today**, Vol. 24, No. 9, November)

- It is reported from Washington that **Russia** and the **United States** have agreed to exchange information on the size and composition of their nuclear arsenals. As of next year, the two states would inform each other how many warheads of what type each has made and where they are storing excess fissile material — but they would not reveal where they keep individual weapons nor inform each other of weapon design. There is criticism in the US that the figures are not to be published. The *Natural Resources Defense Council* is quoted as saying that the US Administration wishes to conceal the fact that besides the 3,500 strategic weapons it is allowed under START II to retain on active duty, it is planning to keep a similar number in reserve. Energy Secretary O'Leary has also called for greater publicity. (**Washington Post**, 12/22)

- In **Japan**, a research and development project is underway for the use of 'stabilised' or 'petrified' plutonium fuel in conventional light-water reactors. The fuel will be made as a mixture of plutonium with various oxides, including zirconium, aluminum, magnesium and thorium, which would constitute a chemically stable compound that is said to be virtually immune to reprocessing and would therefore be practically proliferation proof. According to a report from the Japan Atomic Energy Research Institute (JAERI), the fuel can be fabricated at existing MOX fuel fabrication facilities and loaded into current LWRs. Irradiation tests will start in January 1995; research will have to continue for a number of years. It is expected that the fuel pellets would cost about the same as ordinary MOX fuel. In **Canada**, too, tests are underway to use plutonium together with natural uranium as a proliferation-proof fuel for Candu reactors; reportedly, those reactors would not need to be modified for this purpose. In the **United States** the Department of Energy is studying various alternatives for the long-term storage and disposition of weapons-usable fissionable materials. Its report is expected in 1996. Also in the US, a coalition of environmental groups is advocating vitrifying surplus enriched uranium and plutonium and storing it at former weapon sites, rather than burning it. (**Ottawa Citizen**, 22/8; **Atoms in Japan**, Vol. 38, No. 10, October; **Asahi Shimbun**, 3/10 in **Uranium Institute Newsbriefing**, 5-11/10; **NuclearFuel**, 10/10, 21/11; **NucNet News**, 11/10; **New York Times**, 17/11)

e. Nuclear Testing

- On 7 October, **China** conducted its 41st nuclear test, and its second of the year. The yield was estimated to be between 40 and 150 kilotons. Officials in Beijing say that China plans to conduct a few more tests before joining any international moratorium. The tests are said to serve the purpose of helping to improve the quality of new devices (China is reportedly miniaturizing its warheads) and to test the safety and reliability of existing ones. Australia, Japan, Kazakhstan, the Republic of Korea, Russia, the United Kingdom and the United States were among states expressing regrets at the news of the detonation. Kazakhstan, which claims that the Chinese nuclear tests at Lop Nor send radioactive fallout across its territory, is seeking international support for a stop of Chinese nuclear testing there. Singapore, on the other hand, has stated that it would be unrealistic to expect China not to develop its nuclear weapons and that the tests at Lop Nor do not jeopardise regional stability or endanger the security of any other country. (**New York Times**, 8/10, 12/12; **Financial Times**, 9/10; **International Herald Tribune**, 9-10/10; **Le Monde**, 9-10/10; **Trust and Verify**, No. 51, October; **Associated Press**, 8/10, 20/10; **Arms Control Today**, Vol. 24, No. 9, November; **Straits Times** [Singapore], 28/10 in **JPRS-TND-**94-020, 17/11)

- In **Russia**, a number of nuclear weapons experts are reported to have pleaded for the resumption of nuclear testing, to preserve the safety and reliability of existing weapons. They are also quoted using the argument that testing should continue in order to enable weapons experts to maintain their skills, and claiming that Russia is behind the US in weapons technology, because it has carried out fewer tests. They are further said to argue that with the deterioration of Russian conventional forces, nuclear weapons, which they say are the cheapest means of defence because the fissionable material is available, are the country's 'only effective deterrence'. (**Associated Press**, 3/11)

f. Nuclear Trade and International Cooperation

- **Argentina** is reportedly talking to **Thailand** about the supply of a 10–15 MW(th) reactor for the production of radioisotopes. A decision is expected in 1995. The transaction is reportedly worth about $120 million. A similar deal, worth $80 million, has already been concluded with **Egypt**. In 1990, Argentine's nuclear energy commission and the firm Invap SE undertook to sell **Syria** a 10 MW(th) isotope-production reactor, and the 20 per cent enriched uranium fuel for it, for a total of $100 million. This sale has been stopped by the Argentine government, presumably as part of its new non-proliferation export-control policy. Syria is expected to sue for damages and bring a case before the International Commerce Commission in Geneva (as **Iran** has done with respect to Bushehr) to obtain the ruling that it is entitled to the reactor. (**Nucleonics Week**, 27/10)

- Following what is said to have been ten years of discussion, on 7 November, while in Beijing on an extensive visit largely devoted to the promotion of trade with **China**, Prime Minister Jean Chrétien of **Canada** signed an agreement for cooperation in the peaceful uses of nuclear energy. On behalf of China the agreement was signed by Prime Minister Li Peng. All Canadian nuclear items supplied under the agreement will be subject to IAEA safeguards; none may be used in China's nuclear-weapons programme, nor re-exported without Canada's consent. The agreement also prohibits the enrichment above 20 per cent of any uranium supplied and the reprocessing of any material, without further agreements. Canada now hopes to sell China several — some reports say four — 700-MW Candu-6 power reactors. To start with, Atomic Energy of Canada, Ltd. and the China National Nuclear Corporation entered into an agreement providing for the supply by Canada of two Candu-type power units worth $4 billion, to be constructed on a turnkey basis in Zhejiong Province, South of Shanghai. The agreement will also enable Canada to sell a variety of other nuclear items. (**Globe and Mail**, 2/11; **Ottawa Citizen**, 2/11; **Süddeutsche Zeitung**, 8/11; **NucNet News**, 8/11; **Financial Times**, 8/11; **Nucleonics Week**, 10/11)

- **Canada** and **Mexico** have concluded an agreement for co-operation in the peaceful uses of nuclear energy. Canada's Minister for Foreign Affairs said that the agreement was 'a demonstration of the strong commitment shared by Canada and Mexico to nuclear non-proliferation'. (**Press Release**, Dept. of Foreign Affairs and International Trade, Ottawa, 10-16/11)

- **Canada** has concluded an agreement on nuclear co-operation with **Lithuania**. This will provide the framework for the export of nuclear equipment and technology to help improve safety at the RBMK-type nuclear power station at Ignalina. (**News Release**, Dept. of Foreign Affairs and International Trade, Ottawa, 17/11)

- *Reuter's* reports from Hong Kong that according to a newspaper published there, **China** and the **Russian Federation** recently embarked on a 'secret' $10-million joint nuclear venture in Southern China, not far from Hong Kong. The report is not clear about the subject of the cooperation; mention is made of the importation from Russia of 'super clean' isotopes for civilian use. (**Reuter's**, in **Frankfurter Allgemeine Zeitung**, 1/12; **Süddeutsche Zeitung**, 1/12)

- Negotiations between **Euratom** and the **United States** on a new cooperation agreement continued during the quarter. By year's end there seemed to have been little progress towards a resolution of the problem posed by the fact that the Nuclear Nonproliferation Act of 1978 (which was passed after the initial agreement was concluded) obliges the US to maintain consent rights over reprocessing and enrichment of nuclear material of American origin, which meant that Washington would only be able to grant 'programmatic approval' and could not waive its prior consent rights. Euratom, on the other hand, which resents US Congressional interference in the activities of its nuclear industry, holds that it is an equal partner with the US, sharing the same non-proliferation commitment, and that therefore the prior consent right should be waived, as indeed it had been for so many years in the past. The fact that an

arrangement that had so long been mutually satisfactory should now no longer be acceptable to the US is said to be felt in Europe as anomalous. The two sides had initially appeared optimistic and stressed that, given the wish on both sides to maintain nuclear cooperation, a solution would no doubt be found. When the deadlock persisted, however, concern grew about the negative consequences for commerce and industry, should the agreement expire in 1995 without extension or replacement. Analysts generally predicted a negative impact on industry at both sides of the Atlantic. There was concern that the continuing disunity might also have an unfavourable influence on the parties' non-proliferation policies, and on their cooperation at the NPT Conference in Spring 1995. Pressure was increasing for a compromise solution, and there were calls both in Europe and in Washington to take the matter up at a higher negotiating level. According to American sources, US negotiators have tried to accommodate Euratom in any way consistent with US legislation, which, they say, leaves them no choice but to retain prior consent rights in all nuclear cooperation agreements. Reportedly, at year's end the European side seemed willing to consider some suggestions made informally by the US after the October negotiation sessions. According to reports from Brussels, although Washington has made demarches in the capitals of the individual members of Euratom, supposedly with the aim of getting them to persuade the European Council of Ministers to revise the negotiating mandate so as to accept programmatic consent, the European team have not asked for a new negotiating mandate. That mandate had been approved by the European Council in 1991, and charged the negotiating team to seek an agreement similar to the existing one, i.e., presumably without prior consent rights. During another round of bilateral talks, however, on 1 and 2 December, while there is said not to have been any change in the position of either side on the basic issue of US consent rights, it seems that some misunderstandings may have been clarified. On that occasion US negotiators are said to have agreed to spell out unambiguously the criteria that would necessitate a suspension of programmatic approval of enrichment and reprocessing. The Europeans reportedly agreed to a further joint effort to reach agreement on objective criteria of this nature, and there was some talk about the presence of slightly more flexibility on the American side. Given the time needed for ratification by both parties, however, it still did not look as if, even if agreement could be reached soon, a new agreement could be in place before the present one expired at the end of 1995, but 'a short lapse' is apparently not seen as overly grave. The matter was discussed by the European Union's General Affairs Council (composed of the EU Foreign Ministers) on 19 December, which confirmed the previous negotiating mandate, a move seen as indicating that the old mandate gives the European side enough flexibility to discuss matters further. The next round of negotiations was foreseen for 10 January. It is not expected to be the final one. The London-based *Uranium Institute*, as representative of the world's nuclear fuel industry, has warned of the negative effects for that industry that would follow a breakdown in the negotiations; its secretary-general is said to have suggested that a compromise might be found in a simple extension of the existing agreement. US sources have reportedly ruled out any 'bridging mechanism'. Members of the European Parliament have asked to be informed about the negotiations, reportedly hoping that they could exert an influence on the negotiations. The European Commission has said that although it is not legally obliged to consult the European Parliament, it will keep it informed on the broad lines of the negotiations. Several environmentalist Members of the European Parliament are said to have written to colleagues in the US Congress, urging them to insist on strict compliance with US legislation; *Greenpeace International* also seems to be taking a hand in the matter. (**SpentFUEL**, 3/10, 10/10, 31/10, 21/11, 5/12, 12/12, 26/12; **NuclearFuel**, 10/10, 24/10, 21/11, 5/12, 19/12, 2/1 1995; **Nucleonics Week**, 20/10, 27/10, 15/12; **Washington Post**, 5/11)

- After the refusal of western suppliers and of **Russia** to sell **India** enriched uranium for the Tarapur power station, **China** is reported to have agreed to supply enrichment services and uranium to keep the station operating for one more year. India is said meanwhile to have loaded the two reactors with 70–80 tons of mixed-oxide fuel, contrary to the wishes of the **United States**, which is said not to approve of the use of MOX fuel in reactors it has sold overseas. (**NuclearFuel**, 24/10; **Enerpresse**, 2/11)

- The agreement for the lease of heavy water by **India** to **Romania** for use in its Candu-6 reactors is said to be foundering on the former's requirement that Romania should exchange the supplied heavy water with water from its own production. It seems that Romania is having problems with its plant and is considering closing it. Another reason Bucharest may not enter into a deal with India is said to be that the heavy water could only be supplied to India under IAEA safeguards, which India will not accept. (**NuclearFuel**, 24/10)

- **Iran** is planning to complete the two 1,200-MW light-water reactors at Bushehr with help from **Russia**, and it also intends to build two 300-MW power reactors there, with **China**'s assistance. (**United Press International**, 21/11; **NucNet News**, 1/12)

- Discussion is continuing in the **United States** on the issue of the export of sensitive nuclear technology to **Japan**. It has now been revealed that, in 1986 the US Department of Energy (DoE) adopted guidelines that allow the transfer of such technology to recipients with advanced nuclear programmes. This is said to violate the 1978 Nuclear Non-Proliferation Act as well as the 1987 US–Japan Peaceful Nuclear Cooperation Agreement. The guidelines were never made public until *Greenpeace International* published them in September 1994. (See PPNN **Newsbrief**, No. 27, p. 11) There is a move in the US Congress to make DoE suspend the guidelines. (**Nucleonics Week**, 20/10)

g. IAEA Developments

- In an address to the UN General Assembly, Director General Hans Blix has spoken of new expectations and demands for verification services by the IAEA. It is expected that in the context of the 1995 Review and

Extension Conference of the NPT, the Agency will report about the way in which it is strengthening its safeguards verification system in order to increase its detection capacity and the level of assurance it can give about compliance by states with their international commitments. Reportedly, the new safeguards approach should both have a greater capacity for detection of nuclear activities of which the IAEA has not been notified, *inter alia*, through environmental monitoring, and reduce spending on the old-style safeguards activities. As one of the measures to be taken in this context the Agency is said to consider reducing its safeguards effort with regard to conventional power reactors. Another new approach pertains to the application of safeguards in Euratom member states, under which the Agency relies to a greater extent than heretofore on the application of safeguards by Euratom, and verifies this. It is foreseen that the new safeguards system, which would concentrate to an increased extent on the most proliferation-prone elements within the nuclear-fuel cycle, and which would make use of a data-base providing a solid profile of any country's nuclear activities, should provide for greater transparency than can be obtained under older-type safeguards agreements. Reportedly, one subject of current study is the possibility of remote monitoring of facilities in ways that might help reduce physical inspection and increase safeguards effectiveness.

In his statement to the General Assembly, the IAEA's Director General noted that the US had begun the process 'for the eventual submission to IAEA inspection' of all fissile material no longer needed for defence purposes; the locations where the material would be stored had already been identified. He also announced that work had started to examine relevant issues related to a cut-off in the production of fissile material for nuclear weapons: and he mentioned the IAEA's possible role regarding verification of a Comprehensive Test Ban Treaty.

On 14 October a ground breaking ceremony was held for a new Clean Laboratory for safeguards. The laboratory is to be used for, among other things, analysis of samples of water, soil, biota and other environmental materials, to detect 'nuclear signatures indicative of certain types of facilities and operations'. The Clean Laboratory is expected to be operational in late 1995. (**IAEA Press Release**, PR94/43, 14/10, PR94/44, 17/10; **NuclearFuel**, 24/10; **Direct Information**)

- In early December, IAEA inspectors started an inspection of weapon-grade plutonium stored at Hanford, near Richland, Washington. In September, the IAEA had inspected stocks of surplus weapons-grade uranium at Oak Ridge, Tennessee. (**Nucleonics Week**, 15/12)

h. Peaceful Nuclear Developments

- The government of **Armenia** has confirmed that it will restart the power station at Medzamor, beginning with unit 2, once safety conditions at the two VVER-440/270 units can be met. The reactors are based on the old-type V-230s but seismically upgraded for Armenian conditions. An evaluation mission by the European Bank for Reconstruction and Development (EBRD), planned for September, has been cancelled. Like other western institutions, the EBRD does not favour restarting Medzamor because the reactors are seen as inherently unsafe. The government at Yerevan, however, feels that the plant can be upgraded and operated safely, especially since Russian experts have carried out extensive inspections and much of the equipment is said to be in very good order. The EBRD has approved a loan to build an oil-fired power plant in Armenia but that country's authorities are reluctant to rely on the use of fossil fuels, because hostilities with Azerbaijian interrupt supplies. Plans now call for the restart of Medzamor-2 in 1995. Russia is reported to provide fuel, parts and technical assistance and has promised to lend Armenia funds to help it in the start-up. Armenians living abroad are said to donate or lend the funds needed for the upgrading and recommissioning of the plant. Most of the upgrades. however, are to be completed in three or four years, i.e., after restart. (**Nuclear Engineering International**, October; **Süddeutsche Zeitung**, 12/10; **Nucleonics Week**, 27/10, 17/11)

- A senior nuclear energy official in **Bulgaria** has said that his country has been the subject of a long series of nuclear safety analyses that use up Western assistance money and are deficient because they lack local input. Henceforth, Bulgaria will allow foreign contractors to work in this area only if they have Bulgarian partners. The official also complained that the US failed to recognise progress made in the operation of the country's nuclear reactors. At the six-unit nuclear power centre at Kozloduy, which provides 37 per cent of the country's electrical power, considerable work is said to have been done on upgrading the two oldest units, the VVER-440/230s. These are currently operational. A decision about their eventual shutdown is expected in the next several months. The director of Electricité de France is quoted as saying that it may be possible to operate the VVER-440/230 reactors — which he characterised as 'forgiving' — longer than initially thought. According to a report of late September, work on upgrading the two newer VVER-440 units was about to begin. One of these units is currently undergoing maintenance while the other is operating. The newest two units, of 1,000 MW each, which are also in current use, are expected to be upgraded with French help. In late November, a malfunction in the electric grid, which halted the supply of cooling water to the reactors, forced a brief shutdown of the entire plant. Operation of all units, except the one under maintenance, has since been resumed. IAEA experts are said to have praised the Kozloduy staff for their response to the incident, which briefly deprived the country of almost 40 per cent of its electric power. (**Reuter's**, 29/9, 25/11; **NucNet News**, 30/9, 24/11, 25/11, 30/11; **Standard** [Vienna], 3/10; **Nucleonics Week**, 17/11; **Enerpresse**, 25/11; **Associated Press**, 24/11, 25/11)

- The former Prime Minister of the **Czech Republic**, who initially supported plans for the completion of the power plant at Temelin, is quoted in the Czech press as

predicting that it will not be possible for the two VVER-1000 units to be completed as planned in September 1996 and March 1998, respectively; that the costs of completing the project will be twice or three times as high as the government claims; and that not enough provision has been made for storage of spent fuel or treatment of low- and medium-level waste. The Czech Prime Minister and the Minister for Industry have said that it is 'realistic' to expect that the Temelin station will be on-line in the autumn of 1996. A Russian nuclear official is reported to have questioned whether the American firm of Westinghouse has the information needed to complete construction of a Soviet-design plant, within the stipulated time frame. Austrian environmentalists continue to campaign against Temelin and its Slovak counterpart Mochovce, by offering advice to the two states how to save energy, which they say would make these stations superfluous. The Temelin project is reported to have come under fire in the US Congress.(**Die Presse**, 4/10; **Nucleonics Week**, 13/10; **Kurier** [Vienna], 10/11; **New York Times**, 1/1 1995)

- **France**'s 1,240 MW breeder reactor *Superphénix* has been permitted to operate at 30 per cent power, after an argon leak in one of eight intermediate heat exchangers was found not to have any significant impact on safety. In this phase of operations, a start is being made with a return to power production, which should start once the 20 per cent level has been reached. (**Nucleonics Week**, 10/11)

- In the **Netherlands**, disagreement has arisen within the coalition government about the future of the 58-MW power plant at Borssele. Initial plans called for operation of the plant until the year 2004. To continue operating the plant needs a backfit, and to justify the expenditure the utility companies that own the plant have called for an extension of operations until 2007. A parliamentary debate on the issue has ended in a 77–73 vote against extending the operating life of the station; the Labour Party and its coalition partners the D-66 liberals voted against extension while the right-wing liberals, also members of the government coalition, and the conservatives voted in favour. The Greens called for an immediate shutdown. The language of the resolution adopted leaves room for three interpretations: immediate shutdown (as the Greens want); shutdown within the near future (the preference of the Labour Party); and continuation until 2004 (the view of D-66, who view further investment as not justified, however). The final decision is said to be in the hands of the Economics Minister, who is expected to decide against extending the life of the station.(**Nucleonics Week**, 17/11, 1/12; **NucNet News**, 24/11)

- In **Slovakia**, following an extensive design review by the IAEA, the nuclear regulatory authority has approved proposals for the upgrading and completion of the VVER-440/213 power reactors Mochovce-1 and 2, which are said to be respectively 80 per cent and 90 per cent complete and should begin operations in 1996 and 1997. They are to be backfitted with western safety equipment. Western companies reportedly see the work now under way at Mochovce — which is being done in part by Electricité de France in conjunction with the Slovak utility SEP — as a step to the shutdown of the two oldest VVER-440 units at Bohunice, said to be among Europe's least safe reactors. However, present Slovak plans are said to provide for the shutdown of the two oldest VVER-440 units at Bohunice no earlier than 2000; units 3 and 4 might be run until 2010. It is reported that the European Bank for Reconstruction and Development (EBRD) — reputedly still undecided as to whether it should lend the $870 million the project is said to cost — has received an extensive 'least-cost analysis' showing that completion of Mochovce units 1 and 2 would bring savings ranging between $42 million and $666 million as compared to alternative energy plans. The EBRD has called for public hearings to be held in Slovakia between 8 December 1994 and 17 February 1995. In Austria, environmental groups are stepping up their action against the completion of the Mochovce reactors, which are located about 180 km from the Austrian border. The action has been publicly joined by a variety of Austrian politicians, including Vienna's mayor Häupl. Adapting the slogan used in a notorious campaign of the 1930s in Germany ('Osterreicher — wehrt euch!' — Austrians, resist!) the Viennese daily *Kronenzeitung* arouses the spectre of 'deadly danger' created by the 'stone age reactor' at Mochovce, and calls for an end to all financing of nuclear activities in the Slovak Republic. A Vienna-based organisation, *Global 2000*, joined by *Greenpeace International* and the US *Natural Resources Defense Council*, are hoping to convince the EBRD that it should not fund the project because Slovakia already has an excess generating capacity and does not need the station. They have demanded the presence in Austria of representatives of the Slovak government to respond to complaints from the public. Public hearings on the subject will be held in Vienna, in late January; these will not be binding upon the EBRD. A large-scale collection of signatures is underway, aimed at convincing the EBRD of the wholesale opposition of Austrians against the completion of the station. Furore has also been caused in Austria by the report that a new high-tension power line through a Viennese suburb is intended to carry electric current generated at Mochovce. That news is seen in the context of the fact that the EBRD loan to the plant is predicated on the exportation of part of its output. (**NucNet News**, 29/9, 12/12; **Atomwirtschaft**, October; **Nucleonics Week**, 13/10, 24/11, 8/12; **Kronenzeitung** [Vienna], 30/10; **Kurier**, 2/11, 7/12; **Financial Times**, 6/12; **Salzburger Nachrichten**, 7/12; **Die Presse**, 7/12)

- The government of **Ukraine** is reported to have made sure that there is sufficient nuclear fuel for the coming winter, by appropriating funds for the purchase in Russia of additional supplies. The fuel supplied by Russia in exchange for nuclear warheads returned to it is said to cover less than half of Ukraine's needs. In the medium term, however, prospects for nuclear-power generation are said to be bleak. An acute lack of funds reportedly impedes proper maintenance of nuclear stations, in part because the price — if paid at all — of electricity has been frozen at a level far below cost. Losses appear to have been aggravated by the malfunction of control rods in VVER-1000 units,

which has made it necessary to hold reactor power at 30 per cent. Safety-improvement is said to have ceased altogether. Chernobyl units 1 and 3 have suffered several malfunctions in the past few months, and have had to be shut down intermittently. In October, Chernobyl-3 was down during one week, for repairs to a cracked coolant pipe; at that time, unit 1 was shut down for routine maintenance. Both units are now again in operation. In early December, the finance Ministers of the European Union approved a loan to Ukraine of $108 million, as part of an international plan to help fill a shortfall of $1 billion in Ukraine's fourth-quarter balance of payments. The loans by the European Union are tied to eventual closure of Chernobyl. Kiev has accepted in principle the offer by the G-7 of assistance in providing new generating capacity in lieu of the three remaining Chernobyl units and for cleaning up the site, in return for a definite shutdown commitment. According to the country's Foreign Minister, as quoted in the European press, shutting down Chernobyl units 1 and 3 will cost between $10 and $12 billion, which is said to be about three times higher than previous estimates. He is supposed also to have said that if Europe wants these reactors to be shut down, it should 'reach deep into its pockets'. Authorities in Kiev have also said that the timing of a shutdown must respect technological realities and the financial capacities of Ukraine. One condition cited is that Ukraine's electricity production must not be affected by the shutdown. The G-7 want Chernobyl unit 1 to go off-line in 1996 and unit 3 in 1997, and they want unit 2, which was damaged by fire in 1991 and is scheduled to come back on line in 1996, to remain closed. They are seen to recognise, however, that Kiev will not shut Chernobyl down altogether unless the three VVER-100 units under construction at Zaporozhe, Khmelnitsky and Rovno are completed. The target dates for their completion are 1995 for Zaporozhe-6, 1997 for Khmelnitzky-2 and 1998 for Rovno-4. It is not yet clear, however, how much work is still needed on those units, what safety upgrades they need, and what the costs will be. Ukraine is said to have asked Germany for assistance in providing it with nuclear fuel production and reprocessing technology, in order to make it independent from Russia in those fields. It says that Russia's monopoly in the provision of nuclear fuel enables it to charge extortionate prices for fuel that is not as good as comparable fuel produced in the West. Ukraine is also looking to the possibility of constructing a spent fuel storage facility, on which it has supposedly asked Western advice. Germany is said to have donated for use at the Rovno VVER-440 plant, an almost-new electric generator built for a similar reactor at Greifswald, which has since been shut down. (**Enerpresse**, 6/10; **Nucleonics Week**, 6/10, 20/10, 3/11, 10/11, 24/11; **United Press International**, 18/10; **Le Monde**, 19/10; **New York Times**, 19/10; **NucNet News**, 19/10; **NuclearFuel**, 7/11; **Associated Press**, 16/11; **NucNet News**, 30/11; **Financial Times**, 6/12)

i. Weapons-related Developments in Nuclear-Weapon States

- Following an eight-month review, the Health & Safety Executive (HSE) of the **United Kingdom** has made disclosures to the British press about a number of safety-related incidents at the Atomic Weapons Establishment (AWE), the nuclear weapons facilities of the Ministry of Defence. One of these involved a plutonium storage facility at Aldermaston, where packaging of a plutonium billet was damaged and plutonium powder was spread. Apparently, the possibility of accidental contamination had not been adequately taken into account in working procedures, in the design of the facility, or in the packaging used. At a site where highly-enriched uranium is machined for use in nuclear weapons, inspectors found that inadequate precautions had been taken to prevent a chain reaction occurring, and temporarily halted the manufacturing process. At yet another site, reportedly, maintenance had been put off to speed up production, and emergency procedures were below standard. This is the first time that disclosures of this kind have been made. Until nuclear-weapons work was transferred to private contractors, the HSE's reports were secret. The deficiencies found are thought to date from before privatisation of the weapons production. AWE is exempt from licensing procedures under British law; HSE's director is quoted in the press as saying that safety standards at AWE were so poor that had it been a civil operation it would have been refused a license. Meanwhile, recommendations for ways to correct shortcomings of this kind have been made and follow-up action is said to have begun. In another disclosure it has now transpired that the Ministry of Defence has a secret agreement with the Atomic Energy Authority and British Nuclear Fuels Ltd, under which it has made a down payment of £575 million (about $770 million) towards the clean-up of the nuclear defence programme, including treatment and disposal of waste and decommissioning of plant at BNFL sites. The disclosure raises the issue of the use of facilities presumed to be used exclusively for civil purposes, to supply nuclear weapons, a matter on which neither Parliament nor the public appear to have been fully informed. (**Nucleonics Week**, 20/10; **Times** [London], 18/10; **Independent** 18/10; **Guardian**, 18/10; **Observer**, 13/11)

- On 6 December, the **United States** Department of Energy (DoE) issued a report about safety conditions at American nuclear-weapons sites. Some of the information given had been previously known, but the recent overview gave details about altogether 299 problems. The report reveals that 26 metric tons of plutonium, in liquid, solids and powders, is stored at thirteen sites throughout the country, under conditions that may pose significant risks to workers, although not immediately to the public. The material is said to have been left over when in the late 1980s production of weapon-grade material suddenly stopped. At that time the material was stored under what, apparently, were expected to be temporary conditions, much of it in containers that are now breaking down and which in at least one case are said to be so old that the form of the plutonium inside is not known. The design of several of the installations is said to make inspection of the material inside virtually impossible. Some of the material is said to be in piping, air ducts and process tanks; in those instances quantities are not always known, raising concern about the risk of criticality incidents. Reportedly, the worst — and in some cases

currently worsening — conditions exist at DoE's sites at Rocky Flats, near Denver, Colorado; Savannah River, near Aiken, South Carolina; Hanford, near Richland, Washington; Los Alamos, near Santa Fe, New Mexico; Oak Ridge, Tennessee; and the Pantex plant near Amarillo, Texas. Plans are being made to repackage as much as possible of the endangered stock; it is said that finding a long-term solution may take ten to twenty years. Among the facilities listed, Rocky Flats is said to be 'most vulnerable', as 14 tons of plutonium are stored there under partly unsatisfactory conditions. Other situations calling for urgent actions were said to have been found at Savannah River and at Hanford. On the other hand, at 22 sites mentioned little or no evidence of unsafe conditions was reported to have been found.

Clean-up work at the Hanford nuclear reservation in Washington State, which reportedly has cost $7.5 billion since 1989, is said to have accomplished little so far. Hanford, where plutonium has been produced and extracted since 1943, is known as one of the worst contaminated weapons sites in the country. It has 18,750 employees, doing research, clean-up and management. More than $450 million reportedly went for the conversion of high-level waste into concrete and glass; three-quarters of this money is said to have been wasted. Other funds were used in an attempt to convert a reprocessing facility into a waste processing plant, even after state authorities ordered that work to stop. Much also went for non-essentials. Still, the contractor, Westinghouse, returned large amounts of money to the federal government, having underspent its budget. A recent report of the General Accounting Office speaks of a large backlog in particular in the maintenance and repair of the deteriorating high-level waste tanks. There are 177 such tanks, of which more than 60 are said to be leaky, while many are thought to be prone to internal heat build-up and to be at risk of explosion or fire. According to the report, there is a present backlog of 1,500 clean-up projects.

In other disclosures, 'hundreds of safety violations' are said to have been found at a site in Oak Ridge, Tennessee, where uranium from dismantled nuclear weapons is disassembled and stored. Reportedly, in disregard of rules containers were stacked in a way that might have led to criticality incidents. Inspectors' complaints and warnings at the managerial level are said to have been ignored and heed was paid to them only when senior DoE officials were called in. Work on fissile weapons components is now said to have been stopped, which has also halted weapons dismantlement.

It is said to become increasingly obvious that cutbacks in staff and funds made after production of weapons material stopped are hampering remedial action. According to a spokesman for DoE, even with present cost-cutting measures in place, the present budget will be inadequate. The recent announcement by the US Administration, that DoE funds will be reduced by $10.6 billion over the next five years, and the rumor that the Department may be eliminated altogether, have raised concern about the future of the clean-up programme. It is generally assumed that the newly constituted US Congress will make even further cuts in that programme, which is reportedly seen by many Republican politicians as a 'tree-hugging' environmentalist exercise.

DoE has decided that the Lawrence Livermore National Laboratory should proceed with the engineering and design of a billion-dollar, multi-purpose laser system, the National Ignition Facility. Although described as intended primarily to study thermonuclear fusion as a source of energy for civil uses, the facility would also be used for research on the safety and reliability of nuclear weapons, without the need for explosive testing. Further steps towards a decision about the actual construction of the facility will include the preparation of an environmental impact statement, and a public-dialogue process on whether building it might impede US non-proliferation objectives — as critics say it will. Construction is expected to take seven years and cost $900 million; annual operating costs are estimated at $60 million over the 15 years' estimated lifetime of the device — which would bring total costs to $1.8 billion in 1995 dollars. Operation should begin in 2002. The project will need Congressional fiscal approval.

The Department has evidently not yet decided how to meets its long-term tritium needs. As reported before (see **Newsbrief** 21, page 10), DoE hopes to concentrate tritium production at Savannah River, South Carolina. So far, tritium was produced at that site in reactors which have since been shut down. There now appears to be a proposal to produce the material in an accelerator. Reportedly, doing so may cost $5 billion more than using an advanced light-water reactor. It is noted that the environmental impact of the 500 MW of electricity needed to run the accelerator has not yet been considered. Also, there appears to be some doubt that the new Republican Chairman of the Senate and of the House Armed Services Committees, who are both from South Carolina, will go along with the suggestion to forego the construction of a new reactor there.

The violation of federal rules by an army depot in California, which sent a container with a pound of plutonium by air to Los Alamos National Laboratory, has prompted calls for more careful controls on the domestic shipment of hazardous material.

Traces of plutonium have been found in a park next to a school in Livermore, California, near the Lawrence Livermore National Laboratory.

There are indications that the number of people exposed to nuclear radiation in experiments undertaken by the US government and the military in the years between 1947 and 1974 is many times greater than had originally been believed. The Chairwoman of the Advisory Committee on Human Radiation Experiments, set up by President Clinton, is reported to have said that the number of experiments in which radiation was deliberately released into the environment, previously thought to have been 13, now turns out to have been several hundreds. The Committee is said to have 'logged' more than 400 experiments using radiation in human experimentation,

many of them involving multiple instances. It is now also becoming clear that rather than scattered incidents, they were part of a coherent plan approved at a high level within government. The Defense Department is said to have refused to declassify all relevant material, on the ground that it contains matters of national security. Against expectations, it is now evident that also at the early stage of the experiments, considerable debate took place about the ethical aspects. The Committee's Chairwoman has said that the Committee has found documents which strongly suggested that the motivation for maintaining secrecy about some of the experiments was 'linked to considerations over legal liability on the part of government or concerns about public relations' rather than security concerns. The question has been raised whether these considerations constitute a legal basis to classify documents.

(**PRNewswire**, 21/10; **New York Times**, 4/10, 12/10, 13/10, 21/10, 22/10, 15/11, 24/11, 7/12, 15/12, 19/12; **Guardian**, 5/10; **Associated Press**, 23/11; **Le Monde**, 24/10; **Defense Daily**, 25/10; **Süddeutsche Zeitung**, 25/10; **Nature**, 27/10; **Nucleonics Week**, 1/12, 22/12; **Associated Press**, 5/12, 8/12; **Washington Post**, 7/12; **NuclearFuel**, 19/12; **SpentFUEL**, 19/12)

- The newly elected Republican majority in the US Congress is expected to support the further development of an anti-ballistic missile system using space-based laser technology. According to the contractor working on the system, deployment in space would be possible within five years, at a cost of $50 billion. The incoming speaker of the House of Representatives, Newt Gingrich, has announced that the scheme would be voted into law within 100 days after Congress reopens; he has also announced that the Anti-Ballistic Missile Treaty (ABM) would be scrapped as an obsolete left-over. (**Guardian**, 7/12; **Direct Information**)

j. Events in the Newly Independent States/former USSR

- A report from **Russia** speaks of numerous accidents that took place in nuclear weapon plants in the former USSR, especially in the early years, when production is said to have gone ahead regardless of risk. Reportedly, a series of accidents took place at the Mayak, Tomsk and Krasnoyarsk reprocessing facilities in Siberia, including several criticality incidents that resulted in radiation injuries and multiple deaths. Recent Western press reports, apparently supported in part by the IAEA, speak of worsening conditions at Russian nuclear installations. Problems cited in these reports, which are said to be based on internal Russian government documents, include unsafe conditions at many nuclear installations in the Russian Federation; a wide-spread lack of accurate material management records; inadequate operating practices at installations and in the transport of nuclear materials; disposal of high-level radioactive waste in ways that cause grave risks for the environment and to human health; lack of central supervision of the safety of nuclear weapons; and unsatisfactory technical conditions in nuclear-propelled naval vessels. There have been reports, recently, about worsening physical protection of nuclear material and facilities at the 'closed cities'. It has also been revealed that for more than thirty years, nuclear facilities in the Soviet Union, as well as in the present Russian Federation, have followed a practice of disposing of radioactive waste directly into the ground. Initially, the USSR, like the US, stored its liquid radioactive waste in tanks, but the underground disposal method is said to have been adopted following a catastrophic tank explosion that released large amounts of activity in the atmosphere. The amounts of radioactive waste disposed of in this manner is said to be about half of the nuclear waste ever produced in the country. The radioactivity thus released is said to be up to three billion curies. By comparison, the accident at Chernobyl is believed to have released about 50 million curies. There is a report about large quantities of nuclear waste being buried near Maili Sai, in Kirgizstan, much of it from uranium mining and conversion. Meanwhile, by a vote of 257 to 3, the Russian parliament has turned down in a second reading proposed legislation that would have permitted the country to import spent nuclear fuel for disposal or reprocessing. Russia's Ministry of Atomic Affairs supports the bill, because it considers storage, disposal and reprocessing as a potential source of hard currency. The measure is now being revised, pending a third reading. (**Observer**, 6/11; **United Press International**, 11/11; **New York Times**, 21/11, 27/11; **Daily Telegraph**, 23/11; **Le Monde**, 24/11; **Economist**, 3/12; **Washington Post National Weekly Edition**, 5-11/12; **NuclearFuel**, 2/1 1995)

- As part of the decommissioning of the former Soviet Paldiski naval base in **Estonia**, fuel from the two 25-MW submarine reactors there has been returned to Russia for reprocessing. Under the agreement which it concluded with Russia concluded on 30 July 1994, Estonia hopes to take over the base and is discussing dismantling proposals with a number of countries and the IAEA. Reportedly, the reactors remain Russian property until September 1995, and will then be dismantled. Their presence has long been a subject of controversy between the two countries. (**Nucleonics Week**, 3/11)

- It still appears uncertain when, and under what conditions, three 200-MW dual-use reactors in **Russia** — at Tomsk-7 and Krasnoyarsk-26 — will be shut down. Contrary to earlier accounts that the reactors were still being used for the production of plutonium, a recent report from Washington claims that plutonium production there ceased on 1 October (sic). President Yeltsin promised the US government in 1993 the reactors would be shut down by 2000 provided alternate supplies of heat and power were available. Work is being done in the US on the development of safer, proliferation-resistant fuel for these reactors, but the US Administration reportedly is against the transfer of this technology unless there is assurance that they will indeed be shut down as promised. Russia's Minister of Atomic Energy has been quoted as saying that the reactors could be operated safely for another 12–15 years, and his ministry is reportedly planning to upgrade their safety features in the expectation that they will be used only for civilian purposes and will continue to operate. The Minister has reputedly offered

the US Department of Energy (DoE) an additional 10 metric tons of high-enriched uranium in exchange for the new technology. (**Nucleonics Week**, 3/11; **Post-Soviet Nuclear & Defense Monitor**, 14/12, in **UI News Briefing** 94/51; **NuclearFuel**, 2/1 1995)

- In **Russia**, the international agency that was set up and funded by the European Union, Finland, Japan, Sweden and the United States, with an initial endowment of $70 million, to help former Soviet weapon scientists do peaceful nuclear research at home and so keep them from emigrating to states that seek to use their know-how to develop a nuclear capability, is now said to be embarked fully on its task. There are reports, however, that many Russian scientists are in fact using their own research facilities in and around Moscow to work for foreign countries. Apparently scientists can greatly augment their salaries by doing specific research and development projects that are part of foreign nuclear programmes and are commissioned by any of a number of foreign trade offices established in Russia. The projects are subject to approval by the Russian government, but it is said to be easy to circumvent the rules in this regard. (**Washington Post**, 24/9; **NuclearFuel**, 21/11)

k. Nuclear Proliferation

- **India** is reported to be building a nuclear-powered submarine and has already completed a land-based prototype testing facility for the reactor. Work on the project is said to have started shortly after India returned to Russia the *Charlie I*-class submarine it had leased. The successful launch of an indigenously designed and built solid-fuelled Polar Satellite Launch Vehicle (PSLV-D2) is said to make India one of only four states with the capacity to put a one-tonne satellite into an 800-km orbit. The project is still in an experimental stage, however, and claims that the vehicle will be commercially exploited are considered premature. Four more flights of these vehicles are planned for the next four years. The question of a military application of the missile is raised in the Indian press. A synchronous satellite launch vehicle that can carry a 2.5-tonne payload up to 36,000 km from Earth is hoped to be ready for launching in 1996/97; it will be propelled by Russian-supplied rockets. (**Times of India**, 10/10, 16/10; **Asian Age**, 11/10; **Financial Express**, 14/10, 15/10, 17/10, 18/10, 28/10; **Economic Times**, 15/10, 16/10; **Jane's Defence Weekly**, 17/12)

- While western governments, led by the United States, are seeking to cut nuclear exports and assistance to **Iran**, the Director General of the IAEA has said that unless the Agency is shown evidence that Tehran has violated the NPT, it will continue to provide technical assistance to that country. Dr. Blix is quoted as saying that the IAEA had found no non-compliance by Iran in its commitments under its safeguards agreement. Apparently, the United States considers that its intelligence information gives clear indications of illicit nuclear activities in Iran. This is said to include a procurement pattern that would point to a programme for the development of nuclear weapons. In response to a claim made in late September by CIA Director James Woolsey, that Iran is seeking to buy nuclear material and equipment in Russia, that country's Foreign Intelligence Service has said it has no information to prove that Iran is seeking anything but nuclear-power technology. Reportedly, while Russia has said that it is ready to assist Iran with the completion of the two power reactors at Bushehr, and Teheran has confirmed that it will move ahead to complete the station with Russian assistance, Iran is thought to have problems finding the funds and to be looking for lower-cost VVER equipment in Eastern Europe, from Soviet-type power plants that were never finished. It is said to have tried to buy reactor components in Poland which were supplied by the USSR for the two VVER-440 reactors at Zarnowiec that were never completed. Reportedly, the US Administration has asked Poland not to grant this request and has also asked Germany to make sure that components from the former Greifswald power station in East Germany would not go to Iran; it is also said to have called on the Czech Republic not to supply equipment for the Bushehr plant. China's plans to assist Iran with the construction of two 300-MW nuclear power reactors at the same site are also badly received in Washington. According to an American press report US intelligence fears that China's assistance, which also includes the supply of a small research reactor and an electromagnetic isotope separator, will help Iran with its nuclear-weapons programme. There is a report that German officials have proposed to the US State Department considering an arrangement under which Iran would accept stricter safeguards and make commitments going beyond those it has assumed under the NPT (e.g., a promise not to reprocess or enrich nuclear material) in return for a resumption of German assistance in the completion of the two Siemens supplied power reactors at Bushehr. Israel's Deputy Defence Minister has said that Iran may be working with the DPRK on the production of missiles that can reach Israel. (**ITAR-TASS** [Moscow], 27/9, in **JPRS-TND**-94-017, 17/10; **Nucleonics Week**, 6/10, 15/12; **NucNet News**, 1/12; **Jerusalem Post**, 8/12)

- The 100 metric tons of maraging steel which **Iraq** received in 1989 for the manufacture of ultracentrifuges is now known to have come from **Austria**. Produced by Boehler Edelstahl of Graz, the material was sent overland to Belgium, loaded in Antwerp and taken in two Pakistani cargo ships to Dubai, whence it was again transported overland, to its destination, Iraq. The exporter is said to have believed it was intended for Pakistan. A third shipment, of 6 tons, which was reportedly loaded in Germany on a ship bound for the Middle East and South Asia, is apparently still unaccounted for. Iraq has not declared that material to the IAEA, and the latter has reportedly not asked for clarification. There is suspicion that if Iraq does not have the 6 tons of special steel it may have gone to **Pakistan**, or **India**. The transactions were reportedly prepared through the intermediary of a British subject of Pakistani origin; at the time, maraging steel was not among the trigger-list items of which the export was restricted, and the sale did not violate the Austrian legislation then in force.The 100 tons of maraging steel which Iraq did get should have been enough in theory to produce 5,000 rotor endcaps and baffles for ultracentrifuges; in practice, it is thought that Iraq would probably not have been able to produce

more than 2,000 rotors good enough to use. By the time the material was found, only 3 tons seems to have been used; the rest has since been destroyed.

The IAEA has confirmed that from 1981 until 1987, Iraq was engaged in a programme of procurement and development of laser isotope technology for the enrichment of uranium. While Iraq consistently denied it had ever worked on laser enrichment, the IAEA apparently thought it would have been logical for it to have done so, but it had no proof until, following intelligence information and renewed probes, evidence that there had indeed been an Iraqi laser enrichment project came to light. It is understood that the project was discontinued after six years, without Iraq developing even a rudimentary laser enrichment capability. As reported, the incident is seen in the UN Special Commission as characteristic of Baghdad's persistent reluctance to provide full and correct information about past activities and present capabilities. It is especially relevant as it comes at a time when China, France, Russia and Spain, among others, call for economic sanctions against Iraq to be ended, which would presume that it has made full disclosure of its programmes for the production of weapons of mass destruction. During its discussions in November, following the news that Iraq had recognised Kuwait's sovereignty, its territorial integrity and political independence, the Security Council still did not agree to lift the sanctions, however. Spokesmen in London and Washington have expressed the view that not all conditions for such a move had been met, and according to the Special Commission, as quoted in American media, Iraq has not yet provided full information on its biological and chemical weapons programmes. Besides the complete dismantlement of those programmes, among other conditions that appear not to have been met is the release of all political prisoners and the return of the property seized from Kuwait.

According to a report from Jerusalem, two Iraqi-born members of the Israeli cabinet have had talks in Morocco with Iraq's Deputy Prime Minister Tariq Aziz. The move, which is said to have followed the message from Baghdad that after the autonomy deal with the PLO, Iraq no longer considers Israel an enemy, reportedly contravened Israeli official policy and is thought to have angered the US, which fears that such contacts could undermine the embargo on Iraq. A different version has it that former French Defence Minister Chevènement acted as go-between in arranging the contact, and that the Israeli Foreign Minister, Peres, had in fact been consulted. In the latter account, the question over which the Israeli cabinet is divided is whether Shimon Perez and Tariq Aziz should meet before or after an agreement has been concluded with Syria.

(**Jerusalem Report**, 20/10; **Nucleonics Week**, 20/11; **NuclearFuel**, 24/10, 21/11; **Financial Times**, 14/10, 7/11; **International Herald Tribune**,28/10; **Washington Post**, 4/11; **Financial Times**, 11/11; **Times** [London], 11/11; **Washington Post**, 15/11; **New York Times**, 15/11, 21/12; **Independent**, 6/12)

- The British publication *Jane's Intelligence Review* claims that **Israel** has approximately 200 nuclear weapons, in the form of warheads for an unnamed number of *Jericho I* and supposedly for 60 *Jericho II* missiles; gravity bombs, artillery shells and landmines. According to the report, which is said to be based on French and Russian satellite observations, Israel's nuclear-weapon programme is dispersed over the country, with the reactor and the reprocessing facility at Dimona, weaponisation work being done at Soreq, assembly at Yodefat, and weapon storage either with the delivery vehicles or, separately, at Eilabun. (**Times** [London], 15/11; **Libération**, 15/11)

- There is a report that **Pakistan** may complete the reactor which it started building at Khusab, near Sargodha, in the North of the country, in the mid-1980s. This is said to be a natural-uranium, heavy-water cooled and moderated, reactor of 50–70 MW, intended for the production of plutonium and tritium. It is now said to be about half-finished. Reports about the sources for key equipment and engineering technology differ: US officials seem to think that Pakistan has sought these items in the West, mostly in Germany, but there are also reports that China is the main supplier and that the facility is based on a Chinese design. Reportedly, the government in Islamabad has threatened to complete the reactor unless India is willing to freeze its plutonium stockpiles at a level equivalent to Pakistan's fissile-material holdings of, supposedly, 200 kg of highly-enriched uranium (HEU). On the basis of the amounts needed to construct a bomb, *viz*, 25 kg of HEU or 5-8 kg of Pu-239, this would mean that India would have to reduce its available plutonium stockpile, now estimated at 300–400 kg, to 50–100 kg. A leading opposition politician in Islamabad has called for the recognition of his country as a nuclear-weapon state in exchange for a freeze on its fissile-material production. Analogous to the framework agreement between the DPRK and the US, Pakistan would also demand to be given security assurances. Repeating her claim that Pakistan does not possess nuclear weapons, Prime Minister Bhutto has also reiterated her adamant refusal either to dismantle the nuclear programme or to allow inspections to verify the absence of nuclear weapons. (**Nucleonics Week**, 6/10, 27/10; **Independent**, 1/12)

- An American newspaper report asserts that in **Sweden**, which is known to have worked on nuclear-weapon research and the manufacture of nuclear explosive devices, but is thought to have ended its programme in the late 1960s, a small team of theoretical physicists at the National Defence Research Establishment is still studying nuclear-weapon technology. It further says that the natural-uranium fuelled, heavy-water moderated, 65-MW reactor at Aagesta, a section of Stockholm, that was to have provided plutonium for the programme and was shut down in 1974, is still maintained in a condition that would permit renewed start-up. In reaction to this allegation Sweden's Defence Minister has asked its National Defence Research Establishment for a report on the matter. The IAEA, which at the invitation of Sweden has made four surprise inspections there, one of them at Aagesta, has dismissed the allegations as pure speculation. The

Director of the Swedish Nuclear Power Inspectorate has said there is no possibility to restart the reactor as there is no fuel left and there is no heavy water in Sweden. He is quoted as saying that if Sweden so decided, it might be able to make nuclear weapons in about ten years, but not secretly and not using a reactor in the middle of Stockholm. A Foreign Ministry spokesman said that restarting the reactor would be politically impossible. The facility is said to be scheduled for final decommissioning after 2000. (**Washington Post**, 25/11; see also reference to article by **Jan Prawitz**, under **III. Recent Publications**; **Dagens Nyheter**, 25/11, 26/11; **Upsala Nya Tidning**, 28/11; **Svenska Dagbladet**, 28/11; **NucNet News**, 27/11; **Nucleonics Week**, 1/12; **Die Presse**, 6/12)

I. Illicit Nuclear Trafficking

- At a nuclear conference in Lyon, France, the Director General of the IAEA said there was no information to sustain the allegation that states were actively trying to obtain nuclear material taken from Russian nuclear stockpiles. Contradicting earlier German claims that recent instances of trafficking in plutonium in that country pointed to the diversion of nuclear material from military stocks, Dr. Blix said that neither the quality nor the quantity of the material involved indicated there was a direct threat of weapons-grade material being diverted from Russian inventories.

In what is believed to have been the most important seizure of illicitly traded nuclear material made so far, police in the **Czech Republic**, following a tip, have seized 3 kg (some sources mention slightly smaller amounts) of highly-enriched uranium in the form of uranium dioxide (UO_2). Judging by a certificate that accompanied the containers in which the material was transported, this could be of Russian origin. The material has been analysed as being 87.7 per cent enriched, which according to experts would point to its intended use as fuel for naval-propulsion or research reactors, although the enrichment level might be high enough to make it usable in a nuclear weapon. The form of the material, which, judging by trace amounts of other uranium isotopes, may have been previously irradiated, reprocessed and re-enriched, is also said to point to its possible diversion from a facility to manufacture fuel for naval or research reactors. Three men were arrested, two of them said to be Russians and the third a Czech nuclear physicist.

Customs officers in **Bulgaria** have seized four containers with radioactive isotopes. The containers were found in a tourist bus crossing the border with **Turkey**. The owners were not found. In Istanbul, police arrested a man from **Azerbaijan** who was trying to sell 750 grammes of a material that was variously reported to be 'enriched uranium' and 'uranium 238 suitable for use in nuclear bombs'. In July, Turkish police had arrested a group of five (some reports speak of seven) Turks in possession of 12 kg of uranium reportedly smuggled from Azerbaijan.

In **India** four persons were apprehended with 2.5 kg of 'semi-processed' uranium ore, which they claimed was part of 95 kg of the material which a scientist from India's Department of Atomic Energy was hoping to sell.

The disappearance of a fresh 200-kg fuel element from the Ignalina power station in **Lithuania**, in February 1993, previously thought to have been stolen, is now ascribed to inadequate accounting and working methods. There is said to be a suspicion that workers may have moved the element to the spent fuel pond to hide damage. Measures are underway to prevent this kind of irregularity from recurring.

Police in **Romania** are said to be concerned that the country might become a centre for illicit uranium trade. In the last two years, they say they have seized 230 kg of uranium in clandestine trade. In early October, 4.5 kg of uranium, some of it enriched, was found in the possession of a six Romanians, one of them an officer in the presidential bodyguard — some reports say several military men were involved. Shortly after, seven men, described as Moldovans, Jordanians and Rumanians, were apprehended as they were trying to sell 7 kg of uranium.

In **Russia**, according to an Italian press report, 9.5 kg of enriched uranium were stolen recently from the nuclear-weapons complex at Artsamas-16. The thieves were apprehended and the material was recovered. Three inhabitants of Pskov were detained trying to sell 67 kg of natural uranium. A Norwegian public policy group, Bellona, studying risks of radioactive contamination in the Arctic, claims that the Sevmorput naval shipyard near Murmansk is inadequately protected against theft. Allegedly, in November 1993, three fuel assemblies with highly enriched uranium were stolen there by a retired navy captain. A German news magazine alleges that in March 11 nuclear warheads disappeared in Russia out of a shipment of 60 that were on their way back from Ukraine for dismantlement.

On 29 September, four people were arrested on the border between **Slovakia** and **Hungary**, carrying 750 grams (some reports speak of 921 grams) of uranium. Rumours about the fissile content of the material vary from 'bomb-grade' (as alleged by Slovak police and doubted by the IAEA) to 'natural uranium'. In Hungary itself, several people were apprehended with a special nuclear-material container in a car assumed to conceal 28 kg of uranium. There was a suspicion that the material might be a fuel element of a Russian nuclear submarine. Nuclear experts from the Russian navy were invited to inspect the material. Upon examination the container turned out to be empty.

During their summit meeting in late September, the Presidents of the **United States** and **Russia** agreed to cooperate in enhancing the security of nuclear material and the prevention of nuclear smuggling.

Talks are continuing between **Germany** and **Russia** on cooperation in combating nuclear smuggling. Based on the supposition that the nuclear material smuggled into Germany in the summer of 1994 had originated at Russian weapons plants, German industry is said to be claiming a role in the management and disposition of

plutonium from Russian nuclear weapons. In particular Siemens has used the event to bolster its case for a scheme to operate a MOX fabrication facility in Russia. There still does not seem to be definitive proof, however, that the material found in Germany last summer was of Russian origin, and Russian authorities continue to deny this. Indications have surfaced recently that at least some of that material may have come from nuclear research facilities in the former German Democratic Republic. In contrast to his earlier assertions about the importance, the origin and the probable destinations of the nuclear material seized by German police last summer, and the likely involvement of international criminal organisations, Bernd Schmidbauer, intelligence coordinator for Federal Chancellor Kohl, was recently heard to claim that it had been the IAEA which exaggerated and misrepresented the significance of these finds. This has been rejected by the Agency, which has pointed out that it was criticised by German officials for having questioned German media reports on the matter. In November German police arrested two men who were trying to sell a radiation source containing 1 mg of caesium-137 which they thought was weapons-grade uranium. **Netherlands** authorities reportedly suspect a number of **Belgian** traders of the smuggling of small quantities of radioisotopes; an investigation is said to be underway. The European Commission says it is helping east European countries reinforce their nuclear material control measures. In Russia, a computerised control system is said to have been set up and the material inspection systems in Kazakhstan and Ukraine are to be strengthened. Equipment capable of detecting the presence of fissionable material is being set up on the borders of the European Union. In **Austria**, which is about to join the European Union, measuring devices designed to react to the presence of plutonium and enriched uranium are being tested for possible use in gate posts that would be set up at border cross points and airports. In **Denmark** as well, measures against the illegal importation of nuclear materials have been intensified.

In response to a resolution adopted by the General Conference of the IAEA at its 38th session, a meeting of governmental experts was held at the IAEA in Vienna on 2–3 November on measures against trafficking in nuclear material and radioactive sources. It was attended by representatives of over 40 member states. The experts reportedly agreed that the Agency should have a larger role in monitoring reports of illegal trade in nuclear materials and should establish a data base on such incidents, and that it should help states improve their national systems of accountancy and control and their systems of physical protection of nuclear material. The meeting is said to have confirmed that, although the Agency could help with practical and effective complementary international measures, its function in the matter was essentially an auxiliary one and the main responsibility for the prevention of illicit nuclear trade was that of the governments involved. It was agreed that member states should provide the IAEA with technical data on the nuclear material involved. Reportedly, there was no agreement on giving the Agency isotopic 'fingerprint' information that would enable it to recognise the facility where recovered material originated.

(**La Republicca**, [Rome], 13/9, in **JPRS-TND**-94-019, 17/10; **DDP/ADN** [German news agencies], 20/9, in **JPRS-TND**-94-019, 17/10; **De Standaard** [Netherlands], 27/9, in **JPRS-TND**-94-019, 17/10; **Joint Statement on Strategic Stability and Nuclear Security by the Presidents of the United States and the Russian Republic**, 28/9; **Nucleonics Week**, 6/10, 3/11, 15/12; **NuclearFuel**, 10/10, 7/11, 19/12, 2/1 1995; **Agence France Press**, 10/10 in **JPRS-TND**-94-020, 17/11; **Focus** [Munich], 17/10 in **JPRS-TND**-94-020, 17/11; **Zerkalo** [Baku], 22/10 in **JPRS-TND**-94-020, 17/11; **ITAR-TASS** [Moscow], 27/10 in **JPRS-TND**-94-020, 17/11; **The Hindu** [Madras], 20/10; **UPI**, 3/11; **Die Welt**, 7/10, 23/11; **Süddeutsche Zeitung**, 7/10, 16/10, 3/11, 23/11; **Financial Times**, 12/10; **Die Presse**, 30/9, 5/10, 3/11; **IAEA Press Release** PR 94/46, 3/11; **Standard** [Vienna], 30/9, 21/10, 4/11, 23/11, 24/11; **Kurier**, 30/9, 21/10; **Associated Press**, 20/10; **Reuter's**, 29/9, 30/9, 20/10, 22/11, 30/11; **India Today**, 15/11; **Defense News**, 21-27/11; **New York Times**, 20/12, 21/12; **International Herald Tribune**, 20/12; **Washington Post**, 21/12)

m. Environmental Issues

- Environmental activists in **Canada** are concerned about the possible consequences of an environmental impact statement (EIS) made by Atomic Energy of Canada, Ltd, which concludes that nuclear waste can be safely stored one kilometre down in the Canadian Shield, the granite layer which runs under much of the country's soil. Initial protests against the study express the fear that under the North American Free Trade Agreement, Canada would not be able to prevent the storage of US nuclear waste in its soil. The EIS, which is said to have cost Can$450 million, was released by the Federal Environmental Assessment Review Office to invite comments from the public and specialists, to be followed by public hearings in five provinces and an eventual report to the government in Ottawa. (**Globe and Mail**, 27/10; **NucNet News**, 27/10; **Toronto Star**, 30/10)

- **Japan** and **Russia** have advised selected companies that they will accept tenders for the construction of a floating treatment and storage facility for low-level radioactive nuclear submarine waste. The facility is to be built on a barge that will be moored at a navy shipyard near Vladivostok, where nuclear submarines are decommissioned. It is expected to cost considerably less than the $70 million which Japan has made available for the dismantlement of former Soviet nuclear weapons. Results of the bidding were expected before the end of the year. (**Atoms in Japan**, Vol. 38, No. 10, October; **Nucleonics Week**, 20/10)

- At their meeting in Washington in late September, the Presidents of **Russia** and of the **United States** agreed, among other things, to speed up action with regard to environmental problems in the Arctic caused by Russian radioactive wastes. They undertook to cooperate on the expansion and upgrading of a

treatment facility for liquid low-level radioactive waste in Murmansk. Reports about nuclear pollution in and around Murmansk and the surrounding Kola Peninsula speak of rapidly worsening conditions. The port harbours a number of storage ships for radioactive waste that are said to be in dangerously bad repair; the local nuclear power station reportedly has a history of near-catastrophe; among the 155 nuclear submarines permanently based there, 71 are said to be derelict; and much nuclear waste has been dumped off-shore, including at least 17 nuclear reactors and a submarine. **NuclearFuel**, 10/10; **Associated Press**, 7/12; **Direct Information**)

- In the **United States**, the state of South Carolina has tried to block the importation of irradiated fuel from European research reactors by the US Department of Energy (DoE), for temporary storage at its Savannah River nuclear site. DoE claims that the retrieval and storage of the fuel — which is to be the first batch of a total of 15,000 spent fuel rods to be taken back from Europe — is a vital element of US non-proliferation policy to discourage overseas operators from having their irradiated fuel reprocessed and keep them from dropping out of the US programme to covert reactors using highly enriched uranium to low-enriched fuel. The Department claims that removal of irradiated, US-origin fuel from Europe is urgent in view of inadequate spent-fuel storage facilities there, which might lead to premature reactor shutdowns and might make reprocessing unavoidable. South Carolina has argued that the fuel should not have been accepted before the pertinent environmental statement had been completed; this is expected by end 1995. It says it does not wish to become the dumping ground for foreign nuclear waste and is opposed to using the Savannah River site, which is already badly contaminated by nuclear-weapon production, as a commercial waste deposit. The state has urged Washington to consider alternatives, such as having the material stored temporarily at Dounreay, in Scotland, or allowing it to be reprocessed there. After a series of court actions, up to the highest instance, an injunction against the importation has been lifted and storage is now proceeding. (**New York Times**, 30/9, 1/10; **Nucleonics Week**, 6/10; **NuclearFuel**, 10/10; **SpentFuel**, 7/11)

II. PPNN Activities

- The PPNN Core group held its sixteenth semi-annual meeting at the Pocantico Conference Centre of the Rockefeller Brothers Fund, North Tarrytown, New York from 28 to 31 October 1994. All members of the Core Group were present, with the exception of Jan Murray, who had professional commitments elsewhere.

- The Core Group meeting itself took place on Friday, 28 October, when the Group discussed presentations by David Fischer on *The Inter-relationship between Global and Regional Systems of Nuclear Safeguards* [CGII/99] and by Hiroshi Nagano from the Science and Technology Agency, Tokyo on *The Review of Japan's Nuclear Programme*.

- From Friday 28 to Sunday 30 October the Core Group convened an international briefing seminar for senior government officials attending the meetings of the First Committee of the UN General Assembly on **Issues at the 1995 NPT Conference**. This was attended by 36 participants and observers from 31 states and representatives of the secretariats of the United Nations, the IAEA and OPANAL (the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean). Also present as observers were representatives from the Ford Foundation, the Prospect Hill Foundation, the Rockefeller Brothers Fund and the Power Reactor and Nuclear Fuel Development Corporation of Japan.

The international seminar was opened by Jayantha Dhanapala, Ambassador-designate of Sri Lanka to the United States and President-designate of the 1995 NPT Conference with an address on *Nuclear Non-Proliferation — The Current Context* [CGII/99]. After the opening plenary presentation on *Issues Facing the 1995 NPT Conference* by John Simpson [CGII/100], the participants split into small working groups. During these working group sessions, short presentations were made on papers dealing with aspects of four sets of issues, followed by discussion among members of the group. The issues were clustered as follows:

Issue Cluster A: *The Extension of the Treaty* was chaired by Adolfo Taylhardat, with presentations from Ben Sanders (*Substantive and Organisational Work by States and the Secretariat*)[CGII/101]) and George Bunn (*Procedural Issues — The Nature of the Review/Extension Conference: Implications for the Extension Decision* [CGII/102]).

Issue Cluster B: *The Review of the Treaty — Security Questions* was chaired by Davidson Hepburn. Presentations were made by Lewis Dunn (*The Obligations of Parties (Articles I and II)* [CGII/103]); Jozef Goldblat (*Nuclear Disarmament — (Article VI)* [CGII/104]); and Olu Adeniji (*Nuclear-Weapon-Free Zones and Security Assurances* [CGII/105]).

Issue Cluster C: *The Review of the Treaty — Peaceful Uses and Verification* was chaired by Jiri Beranek. Presentations were made by Djali Ahimsa (*Peaceful Uses (Articles IV and V)* [CGII/105]); David Fischer (*Verification (National and International Monitoring, including IAEA Safeguards, and Action in the Event of Non-Compliance — Article III)*)[CGII/106]) and Harald Müller (*Export Controls* [CGII/107]).

Issue Cluster D: *The Review of the Treaty — Regional Issues* was chaired by Thérèse Delpech. Presentations were made by Yoshio Okawa (*North East Asia* [CGII/108]); Roland Timerbaev (*The States of the Former Soviet Union* [CGII/109])) and Mohamed Shaker (*The Middle East, Israel and Iraq* [CGII/110]).

The seminar concluded with a two-part Plenary Session. The first part involved observations on the working group discussions by a panel consisting of Oleg Grinevsky, Fan Guoxiang and James Leonard; the second consisted of comments on the main issues

emerging from the discussions by the issue cluster chairmen.

- On Monday 31 October, members of the Core Group participated in a ***Dialogue on the Status of Nuclear Non-Proliferation*** with ten North American nuclear non-proliferation specialists, chaired by Ben Sanders. The dialogue was divided into three sessions, the first starting with the presentation of a paper on *The Political and Material Conditions for Proliferation* by Leonard Spector (CGII/111], with Jiri Beranek and Yoshio Okawa acting as discussants. The second session was introduced by a presentation on *The US Strategic Review and Counter-Proliferation Strategies* by Lewis Dunn, with initial comments by Mitchell Reiss and David Fischer. The final session on the 1995 NPT Conference was constructed around three separate presentations based on circulated papers: Mohamed Shaker on *Why the Non-Aligned States May Not Support an Indefinite Extension of the NPT* [CGII/112]; Harald Müller on *The Attitude of Advanced Industrial Non-Nuclear Weapon States* [CGII/113]; and Olu Adeniji on *Security Assurances* [CGII/105]. Discussants were Michael Krepon and Fan Guoxiang; George Questor; and Jon Wolfstal and Roland Timerbaev respectively. The Dialogue concluded with an after-dinner address by Adolfo Taylhardat on *The 1995 NPT Review and Extension Conference. Expectations for the Conference — A View from the South* [CGII/114].

  Copies of papers presented at the Pocantico meeting can be obtained from the Southampton Office of PPNN.

- The seventeenth meeting of the PPNN Core Group will take place over the weekend 9–12 March at the Arden House Conference Centre, Harriman, New York. This meeting will enable the Core Group to discuss key non-proliferation issues that will need to be addressed after the 1995 NPT Conference, as well as incorporating a final PPNN seminar on that conference aimed at senior officials based at the UN in New York.

- **Europe and Nuclear Non-Proliferation**, the bound volume of papers from the thirteenth PPNN Core Group meeting held in Erbismühle, Germany has now been published by PPNN. Those interested in obtaining copies should contact Darryl Howlett at PPNN's Southampton office.

- A book edited by John Simpson and Darryl Howlett, *The Future of the Non-Proliferation Treaty*, based on papers presented to the PPNN seminar at Chilworth, near Southampton, in July 1993 is to be published early in the new year by Macmillan's in the UK and St. Martin's Press in the USA. The book includes contributions from 13 current and former PPNN Core Group members.

III. Recent Publications

- Books:

Brian Cathcart, *Test of Greatness: Britain's Struggle for the Atomic Bomb*, (John Murray).

Shai Feldman (ed.), *Confidence Building and Verification: Prospects in the Middle East*, JCSS Study No.25, (Boulder, Col.: Westview), 255 pp.

Shai Feldman and Ariel Levite, *Arms Control and the New Middle East Security Environment*, (Boulder, Col.: Westview), 253 pp.

David Holloway, *Stalin and the Bomb: The Soviet Union and Atomic Energy 1936-1956*, (New Haven: Yale University Press).

Richard Kokoski, *Technology and the Proliferation of Nuclear Weapons*, (Oxford: Oxford University Press).

Matthias Kuntzel, *Bonn and the Bomb: German Politics and the Nuclear Option,* (Pluto Press), 210 pp.

Steven Mataija (ed.), *Non-Proliferation and Multilateral Verification: The Comprehensive Nuclear Test Ban Treaty (CTBT)*, Centre for International and Strategic Studies, (Toronto: York University), 261 pp.

David Mutimer (ed.), *Control But Verify: Verification and the New Non-Proliferation Agenda*, Centre for International and Strategic Studies, (Toronto: York University), 227 pp.

David O'Very, Christopher Paine, and Dan Reicher (eds.), *Controlling the Atom in the 21st Century*, (Boulder, Col.: Westview), 397 pp.

Mitchell Reiss and Robert Litwak, *Nuclear Proliferation after the Cold War*, (Woodrow Wilson Centre Press), 350 pp.

- Articles and Other Materials:

Len Ackland, 'A dump called Rocky Flats', *The Bulletin of the Atomic Scientists*, Vol. 50. No. 6, Nov./Dec., pp. 12-13.

Oluyemi Adeniji, 'Africa and Nuclear Non-Proliferation', *Director's Series on Proliferation*, No.6, Lawrence Livermore National Laboratory, pp.5-14.

Yinhay Ahn, 'PRC-DPRK Relations and the Nuclear Issue', *The Korean Journal of National Unification*, Vol.3, pp.183-203.

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Yurika Ayukawa, Jinzaburo Takagi, 'Japanese Plutonium Program Going to Reverse to the Ending Nuclear Age', *INESAP Information Bulletin*, Issue No. 3, Oct., pp. 11-13.

Nikolai Babayev, 'NUTEC-93: A Step Towards the New', *International Affairs (Moscow)*, Special Edition: Russia's Nuclear Complex Open's Itself to the Country and the World, pp.98-99.

Dean Babst and Robert Aldridge, 'Growing SSBN Submarine Danger', *Nuclear Age Peace Foundation*, Global Security Study No. 19, August, 2 pp.

D. Shyam Babu, 'Less than Sincere: The US and Nuclear Disarmament', *Frontline*, Oct. 7, pp.58-64.

Kathleen C. Bailey and M. Elaine Price, (eds.), *Directors Series on Proliferation*, No. 5, Lawrence Livermore National Laboratory, August 12, 86 pp.

Kathleen C. Bailey and M. Elaine Price, (eds.), *Directors Series on Proliferation*, No. 6, Lawrence Livermore National Laboratory, Oct. 17, 55 pp.

Doug Bandow, 'Let 'Em Have Nukes', *The New York Times Magazine*, Nov. 13, pp. 56-57.

Bangladesh Institute of International Strategic Studies, *Regional Press Digest on Nuclear Issue in South Asia*, July.

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Vladimir Barkov, 'The Construction Complex of the RF Ministry for Nuclear Power', *International Affairs (Moscow)*,

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Dr. Hans Blix, Ambassador Kamal Bakshi, and Mr, David Fischer, 'Viewpoints: Future Directions for International Safeguards', *IAEA Bulletin*, Vol.36, No.3, pp.16-19.

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Oleg Bukharin, 'Nuclear Safeguards and Security in the Former Soviet Union', *Survival*, Vol.36, No.4, pp.53-72.

George Bunn, 'Extending the Non-Proliferation Treaty: Legal Questions Faced by the Parties in 1995', Issue Papers on World Conferences, No. 2, *American Society of International Law*, Washington, D.C., 56 pp.

Stephen Cambone and Patrick Garrity, 'The Future of US Nuclear Policy', *Survival*, Vol.36, No.4, pp.73-95.

Burrus M. Carnahan and Jacqueline R. Smith, 'A Treaty to Ban Nuclear Smuggling: The Next Step in Nuclear Material Control?', *Arms Control Today*, Vol. 24, No. 8, pp. 14-17.

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Boris Gedroitz, 'The Social Sphere of the Nuclear Complex', *International Affairs (Moscow)*, Special Edition: Russia's Nuclear Complex Open's Itself to the Country and the World, p.76.

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IV. Documentation

United Nations General Assembly resolution: *Comprehensive Nuclear-Test-Ban Treaty* [A/RES/49/70, 15 December 1994]

The General Assembly

Recalling its resolution 48/70 of 16 December 1993, in which the entire international community, for the first time, supported the commencement of multilateral negotiations on a comprehensive nuclear-test-ban treaty,

Reaffirming that a comprehensive nuclear test ban is one of the highest priority objectives of the international community in the field of disarmament and non-proliferation,

Convinced that the most effective way to achieve an end to nuclear testing is through the conclusion of a universal and internationally and effectively verifiable comprehensive nuclear-test-ban treaty that will attract the adherence of all States and which will contribute to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security,

Reaffirming the conviction that the exercise of utmost restraint in respect of nuclear testing would be consistent with the negotiation of a comprehensive nuclear-test-ban treaty,

Noting the aspirations expressed by the parties to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time, which are recalled in the preamble to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons,

Welcoming the preparation of a rolling text in the Ad Hoc Committee on a Nuclear Test Ban of the Conference on Disarmament, as reflected in the report of the Conference and its appendix, and noting the decision of the Conference to continue its work in inter-sessional meetings,

1. Welcomes the multilateral negotiation on a comprehensive nuclear-test-ban treaty in the Ad Hoc Committee on a Nuclear Test Ban of the Conference on Disarmament, and the positive and substantial contributions to the elaboration of the rolling text made by States participating in those negotiations;
2. Calls upon participants in the Conference on Disarmament to advance work on the basis of the rolling text during the inter-sessional negotiating period with a view to making substantial progress;
3. Also calls upon the Conference on Disarmament, upon the re-establishment of the Ad Hoc Committee on a Nuclear Test Ban at the commencement of its 1995 session and renewal of its mandate, to proceed to a new phase of negotiation;
4. Urges all States participating in the Conference on Disarmament, in particular the nuclear-weapon States, to negotiate intensively, as a high priority task, and to conclude a universal and multilaterally and effectively verifiable comprehensive nuclear-test-ban treaty which contributes to nuclear disarmament and the prevention of the proliferation of nuclear weapons in all its aspects;
5. Calls once more upon all States to support the multilateral negotiations in the Conference on Disarmament for a comprehensive nuclear test-ban treaty and their conclusion without delay;
6. Requests the Secretary-General to ensure the provision to the Conference on Disarmament of adequate administrative, substantive and conference support services for these negotiations;
7. Decides to include in the provisional agenda of its fiftieth session the item entitled 'Comprehensive test-ban treaty'.

United Nations General Assembly resolution: *Conclusion Of Effective International Arrangements To Assure Non-Nuclear-Weapon States Against The Use Or The Threat Of Use Of Nuclear Weapons* [A/RES/49/73, 15 December 1994]

The General Assembly

Bearing in mind the need to allay the legitimate concern of the States of the world with regard to ensuring lasting security for their peoples,

Convinced that nuclear weapons pose the greatest threat to mankind and to the survival of civilization,

Welcoming the progress achieved in recent years in both nuclear and conventional disarmament,

Noting that, despite recent progress in the field of nuclear disarmament, further efforts are necessary towards the achievement of the goal of general and complete disarmament under effective international control,

Convinced that nuclear disarmament and the complete elimination of nuclear weapons are essential to remove the danger of nuclear war,

Determined to abide strictly by the relevant provisions of the Charter of the United Nations on the non-use of force or threat of force,

Recognizing that the independence, territorial integrity and sovereignty of non-nuclear-weapon States need to be safeguarded against the use or threat of use of force, including the use or threat of use of nuclear weapons,

Considering that, until nuclear disarmament is achieved on a universal basis, it is imperative for the international community to develop effective measures and arrangements to ensure the security of non-nuclear-weapon States against the use or threat of use of nuclear weapons from any quarter,

Recognizing that effective measures and arrangements to assure the non-nuclear-weapon States against the use or threat of use of nuclear weapons can contribute positively to the prevention of the spread of nuclear weapons,

Bearing in mind paragraph 59 of the Final Document of the Tenth Special Session of the General Assembly, the first special session devoted to disarmament, in which it urged the nuclear-weapon States to pursue efforts to conclude, as appropriate, effective arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons, and desirous of promoting the implementation of the relevant provisions of the Final Document,

Recalling the relevant parts of the special report of the Committee on Disarmament, submitted to the General Assembly at its twelfth special session, the second special session devoted to disarmament, and of the special report of the Conference on Disarmament submitted to the Assembly at its fifteenth special session, the third special session devoted to disarmament, as well as of the report of the Conference on its 1992 session,

Recalling also paragraph 12 of the Declaration of the 1980s as the Second Disarmament Decade, contained in the annex to its resolution 35/46 of 3 December 1980, which states, inter alia, that all efforts should be exerted by the Committee on Disarmament urgently to negotiate with a view to reaching agreement on effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons,

Noting the in-depth negotiations undertaken in the Conference on Disarmament and its Ad Hoc Committee on Effective International Arrangements to Assure Non-Nuclear-Weapon States against the Use or Threat of Use of Nuclear Weapons, with a view to reaching agreement on this item,

Taking note of the proposals submitted under this item in the Conference on Disarmament, including the drafts of an international convention,

Taking note also of the decision of the Tenth Conference of Heads of State or Government of Non-Aligned Countries, held at Jakarta from 1 to 6 September 1992, as well as the relevant recommendations of the Organization of the Islamic Conference reiterated in the Final Communiqué of the Twentieth Islamic Conference of Foreign Ministers, held at Istanbul from 4 to 8 August 1991, calling uipon the Conference on Disarmament to reach an urgent agreement on an international convention to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons,

Taking note further of the unilateral declarations made by all nuclear-weapon States on their policies of non-use or non-threat of use of nuclear weapons against non-nuclear-weapon States,

Noting the support expressed in the Conference on Disarmament and in the General Assembly for the elaboration of an international convention to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons, as well as the difficulties pointed out in evolving a common approach acceptable to all,

Noting also the greater willingness to overcome the difficulties encountered in previous years,

Recalling its relevant resolutions adopted in previous years, in particular resolutions 45/54 of 4 December 1990, 46/32 of 6 December 1991, 47/50 of 9 December 1992 and 48/73 of 16 December 1993,

1. Reaffirms the urgent need to reach an early agreement on effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons;
2. Notes with satisfaction that in the Conference on Disarmament there is no objection, in principle to the idea of an international convention to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons, although the difficulties as regards evolving a common approach acceptable to all have also been pointd out;
3. Appeals to all States, especially the nuclear-weapon States, to work actively towards an early agreement on a common approach and, in particular, on a common formula that could be included in an international instrument of a legally binding character,
4. Recommends that further intensive efforts should be devoted to the search for such a common approach or common formula and that the various alternative approaches, including, in particular, those considered in the Conference on Disarmament, should be further explored in order to overcome the difficulties;
5. Recommends also that the Conference on Disarmament should actively continue intensive negotiations with a view to reaching early agreement and concluding effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons, taking into account the widespread support for the conclusion of an international convention and giving consideration to any other proposals designed to secure the same objective;
6. Decides to include in the provisional agenda of its fiftieth session the item entitled 'Conclusion of effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons'.

United Nations General Assembly resolution: *1995 Review and Extension Conference of States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons* [A/RES/49/75F, 15 Dec. 1994]

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, which stipulates 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 or periods,

Desirous of ensuring the consolidation of the Treaty with a view to achieving ultimately the elimination of nuclear weapons,

Aware of the need for the Treaty to attain universality of membership,

Convinced that the decision on the extension of the Treaty should lead to further progress in nuclear disarmament, in accordance with the preamble and article VI of the Treaty,

Noting, therefore, the necessity of giving careful consideration to all possible options in order to take a decision that is appropriate and capable of strengthening the non-proliferation regime in the pursuit of the ultimate objective of the elimination of nuclear weapons,

Conscious of the fact that there are various interpretations which have been expressed concerning the application of article X, paragraph 2, of the Treaty,

1. Calls upon States parties to the Treaty on the Non-Proliferation of Nuclear Weapons to give appropriate consideration to the import of the Treaty in its entirety and with special attention to its article X, paragraph 2;
2. Invites States parties to provide their legal interpretations of article X, paragraph 2, of the Treaty and their views on the different options and actions available, for compilation by the Secretary-General as a background document of the 1995 Review and Extension Conference of States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, well before the holding of that Conference.

United Nations General Assembly resolution: *Nuclear Disarmament With a View to the Ultimate Elimination of Nuclear Weapons* [A/RES/49/75H, 15 December 1994]

The General Assembly

Recognizing that the end of the cold war has increased the possibility of creating a world free from the fear of nuclear war,

Welcoming the efforts of the Russian Federation and the United States of America for nuclear disarmament and the conclusion of the two treaties on the reduction and limitation of strategic offensive arms (START I and START II), and looking forward to their early entry into force,

Welcoming also the efforts of other nuclear-weapon States in the field of nuclear disarmament,

Attaching great importance to the contribution which the Treaty on the Non-Proliferation of Nuclear Weapons has made to the peace and security of the world since its entry into force in 1970,

Welcoming the positive developments in the negotiations for a comprehensive nuclear-test-ban treaty based on the consensus achieved at the forty-eighth session of the General Assembly,

1. Urges States not parties to the Treaty on the Non-Proliferation of Nuclear Weapons to accede to it at the earliest possible date, recognizing the importance of the universality of the Treaty;
2. Calls upon the nuclear-weapon States to pursue their efforts for nuclear disarmament with the ultimate objective of the elimination of nuclear weapons in the framework of general and complete disarmament, and also calls upon all States to fully implement their commitments in the field of disarmament and non-proliferation of weapons of mass destruction.

United Nations General Assembly resolution: *Amendment of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water* [A/RES/49/69, 15 December 1994]

The General Assembly

Recalling its resolution 44/106 of 15 December 1989, 45/50 of 4 December 1990, 46/28 of 6 December 1991, 47/46 of 9 December 1992 and 48/69 of 16 December 1993,

Reiterating its conviction that a comprehensive nuclear-test-ban treaty is the highest-priority measure for the cessation of the nuclear-arms race and for the achievement of the objective of nuclear disarmament,

Recalling the central role of the United Nations in the field of nuclear disarmament and in particular in the cessation of all nuclear-test explosions, as well as the persistent efforts of non-governmental organizations in the achievement of a comprehensive nuclear-test-ban treaty,

Conscious of the growing environmental concerns throughout the world and of the past and potential negative effects of nuclear testing on the environment,

Recalling its resolution 1910 (XVIII) of 27 November 1963, in which it noted with approval the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, signed on 5 August 1963, and requested the Conference of the Eighteen-Nation Committee on Disarmament to continue with a sense of urgency its negotiations to achieve the objectives set forth in the preamble to the Treaty,

Recalling also that more than one third of the parties to the Treaty requested that depositary Governments to convene a conference to consider an amendment that would convert the Treaty into a comprehensive test-ban treaty,

Recalling further that a substantive session of the Amendment Conference of the States Parties to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water was held in New York from 7 to 18 January 1991,

Reiterating its conviction that the Amendment Conference will facilitate the attainment of the objectives set forth in the Treaty and thus serve to strengthen it,

Noting with satisfaction the unilateral nuclear-test moratoria announced by several nuclear-weapon States,

Welcoming the decision of the Conference on Disarmament to give its Ad Hoc Committee on a Nuclear Test Ban a mandate to negotiate a comprehensive test ban,

Recalling its recommendation that arrangements be made to ensure that intensive efforts continue, under the auspices of the Amendment Conference, until a comprehensive nuclear-test-ban treaty is achieved, and its call that all parties participate in, and contribute to the success of, the Amendment Conference,

Recalling also the decision adopted by the Amendment Conference to the effect that, since further work needed to be undertaken on certain aspects of a comprehensive test-ban treaty, especially those with regard to verification of compliance and possible sanctions against non-compliance, the President of the Conference should conduct consultations with a view to achieving progress on those issues and to resuming the work of the Conference at an appropriate time,

Welcoming the ongoing efforts being conducted by the President of the Amendment Conference,

Recalling finally the concluding statement made by the President of the Amendment Conference on the States Parties to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water at the special meeting of States parties held on 10 August 1993, in which broad agreement was found for:

(a) Pursuing work for a comprehensive test ban in the Amendment Conference and the Conference on Disarmament in a mutually supportive and mutually complementary manner;

(b) Holding another special meeting early in 1994 to review developments and assess the situation regarding a comprehensive test ban and to examine the feasibility of resuming the work of the Amendment Conference later that year;

(c) Promoting universality of a comprehensive test ban by having the President of the Amendment Conference liaise closely with the Conference on Disarmament and the five nuclear-weapon States;

1. Notes with satisfaction that in 1994 the Conference on Disarmament initiated the multilateral negotiation of a universal and effectively verifiable comprehensive nuclear-test ban, which would contribute effectively to the prevention of proliferation in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security;
2. Takes note of the intention of the President of the Conference to convene, after appropriate consultations and in the light of the work carried out by the Conference on Disarmament, another special meeting of the States parties to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, as envisaged by the General Assembly in its resolution 48/69, to review developments and assess the situation regarding a comprehensive test ban and to examine the feasibility of resuming the work of the Amendment Conference;
3. Recommends that arrangements be made to ensure the fullest possible participation of non-governmental organizations in the Amendment Conference;
4. Reiterates its conviction that, pending the conclusion of a comprehensive nuclear-test-ban treaty, the nuclear-weapon States should suspend all nuclear-test explosions through an agreed moratorium or unilateral moratoriums;
5. Decides to include in the provisional agenda of its fiftieth session the item entitled 'Amendment of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water'.

Agreed Framework between the United States of America and the Democratic People's Republic of Korea. [Geneva, 21 October 1994]

Delegations of the Governments of the United States of America (U.S.) and the Democratic People's Republic of Korea (DPRK) held talks in Geneva from September 23 to October 21, 1994, to negotiate an overall resolution of the nuclear issue on the Korean Peninsula.

Both sides reaffirmed the importance of attaining the objectives contained in the August 12, 1994 agreed statement between the U.S. and the DPRK and upholding the principles of the June 11, 1993 joint statement of the U.S. and the DPRK to achieve peace and security on a nuclear-free Korean Peninsula. The U.S. and DPRK decided to take the following actions for the resolution of the nuclear issue:

I. Both sides will cooperate to replace the DPRK's graphite-moderated reactors and related facilities with light-water reactor (LWR) power plants.
   1) In accordance with the October 20, 1994 letter of assurance from the U.S. President, the U.S. will undertake to make arrangements for the provision to the DPRK of a LWR project with a total generating capacity of approximately 2,000 MW(E) by a target date of 2003.
      — The U.S. will organize under its leadership an international consortium to finance and supply the LWR project to be provided to the DPRK. The U.S., representing the international consortium, will serve as the principal point of contact with the DPRK for the LWR project.
      — The U.S., representing the consortium, will make best efforts to secure the conclusion of a supply contract with the DPRK within six months of the date of this document for the provision of the LWR project. Contract talks will begin as soon as possible after the date of this document.
      — As necessary, the U.S. and the DPRK will conclude a bilateral agreement for cooperation in the field of peaceful uses of nuclear energy.
   2) In accordance with the October 20, 1994 letter of assurance from the U.S. President, the U.S., representing the consortium, will make arrangements to offset the energy foregone due to the freeze of the DPRK's graphite-moderated reactors and related facilities, pending completion of the first LWR unit.

— Alternative energy will be provided in the form of heavy oil for heating and electricity production.
— Deliveries of heavy oil will begin within three months of the date of this document and will reach a rate of 500,000 tons annually, in accordance with an agreed schedule of deliveries.

3) Upon receipt of U.S. assurances for the provision of LWR's and for arrangements for interim energy alternatives, the DPRK will freeze its graphite-moderated reactors and related facilities and will eventually dismantle these reactors and related facilities.
— The freeze on the DPRK's graphite-moderated reactors and related facilities will be fully implemented within one month of the date of this document. During this one-month period, and throughout the freeze, the International Atomic Energy Agency (IAEA) will be allowed to monitor this freeze, and the DPRK will provide full cooperation to the IAEA for this purpose.
— Dismantlement of the DPRK's graphite-moderated reactors and related facilities will be completed when the LWR project is completed.
— The U.S. and DPRK will cooperate in finding a method to store safely the spent fuel from the 5 MW(E) experimental reactor during the construction of the LWR project, and to dispose of the fuel in a safe manner that does not involve reprocessing in the DPRK.

4) As soon as possible after the date of this document, U.S. and DPRK experts will hold two sets of experts talks.
— At one set of talks, experts will discuss issues related to alternative energy and the replacement of the graphite-moderated reactor program with the LWR project.
— At the other set of talks, experts will discuss specific arrangements for spent fuel storage and ultimate disposition.

II. The two sides will move toward full normalization of political and economic relations.
1) Within three months of the date of this document, both sides will reduce barriers to trade and investment, including restrictions on telecommunications services and financial transactions.
2) Each side will open a liaison office in the other's capital following resolution of consular and other technical issues through expert level discussions.
3) As progress is made on issues of concern to each side, the U.S. and DPRK will upgrade bilateral relations to the ambassadorial level.

III. Both sides will work together for peace and security on a nuclear-free Korean Peninsula.
1) The U.S. will provide formal assurances to the DPRK, against the threat or use of nuclear weapons by the U.S.
2) The DPRK will consistently take steps to implement the North–South Joint Declaration on the Denuclearization of the Korean Peninsula.
3) The DPRK will engage in North–South dialogue, as this agreed framework will help create an atmosphere that promotes such dialogue.

IV. Both sides will work together to strengthen the international nuclear non-proliferation regime.
1) The DPRK will remain a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and will allow implementation of its Safeguards Agreement under the Treaty.
2) Upon conclusion of the supply contract for the provision of the LWR project, ad hoc and routine inspections will resume under the DPRK's Safeguards Agreement with the IAEA with respect to the facilities not subject to the freeze. Pending conclusion of the supply contract, inspections required by the IAEA for the continuity of safeguards will continue at the facilities not subject to the freeze.
3) When a significant portion of the LWR project is completed, but before delivery of key nuclear components, the DPRK will come into full compliance with its Safeguards Agreement with the IAEA (INFCIRC/403), including taking all steps that may be deemed necessary by the IAEA, following consultations with the Agency with regard to verifying the accuracy and completeness of the DPRK's initial report on all nuclear material in the DPRK.

V. Comments From Readers

In a letter dated October 26, 1994, Dean Babst, of the Nuclear Age Peace Foundation in California, wrote:

In PPNN Newsbrief *No. 27 on page 9, you mention that President Yeltsin recently proposed that the five acknowledged Nuclear Weapon States work for further reductions in nuclear weapons. 'One early reaction came from Britain's Defence Secretary who was said to have pointed out that his country was only a "small-time nuclear player" and that existing treaties should be implemented before new ones are concluded'.*

Britain's Defence Secretary may feel they are only a 'small-time nuclear player', but when completed, Britain's four Trident nuclear submarines will have the destructive power of 8 World War IIs and could produce enough clouds of radioactive dust to cover much of the earth. How can there be so little thought about the consequences of what we are doing?

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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