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PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 27 **NEWSBRIEF** **3rd 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 24 June and ending on 30 September 1994.

The **Newsbrief** is published four times a year as part of the effort of the Programme for Promoting Nuclear Non-Proliferation (PPNN) to foster awareness of the issues related to the spread of nuclear weapons and of developments that may help constrain that spread. Using publicly available material derived from reputable and generally reliable sources, the **Newsbrief** seeks to present 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 a large amount of information on hand, and to present it in condensed and simplified form. Much of the current issue is devoted to developments concerning the Democratic People's Republic of Korea (DPRK); illicit trafficking in nuclear materials; this year's General Conference of the IAEA; and the third session of the Preparatory Committee for the 1995 NPT Conference. Given current interest in the topic of nuclear nonproliferation, the list of new publications is also exceptionally long. All this means that there is less space for some other topics, in particular the peaceful uses of nuclear energy, even though this issue of the **Newsbrief** is the biggest so far.

As in previous issues, subheadings used were chosen to point to trends rather than to imply a judgement on the events covered by them. This practice makes it necessary to adapt the subheadings from time to time. For example, with the end of the nuclear rivalry between the Superpowers, the subheading **Events of Concern for Vertical Proliferation** seems no longer apt; it has been replaced by the more neutral phrase **Weapons-related Developments in Nuclear-Weapon States**. Logically, then, the contrasting subheading **Developments of Concern for Horizontal Proliferation**, would no longer seem to apply either. Starting with this issue, therefore, the **Newsbrief** uses the subheading **Nuclear Proliferation** above the section that presents references to news items about the spread of nuclear-weapon capabilities to countries not previously known to have such capabilities; about the growth or decline of such capabilities where they had been alleged to exist; and about efforts related to the development of nuclear weapons in so-called 'threshold states', i.e., states alleged to have such weapons, but not formally recognised as nuclear-weapon states. An exception to this practice will be events or situations of particular topical importance: these are presented under the heading **Background**, at the beginning of the **Newsbrief**. Developments with regard to the DPRK form a case in point.

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 call 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

- On 8 July, representatives of the **Democratic People's Republic of Korea** and of the **United States** started their third round of talks, amidst signs that the authorities in Pyongyang might now be willing to discuss a solution of the long-standing problems on the Korean Peninsula, including the resumption of

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international inspections of the DPRK's nuclear installations. The meeting was the apparent outcome of a visit by former US President Jimmy Carter to President Kim Il-Sung, at which reportedly the latter had undertaken to ensure that the fuel extracted from the 25-MW reactor would not be reprocessed, the reactor would not be refuelled, and a resumption of IAEA safeguards pursuant to the relevant agreement would be allowed, in the understanding that the high-level diplomatic negotiations in Geneva were resumed and American efforts to have the UN Security Council adopt sanctions against the DPRK suspended. Mr. Carter is said to have advised Washington to adopt this course. There are reports that Kim Il-Sung's invitation to Jimmy Carter to come to Pyongyang for discussions on the matter was issued after China, in apparent reaction to the breach of faith it felt Pyongyang had committed in starting the refuelling of the reactor without letting the IAEA test the fuel, had let it be known that it would no longer resist the imposition of sanctions. According to reports from Seoul, there had been at least one Chinese emissary in Pyongyang to persuade it to compromise and negotiate a peaceful solution. China hailed the announcement that the DPRK and the United States would resume their talks and claimed credit for having helped to bring about this decision. Some observers noted that no firm undertakings had been received from the DPRK before the bilateral discussions were resumed, but other sources indicated that Pyongyang had indeed pledged to suspend the refuelling operation, refrain from reprocessing the extracted fuel and allow inspection of the 8,000 irradiated fuel pins. Mr. Carter himself stressed that he had merely conveyed to the White House the views and commitments expressed to him in Pyongyang; he said he had no way to guarantee that the promises would be honoured. Shortly afterwards, interviewed on a trip through Japan, the former president expressed doubt that the DPRK would give up its spent fuel rods. He added that the first consideration now should be to make sure that no more plutonium would be reprocessed.

Initial reports from both sides on 8 July, about the first day of the resumed discussions, reflected a much-improved atmosphere. In parallel with the talks at Geneva, preparations were also underway for a meeting of the Presidents of the two Korean states; this was to take place in Pyongyang, on 25–27 July, where South Korea's President Kim Young Sam expected to have two rounds of talks with the DPRK's Kim Il-Sung. At the time, there was no mention yet of a possible return visit. It was reported in Seoul that the South Korean President would once again raise the issue of a nuclear-weapon-free zone in the Korean Peninsula.

The next day, 9 July, it was announced that the DPRK's President, Kim Il-Sung, the 'Great Leader', had died, reportedly of a heart attack. A week's mourning was proclaimed and the meeting of the heads of state of the two Koreas was postponed without a new date having been set. The Geneva talks were suspended until after Kim Il-Sung's funeral.

After what appeared to have been a smooth transition, within two weeks after the death of Kim Il-Sung his 52-year old son and heir Kim Jong-Il, the 'Dear Leader', was named to the highest positions in the country. In the absence of direct information from Pyongyang, there had been speculation abroad as to who the next Head of State of the DPRK would be, and what approach that person would adopt in the nuclear issue. Even before the funeral, however, reports that the military and the Central Committee of the Korea Workers Party had come out in support of Kim Jong-Il indicated the high likelihood that he would succeed his father. At a ceremony on 20 July — after the funeral, delayed by several days to allow the great throngs of mourners to say farewell to the 'Great Leader' — he was acclaimed as Head of State, Commander in Chief of the armed forces, and General Secretary of the Korean Workers' Party. On 9 August, at a ceremony marking the passing of one month since the death of Kim Il-Sung, the country's political elite repeated their vow to put Kim Jong-Il at the head of the party, the state and the army; it was noted that Kim was not himself present. Shortly after, Pyongyang Radio broadcast a warning that if the succession issue failed to be solved correctly, the result could be disastrous. Again, there was speculation as to why Kim Jong-Il had still not formally been appointed Head of State and Secretary-General of the Workers' Party, and had not made any public appearance since his father's funeral. American and South Korean intelligence officials were quoted to say, however, that they had no evidence of any serious dissent in Pyongyang that might endanger Kim's orderly succession and in early September it was confirmed in Pyongyang that Kim Jong-Il would shortly take formal power.

Among assessments of the likely effect of the changes in the DPRK, there were comments that China, which had maintained a close relationship with President Kim Il-Sung, might now be less inclined to put its full weight behind the DPRK. On the other hand, China's withdrawal from the Korean Military Armistice Commission, on 2 September, is seen as a gesture of support for the DPRK, which had earlier done the same, and as a setback to South Korea, which reputedly sees this as part of a policy to isolate it further from attempts at settling regional issues. However, during a visit to Seoul on 23 July, Japan's new Prime Minister, Tomiichi Murayama, reassured South Korea that his country would consult it on any negotiations it might have with Pyongyang. He also reconfirmed Japan's willingness to provide financial assistance to supply light-water reactors to the DPRK once the nuclear issue was resolved.

Pending the resumption of the talks between senior diplomats from Washington and Pyongyang, the latter reaffirmed its commitment to honour the late Kim Il-Sung's undertaking to freeze the nuclear programme. Specifically, the DPRK would allow IAEA inspectors to remain at Yongbyon; would not reprocess the irradiated fuel extracted from the reactor; and would not load new fuel into the reactor. A few days before the resumption of the talks, the Government-controlled daily *Rodong Sinmun* also stated that the country would

adhere to the 'package proposal' on the nuclear issue that had been made before Kim Il-Sung died. The paper referred to the DPRK's wish to obtain a light-water reactor for electricity generation, calling this a touchstone of American intentions. At the same time Pyongyang said that it would shortly have to start reprocessing the spent fuel by the end of August, because the cladding of the rods was deteriorating in the fuel pond. Experts from the IAEA and the United States said that while corrosion was indeed likely to occur, it would be possible to slow this process down and extend fuel storage life by months or even years. The US Administration, which all along considered the question of the reprocessing of the extracted fuel as one of the major and most disquietening aspects of the situation, suggested sending experts to improve conditions in the spent fuel pond and thereby lengthen the storage life of the rods. The use of British technicians with experience in handling the kind of fuel used in the reactor at Yongbyon was mentioned and it was suggested that the condition of the fuel in wet storage might be stabilised for a year or more by lowering the temperature of the cooling water and maintaining an anti-corrosive water chemistry regime in the pool. Reportedly, discussions were held also on the possibility of arranging for concrete dry storage of the fuel, possibly outside Korea. There was also said to be a proposal from Washington to have the spent fuel reprocessed abroad. According to South Korean sources cited in the United States, during the previous round of negotiations the DPRK had offered to let the IAEA monitor the reprocessing and keep the extracted plutonium under its safeguards.

Following working-level contacts during the period of suspension, representatives of the US and the DPRK reached agreement in principle that the high-level discussions would be resumed. On 5 August, the two sides again met at Geneva for formal negotiations. Initial reports reflected 'businesslike and useful' talks but no specific agreement on any issue. In particular, American negotiators were said once again to have expressed opposition to the early reprocessing of the irradiated fuel from the 25-MW reactor, while the North continued to insist on the need to do so. According to American sources quoted at the time, there might be enough plutonium in the fuel for four or five nuclear weapons.

After a week of intensive negotiations, the two sides announced on 12 August that they had reached tentative agreement on a package of elements that should be part of a final resolution of the nuclear issue. As reported, the DPRK would remain a party to the NPT; would allow implementation of its safeguards agreement with the IAEA, thus permitting IAEA inspection of its nuclear installations; would seal the reprocessing facility; and would be ready to replace its uranium-fuelled, graphite-moderated nuclear reactors with light-water reactors. The DPRK was said also to have confirmed that it would continue to observe the freeze of its nuclear activities while negotiations were going on, but to have reserved the right to start refuelling the reactor any time after 23 September, when the negotiations were to be resumed.

Among 'important issues' mentioned in a joint statement of the two delegations as still to be resolved, was the question of the 'safe storage and disposition of the spent fuel'. Reportedly, the DPRK had agreed not to reprocess the 8,000 irradiated fuel pins from the 25-MW reactor fuel itself, but it was not clear at the time what would happen instead. Pyongyang appeared to have rejected an American suggestion of moving it to a third country, such as China, for safekeeping. In fact, there had been an earlier report that when visiting China, Japan and Russia, the chief American negotiator, Assistant-Secretary of State Robert L. Gallucci, had met with little or no enthusiasm there for the idea of accepting the fuel for storage. One idea which is said to be under consideration is that the fuel pins would be encased in concrete or welded steel containers and left in dry storage in the DPRK, pending which the fuel will be left in the cooling pond. The matter was the subject of technical discussions between the two sides in Berlin, in early September.

As another part of the 'package' it was announced that the two governments were prepared to establish diplomatic representation in each other's capitals — reportedly beginning by setting up liaison offices — and would move towards full normalisation of political and economic relations. The United States had also agreed in principle to grant the DPRK negative security guarantees. In September, working-level talks on the establishment of liaison offices in the respective capitals were held in Pyongyang.

With regard to inspection of the two supposed waste-disposal areas where the Agency had wished to make special inspections, it was noted that no specific decision seemed to have been taken. There have been several recent statements by DPRK officials to the effect that the two sites would remain out of bounds. An unnamed senior official in Washington was reported to have said that diplomatic recognition would depend on Pyongyang's concurrence with IAEA inspection of these sites, although later reports seem to indicate that the United States might be flexible in regard to the timing of the inspection.. Reportedly, in an earlier telephone conversation, President Clinton advised President Kim Young-Sam of South Korea that the United States would insist on IAEA inspection of the two waste sites before it would agree to the supply of light water reactors to the DPRK. There has also been a report from the *Korean Central News Agency*, that the Foreign Ministry at Pyongyang had again said that the DPRK would never allow the inspection of 'the military sites' (*sic*) at the expense of its sovereignty to receive light-water reactors. This was reiterated in a later radio broadcast and underlined in a statement by the leader of the DPRK's delegation, who said that the idea of special inspections was invented by 'some dishonest quarters of the IAEA', and was 'a product of its partiality'.

In early September it was reported that the two IAEA inspectors who had been permitted to remain at the Yongbyon site to monitor the spent fuel, had been given access to a fuel fabrication facility and a fresh fuel storage site — i.e., two of the seven nuclear

facilities of which the IAEA had been notified in the DPRK's initial inventory declaration. It was also announced in Vienna that analyses of samples taken earlier in 1994 indicated no evidence of plutonium extraction in the preceding year, and that, based on daily inspections by the IAEA and remote video monitoring, it could be concluded that none of the irradiated fuel had been removed from the storage pond. IAEA officials were also quoted as saying that they had no way of knowing how much plutonium the DPRK might have extracted before Agency inspections began.

A major element among the items tentatively agreed on between the DPRK and the United States in August was the latter's undertaking to make arrangements for the provision to the DPRK of light-water reactors with a total output of approximately 2,000 MW(e) and to ensure the presence of interim energy alternatives in the period before the DPRK's energy needs could be met by the new reactors. The 'interim' energy would presumably come from South Korea, where officials are said to have expressed their country's readiness to supply excess electricity to the North, rather than oil which, they fear, might be put to military use. Reportedly, also, Seoul would see the construction of additional power-generating capacity in the North as an advance investment for eventual unification.

Already before the resumption of the third round of negotiations, the United States was reported to have consulted with China, Japan, Russia and the Republic of Korea on the question of assistance to the DPRK with the construction of one or two light-water power reactors that would not lend themselves as readily to the production of weapon-usable plutonium. Reportedly, Washington would want the 200-MW reactor at Yongbyon, (which may be completed in 1995 or 1996) and the 600–800-MW reactor at Taechon (expected to be finished in 1996–97) as well as the 25-MW reactor at Yongbyong, to be dismantled altogether, before any nuclear assistance is given. There is particular concern about these facilities which, as Amb. Robert Gallucci is quoted to have said recently, will be able to produce plutonium 'by the ton'. Agreement in principle is said to have been reached already before the bilateral talks were resumed, that if the DPRK halted its alleged nuclear-weapon programme and made an unambiguous commitment to abide by the NPT, guaranteeing nuclear transparency, Japan, South Korea and the United States would jointly assist it with the construction of light-water power reactors, possibly of a modern Russian design. An offer for the supply of a power reactor was reportedly made by Russia, in early July and repeated in August. Reputedly, a major part of the costs would be covered by the Republic of Korea. Seoul has also said it is ready to provide reactors. Initially the US Administration was seen as reluctant to concur with any such move, since South Korean reactors are based on American technology, of which US legislation would not allow the export to the DPRK. Some reports speak of Pyongyang's preference for Russian reactors, as it has experience in dealing with Russia, has already done some site selection work for VVER-440s and would wish to avoid being dependent on technology from its Southern adversary. The Russian reactor also costs less than does an American LWR power plant. The most recent reports see the United States as leaning toward having the reactors, which press reports say are expected to cost about $4 billion, supplied by South Korea after all, rather than by Russia. There has been a report that the Seoul government would wish to see the reactors built in the demilitarised zone between North and South. In late August, however, Pyongyang radio said that the DPRK would reject the South's offer to provide it with up-to-date reactors, and that this matter should be handled between it and the United States, without the intervention of Seoul. In early September, DPRK and US officials held working-level talks in Berlin, on the possible supply of light-water reactors and on the disposal of the spent fuel rods from the 25-MW reactor. Following the Berlin meeting the head of the DPRK's delegation said his country claimed the right to select the type of reactors it would receive — presumably based on Russian or German technology — and also demanded additional financial assistance, amounting to 'several billion dollars'.

The same message emerged from the fourth round of senior-level talks that started on 23 September. Initial reports spoke of the DPRK's insistence on a payment of $2 billion as the price of discontinuing its natural-uranium fuel cycle and the supply of German or Russian-built reactors rather than South Korean ones. It was also thought to have said that insistence on inspections at the two suspected waste-sites would jeopardise over-all agreement. First reactions from the US side were that the DPRK's new demands were 'ridiculous' and as of the day that this **Newsbrief** went to press, no progress had been reported and the talks were suspended until 4 October. It has been remarked that the resolution adopted earlier by the IAEA's General Conference in Vienna, with 76 votes in favour, 10 abstentions (mainly non-aligned states and China) and one against (Libya), which calls on the DPRK to allow full international inspection, may have stiffened the DPRK's stance. It was noted, however, that, while expressing extreme displeasure at current American naval exercises off the Korean coast, Pyongyang did not take them as a pretext to break off the talks.

The proposal to supply the DPRK with reactors as part of a deal to persuade it to cease its nuclear-weapon efforts is not everywhere received with approval. Reports from Washington speak of reluctance among officials and members of both houses of the Congress, to entertain the idea, which to many appears as a reward for non-compliance with treaty obligations. According to critics, Pyongyang might exploit the situation to buy time for the completion of its nuclear-weapons programme, which it would seek to keep going for the ten-year period it would probably take for a new light-water reactor to be completed. Sceptics also feel that for Pyongyang, the issue of power generation is a pretext to maintain its nuclear programme. This view appeared to be bolstered by the disclosure that in 1992, shortly before IAEA inspectors were to visit the site of the 200-MW reactor, American surveillance satellites had seen part of the facility being demolished so that

electrical turbines could be installed next to the reactor. Allegedly, this was done to create the impression that the plant was to be used for power generation, rather than in the first place to produce plutonium. Only the large reactor at Taechon is seen by observers as intended in the first place to generate power, but, given the fact that, like the other reactors, it is a natural-uranium (magnox) fuelled, graphite-moderated facility, they think it might also be used as a stand-by source of weapon-grade plutonium.

Comments in Washington on the achievements of the August talks called for caution. Media reports said the US Administration would link the results of future negotiations to the extent to which the DPRK adhered to its commitment to freeze its nuclear operations, to refrain from reprocessing and replacing the extracted fuel, and to permit IAEA inspectors to remain on-site. There was also mention of a demand by Washington that the North's undertaking not to finish building the two natural-uranium reactors now under construction, and the closure of the reprocessing facility, should be monitored by the IAEA, but this has not been confirmed.

After the August meeting in Geneva, Assistant-Secretary of State Gallucci was heard to say that the United States was pleased with the outcome of the talks so far but the lion's share of the work still remained to be done. He qualified the tentative agreement — which some observers saw as reflecting greater openness and flexibility on Pyongyang's part — as 'a basis on which to go further', and as 'a first step'. Following the working-level discussions that were held in Berlin and Pyongyang a month later, Gallucci was heard to express similar reservations. While the talks had been productive, he said, the differences with the DPRK were still so deep that it was unlikely the two sides would be able to open diplomatic relations or resolve the questions over the North's nuclear activities any time soon. He was also reported to have rejected Pyongyang's claim to the right to select the type of reactor it would get, saying that the design would be like that of reactors now being constructed in South Korea and that that country would have to play a central role in their construction.

It has been reported that in August, Kim Jong-Il wrote to former President Carter asking him to continue his mediation efforts. His letter is said to contain a standing invitation to Mr. Carter to come to Pyongyang and is believed to contain the assurance that the DPRK will pursue the flexible policy Kim Il-Sung had recently adopted; it did not, apparently, indicate any interest in setting a new date for a meeting with the President of the Republic of Korea, which was put off when Kim Il-Sung died. Press reports from Seoul say that authorities there are not keen on a resumption of Mr. Carter's intervention, because they see Kim's initiative as part of an attempt to drive a wedge between themselves and Washington.

Press comments stress that South Korea sees the import of the events of the last few months as going beyond the immediate security aspect of having a potential nuclear-armed northern neighbour, to the possible resolution of a forty-year-old conflict. Comments in Seoul on the outcome of the August round of negotiations were cautiously positive. There is said to be anxiety in South Korea that an improvement of relations between the US Administration and the DPRK might have a negative impact on those with the Republic of Korea. South Korea has let it be known that it would not oppose the normalisation of relations between the DPRK and the USA but it is said to resent what it sees as a tendency on the part of the DPRK to try and resolve its differences with the United States without involving the Republic of Korea. The latter's foreign minister reportedly visited Washington in early September to urge authorities there not to conclude important agreements with the North without involving Seoul. While in Seoul in mid-September, Assistant-Secretary of State Gallucci reportedly promised South Korea that the United States would not try to improve its relations with the DPRK at the expense of the South. Secretary of State Christopher has also sought to reassure South Korea with a promise to visit it later this year. Some Washington observers see Seoul's bellicose stance as at least partially responsible for the bad relations between the two Korean states and warn for too close identification with Seoul's policies.

Reportedly determined to play a central role in providing the DPRK with alternative sources of nuclear power, the President of the Republic of Korea, Kim Young-Sam on 15 August made what was seen in the East Asian press as 'a modestly conciliatory speech', in which he called for an early improvement in relations between the two Korean states and expressed willingness to give technical and financial support to the North's peaceful nuclear developments.

Meanwhile, speculation has continued about the progress the DPRK may have made in developing nuclear weapons. A report by the Russian Foreign Intelligence Service, that was translated and excerpted for the US Senate in February 1993, stated that 'the DPRK [did] not possess nuclear weapons at [that] time'. A Russian press report of June 1994, however, claims that a secret KGB account of early 1990 disclosed that at that time the DPRK had developed a nuclear explosive device. One report from Seoul quotes a former KGB source as saying that in 1990 the North had its first 'nuclear detonator'. Several South Korean reports speak of various defectors from the DPRK who supposedly disclosed information about that country's nuclear activities. One of these was alleged to be a non-commissioned officer, a qualified scientist, who spoke of Pyongyang's establishment of the military infrastructure for nuclear warfare. Another was said to be an employee of a uranium refinery, who alleged that in 1988 the DPRK reprocessed about 12 kgs of plutonium, 'sufficient to produce two nuclear bombs'. This source is supposed to have said that no nuclear bombs had been produced yet, but he thought they were 'near completion'. A 'senior government official' is quoted in Seoul as identifying three periods during which the reactor at Yongbyon had been shut down: 71 days in 1989, one month in 1990 and 50 days in 1991.

According to this account, the DPRK processed the fuel it extracted during these outages, to obtain between 48 lbs (21.6 kg) and 60 lbs (27 kg) of plutonium, presumably enough for three or four nuclear weapons. There has also been a report from South Korea about a defector who claimed to be the son-in-law of the DPRK's Prime Minister Kang Sung San and alleged that Pyongyang had already developed five atomic bombs and was planning to produce five more before openly proclaiming itself a nuclear power. In line with previous accounts, this person said that the DPRK's new leader, Kim Jong-Il, was personally in charge of the nuclear weapons programme, which he considered not as a bargaining chip, as often surmised by western intelligence analysts, but as a straightforward means of asserting military power. This statement has been received with scepticism by intelligence officials, who see no way to verify the allegation; the DPRK denies that the defector is the Prime Minister's son-in-law. United States and South Korean officials have expressed doubts about the credentials of the person in question and about the likelihood that the North would have produced nuclear material for more than one or two nuclear weapons. According to the IAEA, '[t]he statement made by the defector is not judged to be plausible'. There is also a question why this information should have been disclosed several months after the supposed defection took place.

(**Financial Times**, 22/6, 23/6, 21/7, 25/7, 28/7, 9/8, 13/8, 15/8, 2/9; **Nucleonics Week**, 23/6, 30/6, 11/8, 18/8, 8/9; **Washington Post**, 23/6, 24/6, 25/6, 26/6, 28/6, 29/6, 30/6, 1/7, 3/7, 7/7, 16/7, 28/7, 30/8, 3/8, 8/9, 10/9, 15/9; **International Herald Tribune**, 24/6, 25-26/6, 7/7, 8/7, 11/7, 12/7, 13/7, 16-17/7, 18/7, 22/7, 23-24/7; 28/7, 29/7, 9/8, 15/8, 16/8, 7/9, 12/9, 13/9, 14/9, 15/9, 16/7, 17-18/9, 23/9, 24/9; **Daily Telegraph**, 25/9, 26/9, 30/9; **Washington Post National Weekly Edition**, 27/6-3/7, 4-10/7; **New York Times**, 29/6, 30/6, 5/7, 9/7, 10/7, 11/7, 20/7, 22/7, 23/7, 24/7, 28/7, 3/8, 5/8, 6/8, 9/8, 13/8, 14/8, 15/8, 21/8, 23/8, 25/8, 29/8, 2/9, 3/9, 16/9, 28/9; **Economist**, 2/7, 30/7, 13/8; **Reuter's** 6/7, 12/7, 28/7, 29/7, 7/8, 11/8, 16/8, 22/8, 9/9, 22/9 ; **Associated Press**, 6/7, 21/7, 26/7, 28/7; **Kurier**, 7/7; **Guardian**, 8/7, 21/7, 28/7; **Le Monde**, 10/7, 11/7, 21/7, 27/7, 15/8; **Yomiuri Shimbun**, 12/7; **Neue Zürcher Zeitung**, 13/7, 30/7, 17-18/9; **Sunday Telegraph**, 17/7; **Yonhap** [Seoul], 25/6, 26/5, both in **JPRS-TND**-94-013, 24/6, 24/6 in **JPRS-TND**-94-015, 22/7; **Chugan Choson** [Seoul], 30/6 in **JPRS-TND**-94-015, 22/7; **Süddeutsche Zeitung**, 22/7, 25/7, 27/7, 28/7, 29/7, 15/9, 16/9, 23/9; **Frankfurter Allgemeine Zeitung**, 22/7, 16/9; **Independent**, 23/7, 13/8, 15/8, 14/9, 28/9; **Times** [London], 27/7, 28/7; **Far Eastern Economic Review**, 28/7; **Wall Street Journal**, 28/7; **Occasional ISIS Report**, 1/8; **Mainichi Shimbun**, 9/8; **Xinhua** [Beijing], 13/8, 14/8, in **JPRS-TND**-94-016, 19/8; **US Information Service**, 16/8; **Korea Times** [Seoul], 16/8; **BBC Monitoring Service, Summary of World Broadcasts**, 16/8, 17/8, in **Uranium Institute News Briefing**, 94/34; **Christian Science Monitor**, 23/8; **Die Welt**, 15/9; **Bulletin of the Atomic Scientists**, Sept/Oct.)

- In the **United States** a report by scientists of the *Natural Resources Defense Council* calls for a drastic tightening of the norms set for the verification of compliance with non-proliferation undertakings. According to the authors of this proposal, Drs. Thomas Cochran and Chris Paine, the 'significant quantity' (SQ) used as the basis for international safeguards, i.e. 8 kg of Pu 239 and 25 kg of highly enriched uranium, should be reduced by a factor of 8, to 1 kg and 3 kg, respectively. The proposal, contained in letters to the IAEA and to the US Administration, is generating discussion among scientists, industry and US government officials. There seems to be a widely shared view that the amounts currently used to set the targets for international safeguards are too high. The IAEA says that in practice its inspection goals are much tighter than would seem to be indicated by the SQ figure, but that any formal change in the threshold value would have to be decided by member states. The present trend seems to be to consider values mid-way between those now proposed and the old ones. Experts comment that in fact the amount of nuclear material needed depends largely on the technological sophistication and expertise of the producer. The discussion is hampered by the fact that data on weapon production are classified. (**New York Times**, 21/8; **Associated Press**, 21/8; **Wall Street Journal**, 23/8; **Nucleonics Week**, 25/8; **Economist**, 27/8; **SpentFUEL**, 29/8)

- The US Senate has approved the appointment of Ralph Earle, former Director of the US Arms Control and Disarmament Agency, as ACDA's new Deputy Director. Thomas Graham, Jr., former acting Deputy Director of ACDA, has been confirmed as U.S. Representative to the 1995 NPT Conference, with the personal rank of ambassador. Dr. Lawrence Scheinman, who has served as counsellor for non-proliferation in the US Department of Energy, has been confirmed as Assistant Director of ACDA for Nonproliferation & Regional Arms Control. Ms. Amy Sands, previously head of the Section for Proliferation Assessments at the Lawrence Livermore National Laboratory, has been appointed Assistant Director for Intelligence, Verification and Information Support. Dr. Michael Nacht, former Dean, School of Public Affairs, University of Maryland, has become Assistant Director for Strategic and Eurasian Affairs. (**Foreign Report**, 23/6; **Nucleonics Week**, 28/7; Direct Information)

- Gerard C. Smith, Chairman of the Washington Council on Non-Proliferation, a former Director of the Arms Control and Disarmament Agency and a senior arms control negotiator in the Nixon and Carter Administrations, died on 4 July. Ambassador Smith played a prominent part in discussions and negotiations on disarmament matters, especially with respect to nuclear weapons. He directed the negotiations leading to the Anti-Ballistic Missile Treaty of 1972. In 1982, together with McGeorge Bundy, Robert S. McNamara and George F. Kennan, he wrote an article in Foreign Affairs calling for a US non-first-use pledge. (**Washington Post**, 6/7; **New York Times**, 6/7)

b. NPT Events

- **Kyrgyzhtan** deposited its instrument of ratification of the NPT in Moscow, on 5 July. This brings the number of parties to the NPT to 165. On 11 July, the government of **Argentina** submitted to the Parliament its request for ratification of the NPT. President Kuchma of **Ukraine** has confirmed that he would ask the Parliament to ratify the Treaty. (**United Nations**; **Reuter's**, 19/8; **Direct information**)

- The **Preparatory Committee for the 1995 Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons** (NPT) had its third session at United Nations Headquarters in Geneva, on 12–16 September. The session was opened by the Chairman of the second session, Ambassador André Erdös of Hungary and chaired by Ambassador Isaac Ayewah, Deputy Permanent Representative of Nigeria to the United Nations in New York; Hannelore Hoppe of the UN Centre for Disarmament Affairs was the Secretary. Representatives of 89 states parties to the NPT participated.

  Algeria, Argentina, Brazil, Chile, Israel, Pakistan and Ukraine attended as observers. The Committee decided that representatives of intergovernmental organisations should be allowed, upon request, to attend meetings as observer agencies. In that capacity, the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL) and the League of Arab States were represented at the session. The session was further attended by representatives of 51 non-governmental organisations, of whom several held briefings for delegations participating in the session of the Preparatory Committee. On 14 September, a number of NGOs participated in a joint briefing meeting held 'on the margins of the Committee's deliberations', i.e., in a room available for this purpose at the UN building in Geneva. Their one-page statements were made available to participants. The statement made on behalf of PPNN is reproduced in the **Documentation** section of this **Newsbrief**. Information material from NGOs was displayed outside the meeting room and distributed individually to delegates.

  Early on in its third session, the Preparatory Committee devoted two meetings to substantive statements. These were seen as early indications of attitudes that may be expected to dominate the review and extension process at the 1995 conference. In general terms, speakers from industrialised nations stressed the non-proliferation functions of the Treaty and praised its attainments. The majority of the (more numerous) speakers from developing and non-aligned states underlined the obligations of nuclear-weapon states under article VI of the Treaty, and expressed the view that the implementation of the Treaty had not gone far enough to alleviate the discrimination inherent in it. While the former category of speakers called for the indefinite and unconditional extension of the Treaty, the latter, by and large, expressed preference for an extension by a fixed period or periods. A document reflecting the views of the Group of Non-Aligned and Other States in this regard is reproduced in the **Documentation** section of this **Newsbrief**. There was much discussion in and around the session about options for extension, including the admissibility of conditional extensions.

  In response to the request made by the Committee at its second session, background documents had been prepared by the Secretariats of the United Nations, the IAEA, OPANAL and the South Pacific Forum. These will be amended to take account of comments made, and brought up to date before being submitted to the Conference. Some delegations felt that the paper prepared by the IAEA as usual on its activities under article IV did not constitute the 'comprehensive' background documentation requested by the Preparatory Committee at its second session; they proposed that a second paper should be prepared on the implementation of that article. Such a paper would presumably include a description of supplier states' controls on nuclear exports, which a number of developing nations see as detracting from their rights under article IV. There was no consensus on the preparation of such a paper, and the issue was remitted to the Committee's fourth session for further consideration. A request of the non-aligned delegations for a paper by the United Nations Secretariat on the legal interpretation of article X.2 (options for extension) also could not obtain consensus and was similarly held over for the next session.

  Most of the third session of the Committee was devoted to procedural matters, this time pertaining exclusively to the 1995 Conference itself. Discussions on these items reflected the approaches of the respective speakers to the substantive issues that will face the Conference. The draft Rules of Procedure for the Conference were discussed in a working group, which managed to agree on the entire document, with the exception of one country which questioned the rule on decision-making with regard to the extension, particularly how to act if there was more than one proposed option. As to the scale of contributions to the budget of the Conference, which is part of the Rules, it was agreed that China, France, Russia, the UK and the USA together would pay 55 per cent of the costs, with the remainder being paid by the other participants in accordance with an adjusted UN scale of contributions. However, the country referred to above insisted that all **parties** should contribute, including those that did not attend. Another state asked for postponement, because its UN contribution was still under discussion.

  The Committee will have to discuss the matter again at its January session.

  Also held over to January was the Agenda for the Conference. In this connection there was an extended exchange about the order of the items. The main issue here seems to be whether absence of agreement on the review of the implementation of the Treaty should hold up a vote on its extension. There is also question about the item allocating the review of the implementation of various elements of the Treaty to the respective committees.

The question of the 'final document(s)' is referred to the last session of the Committee as well. The issue of the relationship between review and extension also has a bearing on this item.

The Group of Western and Other States had endorsed the candidature of Ambassador Pasi Patokallio of Finland for the chair of the Committee's fourth session. The allocation of the chairs of the principal committees of the conference has not yet been fully agreed, however. Given the presumed connection between those allocations and the chairmanship of the various sessions of the Preparatory Committee, this matter also had to be left for decision at the fourth session. The chairman of the third session, Amb. Ayewah, was asked in the interim to have consultations on this issue.

(**NPT/CONF.1995/PC.III/15**, 16/9, Progress Report of the Preparatory Committee for the 1995 Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons; **NPT/CONF.1995/PC.III/13**, 14/9, letter from the head of the delegation of Indonesia, transmitting a document of the Group of Non-Aligned and other states; **Reuter's**, 15/9; **Tribune de Genève**, **Journal de Genève**, **Neue Zürcher Zeitung**, **Financial Times**, all 16/9; **Nucleonics Week**, 22/9; **Direct Information**)

- References to reports that **Iran** is contemplating withdrawing from the NPT, mainly because of its dissatisfaction with the way article IV of that treaty is implemented, are included below under item **g. IAEA Developments**: **1. General Conference**.

c. Other Non-Proliferation Developments

- On 26 July **Kazakhstan** signed a safeguards agreement with the International Atomic Energy Agency pursuant to the NPT. The agreement will come into effect upon ratification by Kazakhstan. Kazakhstan has inherited an extensive nuclear research establishment from the former USSR. Reportedly, there are still 104 SS-18 strategic missiles with 1,040 warheads on its territory, which are to be moved to Russia. (The pertinent press reports do not mention another 370 warheads on gravity bombs that in 1993 were said to be still in Kazakhstan—Ed.) (**United Press International**, 26/7; **Frankfurter Allgemeine Zeitung**, 27/7; **IAEA Press Release** PR 94/30, 27/7)

d. Nuclear Disarmament and Arms Limitation

- Reports from **Canada** say that a proposal is under consideration to burn plutonium from dismantled Russian and US nuclear warheads in Candu reactors. Reportedly, Atomic Energy of Canada Ltd. has been commissioned by the US Department of Energy to make a feasibility study. A study by the US National Academy of Sciences is said to have concluded that US reactors could burn plutonium and uranium oxides (MOX) in one-third of their cores, but that is thought to carry risks in the case of a sudden shut-down. The study is said to have called the use of plutonium in Candu reactors a 'technically attractive option'; Candu reactors are said to have greater shut-down flexibility and may be able to use MOX fuel throughout the core, without physical modifications to the reactor. Observers note, however, that this solution might have some political repercussions because of Canada's long-standing anti-plutonium policy; apparently, also, the costs involved are difficult to assess. *Greenpeace* has warned against the idea as encouraging civilian use of weapons-usable plutonium. (**Globe and Mail**, [Toronto] 8/7; **Greenpeace Press Release**, 8/7, in **Uranium Institute News Briefing**, 13-19/7; **Nucleonics Week**, 14/7, **Ottawa Citizen**, 9/8)

- **China** and **Russia** have concluded an agreement to avoid military incidents such as unintentional border crossings, jamming of radar, inadvertent missile launches and violations of airspace. The two countries have also agreed not to target nuclear missiles at each other. This is seen in the West as a largely symbolic move, as Chinese missiles are thought not to be targeted in advance. (**International Herald Tribune**, 13/7; **New York Times**, 4/9)

- At Paldiski, in **Estonia**, Russian technicians have begun to dismantle two 25-MW land-based submarine training reactors. These reactors are reported to be very compact and hard to take apart, and to possess secret features which would enable them to achieve power surges of more than 100 per cent. Estonia is paying part of the cost of the operation, but the presence of its safety personnel is reputedly discouraged, as is Western observation. It seems that there had been disagreement on the deadline for the dismantling job, with Estonia demanding that the work should be concluded within ten months, and Russia saying it needed seventeen. They have now reportedly agreed on fourteen months. The fuel of the first reactor should be removed by mid-September, that of the second, by 20 October. The main question in the negotiations is said to have been the timing of the withdrawal of Russian military personnel and their families, rather than the demolition of the reactors. Submarine training will reportedly be moved to Obninsk in Russia, and be done on simulators rather than actual reactors. (**Russia & Republics Nuclear Industry**, 25/5; **Süddeutsche Zeitung**, 28/7; **Frankfurter Allgemeine Zeitung**, 1/8; **Salzburger Nachrichten**, 1/8; **Neue Zürcher Zeitung**, 4/8; **Nucleonics Week**, 1/9)

- **Russia** and the **United States** have signed a new agreement under which the three plutonium production reactors at Tomsk and Krasnoyarsk will be shut down and converted to fossil-fuel units. This is not expected to occur until the end of the present century, in part because local authorities have not yet approved the plans for the fossil units and these plans in fact have not been drafted. US Vice President Gore, who was the American signatory, promised that his country would add to the $90 million already pledged to help Russia build a storage facility for excess plutonium and high-enriched uranium. (**NuclearFuel**, 4/7)

- The **United States** Administration is changing its strategic nuclear doctrine from 'mutually assured destruction' to 'mutual assured safety'. The latter doctrine is understood to imply cooperation with Russia to provide maximum security for the remaining

nuclear weapons. Reportedly, however, the Pentagon's 'Nuclear Posture Review' reflects fears that Russia's economic problems may prompt it to rely for its safety on nuclear weapons rather than on a large conventional force which it would presumably find more costly to rebuild. In that light, the Administration is said to have decided to put off for now further strategic arms reduction talks with Moscow until START I and II have been ratified and fully implemented by the Russian Federation, to maintain American nuclear forces in Europe — reportedly comprising 480 nuclear weapons — and not to adopt a non-first-use policy. Some limited reductions are foreseen in delivery vehicles, with the Trident submarine force to be cut from 18 to 14 boats, and the B-52 bomber fleet from 94 to 66. B-1 bombers will no longer be nuclear-capable. Meanwhile, **Russia**'s President Yeltsin has proposed in the United Nations' General Assembly that the five acknowledged nuclear-weapon states should conclude a treaty on nuclear disarmament and strategic stability, which would provide for a reduction of their nuclear missiles, limit the production of weapon-grade nuclear material and include a comprehensive nuclear test ban. It would also prohibit the reuse of nuclear material taken from dismantled 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. At their meeting in Washington on 28 September, Presidents Clinton and Yeltsin pledged to implement the START agreements with utmost vigour. President Clinton has promised that dismantling pursuant to START II will begin as soon as it has been ratified. (**International Herald Tribune**, 23/9; **New York Times**, 23/9, 29/9; **Financial Times**, 23/9; **USIA European Wireless File**, 26/9; **Times** [London], 27/9, 28/9; **BBC Broadcast Reports**)

- It has been disclosed that the agreement concluded between Presidents Bush and Gorbachev in 1991, to take their respective bomber forces off alert and put the warheads in storage, formalised an arrangement that had existed for decades. A report from Moscow claims that even during the height of the Cold War Soviet strategic bombers carried dummy nuclear weapons rather than actual bombs. On the American side, since the accidents with nuclear bombs in Spain and Greenland in the late 1960s, the bombers in the US strategic fleet have been taken off airborne alert. At first one half of the fleet was on constant alert, and since the late 1970s one third. (**Times** [London] 1/7; **Standard** [London] 3/7)

- The process of dismantling and removal of nuclear warheads from **Ukraine** is reported to be ahead of schedule. In response, Russia has so far made two shipments of reactor fuel to Ukraine. According to a report from Moscow, by mid-May 180 strategic warheads had been removed to Russia. A *Reuter* dispatch of 29 June cites the number 240. At that time, the newly elected parliament in Kiev decided, in a vote of 141 to 41, to put on its agenda the question of reconsidering the withdrawal of all strategic nuclear warheads from Ukrainian territory, on which Ukraine had earlier concluded an agreement with Russia and the United States. In an interview on a Russian television news programme, Ukraine's newly elected president, former prime minister Leonid Kuchma, has reaffirmed that his country would fulfil its pledge to remove all nuclear weapons from its territory, saying, however, that it would need assistance to do so. In this context, observers expect that it will be some time before one can see the effect of the change of presidents. Kuchma has been known for his pro-Russian views, but it appears too early to say how much influence he will be able to bring to bear against the nationalistic feelings especially of conservatives and of parliamentarians from the western part of the country. On 2 August, US Vice-President Gore had a meeting with President Kuchma in Kiev, during which the new President reportedly gave the assurance that Ukraine would accede to the NPT 'as soon as possible'; apparently, he did not say when the Ukrainian Parliament would be asked to decide on the ratification. Mr. Gore is said to have invited President Kuchma to meet with President Clinton in Washington, on 29 November. Reports from a press conference held in Kiev shortly after the Presidential election have Mr. Kuchma saying that, because the NPT would expire in 1995 and a subsequent agreement would have to be the subject of new negotiations (*sic*), the question of Ukraine's accession should be carefully considered. In this context, too, press comments point to a link between accession and American economic assistance to Ukraine. It has been reported that the chairman of the foreign affairs committee of Ukraine's parliament has said that his country might delay joining the NPT.

  Reports from India reveal that during a visit there in April, Ukraine's then foreign minister expressed 'sympathy' for India's refusal to be 'dictated to' on the subject of acceding to the NPT.

  Pending Ukraine's accession to the NPT, a safeguards agreement has been concluded between that country and the IAEA, covering all peaceful nuclear activities.

  (**Hindu** [New Delhi], 18/4, 20/4; **ITAR-TASS** [Moscow], 13/5 in **JPRS-TND**-94-012, on 7/6; **Reuter's**, 29/6; **Frankfurter Allgemeine Zeitung**, 29/6; **Süddeutsche Zeitung**, 29/6, 30/6; **New York Times**, 10/7, 12/7, 3/8; **International Herald Tribune**, 12/7, 18/7; **Asahi Shimbun**, 14/7; **Libération**, 3/8; **Ux Report**, 29/8, in **Uranium Institute News Briefing**, 23-31/8; **Financial Times**, 2/9)

- The head of the **United States** Space Command, Air Force General Charles A. Horner, has said that the United States should get rid of all its nuclear weapons. Reportedly, at a breakfast meeting with defence reporters, on 15 July, Gen. Horner said the weapons served no purpose now that the Superpowers no longer threatened each other, that terrorists would not be deterred by a threat of massive retaliation, and that any small country that used nuclear weapons could still come under a devastating conventional counterattack. He is said to have clarified his statement as being

'long-term', as opposed to an immediate and unilateral disarmament. (**International Herald Tribune**, 16/7)

e. Nuclear Testing

- On 5 September, the **Ad Hoc Committee on a Nuclear Test Ban** issued a report on its work to the Conference on Disarmament (CD). The Appendix to the report contains a 'rolling text' for a draft treaty. While the CD itself has ended its work for the current year, the Ad Hoc Committee has recommended that it should continue work on a nuclear test ban treaty in November and December and in January 1995. Chances that there will be early agreement on a comprehensive nuclear test ban appear to be dwindling. Reports that the US wishes to include the option of denouncing the Treaty have caused consternation among proponents of an indefinite test ban. (**Financial Times**, 1/9; **Presse**, 2/9; **CD/1273/Rev.1**, 5/9)

- Thought appears to be given in **Russia** to the use of nuclear explosions for peaceful purposes. Reportedly, proposals to use nuclear explosions to vitrify and bury high-level nuclear waste and scrapped chemical weapons have been worked out by defence authorities and nuclear experts and are being considered by the Science Research Council of the Russian National Security Council. The operation would be conducted by the Moscow-based joint-stock company Chetek. (**Russia & Republics Nuclear Industry**, 25/5)

- There are reports of discussions going on among various branches of the **United States** Administration, about whether to hold a series of tests involving very small nuclear detonations, to verify whether nuclear weapons will operate as designed. These so-called hydronuclear experiments are said to involve the explosion of miniature warheads with a yield of several dozens of pounds of TNT. Apparently the US State Department, the Department of Energy and ACDA, supported by a number of United States senators, wish to defer these experiments for the time being, given present attempts to achieve a comprehensive test ban treaty. The Department of Defense and the Joint Chiefs of Staff are said to believe that these experiments are needed to help detect any deterioration of nuclear weapons. Pentagon officials say that they have understood that the US nuclear moratorium had not excluded hydronuclear testing. Reportedly, France and Russia are also in favour of allowing such experiments and may seek to add a clause to that effect to a test ban treaty. (**Washington Post**, 22/7, 25/7)

f. Nuclear Trade and International Cooperation

- On 21 June, **Argentina** and **Canada** signed a new agreement for cooperation in the peaceful uses of nuclear energy. The agreement will allow Canada to sell reactors and reactor parts to Argentina, including parts and fuel for a German-supplied power reactor in operation there. (**Ottawa Citizen**, 21/6)

- Nuclebras of **Brazil** and Siemens AG of **Germany** are said to have begun discussions on the resumption of their cooperation. Reportedly, the nuclear cooperation between the two countries — under which a fuel-fabrication facility was built that produced fuel elements for Brazil's Angra-1 PWR — had been halted by the German government after it had concluded that fuel-cycle technology had been diverted to Brazil's clandestine nuclear-weapons programme. Now that Brazil has accepted 'full-scope safeguards', however, Bonn has apparently given permission for Siemens to supply Brazil with further components for its fuel-cycle infrastructure: a ceramics plant for production of enriched uranium oxide fuel pellets, and a uranium conversion facility. There are some indications in this connection that Brazil might be seeking the means of completing the Angra-2 facility but there has also been an unconfirmed item in the press alleging that it would be willing to trade the components of that reactor for a Russian nuclear submarine. (**O Estado de Sao Paulo**, 9/6 in **JPRS-TND**-94-014, 13/7; **NuclearFuel**, 18/7)

- **Brazil** and **Russia** have concluded an agreement of cooperation in the peaceful uses of nuclear energy. The agreement is said to provide for cooperation in applied basic research, fusion, research reactors, radioisotope production, radiological protection and nuclear safety. (**Nucleonics Week**, 22/9)

- On the occasion of a visit of **China**'s Prime Minister Li Peng to **Germany**, in July, discussions are said to have been held on the supply by Germany of industrial technology in several areas, including nuclear power generation. (**Nucleonics Week**, 7/7)

- Reports keep appearing about **Iran's** continuing determination to complete at least one of the units of the Bushehr power station with assistance from **Russia**. Observers comment, however, that using Russian VVER technology to complete a plant started by Siemens of Germany and about 80 per cent finished may be next to impossible, even if funds can be found. According to unconfirmed reports in July, Russia has already cancelled the supply of two power reactors because Iran could not pay for them. **China** is reported also to have agreed to help Iran construct a power plant at Bushehr. (**MENA** [Cairo], 13/4 in **FBIS-NES**-94-072, 14/4; **Middle East Economic Digest**, 7/1; **New York Times**, 5/7; **Nucleonics Week**, 22/9)

- Utilities in **Switzerland** are said to be considering an offer from the **Russian Federation** to reprocess Swiss spent fuel at Krasnoyarsk, where there is a so-far unfinished reprocessing plant. No decision appears to have been taken yet. (**Nucleonics Week**, 15/9)

- The existing nuclear cooperation agreement between the **United States** and **Euratom** will expire at the end of 1995. The negotiations must be completed by the end of the current year, to permit the approval procedure to be completed in time and avoid a lapse in the cooperation and serious harm to Europe's nuclear industry and to international nuclear trade. The major issue so far unresolved and holding up progress is the European Union's (EU) wish to obtain a waiver by the Congress of prior consent rights for transfers and retransfers of US-origin nuclear materials. This would reflect Euratom's claim for recognition as an equal

partner to the United States and would in principle have been permissible under US legislation. As reported, the European side consider the US' demand for prior-consent as threatening as well as inappropriate, particularly for transfers within the EU, given their firm commitment to non-proliferation. There is also said to be a strong feeling among European countries that they are capable of making their own decisions on intra-European trade in nuclear materials. The US Administration, however, has let the European Commission know that it does not consider a presidential request to the Congress to waive the requirements of the 1978 Nuclear Non-Proliferation Act as politically feasible, but that it would be willing to give 'programmatic approval' for the life of the agreement, to cover European reprocessing and other sensitive nuclear activities referred to in the US legislation. Reportedly, the US Departments of Energy and Defense resisted even this approach and demanded prior case-by-case approval. The Chairmen of two subcommittees of the House of Representatives have also underlined their views that the agreement should neither include a waiver of US prior consent requirements nor programmatic approval. A bipartisan group of members of the House of Representatives have written to the Administration urging it to tighten control over the transfer of weapons-usable nuclear material of US origin, in the new agreement with Euratom. As now formulated, the American proposal is seen as a take-it-or-leave-it proposal, not open for negotiation. Another change over the previous situation is that the US Administration has offered an agreement for only twenty years, rather than the original thirty-five. Negotiations are expected to resume in October. The Energy and Natural Resources Committee of the US Senate, which is said to be inclined towards granting Euratom predictable long-term approvals for reprocessing, has called for a hearing on the matter in late September, at which it was hoped US policy could be clarified. Reportedly, the Committee wanted to meet before the Government Affairs Committee does so, whose Chairman, Sen John Glenn, is opposed to reprocessing and the civil use of plutonium. Some US experts accuse the Clinton Administration of insensitivity to European requirements and of seeking to impose a plutonium policy which is not acceptable to Europe. At the recent General Conference of the IAEA, the issue was discussed at length, both in public statements and in private meetings. An international industrial interest group newly set up in Washington is understood to put its weight behind the early conclusion of a new US–Euratom agreement. This group, the International Nuclear Nonproliferation Alliance, which reportedly includes among its members representatives of major nuclear companies and associations from Asia, Europe and North America, aims at promoting international nuclear cooperation through strengthening the nonproliferation regime. An Atlantic Council bulletin, *The US Euratom Agreement — Avoiding a Breakdown in Cooperation* by Harold D. Bengelsdorf, calls upon Washington to be sensitive to the requirements of European energy policies and acknowledge the expertise and status of European nuclear programs, including the Euratom safeguards regime. [See also under **Recent Publications**] (**SpentFUEL**, 20/6, 27/6, 4/7, 18/7, 25/7, 8/8, 15/8, 29/8, 5/9; **NuclearFuel**, 4/7, 18/7, 15/8, 29/8, 12/9, 26/9; **Bulletin of the Atomic Scientists**, Sept/Oct.)

- The **United States** Departments of State and Transportation and the Nuclear Regulatory Commission have questioned whether current studies commissioned by the Department of Energy on sea shipments of plutonium, mixed oxide (MOX) fuel and high-level nuclear waste are necessary. The State Department is said to be concerned that reopening the issue of plutonium transport by launching more studies might further complicate the US–Euratom negotiations and could upset the agreement with Japan. The Nuclear Regulatory Commission, which believes the issue has been studied adequately, is also known to be opposed to new studies on the subject. Those supporting the studies, including *Greenpeace*, are said to claim that not making further studies on the risks of the sea transport of plutonium would conflict with the Administration's non-proliferation policy. The organisations most insistent on having the matter reviewed again are now expected to initiate studies of their own. (**SpentFUEL**, 15/8, 22/8; **NuclearFuel**, 15/8, 29/8)

- In a report released on 8 September, *Greenpeace International* charges that for the past seven years the **United States** has provided **Japan** with sensitive technology relating to the reprocessing of fast breeder fuel, in contravention of the the US Nuclear Nonproliferation Act of 1978. The technology would be used in Japan's Recycle Equipment Test Facility, which will separate super-grade plutonium from plutonium produced in the fast breeder reactors at Monju and Joyu. The US Department of Energy is quoted as saying that the exports, which are seen as 'a remnant of the last administration', would be ended. (**Nucleonics Week**, 8/9; **Kyodo** [Tokyo], 9/9; **Associated Press**, 9/9; **International Herald Tribune**, 10-11/9; **NuclearFuel**, 12/9; **Washington Post**, 13/9)

- In the **United States**, the Department of Energy has proposed dropping Argentina, Brazil, Chile and South Africa from the list of countries requiring specific authorization for assistance related to civilian nuclear power reactors. They would still need specific authorization for assistance in enrichment, reprocessing, mixed-oxide fuel fabrication and heavy-water production. (**NuclearFuel**, 29/8)

g. IAEA Developments

1. General Conference

- The 38th Regular Session of the General Conference of the IAEA was held in Vienna on 19–23 September. It was attended by representatives of 100 member states. President was Prof. Alec Jean Baer of Switzerland.

  At the opening session, the General Conference heard a message from the Secretary-General of the United Nations, who referred to the NPT as the cornerstone of international efforts to prevent the spread of nuclear

weapons, called it a top priority of the IAEA and of the Member States of the United Nations to maintain the Treaty's integrity and expressed the hope that it would be extended indefinitely and unconditionally.

In his statement, the Agency's Director General spoke about, among other things, the issue of IAEA safeguards in the DPRK, the situation in Iraq, the status and improvement of safeguards, possible new verification tasks and the illicit trade in nuclear material. Relevant portions of the statement are reproduced in the **Documentation** section of this **Newsbrief**. (**Press Release** 94 PR/33, 19/9)

As customary, the General Conference discussed the major activities of the Agency, as reflected in its Programme and Budget. Many statements in the general debate dwelled on the 1995 review and extension conference of the NPT. More than in previous years, speakers from developing nations mentioned the importance of article IV of the Treaty; several, China among them, criticised what they saw as the imbalance between the Agency's promotional and regulatory activities, including safeguards. Most speakers from the non-aligned nations called for the extension of the NPT for a finite period or periods. Iran, whose attempts to resume construction of the Bushehr power station are hampered by export restrictions of supplier states, specifically included 'safe and easy access to materials and technology for peaceful purposes' among conditions which, if not attained, would make it hard to reproach states for non-compliance with the Treaty. The assertion of its representative, that the 'increasing difficulty of benefitting from the rights to peaceful applications of nuclear energy' had justified 'renouncing the NPT among some of the developing countries', was widely seen as a threat to quit the Treaty, in line with similar statements Iran has made in the Conference on Disarmament. According to a report in *NuclearFuel*, however, Iran is expected to wait in pursuing this line further until it sees how much support it will get from other members of the Non-Aligned Movement at the fourth session of the Preparatory Committee for the 1995 NPT Conference. The possibility that the DPRK will receive assistance in acquiring light water power reactors as a 'reward' for capping its nuclear-weapon effort is seen as contributing to Iran's resentment.

There was talk in the lobby about current suggestions, reportedly under study in the US, to entrust to a subsidiary organ of the United Nations Security Council the task of verifying compliance with various nuclear disarmament measures. The idea was mentioned negatively in several statements. In his speech, the Director General said that

> ... the cases of Iraq and DPRK have demonstrated the close, prompt and effective liaison and interaction which exist between the IAEA and the UN in accordance with the IAEA Statute and the relationship agreement with the UN. The Security Council has looked to the IAEA as the nuclear inspection arm of the UN system and the IAEA has looked to the Council as the body politically responsible for the implementation of nuclear arms control measures. As attention to nuclear non-proliferation increases and more nuclear arms control measures requiring verification are adopted it would be reasonable and cost-effective to continue building on this distribution of functions and to avoid any duplication.

New members of the Board of Governors elected by the Conference for the next two years were Algeria, Brazil, Ghana, Mexico, Morocco, Pakistan, the Slovak Republic, Spain, Thailand, Turkey and Uruguay. Besides these 11 members the 35-member Board comprises Argentina, Australia, Canada, China, Colombia, Cuba, Egypt, Ethiopia, Finland, France, Germany, India, Indonesia, Ireland, Japan, Lebanon, Philippines, Poland, Russian Federation, Switzerland, Tunisia, Ukraine, United Kingdom and United States (**IAEA Documents GC(XXXVIII)/3**, 27/6; **GC(XXXVIII)/28**, 21/9; **Press Release** PR 94/35, 22/9; **Nucleonics Week**, 22/9; **NuclearFuel**, 26/9).

The question, what state should occupy the seat to be taken, in terms of Article VI A. 1 (5) of the Agency's Statute, by the African country most advanced in the technology of atomic energy including the production of source materials, was understood to be under dispute between Egypt and South Africa. Earlier, South Africa was designated annually by the Board to this seat. In 1976 the Board decided to review that designation 'taking due account of the inappropriateness and unacceptability of the apartheid regime of the Republic of South Africa as the representative of the area of Africa...'. Since 1977, the seat has been occupied by Egypt, whose present term has one more year to run. South Africa had requested the inclusion of a supplementary item in the agenda of the Conference, to restore its position in the Agency and the Board. Consultations resulted in a resolution submitted by South Africa on behalf of the African Group, and adopted without a vote, which, while expressing 'deep satisfaction' at developments in South Africa, invites it to resume participation in all activities of the Agency and asks the Board of Governors 'to review the designation of South Africa to the Board in the light of ...new developments' and to report to the Conference at its next session. (**GC(XXXVIII)/15**, 25/8; **GC(XXXVIII)/29**, 21/9; direct information)

The Conference approved a budget for 1995 of US $211,557,000 — as compared with $201,103,000 for 1994 — including $72,745,000 for safeguards, against $68,602,000 for 1994. It set a target of $61,500,000 for voluntary contributions to the IAEA's Technical Assistance and Co-operation Fund for 1995, compared with $58,500,000 for the current year.

Among issues discussed were the IAEA's role in the maintenance of standards of health and safety in the operation of nuclear installations in former Soviet republics, especially with respect to the Chernobyl power station in Ukraine; the implementation of IAEA safeguards in the Democratic People's Republic of Korea; the implementation of Security Council resolutions with regard to Iraq and the strengthening of IAEA safeguards.

The issue of illegal trafficking in nuclear materials received prominence in the debates. The item had been included in the agenda at the request of Germany on behalf of the European Union. An explanatory memorandum expressed concern about the proliferation and radiation risks posed by the recent increase of illicit nuclear trade, and said that, while the main responsibility for measures to solve the problem rested with governments, the IAEA should examine additional options in this regard. A resolution, co-sponsored by the members of the European Union and 21 other states, *inter alia*, calling on states to take all necessary measures and inviting the Agency's Director General to intensify the Agency's supporting activities in this area and examine options to collect, verify and analyse data relating to incidents of illicit trafficking, was adopted without a vote. The representative of the Russian Federation rejected allegations of mismanagement levelled at his country; Russia refrained from cosponsoring the resolution (**GC(XXXVIII)/1/Add.2**, 15/9; **GC(XXXVIII)/44**, 22/9; **Press release** PR 94/36, 23/9)

The General Conference considered a report by the Director General on the implementation of United Nations Security Council resolutions 687, 707, and 715 (1991) relating to Iraq. A portion of this report relating to safeguards is summarised in the next section. The Conference also received a communication from Kuwait on this matter. A resolution noting the situation as reported and expressing the wish to remain seized of the matter was adopted without a vote. The Conference rejected a call by Iraq for the restoration of its right to vote. Iraq has been deprived of the vote by reason of non-payment of its financial contribution to the IAEA; it claims that the embargo imposed on it makes payment practically impossible. (**GOV/2747-GC(XXXVIII)/10**, 11/8; **GC(XXXVIII)/INF/7**, 13/9; **GC(XXXVIII)/INF /13**, 19/9; **GC(XXXVIII)/37**, 22/9)

On the issue of strengthening the effectiveness and improving the efficiency of the safeguards system, the Conference welcomed a report of the Director General on measures taken to implement the Board's decisions to strengthen the system. It requested the Director General to continue with the assessment and development and, on a voluntary basis, testing of the measures being considered under the IAEA's programme on this area, known as 'Programme 93+2' and asked him to present the Board in March 1995 with proposals in this regard,together with an evaluation of their technical, legal and financial implications. (**IAEA\Documents GC(XXXVIII)/17**, 29/8; **GC(XXXVIII)/42**, 22/9)

On the basis of a report by the Director General, the Conference adopted without a vote a resolution on an African Nuclear-Weapon-Free Zone, noting progress made in this regard, and requesting the Director General to continue to assist African states in their efforts and to report to the Conference at its thirty-ninth session. (**GOV. 2751-GC(XXXVIII)/13**, 27/8; **GC(XXXVIII)/30**, 21/9)

A report on the implementation of the safeguards agreement with the Democratic People's Republic of Korea was discussed at some length. France submitted a draft resolution endorsing the Agency's actions and calling on the DPRK to cooperate with the IAEA and allow it access to all safeguards-relevant information and locations. Several countries, including China, Cuba, India, Indonesia, Lebanon and Libyan Arab Jamahiriya, said they felt the resolution was premature, the situation should be approached with patience and further efforts should be made at a constructive dialogue. The resolution, co-sponsored by 54 states, was adopted by 76 votes against 1 (Libya) and 10 abstentions. (**GC(XXXVIII)/19**, 16/9; **GC(XXXVIII)/31**, 21/9)

At the request of Israel, a supplementary item was included in the agenda, on the restoration of technical assistance to that country. Assistance to Israel was suspended in 1981, following its air raid on the *Osiraq* reactor at Tamuz, Iraq. Israel took the view that given progress in the Middle East peace process and its own contributions to the IAEA's technical assistance, it should be enabled once again 'to fully exercise its rights of membership in the Agency'. It submitted a draft resolution to this effect. Consultations took place aimed at avoiding the long and unproductive discussions in Plenary which the matter might set off. In the end, the resolution was not put to the vote. Instead, the President read an agreed statement confirming as the Conference's conclusion that there was unanimous support for a nuclear-weapon-free zone in the Middle East; that technical assistance should be available to all states; that a number of member states would prefer not to settle this matter now, while others did; and that all concerned supported the peace process. In the upshot, the President expressed his understanding that the Conference wished technical assistance to Israel to be restored.

Reservations were expressed by Iran, Lebanon, Libya, Qatar and Syria. Iran called for a vote, but the President, supported by Saudi Arabia ruled that the decision having been taken, the issue was closed. Iran did not challenge this ruling. (**GC(XXXVIII)/14**, 25/8; **GC(XXXVIII)/34**, 21/9; **Direct information**)

This outcome was connected with the adoption, without a vote, of a resolution on the long-standing issue of the financing of technical assistance. Its particular relevance was that, here too, the President read a statement expressing the understanding that the Conference endorsed the conclusion that in view of the ongoing peace process in the Middle East, the Board of Governors should identify possible activities in Ghaza and Jericho that could be the subject of the Agency's technical assistance.(**GC(XXXVIII)36**, 21/9).

In response to a request made at its previous session, the General Conference had before it a report on the application of Agency safeguards in the Middle East. In it, the Director General described the consultations he had conducted with states in the area and the Agency's active participation in the proceedings of the Multilateral Working Group on Arms Control and

Regional Security. A draft resolution on the subject, submitted by a group of Arab delegations, was amended in extensive consultations with other groups of states and adopted without a vote. (**GOV/2757-GC(XXXVIII)/18**, 26/8; **GC(XXXVIII)/33/Rev.1**, 23/9)

The matter of Israel's standing at the Conference briefly surfaced once again in connection with the report of the General Committee on its examination of Israel's credentials. A reservation had been made by Qatar on behalf of the members of the League of Arab States, of which the Committee took note. In Plenary, Iran said it rejected Israel's rights to attend the General Conference; the US expressed regrets at this statement. The report was adopted without a vote (**GC(XXXVIII)/32**, 21/9; **GC(XXXVIII)/41**, 22/9)

Also without a vote, the Conference adopted resolutions on personnel questions, notably on the need to employ more women in the professional and higher categories, particularly at the senior and policy-making levels, and on the necessity to recruit an increased proportion of staff members from developing countries, particularly at the senior and policy-making levels. Reports on progress in these matters were requested for the next session of the Conference. (**GC(XXXVIII)/38,** 22/9; **GC(XXXVIII)/39,** 22/9)

During the Conference, on 20 September, the International Convention on Nuclear Safety was opened for signature; on the first day, representatives of 38 states signed it. The text of the convention had been adopted at a diplomatic conference in June 1994 by 84 countries. Contracting parties accept the obligation that their nuclear power plants meet 'benchmark provisions' based on nuclear safety principles that reflect an international consensus. They must also submit periodic reports for 'peer review' at meetings of the parties. The Convention enters into force on the 90th day after the 22nd instrument of ratification has been deposited with the IAEA, including 17 from states that have at least one nuclear installation which has achieved criticality in the reactor core. (**GOV/2743**, 3/8; **Press Release**, PR 94/34, 20/9; **Nucleonics Week**, 22/9)

2. Safeguards

- The IAEA's Director General has stated that significant progress has been made recently in the Agency's activities in **Iraq** under the relevant Security Council resolutions. Dr. Blix said that of 23 August the IAEA had established a continuous presence in Iraq and the remaining elements of the Agency's ongoing monitoring and verification activities were put in place by early September. The IAEA is said to be confident that Iraq no longer has the capabilities to produce fissile materials. Reportedly, the IAEA's monitoring programme functions at 24 locations, chosen because before the Persian Gulf War they had been nuclear sites, because activities in support of the nuclear programme had been carried out there, or because other activities there might have been connected with that programme. (**Nucleonics Week**, 1/9; see also Annex 3)

The IAEA is reported to have elaborated a verification policy regarding vitrified high-level nuclear waste, under which it will formally terminate safeguards under specified conditions. These include the identification of the location of the material, and of notifications of its movement after interim storage, of placement in a final repository and of any intention to reprocess it. (**NuclearFuel**, 12/9)

h. Peaceful Nuclear Developments

- According to a study by the Nuclear Energy Agency of the OECD, projected fuel cycle costs have fallen 'dramatically' in the last few years. Costs are said to be 40 per cent lower than those given in an NEA study of 1985, due mainly to the fall in the price of uranium and lower enrichment costs. Figures published in the United States for 71 nuclear power reactors further indicate their cost-competitiveness. While, reportedly, the average cost of electricity produced by these reactors was US$21.52 per MWh, that of coal-fired plants was US$19.67/MWh and of gas and oil-fired plants US$34/MWh. (**NEA Information Communiqué**, 18/7; **Enerpresse**, 22/7; **ENS NucNet News**, 22/7, 21/9)

- **Armenia** has received a visit of Russian experts to consider how best to re-start the power station at Metsamor, which comprises two VVER-440/230 units that initially came on line in 1976 and 1979, respectively. The plant — which is said to be equipped with some upgrades, including seismic provisions to meet local conditions — was shut down in 1989 following an earthquake the year before. It could reportedly be operational again before the end of 1994. Russia has promised help with the financing. A team of safety experts working for the European Bank for Reconstruction and Development (EBRD) was expected to visit the site in late September. According to press reports, if the team found the plant to be a safety hazard, the EBRD might threaten to end its fossil fuel assistance to Armenia should it proceed with the restart. (**Eastern European Energy Report**, June, in **Uranium Institute News Briefing** 94/26; **Nuclear Engineering International**, July; **Süddeutsche Zeitung**, 9/9; **Neue Zürcher Zeitung**, 10/9; **Nucleonics Week**, 15/9)

- Brazil is reportedly contemplating the construction of a centrifuge enrichment plant near Rio de Janeiro, to provide fuel for the Angra power station. (**NuclearFuel**, 26/9)

- Cuba is said to have asked companies in Brazil and Italy to make a technical feasibility study on whether the Juragua nuclear power plant (two VVER-440/230s —Ed.) could still be made viable and should be completed (**Reuter's**, 22/6)

- In the **Czech Republic**, several hundred mainly Austrian anti-nuclear activists have demonstrated against the completion of the nuclear station at Temelin, where construction of two VVER-1000 reactors is underway with support of the American Export-Import Bank. A blockade of the building site by

demonstrators led to clashes with construction workers and ended in a number of arrests. The utility which owns the station claims that some damage was done; the demonstrators maintain their actions were non-violent and accuse the utility of brutality. The decision of US authorities to enable the American firm Westinghouse to complete and upgrade the reactors is strongly opposed in Austria, where, among others, the *Women's Alliance Against Nuclear Danger*, which includes a number of influential female politicians, has announced for the coming Autumn plans for an 'offensive' against the construction of the station, together with Czech environmental activists. (**Süddeutsche Zeitung**, 25/7, 26/7; **Kurier**, 25/7, 26/7; **Frankfurter Allgemeine Zeitung**, 26/7; **Salzburger Nachrichten**, 28/7, 10/8; **Nucleonics Week**, 4/8) [See also under **Slovak Republic**, below.]

- **France** will order no further electrical generating capacity, including nuclear power, until the end of the century. Informed sources see the decision as having been prompted by the fact that consumption is still below capacity, rather than as a 'veiled moratorium on nuclear power'. While apparently not a surprise, the decision is expected to have a negative impact on France's nuclear industry and raises the question what type of plant will be chosen once ordering starts again.

  The *Superphenix* fast reactor, which had been offline for four years, has been given permission to run at low power. Criticality was reached on 4 August. Reportedly, started at 3 per cent of power, the plant is expected to be reconnected to the grid in September, when it should operate at 20-30 per cent, and shortly after at 60 per cent. Initial reports had it that it was planned to reach 50 per cent by year's end, but it is now reported that the facility is expected to be run at full power within five months. Protests are still being raised against the resumption of operations. Opponents, including *Greenpeace*, who quote what they consider to be an unauthorised change in the mandated tasks of the 1,300MW facility, from that of an electricity-generating fast breeder reactor to that of research on incinerating plutonium and unrecyclable waste, have said they may take the matter to the French Supreme Administrative Court. Several organisations are said to have brought civil suits at a court in Grenoble. (**Nucleonics Week**, 23/6, 14/7, 28/7, 11/8; **Die Welt**, 28/6; **NucNet News**, 12/7, 3/8, 8/8, 10/8; **Tribune de Genève**, 14/7, 9/8, 13-14/8; **Financial Times**, 4/8; **Le Monde**, 4/8; **Libération**, 4/8; **Süddeutsche Zeitung**, 4/8; **Neue Zürcher Zeitung**, 5/8)

- During a visit to Japan, in June, **Indonesia**'s Minister for Research and Technology has said that his country intends to build both boiling and pressurised-water type nuclear power stations. He asked Japanese industry to join in the international bidding. A public hearing about the plans to build a 600-MW power plant in central Java will reportedly be held in 1996. Indonesia's national press agency quotes the Director General of its Atomic Energy Agency, Djali Ahimsa, as saying that construction of the first 600-MW power plant (some reports speak of 1,200 MW) will start in May 1996, and that over the next 25 years the country intends to build twelve nuclear stations, with a total capacity of 7000MW. According to an Australian press report, the issue of nuclear power is still a matter of dispute in the government. Indonesia's Minister for the Environment has pointed out that no decision has yet been taken at the presidential level. (**Nikkankogyo Shimbun**, 23/6; **Reuter's**, 4/8; **Financial Review** [Sydney], 10/8; **Mainichi Shimbun**, 11/8; **Australian**, 26/8)

- **Japan** has announced that in order to give reassurance that it will only use its plutonium for the peaceful generation of electricity, it will as a matter of policy periodically publish details of its plutonium inventory. Press reports have it that it had been largely the result of foreign pressure that the Atomic Energy Commission has revised its long-term nuclear energy policy, delaying its plutonium use substantially. The new policy, which requires the country to reprocess spent nuclear fuel only as the need arises, avoiding the production of excess plutonium and storing spent nuclear fuel for longer periods than initially foreseen, is said not to change Japan's long term policy of nuclear recycling. It has also been announced that plans for the shift to fast-breeder reactors are being reconsidered and that higher burn-up levels in light water reactors have lowered expectations of the amount of spent fuel to be discharged. Among many changes in the programme that have been announced is a decrease of the generating capacity for 2000 from 'at least' 53,000MW to 45,600MW; a target for uranium enrichment capacity by the early 2000s of 1.5 million SWU/year instead of 3 million; and the start of operations of the Rokkasho Reprocessing plant after 2000 instead of the mid-1990s. Under the revised plans, by 2010 nuclear energy should provide 70,500-MW or about 17 per cent of primary energy. A Japanese anti-nuclear institute, the Citizens' Nuclear Information Center, has said that over the next decade Japan will have to transport plutonium by sea more than 100 times. (**Kyodo** [Tokyo, 2 items], 18/5 in **JPRS-TND**-94-012, 7/6; **ENS NucNet**, 8/6; **Atoms in Japan**, Vol. 38, No.6, June; **SpentFuel**, 20/6; 'Outlook on Asian Nuclear Power', Special Report, **NuclearFuel**, 4/7)

- Violent incidents are said to have occurred during a demonstration on 8 July against completion of the Mochovce nuclear power plant in the **Slovak Republic**. According to the plant's management, *Greenpeace* activists who had entered the site committed 'terrorist acts' against security staff trying to dislodge them, while *Greenpeace* alleges that it had become the victim of the latter's 'extreme brutality'. The demonstrators were calling on the European Bank for Reconstruction and Development not to provide funds for the completion of units 1 and 2 of the Mochovce nuclear station; the Slovak utility has repeated its determination to complete the construction. The Austrian government is planning to continue its resistance against the completion of the station. The reactors in question are pressurised water reactors of the relatively modern, Soviet-designed VVER-440/213 type. They will be upgraded to meet Western safety standards. Once these units are operating, the Slovak authorities plan to shut down the two oldest

VVER-440/230 units at the Bohunice nuclear power station. (**Salzburger Nachrichten**, 7/7; **Kurier**, 7/7; **NucNet News**, 8/7; **Standard** [Vienna], 12/7; **Presse**, 6/8)

- In **Sweden**, the election victory of former Prime Minister Ingvar Carlsson's Social Democratic party is seen as a blow to supporters of nuclear energy in that country. Carlsson had previously said that the country should follow through with its plan to decommission its power reactors by 2010 and that it should close the first one already before the end of this decade. Reportedly, Swedish industry says the country cannot afford to do so. The return to Parliament of the anti-nuclear Greens as well as that of some other small anti-nuclear groups is said to have added to the despondency of Sweden's nuclear industry. (**Nucleonics Week**, 18/8, 22/9)

- At its summit meeting at Corfu in June, the European Union agreed to help finance the completion and upgrading of three VVER-1000 units in **Ukraine** with a grant of up to $600 million. Among conditions set by the European Union are the demand that the Chernobyl station be closed definitively and as early as possible, and that the country sign the Vienna Convention on nuclear liability. Ukrainian officials have qualified the grant as 'obviously insufficient'; they claim that to replace the Chernobyl power station, which presumably would require two new reactors; build a new containment structure ('sarcophagus') around the destroyed Chernobyl-4 unit, and decommission the remaining three units, they would need $4 to $6 billion. Earlier, the government at Kiev had stated once again that the country could not do without the power generated at Chernobyl, which represents almost 10 per cent of electricity generated in Ukraine, and that the plant was currently safe to operate. Closure, the government said, could take place only as part of a modernisation of the entire power industry, including completion of five VVER-1000 stations: Khmelnitsky-2 and 3, Rovno-4, South Ukraine-4 and Zaporozhe-6. This would require massive international assistance, and because of the time it would take to complete these units, Chernobyl-1 and 3 would have to be run beyond the year 2000. Observers note Ukraine's insistence that it deserves such international assistance because the Chernobyl disaster was the Soviet Union's fault. Ukrainian authorities also point to the social aspects of closure of Chernobyl, which would mean a loss of many jobs, migration of workers and consequent housing problems, which should also be addressed. Shortly before his election defeat President Kravchuk expressed support for the proposal by the head of Ukraine's nuclear energy authority, to build a new nuclear power station near Slavutych (the town erected to house the nuclear workers displaced from Pripyat after the disaster at Chernobyl) to employ the people living there.

  The tender invited by the European Commission for a feasibility study on the construction of a new shelter, or 'sarcophagus', for the Chernobyl-4 reactor that was destroyed in 1986 has been won by the *Alliance* consortium led by the French company *Campenon Bernard SGE* and including French, British and German companies. The present shelter was hastily installed after the accident of 1986, and is said to be deteriorating at an increasing rate. The European Commission has awarded a contract of about $3.6 million for a feasibility study on the construction of a second shelter over Chernobyl-4. The study is to cover the near-term confinement of the damaged reactor, disposal of waste now stored at and around the site and the dismantling over the long term of the present sarcophagus. Reportedly, the seed money awarded by the G-7 towards the shut-down of Chernobyl does not include financing for long-term aspects of its decommissioning. In an earlier French study the cost of the second shelter for Chernobyl-4 was set at between $200 and $300 million, and total project costs, including disposal of radioactive matter around the site and stabilising conditions within the shell was reportedly estimated to be around $2.5 billion. On a contract awarded by the European Commission, as part of a study of the decommissioning of the Chernobyl station, a consortium of eight German companies and one French firm will in September start a survey of the nuclear waste that was dumped in 800 shallow pits around the site as part of the clean-up done in 1986. The survey is expected to take 15 months; it will be done in cooperation with the Ukraine Academy of Sciences.

  At their summit conference in Naples, in early July, the G-7 countries agreed to provide Ukraine with over-all assistance totalling $4 billion and grant it $200 million towards the closing and replacement of Chernobyl. They are said to estimate the total cost of closing Chernobyl, replacing it with new VVERs and conducting initial environmental work at Chernobyl at $1.3 to 1.5 billion. The first reactor to be closed would have to be Chernobyl-1. It would be replaced by Zhaporozhe-6, which is said to be 95 per cent. complete and to cost $34 million to finish. Chernobyl-3 would continue operating until Khmelnitsky-2 could be taken into use, which is now for 80 per cent complete, and would require $250 million to finish. Chernobyl-2 — where operations were suspended after a fire in the turbine room — would have to remain shut down; it would be replaced by Rovno-4, again at a cost of about $250 million. As conditions for these grants the G-7 also call for reforms in Ukraine's energy policies, such as measures to achieve greater efficiency. The reaction from Kiev to the proposed aid package was one of disappointment. The head of Ukraine's nuclear power authority, Mikhail Umanets, called it less than a tenth of what was needed and said Chernobyl would be kept running until proper assistance was obtained. In August, a number of prominent members of the country's nuclear-energy establishment warned the government that the nuclear industry was in acute financial difficulties and needed an urgent infusion of cash to prevent the collapse of the country's economy. Reportedly, in the first half of 1994, Ukraine's nuclear industry was able to pay only 12 per cent of its fuel costs. Representatives of the G-7 countries are expected to go to Ukraine in October, to discuss the closure of the Chernobyl station and the disbursement of the funds made available for assistance to the country's nuclear programme.

In a referendum held in a district near Zaporozhe, a large majority of voters expressed themselves against the completion of the sixth VVER-1000 power reactor at the Zaporozhe station. This plant, which is one of five VVER-1000 units under construction in Ukraine, is said to be 95 per cent completed. Recently published estimates set the cost of completing all five units, including safety upgrades, at $1,271 billion. The American Agency for International Development will contribute $3,000,000 to study the possibility of building a dry storage facility for spent fuel at Zaporozhe; the engineering firm that will make the study will add a grant of $200,000.

The Ukrainian Parliament has set up a committee on nuclear policy and safety which will also deal with nuclear disarmament. Social issues relating to the Chernobyl disaster and compensation will be covered by a committee previously set up for this purpose.

(**ENS NucNet**, 2/6, 30/6, 13/7, 9/8; **Nucleonics Week**, 23/6, 30/6, 7/7, 14/7, 21/7, 28/7, 18/8, 8/9; **Nihonkeizai Shimbun**, 28/6; **New York Times**, 3/7, 10/7, 20/8; **Reuter's**, 6/7, 12/7; **Libération**, 6/7; **Die Welt**, 7/7; **BBC Monitoring Service, Summary of World Broadcasts**, 8/7, in **Uranium Institute News Briefing**, 6-12/7; **Washington Post**, 9/7; **Standard** [Vienna], 9/7, 13/7; **Times** [London], 11/7; **Financial Times**, 11/7; **Frankfurter Allgemeine Zeitung**, 11/7, 16/9; **International Herald Tribune**, 13/7; **Nuclear Engineering International**, September;)

- Research is going on in the **United States** on new types of power reactors. One 'evolutionary' set of designs is derived from experiences gained from existing power reactors. It consists of large (1,350MW(e)) reactors of which the design optimises light-water technology so as to make them simple, easier to build and maintain, and costing less to construct and run, than any now in use. In the boiling water reactor (BWR) developed by *General Electric* the control system, for one, is said to require much less cabling and to be more reliable and compact, easier to operate and safer than any so far. Its simplicity should also cut building time and cost. Safety improvements of the plant are said to permit a reduction of the building volume to 70 per cent of that of existing BWRs, making the design more rugged and immune to earthquakes. Two of these *Advanced Boiling Water Reactors* or ABWRs, are now being built in Japan by GE; their construction period is expected to be less than five years. The American firm *ABB Combustion Engineering* has completed the design of a pressurized water reactor (PWR) of similar power, called the *System 80+*. This is reported to feature a number of important safety improvements over older plants, including lower operating temperatures, fuel of lower 'power density', a greater volume of cooling water, simple control and operating systems and dual steel containment, designed to withstand any credible accident. Construction time of this plant should be four years. In July, first approval for these two designs was given by the US Nuclear Regulatory Commission. They have now entered into the certification phase of the licensing process. GE and *Westinghouse* are also working on a new generation of simplified, cheaper and safer, medium-sized (600MW(e)) power reactors. The designs of both types — BWR and PWR, respectively — called 'passive' nuclear reactors, are said to rely on natural forces, such as convection and gravity flow of emergency cooling water, and therefore reduce or eliminate reliance on devices like pumps, valves and emergency power generators. Both will also have improved automatic safety features. Both designs foresee the assembly of systems and subsystems in the factory rather than on-site, which would further reduce construction time, to what is hoped could be three to four years. This, together with the reduced size of these reactors, their greater safety, their simplicity and their lower cost are all seen as potential factors in making them attractive export items. (**Atomwirtschaft**, July; **Energy Daily**, 15/7; **ENS NucNet**, 27/7)

- The Nuclear Regulatory Commission of the **United States** has issued the rule that nuclear power plants must have barriers to prevent vehicles carrying personnel or explosives from penetrating vulnerable areas. (**NEI Infowire**, 1/7, **New York Times**, 7/8)

i. Weapons-related Developments in Nuclear-Weapon States

- In the former **USSR**, residents of the Altay regions of Siberia are said to have been exposed to 58 nuclear explosions at Semipalatinsk between 1949 and 1990. According to recent investigations by the Siberian branch of the Russian Academy of Sciences, radioactive fallout covered nearly the entire territory and over a third of the population of the region is said to have died in the first 5–7 years after the earliest explosions. Genetic consequences of radiation continue to be observed. It has also been revealed that in 1954, as part of an experiment involving 45,000 soldiers, to determine if they could fight in conditions of nuclear war, a 20-kiloton nuclear bomb was dropped from an airplane at Totskoye, in the area of Tomsk, in the Southern Urals. The event is said to have led to radiation sickness and genetic damage among the local populace. (**ITAR-TASS**, in **JPRS-TND**-94-012, 7/6; **Associated Press**, 8/9, 9/9; **Times**, 10/9; **Frankfurter Allgemeine Zeitung**, 16/9; **International Herald Tribune**, 16/9)

- On 30 August, a fire broke out at a reprocessing plant at the Mayak nuclear centre (formerly known as Chelyabinsk-65) in **Russia**. According to preliminary reports, the event was rated as 'level 1' on the IAEA's International Nuclear Events Scale, but some sources reportedly see it as warranting classification at level 3 . While maintaining that the event did not cause serious contamination or worker exposure, Russian authorities are still investigating the event. (**New York Times**, 2/9; **Nucleonics Week**, 8/9)

- The **United States** Department of Energy has confirmed long-standing reports that in 1962, a nuclear explosive made with 'reactor-grade' plutonium produced in the **United Kingdom** in gas-cooled natural-uranium reactors was exploded in the Nevada desert, showing that all grades of plutonium can be

used for this purpose. The yield was described as less than 20 kilotons. At the time the test was held plutonium with less than 7 per cent Pu-240 was graded as 'weapons grade', and plutonium containing more than 7 per cent Pu-240 as 'reactor grade'. In the 1970s the definition of reactor grade shifted to 19 per cent Pu-240 or above. Some European and American experts call the announcement misleading, in that the British plants where the material was produced were low-burnup, natural-uranium, graphite-moderated reactors that produced high quality plutonium (i.e., with a low Pu-240 content) and cannot be compared with, for example, present-day light-water reactors. British sources have also acknowledged that, while the test confirmed that it was possible to make an explosive device with 'this type of plutonium', it took much US experience and expertise to do so.

The US Department of Energy has also disclosed that between 1945 and 1992, 994 metric tons (MT) of high-enriched uranium (i.e., uranium enriched to above 20 per cent U-235) was produced at Portsmouth, Ohio and Oakridge, Tennessee. Earlier unofficial estimates spoke of 500–700 MT. Reportedly, 258.8 MT are stored at sites in twelve states.

The General Accounting Office is of the opinion that recent reorganisations in the Energy Department have made it harder to make independent evaluations of safety problems in the weapons-production facilities. The Energy Secretary, however, is said to feel that the reorganisation, which integrated safety experts with line-managers, created a more cooperative atmosphere and is more conducive to getting problems solved. Meanwhile, notwithstanding the fact that weapons production has stopped, safety problems are said to be increasing as a result of aging infrastructure and the accumulation of the nuclear material inventory.

For the second time, the Department of Energy has doubled its projection of the cost of cleaning up contaminated weapon sites, putting the total between $400 and $600 billion: four times the original estimate. An immediate problem reportedly facing the Department is its need to move 2,100 metric tons of irradiated nuclear fuel at the Hanford Reservation away from the Columbia River, near which it is now stored. Thought is apparently being given to sending the material to the UK for reprocessing, vitrification of the waste, and possibly storage.

The US General Accounting Office is said to have concluded that while, in the past five years, the Department of Energy has spent $23 billion to clean up nuclear waste sites, little clean-up has resulted. This is ascribed in part to resistance to new technologies on the part of contractors who have invested in existing methods, and of local authorities that benefit economically from extended clean-up schedules.

Scientists at the Lawrence Livermore National Laboratory — thought to be at risk of being closed as part of the US Administration's efforts to cut expenditure — are said to have designed a laser device that could be used for the development of a fusion reactor as well as for other research purposes, but which they claim could not be of direct use in the development of new nuclear warheads. Experts say, however, that the device, called National Ignition Facility (NIF), might be used to approach weapons-physics problems experimentally and some warn that its construction would send a 'negative international signal'. The machine would cost $1 billion to build and $250-million yearly to operate.

(**New York Times**, 21/6, 28/6, 1/9; **Nucleonics Week**, 30/6; **NuclearFuel**, 4/7, 20/7; **SpentFUEL**, 4/7; **Financial Times**, 2/9; **direct information**)

j. Nuclear Proliferation

- **India** has staged another successful test of its ballistic missile *Prithvi*, which has a range of 150 miles (250 km) and can carry a one-ton payload. Reportedly, present plans call for the induction of one hundred missiles of this type into India's armed forces. In February, India had conducted a third successful test of its intermediate-range ballistic missile *Agni*, which has a range of 1,500 miles (2,500 km). Further work on this missile is said to be suspended indefinitely. There is a report that this is the result of pressure from Washington, which is also said to have demanded that *Prithvi* should not be deployed. Another report claims that the reason further work on *Agni* is deferred for now is financial, and that the Government is giving priority to the purchase of MiG-29M fighter aircraft, to counter the proposed supply by the United States of 38 F-16s to Pakistan. Until recently, it was believed that the US Administration was ready to proceed with that supply, if Pakistan accepted a 'verifiable cap' on its production of weapon-grade nuclear material, as reportedly proposed by US Amb. Strobe Talbot during a visit to Islamabad in April. So far, Pakistan had not expressed agreement with this condition. On 10 August Prime Minister Bhutto stated the F-16s should be delivered or the money returned, adding that the purchase of the fighter planes should not be linked to any political issue. On the same day, in an interview with *The Times of India*, the US Ambassador in New Delhi said that Washington had decided against the supply of the planes. Meanwhile, India has reacted strongly at the news that France had agreed to provide Pakistan with three submarines (presumably conventionally powered — editor) equipped with modern anti-ship missiles. Reports that Pakistan is to receive medium-range M-11 missiles from China — in addition to components it bought in 1992 — have been denied in Beijing. The US Administration has said that if the report turns out to be correct, it will have to react with sanctions against both countries.

  On 4 May, India announced the launch of an *Augmented Satellite Launch Vehicle*, which is said to have put a 113 kg satellite into low earth orbit. Work is reputedly underway also on a short-range surface-to-air missile, *Trishul*, which should enter service in the next few years, and on a medium-range surface-to-air missile, *Akash*.

(**India Today**, 15/4, 30/6 in **JPRS-TND**-94-015, 22/7; **Hindu Times**, 20/4, 22/4; **Times of India**, 5/5, 7/6 and 22/6 in **JPRS-TND**-94-015, 22/7; **Economic Times** [New Delhi], 7/5; **New York Times**, 5/6, 10/8, 11/8; **International Herald Tribune**, 7/6, 22/9; **Dainik Jagran** [Delhi], 19/6 in **JPRS-TND**-94-014, 13/7; **Associated Press**, 9/8; **Guardian**, 10/8, 11/8, 9/9; **Reuter's**, 7/9; **International Herald Tribune**, 10/9)

According to an opinion poll conducted in New Delhi in May, 84 per cent of responses supported the idea that India should have nuclear weapons. Reportedly, most of the persons polled saw the United States as being on the side of Pakistan and fuelling an arms race, to which India should respond in kind. (**The Pioneer** [Delhi], 12/5 in **JPRS-TND**-94-012, on 7/6)

- Iran has once again denied reports that it is trying to make or to buy nuclear weapons and has rejected as 'baseless' earlier, allegations in a London-based Arab daily, *Al Sharq-al-Owsat*, that it had sought technology in Spain for this purpose. Israeli authorities are said to have discussed with their German counterparts reports that nuclear material smuggled from Russia was 'ending up' in Iran. The US President's report for 1993 on the activities of the US Government relating to the prevention of nuclear proliferation expresses 'great concern about the ultimate direction of the Iranian nuclear program' and cites the Director of Central Intelligence as saying that Iran is pursuing the acquisition of nuclear weapons and will probably take 8–10 years to produce its own nuclear weapons, perhaps sooner with 'critical foreign assistance'. Some analysts, on the other hand, feel that worsening economic conditions, and the lack of military equipment and trained personnel, make this less likely. Recent intelligence analyses are said to indicate that the lack of resources has slowed down Iran's nuclear programme which, according to these sources, would need much more than ten years to develop nuclear weapons, unless it could buy them abroad. (**Report to Congress Pursuant to Section 601 of the Nuclear Non-Proliferation Act of 1978 for the Year Ending December 31, 1993**, submitted 16/5; **IRNA** [Teheran], 16/2, in **FBIS-NES**-94-033, 17/2; **Reuter**, 7/6; **New York Times**, 5/7; **Daily Telegraph**, 18/8; **Times** [London], 23/8)

- **Israel** is reported to have told **Egypt**'s foreign minister that it will not accede to the NPT until there is an agreement for the denuclearisation of the Middle East. A report has surfaced about a fatal accident at the *Dimona* facility in 1966. (**Nucleonics Week**, 8/9; **International Herald Tribune**, 17-18/9)

- Speaking in Kashmir, on 23 August, **Pakistan**'s previous Prime Minister, Nawaz Sharif, claimed that his country had nuclear weapons and might use them if it was attacked by India. The statement was denied by Pakistan's Foreign Minister, who said Pakistan neither had nuclear weapons nor intended to acquire them. Prime Minister Benazir Bhutto — who is expected to meet with President Clinton in the near future — called the remark 'irresponsible'. On 27 August President Farooq Leghari also said Pakistan had no nuclear weapons, but needed nuclear energy for peaceful purposes. He added that Mr. Sharif had no access to current information on Pakistan's nuclear programme and should not make statements that could be exploited by the country's enemies. Sharif has since repeated his assertion, however, saying that he did so to keep Prime Minister Bhutto from making too many concessions to India over Kashmir. It is noted that when he himself was Prime Minister, in 1990–93, he maintained that the country had no nuclear weapons, and the question is raised in the press when Pakistan built the weapons which he now claims she has.

There is a report that when Kazakhstan's foreign minister was in Islamabad recently, he said his country would not let other Muslim nations have any of the warheads still on Kazakhstan's territory. [Related information is contained in the item on **India**, above.] (**Financial Times**, 24/8; **Guardian**, 24/8; **International Herald Tribune**, 25/8, 26/8; **New York Times**, 25/8, 28/8; **Nucleonics Week**, 1/9)

- The case reported in June of three men arrested in Russia while trying to sell 'a large quantity of weapon-grade uranium' to Germany, turns out to have involved three kilograms of low-enriched fuel apparently stolen from a power plant. As first reported, the event had caused concern among law-enforcement personnel in Russia and Western Europe, where the media devote much attention to the alleged lack of security of nuclear material in the nuclear installations of the former USSR. The case is one of several — some sources speak of more than fifty — currently under investigation by Russian authorities, most of them reputedly involving the theft or clandestine sale of modest amounts of natural or low-enriched uranium. Among instances reported since mid-August is the recovery of 5.5kg of natural uranium, presumably stolen at Chelyabinsk; the arrest of three men in Kaliningrad as they were trying to sell a 60kg container with an unspecified amount of a radioactive substance, described in one report as plutonium; the apprehension on a train of a man with 2kg of cesium in his luggage; the arrest of two men who were taking 10kg of natural uranium out of the Arzamas-16 nuclear centre; and the apprehension in central Russia of three persons who offered 100kg of natural uranium for sale.

Police in Germany report an increase in the number of cases of apparent smuggling of radioactive materials, many of which they speculate have their origin in the former Soviet Union or countries in its ambit. In 1991, 41 such cases are said to have been brought to the attention of the German federal police; in 1992, 158; and in 1993, 241. So far in 1994, about 90 cases were discovered. Of the cases recorded in 1993, 118 turned out to be attempts to gull credulous buyers with worthless materials; the rest were thought to deserve follow-up. Many of the latter group appear to have involved minor quantities of radioisotopes used in medicine or industry — in one recent, typically trivial, case a traveller from Zaire was found carrying 850 grams of uranium ore — but some seem to concern substantial amounts of nuclear material. Within the last few months, the disclosure of four instances of illicit

trade in allegedly weapons-related nuclear material has evoked particular public interest.

In May, during a search for forged banknotes in Tengen, near the German–Swiss border, German police impounded a container with 60g of radioactive material, which a subsequent analysis showed to contain about 6g of metallic plutonium-239. Part of the plutonium was found to be of 'super grade', i.e., plutonium enriched through isotopic separation to 99 per cent. As one report had it, the rest of the material was 'a cocktail of aluminum, antimony, copper, iodine, mercury, nickel, rubidium, silicon, strontium, zirconium, broken glass, and brush bristles'. (No mention was made here of trace quantities of gallium referred to in other reports—Ed.) According to one widely publicized account, the material might have come to Germany as early as a year before, from Russia *via* the Black Sea port of Varna and Athens, and had been offered for sale by Russian individuals linked to the KGB and a Bulgarian organisation, *Kintex*. That organisation is believed to trade in drugs and weapons and is known to have had commercial dealings with Iraq; it also appears to have had ties with the *Banco Nazionale del Lavoro* (*BNL*), whose branch in Atlanta, Georgia, in the United States, was charged with fraud and financing illegal trade with Iraq. Records found at *BNL* are said to show that in the late 1980s *Kintex* bought equipment for organisations involved in Iraq's nuclear programme.

Initially, there were reports that the plutonium was a sample of a possible later supply of what was rumoured to be 100–150kg of weapon-grade plutonium from former Soviet stockpiles that was shipped through Varna and Athens to Switzerland in February 1994. Later, however, German and US intelligence authorities are said to have concluded that if there were any further amounts of plutonium involved, they would most likely have been smaller quantities and would not be of the same high purity. Following information said to have been given by the German automobile mechanic, Adolf Jäkle, in whose garage the container with plutonium was found, Swiss police also made several searches; these do not seem to have led to the discovery of any further nuclear material.

Jäkle, apparently hoping that cooperation with the police would get him a lighter sentence for the offences of which he was suspected, is said to have offered to reveal the whereabouts of an additional 60g of weapon-pure plutonium and unspecified quantities of high-enriched uranium, in Germany, Switzerland and Austria. He reportedly told police that he could provide a list of potential buyers. According to some press reports Jäkle held a $100-million letter of credit, commissioning him to buy nuclear equipment for the DPRK and/or Iraq. Pyongyang has since denied any involvement with the matter. German authorities, who at first thought that an Iraqi agent living in Germany (later said to be known to them as a narcotics smuggler) might be implicated in this matter, have since said they had not been able to confirm Iraqi involvement. Israeli officials appear to have told *Luxembourg Television* that Iraq was indeed involved, but American observers are said to consider it unlikely that at the very moment when Iraq seeks an end of the UN embargo, it would get embroiled in an venture of this kind. Pakistan has denied a claim by German enforcement personnel, that there were signs it was involved in another case of illicit trade in plutonium, which supposedly came to light in August; an official US source is said to have also rejected this claim as improbable.

In early August, news came that in July Bavarian police in Landshut had come upon a milligram-quantity of highly-enriched uranium that was presented as a sample of a larger quantity being offered for sale. The presumed buyer was said to have been an undercover agent. In the follow-up, police arrested the apparent leader of the group, a man of Czech nationality, five Slovaks who were in possession of 600g of low-enriched uranium pellets, and a German woman who was mentioned as 'the central figure' in the deal.

The biggest find so far was made in August, when at Munich Airport Bavarian police seized 560g of mixed uranium/plutonium oxide (MOX) in powder form, said to contain more than 400g of various isotopes of plutonium, of which 87 per cent was Pu-239, in baggage on a flight from Moscow. They arrested two Spaniards and a Colombian, thought to be couriers carrying the material. Reportedly, like the three preceding cases, this event was also part of a 'sting' operation. According to reports in the German media it had come about as the follow-up of an offer made in Moscow by an agent of the German intelligence service, to pay $250 million for 4kg of plutonium. Information released afterwards indicated that among the material impounded at Munich there were also several hundred grammes of lithium-6.

The third case was soon followed by one in mid-August near Bremen, involving an attempt to sell 0.05mg of plutonium, supposedly contained in a Soviet-type smoke detector; here, the professed buyer is said to have been a TV journalist posing as a police agent.

The number of recent reports of attempted trade in potential weapon-material has added to concern at the apparent growth of that trade. Initial speculation about the possibility that several of these events were connected and could reflect the existence of powerful criminal organisations with means of obtaining nuclear material from former Soviet stockpiles and routing it to persons, groups or states wishing to use it for the production of weapons, seems to be dying down. Among accounts of the extent of the trade, conjectures have been heard about the smuggling of Russian material by way of the Baltic; about the role played in these deals by Russian scientists, and about the involvement of Russian security staff.

Initial reports from Germany pointed to Russian military stockpiles as the likely source of the nuclear material involved in every one of these cases. With respect to the origin of the 'super-grade' plutonium, officials in Bonn at first expressed the view that this had come from Russian production facilities at Chelyabinsk, Tomsk or Krasnoyarsk. American

sources, however, reportedly considered it more probable that the material came from a research laboratory in Russia. Euratom is said to have deduced from the presence of gallium with the plutonium that it was meant for warhead use, but American experts seem to doubt this; given the unusual purity of the material some believe it was meant for use in laboratory measurement standards. In the early stages of the investigation, German experts said the plutonium had been enriched by centrifugation, and Western intelligence sources were quoted as saying that in the USSR there had been several sites where centrifuges were used for this purpose. More recently, however, there was a report that US experts can find no record of such a programme. According to *Nucleonics Week*, the USSR is known to have enriched small amounts of plutonium at the All-Russian Research Institute of Experimental Physics at Arzamas-16, by means of electro-magnetic isotope separation (EMIS), or *calutrons*. Reportedly, the fact that there was mercury among the various materials in the container that held the plutonium has prompted one source at the German Federal Ministry of Research and Technology to say that the material could reflect yet another fraud by someone trying to find a gullible buyer for worthless material. There is also conjecture that the mixture might imply an effort to export plutonium 'disguised' in other materials.

With respect to the material seized at Munich Airport, German official sources also at first claimed that this came from Russian weapon-related stockpiles. This was promptly denied by official Russian sources, who said there was no plutonium missing from the country's military stockpile, declared that Germany had brought no proof that the impounded material hails from Russian weapons establishments, and expressed suspicion that these claims were prompted by political motives. American sources were said to believe that the presence of the plutonium in Munich was not necessarily in conflict with the Russian contention; they argued that the plutonium was of reactor-grade and might have come from a laboratory at Dimitrovgrad or Novosibirsk where mixed-oxide fuel is prepared for experimental use in fast reactors.

The various cases and the way they have been handled are seen to have caused friction between Bonn and Moscow. German media allege Russia's authorities are not in full control of their nuclear material. They carry extensive articles about insufficient accounting and control of nuclear material; monitoring equipment that is outdated, defective or missing altogether; deficient physical security measures; and a generally impoverished and disgruntled scientific staff, and underpaid security personnel susceptible to bribes. Bonn's Finance Minister Waigel has expressed the view that future financial aid to Russia should be linked to its efforts in stopping nuclear trafficking. Russian resentment at Germany's allegations appears to be aggravated by the actions of Bonn's intelligence service, in flushing out illegal nuclear trade in sting operations partly carried out on Russian territory. Commentators in Moscow also question Germany's motives for blaming Russia as the sole source of smuggled radioactive material.

Specialists in Western countries are now said to believe that while the problem of clandestine trade in nuclear material poses a potential long-term risk and deserves serious consideration, Germany's concern seems both premature and somewhat overdone. The contention published by German media, that the country has become a focal point for operations of a 'nuclear mafia' is countered by the argument that clients would more profitably be sought elsewhere; that the southern borders of the former USSR would yield better opportunities to pass illicit cargoes than the 'hard frontiers' of the West; and that it would be unwise to concentrate this clandestine trade in a well-organised country with a sophisticated police apparatus. Recent reports from Bonn say that officials there now admit they have no proof of the origin of the smuggled plutonium, nor of a link to organised crime of the individuals offering the material for sale. The matter is also raising questions about the wisdom and the legality of the sting operations, in which restrictions on the transport of dangerous substances seemed to have been deliberately ignored. Some opposition politicians assert that the present government in Bonn has used intelligence personnel to act as buyers of nuclear material, both within and outside the country, in order to provoke and 'discover' illegal trade and so enable the incumbent government to demonstrate its vigilance. Critics also allege that the way the matter has been handled has deprived the authorities of means to find the source of the smuggled material.

In the United States, where this issue has been given much public attention, Energy Secretary O'Leary has noted Russia's sense that America was trying to 'hype' these events, and has warned for unnecessary public alarm. A recent issue of the US periodical *Newsweek*, however, carries a report from Sicily that the mafia there has 'gone into the lucrative business of smuggling plutonium, uranium and arms' from countries of the former USSR and its allies.

Responsible Russian officials acknowledge that inadequate Soviet records on nuclear material production may have created conditions where clandestine removal of nuclear material from stockpiles cannot always be easily discovered. They also recognise that their system of material control and accounting may still not be fully adequate, in part, perhaps, because of insufficient funding. The slow pace with which money is allocated to the improvement of Russian nuclear material safeguards, from the funds set aside for this purpose under the *Nunn-Lugar Program*, is blamed for some of this situation. According to the German news magazine *Focus*, personnel in at least one production facility may have set aside stocks of non-accounted nuclear material. It seems, meanwhile, that the news that a significant amount of MOX-material had been smuggled out of the country may have prompted Russia's nuclear energy ministry to begin investigating locations where that material is handled. In that context, mention is made of Mayak, or Chelnyabynsk-65, near the Ural Mountains; the

Bochvar Institute of Inorganic Materials near Moscow; and the Institute of Atomic Reactors at Dimitrovgrad, to the East of Moscow.

Germany's Federal Chancellor, Helmut Kohl, and Russia's President Boris Yeltsin have exchanged letters on the matter; President Yeltsin — whom President Clinton is said to have urged to make the German visitors welcome and to give the issue serious attention — is reported to have promised his full cooperation. In August, the coordinator of Germany's intelligence services, Bernd Schmidbauer, went to Russia with analyses of the material in question, to discuss ways of preventing further illegal trade in bomb-grade nuclear material. He also saw President Yeltsin. Mr. Schmidbauer and other senior officials of Germany's foreign and domestic intelligence services met with the heads of Russia's Federal Counterintelligence Service and of its Foreign Intelligence Service, as well as with scientists from the Russian nuclear establishment. The two sides agreed to work together in preventing the smuggling of nuclear material, in particular by tightening border controls and exchanging information. It was also agreed to open 'contact offices' in each other's capitals. In what is described as having been 'businesslike' meetings, the German side is said to have aired their suspicion that Russian officials might have been involved in the attempted smuggling of plutonium through Munich Airport and it was agreed to make a joint investigation. Russian sources were still heard to express doubt, however, at German claims about the origin of the plutonium. It appears that if indeed the material came from Russia, it is most likely to have come from nuclear research facilities rather than from military stockpiles. Increasingly, however, European media seem to reflect the view that earlier reports may have overestimated the extent and nature of the transactions.

While Central Europe seems so far to be a prime locale for this trade, it is not the only area where such incidents occur. In May, there was a report that Swedish border controls were being tightened against an expected attempt to move enriched uranium through the country from Russia. Finland is installing radiation detectors at custom stations on borders and in harbours. Police in Hong Kong were said to have been warned of the possibility of that city being used by Asian crime syndicates as a base for trade in nuclear material. In mid-June, Viennese police discovered 5.7kg of what was said to be 'enriched uranium' in a private home; there was no indication of its origin or its enrichment level. In July, Turkish police reported the arrest of five persons who were found in possession of 10kg of uranium believed to be from 'a former Soviet Republic', which was claimed to be worth $825 million. (*sic*) (The report did not specify whether this was enriched uranium—Ed.) In Rumania, police are said to have seized 3kg of enriched uranium, alleged to have entered the country from Ukraine. Again, the enrichment level was not revealed. In Hungary two men were caught trying to sell 2kg of presumably low-enriched uranium. In Estonia, 3 kg of low-enriched uranium oxide were found by police, reputedly stolen from a Russian military facility. In September, Bulgarian police impounded 19 containers of various radioactive substances, including, reportedly, about 100 grammes of plutonium, and made several arrests.

The Director of the US Federal Bureau of Investigations (FBI), Louis Freeh, has also met with law enforcement officials in Central and Eastern Europe and in Russia, to seek their cooperation in fighting organised crime, especially in the nuclear field. He has pointed to the threat posed by criminal associations obtaining nuclear material and selling it to terrorist groups or states with clandestine weapons programmes. At the end of a visit to Russia, the FBI Director signed a memorandum of understanding with Russia's Interior Ministry, providing for joint efforts to fight organised crime. The document is also reported to confirm the decision to open a permanent FBI office in Moscow, and to provide for the possibility of Russia establishing a similar office in Washington. As announced on 26 September by President Clinton, in his speech to the United Nations General Assembly, the United States, the Russian Federation and Germany have agreed to undertake joint anti-terrorist training, under the leadership of the FBI. According to FBI Director Freeh, both Austria and Germany have offered to help in the project.

(**DPA** [Hamburg], 27/5, and **Helsinki Radio**, 31/5, in **JPRS-TND**-94-013, 24/6; **Reuter's**, 6/6, 7/6, 11/8, 15/8, 16/8, 26/8; **Novaya Nezhednevnaya**, 9/6, 16/6, in **JPRS-TND**-94-014, 13/7; **United Press International**, 7/6, 4/7, 5/7; **Presse**, 8/6; **Süddeutsche Zeitung**, 8/6, 20/8, 23/8, 15/9; **Australian**, 8/6; **Wiener Zeitung**, 16/6, and **South China Morning Post** [Hong Kong], 20/6, in **JPRS-TND**-94-014, 13/7; **Associated Press**, 29/6, 24/8, 26/8; **Neue Zürcher Zeitung**, 30/6, 7/7; **International Herald Tribune**, 1/7, 6/7, 18/7, 21/7, 26/7, 12/8, 15/8, 16/8, 17/8, 20/8, 22/8, 13/9; **Independent**, 4/7, 16/8, 19/8; **Times** [London], 4/7, 23/7; **ITAR-TASS**, 6/7, 8/7, in **JPRS-TND**-94-015, 22/7; **Frankfurter Allgemeine Zeitung**, 5/7, 19/7, 16/8, 12/9; **Associated Press**, 8/7, 22/7, 15/8; **NuclearFuel**, 18/7, 15/8, 29/8, 12/9; **Wall Street Journal**, 18/7; **New York Times**, 18/7, 20/7, 12/8, 14/8, 15/8, 16/8, 17/8, 18/8, 19/8, 21/8, 23/8, 26/8; **Spiegel**, 18-24/7, 25-31/7, 7-13/8; **Presse**, 18/7; **Die Welt**, 21/7, 12/8, 23/8, 13/9, 15/9; **Nucleonics Week**, 21/7, 4/8, 18/8, 25/8; **Washington Post**, 23/7, 14/8, 18/8; **Focus** [Munich], 25/7, 15/8, 22/8; **Die Zeit**, 29/7; **Libération**, 3/8; **BBC Monitoring Service, Summary of World Broadcasts**, 5/8, 6/8, in **Uranium Institute News Briefing**, 3-9/8;**Kurier**, 10/8; **LKA-Pressedienst** [Bavarian Criminal Investigation Department — Press Release] 539/94, 11/8; **Guardian**, 15/8; **Salzburger Nachrichten**, 16/8; **Financial Times**, 16/8, 19/8, 22/8, 25/8, 31/8; **Daily Telegraph**, 19/8, 22/8; **Bild am Sonntag**, 21/8; **Economist**, 27/8; **Bulletin of the Atomic Scientists**, Sept/Oct; **Tribune de Genève**, 10-11/9; **Guardian**, 15/9; **Newsweek**, 19/9; **USIA European Wireless File**, 27/9)

- A former diplomat from **Saudi Arabia** has alleged that his country has given serious consideration to the acquisition of nuclear weapons and gave financial

support to Iraq's nuclear weapon programme. The claim was made in an interview with the British *Sunday Times* on 24 July, by Mohamed A. Al-Khilewi, described as a 'diplomat trained as a nuclear expert' and 'a former second-ranking official at the permanent Saudi mission to the United Nations'. (Until recently Mr. Al-Khilewi was listed fifth among the Saudi Mission's staff, and his rank was given as First Secretary—Ed.) He is said to have broken with his country in May and has been given asylum in the United States. Mr. Al-Khilewi has asserted that in 1975, the Saudi government opened a nuclear research office in a 'secret military complex at Al-Suleiyel', near Al-Kharj. At that time, he said, it gave financial assistance to the Pakistani nuclear programme in its developmental stage. Later, however, this arrangement supposedly no longer satisfied the Saudi government, which sought to have its own nuclear weapon. Therefore, Al-Khilewi claims, it contributed $5 billion to Iraq's nuclear-weapon programme, hoping to obtain nuclear weapons and weapon technology from that country. In a second interview, given in New York on 5 August, Mr. Al-Khilewi again alleged that Saudi Arabia had tried to 'buy into a covert Pakistani program'. According to him, in 1985 Saudi Arabia 'started to think seriously about starting its own nuclear weapons program' and sought to obtain nuclear research reactors and training from China. Correspondence produced at the interview is said to indicate that the transaction envisaged concerned the purchase of one miniature neutron-source reactor. As noted in the newspaper report, Saudi Arabia acceded to the NPT in 1988 but has since 'refused' to conclude a safeguards agreement with the IAEA that would oblige it to declare any nuclear facility it has and open it to inspection. The US Central Intelligence Agency (CIA) is said to have begun an investigation of the allegations. The accusations against an ally in the Persian Gulf war have received much attention in the British press, but authoritative sources in London are quoted as saying they have found no grounds either to support or refute the allegations. (**Sunday Times**, 24/7, 31/7, 28/8; **Standard** [London], 24/7; **Washington Post**, 25/7; **International Herald Tribune**, 25/7; **Guardian,** 25/7; **Christian Science Monitor**, 25/7; **New York Times**, 7/8)

- In the **United States**, a salvage company in Idaho was found trying to sell surplus reprocessing plant tanks to British Nuclear Fuels, plc. (BNFL). The equipment was to have been used in a reprocessing facility of which completion was cancelled in 1992. The salvage company had bought the equipment from the Department of Energy. The attempt to sell the tanks abroad — which was stopped by the Nuclear Regulatory Commission when BNFL advised it of the offer — is expected to trigger a review of the relevant regulations, to ensure that the existing strict export controls are properly applied to sensitive equipment of this kind. (**Wall Street Journal**, 3/8; **Nucleonics Week**, 4/8; **Guardian**, 4/8)

k. Environmental Issues

- The Norwegian Minister for the Environment has said that studies on radioactive waste pollution on the Kola Peninsula in **Russia** absorb funds that should be used for actual clean-up activities. There are reports that measurements in the Kara Sea have found impermissibly high levels of ionizing radiation in the region of Novaya Zemlya and of several areas of the northern Russian coast. These levels are presumably caused by such phenomena as the dumping of nuclear material at sea, the disposal of at least 16 submarine reactors there, and the radioactive pollution of rivers that run into the Arctic Ocean, particularly the Ob, which is said to carry large amounts of radionuclides from the weapon plants near Tomsk. The Norwegian government has reportedly expressed opposition to a Russian plan to build an underground storage facility for nuclear waste on Novaya Zemlya.

  The Brussels-based Komsomolets Foundation has reportedly concluded that leakage of plutonium from the wreck of the Soviet submarine *Komsomolets,* which in 1989 sank off the Norwegian coast, can be stopped at a cost of $12.5 million, which is much less than expected. Work was started in late July by the Netherlands Deep Sea Consortium, a salvage company which works with the Foundation; the Dutch government is said to contribute about $1 million. An earlier report from St. Petersburg had said that there was a plan to 'plug' the openings in the fore part of the submarine, and that this would be done by Russian staff and with Russian equipment. Norwegian officials are reported to be of the opinion that the radiation danger presented by the leak is less acute than environmental groups or the Komsomolets Foundation believe, and that sealing the torpedo tubes is unnecessary, because radioactive material leaked will be diluted to the point where it does not pose any danger, and ineffective because the seals will not last the 24,000 years' half-life of the plutonium. (**United Press International**, 3/6; **Spiegel**, 6/6; **Nucleonics Week**, 23/6, 25/8; **ITAR-TASS** [Moscow 27/5, in **JPRS-TND**-94-013, 24/6; **Frankfurter Allgemeine Zeitung**, 23/8)

- **Japan** and **Russia** are discussing details of a floating storage facility for low-level radioactive waste which is to be constructed near Vladivostok. Russia is said to have promised not to dump low-level waste in the Sea of Japan for as long as the talks continue. Contract tenders should be issued soon, and the facility is supposed to be ready in 1995. However, there does not appear to be agreement yet as to how much of the $100 million which Japan has made available towards the denuclearisation of the former USSR should be earmarked for the facility.

  There was a report in late June that at Petropavlovsk Kamchatsky in the Kamchatka peninsula, one side of a dump of radioactive waste of the Russian navy had caved in and contaminated water was flowing into the sea. The radiation level at the point of the break was said to be 1,000 times higher than the natural background for the area, but no immediate threat was thought to exist for the local population.

(**Reuter's**, 28/6; **Asahi Shimbun**, 29/6; **Nucleonics Week**, 14/7)

II. PPNN Activities

- Following his appointment as Assistant Director of ACDA for Nonproliferation & Regional Arms Control (see page 6), Dr. Lawrence Scheinman has resigned from PPNN's Core Group. His successor on the Group is Ambassador James F. Leonard.

- PPNN is holding its Sixteenth Core Group meeting at the Pocantico Conference Centre of the Rockefeller Brothers Fund, North Tarrytown, New York from 27 to 31 October. The Core Group itself will meet on 27 October, and will then convene a Briefing Seminar on *Issues at the 1995 NPT Conference* for delegates to the First Committee of the UN General Assembly on 28 to 30 October. On 31 October the Core Group will meet members of the US non-proliferation community for a colloquium on *The Status of Non-Proliferation.*

- The Seventeenth PPNN Core Group meeting will take place over the weekend of 9-12 March, 1995 at the Arden House Conference Centre, Harriman, New York. This meeting will incorporate a final PPNN seminar for senior officials on *Issues at the 1995 NPT Conference.*

- *South Asia, Nuclear Energy and Nuclear Non-Proliferation*, the bound volume of papers from the Fourteenth PPNN Core Group meeting held at Kandy, Sri Lanka, in November 1993 has now been published. Those interested in obtaining copies should write to Darryl Howlett at PPNN's Southampton office.

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IV. Documentation

STATEMENT OF THE PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION TO THE THIRD SESSION OF THE PREPARATORY COMMITTEE FOR THE 1995 CONFERENCE OF THE PARTIES TO THE TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS 14 September 1994

The Programme for Promoting Nuclear Non-Proliferation [PPNN] is an international networking venture devoted to supporting and reinforcing the nuclear non-proliferation regime and the Treaty on the Non-Proliferation of Nuclear Weapons [the NPT].

It was initiated in 1987 through a conviction that the world community did not adequately recognise the dangers of nuclear proliferation or fully support the means of preventing it, notably the NPT. As a consequence PPNN, has attempted to encourage dialogues on these issues between officials and others on both a regional and global basis, as well as disseminating information and analyses about the regime and the problems that confront it. The wide political, functional and geographical representation of its Core Group has resulted in this being done in as objective a manner as possible.

PPNN's networking and information activities are underpinned by the conviction that nuclear non-proliferation is an important international objective in its own right. This in turn rests on two assumptions:

- that the risk of a nuclear war will persist as long as there are nuclear weapons, and that all possible steps should be explored to move closer eventually to a world free of the threat of their use; and
- that nuclear proliferation encompasses a wide range of political, economic and security issues, which must be fully understood and addressed before effective policies can be designed and implemented to prevent it.

This leads to the further beliefs that:

- a strong global nuclear non-proliferation regime is a basic requirement to achieve these objectives;
- that the NPT's legal commitments and obligations are at the heart of that regime and indispensable to it;
- that even the recent relatively modest progress towards reducing nuclear armaments would have been unlikely in the absence of this unique global non-proliferation and disarmament instrument, both because of the assurances it offers the nuclear-weapon states and the forum its revue conferences provide for pressures upon them; and
- that the non-proliferation and disarmament regime would be undermined, and eventually collapse, without credible guarantees of the continued existence of the Treaty for many years ahead.

Nothing more effective than the NPT appears achievable in the immediate future. Its parties have a rare opportunity at their 1995 conference to agree a long extension of the NPT in a manner demonstrating their united and absolute opposition to nuclear proliferation, and thus to reinforce their commitment to the non-use of nuclear weapons and their eventual elimination. Our hope is that you, as representatives of those parties, will make full and constructive use of it.

LETTER DATED 14 SEPTEMBER 1994 FROM THE HEAD OF THE DELEGATION OF INDONESIA ADDRESSED TO THE CHAIRMAN OF THE PREPARATORY COMMITTEE FOR THE 1995 CONFERENCE OF THE PARTIES TO THE TREATY ON THE NON-PROLIFERATION OF NUCLEAR WEAPONS, TRANSMITTING A DOCUMENT OF THE GROUP OF NON-ALIGNED AND OTHER STATES ON SUBSTANTIVE ISSUES

On behalf of the Group of Non-Aligned and Other States, I have the honour to submit to you a document, covering various aspects which are of paramount importance to the present as well as to the next Preparatory Committee meeting and to the 1995 NPT Review and Extension Conference.

It would be highly appreciated if you could take the necessary steps to include it as an official document of the Preparatory Committee meeting and at the same time to make it available to all NPT states parties.

(signed) Agus Tarmidzi
Ambassador/Head of Indonesian Delegation

ANNEX
DOCUMENT ON SUBSTANTIVE ISSUES SUBMITTED BY INDONESIA ON BEHALF OF THE GROUP OF NON-ALIGNED AND OTHER STATES

1. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was conceived as an instrument to prevent the proliferation of nuclear weapons. As part of this endeavour, States Parties which are Nuclear-Weapon States undertook 'to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control' and, at the same time, to promote the peaceful uses of nuclear energy.
2. During the negotiations of the NPT, the Non-Nuclear-Weapon States (NNWSs), particularly the developing countries, sought a fair balance in the Treaty between the mutual obligations and responsibilities of the NWSs and NNWSs which could successfully serve the interests of all States Parties. This position was endorsed by resolution 2028 (XX) of the UN General Assembly. However, this was not fully realized at the time. Today, more than two decades later, the imbalances between the obligations and responsibilities have grown. There is a stalemate in negotiations aimed at redressing those imbalances, including negotiations in the NPT Review Conferences as well as the Conference on Disarmament.
3. The Non-Aligned Countries value the Non-Proliferation Treaty as a key instrument to channel international efforts to halt vertical and horizontal proliferation of nuclear weapons. Notwithstanding the important role of the Treaty in the maintenance of international security, it should be recognized that the Treaty has fundamental shortcomings that have become the bone of contention between NWSs and NNWSs Parties to the NPT ever since it came into being, thus eroding the perceived value of the Treaty.
4. The preparations for the NPT Conference in 1995 provide an exceptional opportunity towards the realization of the objectives enshrined in the Treaty. *Substantive progress on the following areas will contribute to the successful outcome of the review and extension Conference of the NPT*:

Nuclear Disarmament

5. The cessation of the nuclear arms race, nuclear disarmament and general and complete disarmament as a whole, continue to be the main objectives of the Treaty. The NWSs should reaffirm their commitment to the complete elimination of nuclear weapons.
6. A time-bound framework and a target date for the total elimination and the efforts by the NWSs to carry forward the process of de-emphasizing the role of nuclear weapons will create a strong political thrust towards international efforts to prevent proliferation of nuclear weapons. A statement by the Russian Federation and the United States indicating the bilateral measures they will take in the future in order to reduce their nuclear arsenals beyond the levels envisaged in the START I and II agreements, would also be a welcome initiative, together with an indication of the steps that China, France and the United Kingdom would be willing to take in light of the reductions referred to above.

Nuclear-Weapons-Free Zones

7. NWSs should abide and adhere to those international instruments that have established nuclear-weapon-free zones, and to support the initiatives taken by a State or States Parties with a view to establishing nuclear-weapon-free zones, freely arrived at among the States of the region concerned, particularly in the regions of the Middle-East and Africa.
8. Furthermore, deployment of nuclear weapons by NWSs on foreign territories, particularly in NNWs territories, should be prohibited as it negates the objectives of a nuclear-weapons-free zones. All States that have deployed nuclear weapons outside their boundaries should withdraw all those weapons back to their own territories.

Comprehensive Nuclear Test Ban

9. The conclusion of a Comprehensive Nuclear Test Ban Treaty (CTBT) remains one of the highest priority objectives of the international community and the fundamental pillar of an effective and comprehensive non-proliferation regime. All efforts towards the achievement of this objective, including the PTBT Amendment Conference, should be pursued. While the decision by the Conference on Disarmament to establish an *ad hoc* Committee with a negotiating mandate is welcome, a target date must be set to conclude the negotiations on a CTBT prior to the 1995 NPT Review and Extension

Conference. The conclusion of a CTBT would decisively benefit the outcome of the said Conference. Pending the conclusion of such a Treaty, the nuclear-weapon States should suspend all nuclear testing.

Security Assurances

10. Pending the total and complete elimination of nuclear weapons, unconditional security assurances to the NNWSs has been regarded as one of the major concerns. In the context of an acceptable balance of mutual responsibilities and obligations, it is the primary right of States Parties to the NPT to be assured of non use and threat of use of nuclear weapons. Nuclear Weapons States Parties should agree to a legally binding instrument on this issue before the 1995 Conference. The CD should intensify negotiations with a view to concluding an international convention to assure non-nuclear-weapons States against the use or threat of use of nuclear weapons.

Fissile Material

11. A Treaty banning the production and stockpiling of fissile material for nuclear weapons and other nuclear explosive devices would be a significant contribution to nuclear disarmament and nuclear non-proliferation provided that such a treaty is non-discriminatory, effectively verifiable and universally applicable, thus constituting a part of the comprehensive efforts to ban nuclear weapons and lead to their destruction.

Peaceful Use of Nuclear Energy

12. There continues to exist unjustified restrictions and constraints imposed on developing NNWSs regarding full access to nuclear technology for peaceful purposes. Unilaterally enforced restrictive measures, beyond safeguards required under the Treaty, must not be used to prevent peaceful development, especially in the nuclear area, and should be removed.
13. The inalienable right of all States Parties to develop the peaceful use of nuclear energy for economic and social development must be reaffirmed by all nuclear and advanced non-nuclear States Parties. It is also essential that free and unimpeded access to technology by guaranteed, without exception, for all States Parties to the Treaty who have concluded relevant safeguards agreements with the IAEA.

STATEMENT TO THE THIRTY-EIGHTH SESSION OF THE GENERAL CONFERENCE OF THE INTERNATIONAL ATOMIC ENERGY AGENCY by Hans Blix, Director General [Extract]

In the year ahead of us two anniversaries of particular importance to the IAEA will occur. It will be 50 years since the founding of the United Nations and it will be 25 years since the Non-Proliferation Treaty entered into force. The stock-taking at these anniversaries is a good starting point for thinking about future directions. We must ask how we can best cope with today's and tomorrow's issues and how we can make optimal use of the IAEA in all areas of its mandate.

The IAEA and the UN System

Let me begin with some comments on the IAEA as a part of the UN family. There is frequent criticism of a lack of cohesion and co-ordination in the UN system — not least in analyses made in connection with the UN's 50th anniversary. I submit that this criticism is not valid for the IAEA's relations with the UN and UN organizations. This Conference and the Agency's Board of Governors have a practice of following the UN lead in political matters, eg on representation issues. The Agency also seeks to fully play its role in system-wide efforts declared by the UN, such as the current work to promote sustainable development by implementing Agenda 21. Above all, the cases of Iraq and DPRK have demonstrated the close, prompt and effective liaison and interaction which exists between the IAEA and the UN in accordance with the IAEA Statute and the relationship agreement with the UN. The Security Council has looked to the IAEA as the nuclear inspection arm of the UN system and the Agency has looked to the Council as the body politically responsible for the implementation of nuclear arms control measures. As attention to nuclear non-proliferation increases and more nuclear arms control measures requiring verification are adopted it would be reasonable and cost-effective to continue building on this distribution of functions and to avoid any duplication.

In welcoming the personal representative of the Secretary-General, Mr Giorgio Giacomelli, I would ask him to convey to the Secretary-General our appreciation for the excellent and close liaison that is maintained with him and, through him, with the United Nations, in particular the Security Council. I am pleased that we have recently established a secure phone and fax line between the Secretary-General's office and my office. I hope, however, that we shall not need to use it very often.

...

The IAEA and the NPT

As I said in my opening statement it will next year be 25 years since the Non-Proliferation Treaty entered into force. The more than 160 parties to the Treaty will review the past experience of the Treaty, consider its future and decide on its extension. The cases of Iraq and DPRK have raised questions about the reliability of commitments made under the Treaty and pointed to the need for strengthening verification under the Treaty. These questions will undoubtedly be discussed. At the same time the parties to the Treaty can take encouragement in the continued increased adherence to the Treaty. The IAEA is contributing substantial background material in support of the Conference, particularly concerning safeguards implementation and the transfer of nuclear science and technology for peaceful purposes. We look forward to the guidance of the Conference in these tasks.

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Safeguards Verification, Non-Proliferation, Nuclear Arms Control

One of the most important functions of the IAEA has been and remains to verify the peaceful nature of nuclear activities through safeguards. The Agency's experience is unparalleled in the UN system and could be made use of in verifying future nuclear arms control and disarmament arrangements.

The discovery by the IAEA after the Gulf War that Iraq, despite full-scope safeguards, had been able secretly to develop a substantial programme for uranium enrichment and for weaponization accelerated the efforts to strengthen the safeguards system and to reduce the risk that material or installations which should have been subjected to safeguards could remain undeclared and undetected. It was realized that for this purpose the IAEA needed above all increased access to information and easier access to relevant sites and installations.

Some proposals have already been endorsed by the Board of Governors, e.g. regarding the early provision of design information and the reporting on the export and import of nuclear material and specified equipment. Further proposals for a strengthened and more cost effective safeguards system are being considered in 'Programme 93+2' to be presented to the Board of Governors in March 1995. Key proposals relate to increased access to information about a State's nuclear programme and increased physical access to sites. These are complementary features leading to increased nuclear transparency and increased assurance of the absence of undeclared nuclear activities. They can be seen as a natural extension of actions already adopted by the Board of Governors. The programme also includes the study of a number of technical and administrative efficiency measures that could become part of a streamlined and fully rationalised safeguards system. Thanks to the co-operation of a large number of Member States, many new concepts are undergoing field tests and a 'clean

laboratory' facility is being established at Seibersdorf for the receipt and handling of safeguards samples.

There is no doubt that the credibility of non-proliferation commitments will become increasingly important as the number of nuclear weapons in the world is reduced. Safeguards have a vital role to enhance this credibility and should not be viewed by States as *intrusions* into their sovereignty but as *opportunities* to demonstrate compliance with important with important international obligations. This is also how governments generally view safeguards. Similarly, the increasing number of invitations to the Agency to 'visit any place any time' are means by which States, in their enlightened self-interest, can increase their transparency and, at the very least, dispel specific unfounded allegations or suspicions which may have been advanced. I trust more such invitations will be issued. I also trust governments will eliminate a number of restrictions which still reduce the effectiveness of safeguards and lead to unnecessary cost. Many governments continue to insist on restrictions, based on nationality, regarding the designation of international inspectors. Visas for each visit are required by some States and the inspectors' freedom of access to facilities and communications with headquarters are sometimes limited. Why can such barriers not be removed? Are not the interest of all States best served by competent and independent inspectors operating with minimal restrictions? Special arrangements should really only be needed to protect sensitive military or industrial secrets.

If there is considerable scope for strengthening the safeguards system and reducing some costs in it, there is at the same time a vital need to maintain a stable and adequate financial basis for it. The number of safeguards agreements continue to grow — several new agreements were endorsed at the most recent meeting of the Board. More than 800 facilities and other sites are under Agency safeguards. It is of great importance that during the next year member governments reach agreement on reliable and equitable arrangements for the financing of safeguards. They may also need to consider arrangements for the funding of new verification activities.

Safeguards Implementation in DPRK

The report contained in document GC(XXXVIII)/19 summarizes the safeguards implementation in the DPRK. As of the time in 1993 when the DPRK declared its withdrawal from the NPT and then suspended 'the effectuation' of its withdrawal, it appears not to have recognized any legal obligation to accept safeguards inspection under its agreement with the IAEA. Rather it has followed — and it still continues to follow — an à la carte approach, in which the extent of access for safeguards inspection varies depending inter alia upon developments in its negotiations with a third party. From the Agency perspective the situation is different. Both the IAEA and the United Nations have concluded that the safeguards agreement remains valid and that the Agency is under an obligation to seek to implement it fully. This, indeed, is what the Agency has consistently tried to do and is still trying to do. By the time when the Board of Governors met in June this year the Agency, after a long interval, had been enabled to inspect all declared nuclear installations as required by the safeguards agreement. However, the refusal of the DPRK to co-operate in providing access to additional sites and information and the loss of data which resulted from the method of fuel core discharge that the operator chose for the 5 MW Experimental Reactor last spring prevented the assessment of the nuclear material inventory declared by the DPRK. It also prevented a resolution of the inconsistency between this declaration and findings of the Agency.

Although the DPRK appeared immediately after its withdrawal from membership in the IAEA last June to reject all safeguards inspection, this position was somewhat modified following the meeting between the late President of the DPRK and former US President Carter and the Agency has been enabled to maintain the continuous inspector presence basis at Nyongbyon which began in May. During the summer inspectors were enabled to monitor some of the activities of the 5 MW plant. This was in line with the request directed to the Agency by the Security Council in late May. Maintenance of surveillance and seals at the reprocessing plant also continued. However, the Agency's requests for access to the fuel fabrication plant, fresh fuel storage facilities and the new reprocessing line under construction were denied during the summer.

On 5 September representatives of DPRK indicated to IAEA inspectors on site that following recent progress in the bilateral talks with the United States the DPRK was ready to enlarge the scope of inspections and inspections have now in fact been completed at the fuel fabrication plant and at the fresh fuel storage facility. Access to the reprocessing line under construction, however, has not been granted. I should add that the results of the inspections which took place in March and May this year have not provided any indications of reprocessing of recently irradiated fuel or of loading of fresh fuel into the reactor.

I certainly hope that all declared facilities will soon again by fully subjected to safeguards. I also hope that additional information and visits to additional sites will be forthcoming.

Verification under Security Council Resolution Mandate in Iraq

Under the mandate of the Security Council the IAEA has, to date, carried out 26 inspection missions in Iraq and has completed the destruction, removal or rendering harmless of all known nuclear weapons usable materials, facilities and equipment. In particular the IAEA has arranged for and supervised the removal, from Iraq, of all highly enriched uranium and the demolition of all facilities and the removal or destruction of non-nuclear materials and equipment, which could be used for the production of nuclear weapons. The IAEA is satisfied that the scope of Iraq's former nuclear weapons programme is well understood and that, as a result of the destruction, removal and rendering harmless activities, no capability for the production of nuclear weapons exists in Iraq.

Progress towards this conclusion was facilitated by a series of high-level technical talks begun in July 1993, in the course of which Iraq provided additional information regarding its former nuclear weapons programme with respect to supply and procurement channels and sources of external technical support with particular regard to their centrifuge enrichment programme. The significant aspects of these disclosures have been satisfactorily verified.

Since its acknowledgement, in November 1993, of Security Council resolution 715 (1991), Iraq has provided to the IAEA the reports, required under that resolution to enable the IAEA to complete the preparations for the implementation of the ongoing monitoring and verification plan. With the establishment, at the end of August, of its continuous presence in Iraq, the IAEA is in a position to implement its ongoing monitoring and verification plan. Monitoring and verification measures will be subject to modification as technical needs arise or as advanced technologies become available.

As required by Security Council resolution 715, the IAEA, the UN Special Commission, and the Sanctions Committee, have developed a mechanism for monitoring future sales or supplies by other countries to Iraq. It is expected that the Security Council will, in the near future, approve this jointly-developed mechanism, which will form part of the IAEA's ongoing monitoring and verification activities in Iraq.

The implementation of the ongoing monitoring and verification plan does not foreclose the exercise, by the IAEA, of its right to investigate any aspect of Iraq's former nuclear weapons capability, in particular, the right to follow-up on any new information obtained by the IAEA and assessed as warranting further investigation.

As is well known, the IAEA's current activities in Iraq are not based upon the safeguards agreement with Iraq but on the mandate given by the Security Council and consequently

verification activities in Iraq go considerably beyond those which are required under an NPT-type safeguards agreement. Nevertheless, our experience in Iraq has proved useful in the development of safeguards measures which will provide greater assurance of the non-existence of clandestine nuclear activities.

Safeguards in Different Regions: The Middle East

The General Conference last year requested me to continue consultations with States of the Middle East region to facilitate the early application of full-scope Agency safeguards to all activities in the region. In pursuance of this mandate and as reported in a document before you (GC(XXXVIII)/18), I have had further contacts with States in the region and the Agency has continued to participate in the Multilateral Working Group on Arms Control and Regional Security. Additional views regarding verification modalities and national objectives relevant to Middle East nuclear-weapon-free zones were obtained during my visit to Iran, Lebanon, and the United Arab Emirates. I intend in the coming year to continue my consultations in capitals. The meetings of the Multilateral Working Group have taken place against the backdrop of important developments in the bilateral peace process. As a follow up to the Seminar on the Modalities for the Application of Safeguards in the Middle East which we organized last year in Vienna, arrangements are being made within the framework of the Working Group to enable representatives of Middle East States to see a demonstration of verification techniques and to become acquainted with ways in which regional verification in Europe complements the IAEA's international verification.

Safeguards Implementation under the Tlatelolco Treaty

Argentina, Brazil and Chile have now ratified the Tlatelolco Treaty and the Quadripartite Safeguards Agreement between Argentina, Brazil, ABACC and the IAEA entered into force in March this year. As Cuba has declared that it intends soon to adhere to the Tlatelolco Treaty, we can expect that this Treaty will enter into force, formalizing the Latin American and Caribbean region status as a nuclear-weapon-free region. This is to be much welcomed.

Safeguards in Africa

South Africa's adherence to the NPT and Algeria's indicated intention to do the same raises the expectation that Africa, too, will soon become a nuclear-weapon-free zone.

The General Conference last year requested the Director General 'to continue to assist the African States in their efforts towards establishing an African nuclear-weapon-free-zone'. Such assistance has been given and I am glad to tell you that in May the UN/OAU Group of Experts reached agreement on the draft text of a Treat establishing such a zone. This text entrusts the Agency with the task of verification.

Safeguards in the Newly Independent States (NIS)

Another area of increasing IAEA safeguards activity is the Newly Independent States of the former Soviet Union. All these countries — with the exception, of course, of the Russian Federation — have declared their intention either to become or to remain non-nuclear-weapon States. So far, nine — Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakstan, Latvia, Lithuania and Uzbekistan — have acceded to the NPT. As of now three safeguards agreements pursuant to the NPT are in force in the NIS (with Armenia, Latvia and Lithuania) and the Board has approved four further agreements (with Belarus, Estonia, Kazakstan and Uzbekistan). To date one of these agreements (with Kazakstan) has been signed. Also, the Board last week approved the text of a safeguards agreement with Ukraine, which includes provisions for the application of safeguards by the IAEA to all nuclear material under the jurisdiction or control of the Ukraine.

In preparing for full implementation of safeguards in the NIS, the Agency has provided advice on the legal framework for control of nuclear activities in these countries. Furthermore, in collaboration with a number of Member States, the Agency has provided assistance in establishing state systems of accounting for and control of nuclear material, advice on physical protection and on mechanisms for reporting of imports and exports relevant to safeguards. To date nearly 30 fact-finding missions and technical visits have been carried out for these purposes.

Dismantling Nuclear Weapons

At the United Nations General Assembly in September 1993, President Clinton stated that the US would 'pursue new steps to control the materials for nuclear weapons' and during their meeting in Moscow in January 1994 President Clinton and President Yeltsin agreed on the establishment of a joint working group to consider, inter alia,:

> 'steps to ensure the transparency and irreversibility of the process of reduction of nuclear weapons, including the possibility of putting a portion of the fissionable material under IAEA safeguards'.

Against this background, the United States has begun a process aimed at the eventual submission to IAEA inspection of all US fissile material no longer needed for defence requirements. Locations where such material is to be stored and presented for Agency inspection over the next few years have already been identified. Discussions have taken place between the Agency and the United States on legal, technical and financial aspects of the safeguards which are to be applied within the framework of the safeguards agreement between the Agency and the United States (document INFCIRC/288) and an exchange of letters to take account of particular aspects of arrangements. In the exchange of letters the US has confirmed its intention not to withdraw such material for any nuclear weapon or nuclear explosive purpose.

A first inspection has recently been carried out at a storage site in Oak Ridge. The Agency is also preparing a plan to bring additional highly enriched uranium and plutonium under safeguards in step with the rate at which such materials are declared excess to defence requirements. The initiation of this process is a positive and encouraging development. At the same time it calls for long-term solutions of issues concerning the management and financing of such arrangements.

A Cut-Off Agreement

While safeguards verification of nuclear material recovered from dismantled weapons will foster confidence that none of this material will be used to produce new weapons, the objective of verifying compliance with an agreement to prohibit the production of highly enriched uranium and plutonium for weapon purposes would be to create confidence that nuclear weapon arsenals could not be increased on the basis of newly produced nuclear material.

In December last year, the United Nations General Assembly adopted, without a vote, a resolution which recommended 'the negotiation in the most appropriate international forum, of a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices' and which further requested the Agency 'to provide assistance for examination of verification arrangements for such a Treaty as required'. To ensure that the IAEA Secretariat will be able to provide prompt and sound advice, I have established a working group within the Secretariat which is examining relevant issues and preparing background papers. We thus stand ready to assist governments as requested by the General Assembly.

Comprehensive Test Ban Treaty (CTBT)

During the past year the Agency has been invited by the Ad Hoc Committee on a CTBT of the Conference on Disarmament to provide information about the Agency's infrastructure and technical expertise in connection with the discussion of verification of a Comprehensive Test Ban Treaty. Presentations have been made on the Agency's experience in

radionuclide monitoring and on-site inspections as relevant to a CTBT.

In the view of the Agency Secretariat a verification role under a CTBT would be consistent with the Agency's mandate and would fit well with the Agency's current activities in the field of nuclear non-proliferation. Indeed, there is an obvious overlap between the commitment by a State not to test a nuclear weapon or other nuclear explosive device and a non-proliferation commitment by the same State not to use nuclear material for weapons or explosive purposes. Thus Agency verification under comprehensive safeguards agreements is directly relevant to verification of compliance with a test ban agreement. Any non compliance with a CTBT would also be non-compliance with a comprehensive safeguards agreement — and both violations would be reported to the Security Council. Thus, setting up a new organization to verify obligations under a CTBT, the objective of which is in part identical to that of non-proliferation treaties, could lead to complications and would undoubtedly prove more costly than using the Agency for both regimes.

Management of Plutonium and HEU

Last year, I noted that the current process of nuclear disarmament in the US and Russia and ongoing reprocessing of spent civilian nuclear fuel would lead to substantial quantities of plutonium and highly enriched uranium (HEU) which need to be stored before use or disposal. I also drew attention to the international interest in the storage of such materials taking place under conditions of adequate physical security, nuclear safety and — not least — under conditions providing a high degree of assurance that the material will not be used for weapons or explosives. Also, informal discussions have focused on possible additional confidence-building measures. There seems to be broad agreement that the peaceful storage or use of plutonium and HEU should be highly transparent. One possible step is the regular publication of information on stocks of separated civil plutonium. It has also been proposed that the IAEA might be asked to attest the consistency of information thus made public with information available to it under the safeguards system.

Trafficking in Nuclear Material

The international community has been much alarmed by recent cases of illicit trafficking in nuclear materials. Over the last year the Secretariat has recorded many incidents which warranted follow up. Fortunately information received indicates that only small quantities have been involved and in no case does the material appear to have come from a nuclear weapons stockpile. This does not mean that there is not a serious problem. Uncontrolled movement of nuclear material clearly involves both radiation safety and proliferation risks.

There have been extensive discussions between States in recent weeks in search of remedies to the trafficking problem. The IAEA Secretariat has also consulted many Member States exposed to trafficking to identify ways in which the Agency might help mitigate the problem, and areas of the work, like police investigation, in which as a rule the Agency has no role to play. It seems widely agreed that preventing diversion at the sources is crucial and nuclear material accounting and control together with physical protection systems are central to such prevention. The Agency has been active for many years in arrangement for training, in providing expert advice and in co-ordinating the elaboration of guidelines in these two areas. With adequate resources these efforts could be expanded without delay. Further, the current Agency system of collecting and analyzing open information obtained from the media and Member States could be improved significantly. An improved system would allow systematic reporting to Member States, helping them to separate fact from fiction and providing a basis for assessing the real extent of the problem.

In order more systematically to consider ideas from Member States about increased Agency activities to assist in the combatting of trafficking, I am ready to convene a 'Round Table' of government experts that could recommend specific action which could be taken promptly.

Finally on this issue, one could ask whether it is not time for all Member States with nuclear material under their control voluntarily to commit themselves to protect such material, at a minimum, at the levels given in the Agency's Guidelines for the Physical Protection of Nuclear Material contained in INFCIRC/225/Rev.3.

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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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