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Summary:

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

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NEWSBRIEF

Autumn 1990

Editorial note

The present issue of the *Newsbrief* of the Programme for Promoting Nuclear Non-Proliferation (PPNN) covers events in the area of nuclear non-proliferation during the third quarter of 1990, as well as some earlier occurrences about which information came to hand in the course of that period.

PPNN's *Newsbriefs* report on events related to the spread of nuclear-weapon capabilities to additional states and on developments tending to deter that spread. They include references to diplomatic, economic and technical issues that may affect nuclear non-proliferation, including related questions of arms control.

It is the aim of the *Newsbrief* to publish only items derived from reputable and reliable sources and to present them objectively and in a balanced manner. As editor of the *Newsbrief*, the Chairman of PPNN's Core Group is responsible for its contents. Unless expressly stated, the inclusion of an item does not imply the agreement of the members of the Core Group collectively or individually, either with its substance or with its relevance to PPNN's activities.

Readers who wish to comment on items included in the *Newsbrief*, or to draw attention to information they feel should be included, are invited to send their remarks to the editor for publication in a subsequent issue.

The *Newsbrief* is sent free of charge to institutions and persons interested in nuclear non-proliferation. Copies of previous issues are available upon request.

The aims and activities of the Programme for Promoting Nuclear Non-Proliferation (PPNN), under whose aegis the *Newsbrief* is published, are described briefly at the end of this issue.

I. Topical developments

a. Background

This issue of the PPNN *Newsbrief* appears shortly after the fourth Review Conference of the nuclear Non-Proliferation Treaty. As the last review conference before the conference of 1995 that must decide on the Treaty's further duration, this event was widely endowed with a special importance. Notwithstanding — or perhaps to some extent even because of — its special nature, the conference could not reach consensus on a final document, which is the yardstick by which the success of such events is usually measured.

The conference had many positive features. The general debate reflected the high importance states attach to the Treaty as a major factor of national security and inter-

national stability. There were many calls for a substantial extension in 1995. The reports of the committees discussing the implementation of various treaty articles reflected agreement on important political questions, on ways of strengthening the non-proliferation regime and improving nuclear supply policies, and on international cooperation in the peaceful uses of nuclear energy.

The one issue on which no consensus could be reached was the criterion by which to judge the fulfilment by the nuclear powers of their obligation under the Treaty, to proceed to effective nuclear disarmament. Many non-aligned states have long taken this to be a ban on all nuclear tests — a view not shared by the UK and the USA. This time, again, some non-aligned nations, led by Mexico, insisted that, whatever other progress had been made in nuclear disarmament, the 'litmus test' of a CTBT had not been passed. The most intensive efforts at drafting could not produce generally acceptable compromise language on this matter. Judging by the record of the discussions at this review conference and at previous ones, one is left with the conviction that, unless the next five years bring tangible progress towards the conclusion of a comprehensive nuclear test ban, it will be very difficult to get general agreement on a lengthy extension of the NPT in 1995.

Concern about the spread of nuclear and chemical weapon capabilities in the Middle East has worsened as the crisis in the area of the Persian Gulf has grown more acute. Reports about Iraq's nuclear ambitions increasingly engage the interest of the public media. It is worth noting that if allegations that Iraq is clandestinely acquiring the means to enrich uranium are borne out, this does not necessarily mean that it is in breach of its obligations under its safeguards agreement with the IAEA. It might, however, imply a contravention of Article II of the NPT which bars non-nuclear-weapon states parties from manufacturing nuclear weapons. In comparison, the fact that the People's Democratic Republic of Korea has still not concluded a safeguards agreement with the IAEA is a clear violation of the Treaty. The matter was the subject of considerable concern and comment at the NPT Review Conference and at the IAEA's General Conference.

The IAEA's General Conference, held in Vienna in the week following the Review Conference, was relatively uneventful. It adopted once again a zero-growth budget and laid particular stress on the Agency's activities in the areas of safeguards, nuclear safety and radiation protection. Among its resolutions there was one reflecting disappointment with the fact that South Africa had still not acceded to the NPT. This may be reinforced by recent allegations about the existence of a nuclear-weapons programme in that country.

By acceding to the NPT, South Africa would demonstrate its intention to forego its nuclear-weapon ambitions, much as Sweden has done in the past. On the other hand, reports from Brazil indicate that, while it seems to have been on the way to acquiring a nuclear-weapon capability, the present government has barred further moves in that direction.

Much of the newly reawakened interest of the news media in the topic of nuclear (non-)proliferation is concerned with international trade in dual-purpose technology and equipment. Press reports present growing evidence of the relative ease with which countries seeking to acquire weapons of mass destruction and their means of delivery can get the necessary components from industry in developed, but also in some developing, states. The Review Conference has once again focused attention on the need for concerted international action against the clandestine trade in such components. But international action can do little unless individual governments adopt and enforce effective national measures to control such exports.

b. NPT Events

- The fourth Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was held in Geneva from 20 August to 15 September 1990. It was attended by representatives of 85 out of about 140 states parties: one fewer than in 1985. The observers included for the first time China and France, as well as Byelorussia and the Ukraine. Among states developed in the area of nuclear energy, that have not joined the Treaty, Argentina, Brazil, Israel and Pakistan were present.

Amb. Oswaldo de Rivero of Peru was elected by acclamation as President of the Conference. The Conference also elected the following as Chairmen of its principal organs: — Main Committee I: Amb. B.A. Adeyemi (Nigeria); Main Committee II: Amb. T. Strulak (Poland); Main Committee III: Amb. C. Yamada (Japan); Drafting Committee: Amb. C-M. Hyltenius (Sweden); Credentials Committee: Amb. J. H. Groop (Finland). Mr. A. Prandler, Deputy to the United Nations Under-Secretary-General for Disarmament Affairs, was confirmed as Secretary-General of the Review Conference. Mr. D. Boothby acted as its Deputy-Secretary-General.

The Conference was opened by Mr. Y. Akashi, Under-Secretary-General for Disarmament Affairs, on behalf of the Secretary-General of the United Nations. The Director-General of the International Atomic Energy Agency, Dr. Hans Blix, also spoke at the opening session.

Potentially disruptive procedural issues such as the seating of Kuwait as a party and the admission of Israel as an observer and of Palestine as a revolutionary organization were quickly settled. In the committees, the review of the implementation of individual treaty articles began early and led to agreement on a range of important issues. In response to Nigeria's call for a treaty binding nuclear-weapon states not to use nuclear weapons against non-nuclear weapon states it was agreed that the nuclear-weapon states would consult on this matter. Formulations were adopted on issues such as armed attacks on nuclear facilities; the desirability of nuclear-weapon-free zones; and the demand that Israel and South Africa should submit all their nuclear facilities to IAEA safeguards. There was agreement on the nature of the conference of 1995 and ways to prepare for it. In the

framework of discussions on ways to strengthen the international non-proliferation regime, several supplier states made commitments — or confirmed previous commitments — to make all their exports of nuclear supplies conditional on the acceptance by the recipient of 'full-scope safeguards'. Among other points, agreement was reached on texts dealing with the reinforcement of IAEA safeguards; the revival of discussions on assured nuclear supplies; technical assistance to developing nations; nuclear safety; radiological protection and physical security.

The agreement reached on these and other proposals is widely seen as an indication of the international support enjoyed by the non-proliferation regime in general, and the NPT in particular. In the absence of a final declaration of the Review Conference, however, the proposed measures lack formal status. This is reflected in the fact that several nuclear supplier states (including Belgium, Italy and the USSR) which in committee had associated themselves with the language on full-scope safeguards as a condition of supply, have since let it be known that the absence of a final declaration nullifies their concurrence. Upon the request of 23 delegates from all geographic areas, the IAEA's Secretariat has since circulated as a document of the Agency's General Conference the text presenting the ideas and proposals concerning safeguards and technical cooperation that were developed at the Review Conference in its review of Articles III, IV and V of the NPT and included in the relevant documents of the Drafting Committee (IAEA Document GC(XXXIV)/INF/291).

- It was announced during the General Conference of the IAEA that **Albania** and **Mozambique** had deposited instruments of ratification of the NPT in Moscow and Washington, respectively. On 17 September, **South Africa** issued a statement welcoming the view that the African continent should become a nuclear-weapon-free zone, declaring that it was prepared to accede to the Treaty 'in the context of an equal commitment by the other states in the Southern African region' and expressing 'trust' that in the near future talks could commence with the IAEA on concluding a comprehensive safeguards agreement. The text of the statement (in IAEA Document GC(XXXIV)/INF/290) is reproduced in Section V. In response, the Director General of the IAEA announced that the Secretariat was ready to begin negotiations on a safeguards agreement.
- Upon the request of the Deputy Heads of the Delegations of the **German Democratic Republic** and the **Federal Republic of Germany** at the NPT Review Conference, a joint 'Declaration on Non-Proliferation of NBC weapons' was circulated, containing, *inter alia*, the statement that the 'Rights and obligations under the instruments of the Treaty of 1 July 1968 on the Non-Proliferation of Nuclear Weapons will continue to apply to the united Germany'. The text of the Declaration (in Conference Document NPT/CONF.IV/28) is reproduced in Section V.

c. Other Non-Proliferation Developments

- With a letter dated 10 September 1990, the Heads of the (observer) delegations of **Argentina** and **Brazil** at the NPT Review Conference transmitted a joint statement in which they, *inter alia*, confirmed their commitment to the

principles stated by the international community in General Assembly resolution 2028 (XX) 'which set forth the basic tenets of a multilateral treaty to prevent the proliferation of nuclear weapons', and stated that they respected the letter and the spirit of the Treaty of Tlatelolco (Conference Document NPT/CONF.IV/36).

- **Canada, the Federal Republic of Germany, Norway, the USSR and the USA** are discussing an agreement that would enable them better to keep track of exports of heavy-water. It is hoped that the agreement can be concluded by the end of 1990. It provides that an exporting firm proposing to ship heavy-water should notify its government, which would in turn notify the government of the recipient. There does not yet seem to be agreement on the amount of heavy-water of which the export would have to be notified. Exports of heavy-water of 1,000 kg or more are subject to IAEA safeguards. There are reports, however, that there have been many shipments of heavy-water to India from West Germany and the Soviet Union in quantities just below that limit (NuclearFuel, August 6, 1990).
- The cabinet of the **Federal Republic of Germany** decided on 9 August 1990 that it will henceforth permit substantive exports of nuclear technology to take place to any state that is not a party to the NPT only on condition that the state submit all its nuclear activities to IAEA safeguards. For the present, the decision does not apply to existing obligations, but the Government intends within five years to renegotiate the pertinent agreements. This is said to affect mainly Argentina and Brazil (Handelsblatt [Dusseldorf], 27 August 1990, JPRS-TND-90-016, 20 September 1990).
- In September, an international meeting was held in Newport, Rhode Island, **United States**, on reduced enrichment for research and test reactors (RERTR). This was the thirteenth such meeting since 1979 (Argonne National Laboratory; July 14, 1990).
- The Nuclear Regulatory Commission of the **United States** has amended its export licensing regulations to implement the decision of the international suppliers' 'Zangger Committee' to add new definitions to the list of items for use in gaseous diffusion enrichment plants, which when exported to non-NPT states should trigger safeguards (NRC 10 CFR Part 110, in Federal Register Vol. 55, No. 144; July 26, 1990).

The US Senate has voted to relax security controls on high-technology exports with potential military application to allies and former East-bloc states. Similar moves have been made in other Western countries. There is criticism of the move, which might enable states wishing to obtain controlled military technology and equipment to do so through front companies in Eastern Europe (Wall Street Journal, June 19, 1990; Congressional Quarterly Weekly Report, September 15, 1990).

- In cases where it is unable to deter the spread of various weapons of mass destruction, including nuclear, chemical or biological weapons and the means to deliver them, the **United States** is considering 'fall-back' strategies to make their use less likely. Using this approach the **USA** and the **USSR** reportedly promoted talks between India and

Pakistan about confidence-building measures, during a period of great tension between those states earlier this year (The New York Times, September 30, 1990).

d. Nuclear Trade and International Cooperation

- **Argentina** may be obliged to revise its contracts with **Algeria, Iran and Peru** for the delivery of 20% enriched uranium for the research reactors it has supplied to those countries, due to production delays at the Pilcaniyeu pilot enrichment plant. The delays are said to be due to budget cutbacks that have reduced funds available for the facility. **Brazil** has already shelved its plans to import enriched uranium from Argentina (NuclearFuel, July 23, 1990).
- **Argentina and Chile** have an agreement for cooperation in the peaceful use of nuclear energy, of wider scope than the agreement they concluded in 1976 (La Prensa [Buenos Aires], 5 August 1990, in JPRS-TND-90-016, 20 September 1990).
- **Cuba and Mexico** have signed an agreement for cooperation in the peaceful uses of nuclear energy (Havana and Mexico City Radio, 19 July 1990, in JPRS-TND-90-014, 23 August 1990).
- **Euratom** has been involved in an investigation at the Advanced Nuclear Fuel (ANF) fabrication plant in the **Federal Republic of Germany**, which erroneously shipped 129.5 kg of low-enriched uranium pellets to its **United States** facility in Richland, Washington. This is said to be the first time that the provision of the Euratom Treaty of 1957 is enforced which empowers that organization to apply direct oversight of fuel-cycle activities in member states (Sueddeutsche Zeitung, 26 May 1990; NuclearFuel, August 6, 1990).
- **Finland** has been surprised by an announcement from the **USSR** that it will no longer accept the waste generated in the Soviet-supplied power reactors at Lovisa. The Finnish authorities cite the agreement between the two countries under which the Soviet Union has committed itself to store the waste in its territory (Hufvudstadsbladet, 29 June 1990, in JPRS-TND-90-014, 23 August 1990).
- Eleven electric power companies in the **Federal Republic of Germany** have concluded contracts with Cogema of **France** for the reprocessing of the fuel discharged from 15 reactors until the year 2006. The deal is worth about \$1.7 billion. It may be nullified in the event of a government decision in either state. For France this would be a ban on reprocessing; for Germany a decision that spent fuel management no longer requires reprocessing. The **United Kingdom** company BNFL has concluded a contract for the reprocessing of fuel discharged from seven German reactors, at a total cost estimated at \$1.5 billion. (Nucleonics Week, July 12 and August 23, 1990).
- **Indonesia** is reportedly negotiating with **Japan** about the purchase of a new type of (S-BWR) nuclear power plant, to be constructed jointly by Mitsui, Toshiba, Hitachi and General Electric. At the same time, Mitsubishi Heavy Industry and Westinghouse Electric Co. are also bidding to construct another simplified (PWRS) power reactor (KYODO [Tokyo], 18 July 1990, JPRS-TND-09-014 23 August 1990).

- **China** will provide the **Islamic Republic of Iran** with a research reactor, to be built at the nuclear research centre in Isfahan. Since 1979 there have been reports that Iran was planning to buy a 30-MW research reactor; the power of the Chinese-supplied facility is not known.

The Iranian government reportedly wishes to complete the power station at Bushehr — said to be 85 per cent completed but damaged in Iraqi air raids.

France and **Iran** are trying to settle a dispute that has arisen from an arrangement of 1979 under which Iran lent France \$1 billion for the construction of the Eurodif enrichment plant, promising to take 10% of its output and contribute to its running costs. Iran has done neither and is now demanding full repayment and interest on the loan; France has repaid a major part but is seeking compensation for Eurodif (*Middle East Economic Digest*, 6 July 1990; *Nuclear Engineering International*, August 1990).

- The **Republic of Korea** and the **USSR** have concluded a contract under which the Korea Electric Power Company (KEPCO) will purchase over ten years 390 tonnes of enriched uranium in the Soviet Union. Until 1993, the price of the Soviet uranium is set at about 45-55 per cent of the price KEPCO paid to suppliers, such as France and the USA, last year.

Combustion Engineering, Inc. of the **United States** has asked for licenses to export two 950 MW reactors and initial cores to the Republic of Korea (*Nuclear Engineering International*, August 1990; *NuclearFuel*, September 17, 1990).

- Consultations between **France** and **Pakistan** about the supply of a 900-MWe nuclear power plant appear to be continuing. The cost of the plant is said to exceed \$1 billion, of which \$300-400 million would be borne by France, in compensation for the cancellation of the sale of a reprocessing plant in 1977. The station would be built by Framatome and located at Chasma. Although the facility will be subject to IAEA safeguards, France does not require Pakistan to submit all its facilities to safeguards. **Belgium** is seeking to participate in this French project.

Canada refuses to provide **Pakistan** with nuclear technology (except for safety-related information for use at the Karachi power plant, which it supplied) as not all its facilities are subject to safeguards.

China is also still talking to **Pakistan** about the supply of a 300-MW nuclear power plant for the Chasma site. It has supplied a zero-power research reactor for the Pinstech Centre near Islamabad.

Pakistan is also known to have constructed a 50-MW reactor suitable for the production of plutonium and is reported to have a plutonium-extraction facility (*Nuclear Engineering International*, August 1990; *Nucleonics Week*, August 9, 1990; see also Leonard S. Spector with Jacqueline R. Smith: *Nuclear Ambitions - The Spread of Nuclear Weapons 1989-1990*, Westview Press, Boulder, San Francisco, Oxford, 1990).

- The **United States** has approved **Switzerland's** request to retransfer 132 kg of plutonium extracted in **France** from US supplied Swiss fuel, for fabrication in **Belgium** into

mixed-oxide fuel to be used at the Beznau power plant (*NuclearFuel*, September 3, 1990).

e. IAEA Developments

1. General Conference

- At its thirty-fourth regular session the General Conference of the IAEA approved the Agency's Regular Budget for 1991 of \$178.878-million. Of this amount \$54.145 million is devoted to safeguards.
- The General Conference adopted without a vote several resolutions in the area of Nuclear Safety and Radiological Protection: one approving a code of practice on the international transboundary movement of radioactive waste [GC(XXXIV)/950], one initiating action regarding nuclear safety guidelines for nuclear-powered vessels [GC(XXXIV)/949], and one calling for measures to strengthen international cooperation in matters relating to nuclear safety and radiological protection [GC(XXXIV)/948/Rev.1]. The Conference had before it a report by the Director General updating the information regarding 'Israeli Nuclear Capabilities And Threat' [GC(XXXIV)/926]. A resolution on this subject, submitted by 15 Middle-Eastern delegations, calling on Israel to submit all its nuclear installations to safeguards, was adopted with 42 states in favour, 27 against and 14 abstaining [GC(XXXIV)/935/Rev.2, text reproduced in Section V]. Among other resolutions adopted, one dealt with the production of potable water by nuclear desalination [GC(XXXIV)/945 — no vote]. A resolution regarding South Africa's nuclear capabilities, submitted by the African Group, was adopted with 54 votes in favour, 26 against and three abstentions. While a similar resolution adopted at the previous General Conference 'condemned' South Africa for its persistent refusal to comply with resolutions of the United Nations and the IAEA and resolved to take a decision on the suspension of South Africa at the 1990 session, the Conference this time merely 'deplored' South Africa's non-compliance and decided to take up the matter of suspension in 1991 [GC(XXXIV)/942, reproduced in section V]. The General Conference elected as new members of the Board of Governors: Austria, Brazil, Cameroon, Cuba, Indonesia, Iran, Morocco, Portugal, Thailand, the Ukrainian SSR, and Uruguay. The following states are already represented on the board: Argentina, Australia, Belgium, Canada, Chile, China, Czech and Slovak Republic, Egypt, France, Federal Republic of Germany, India, Iraq, Italy, Japan, Nigeria, Philippines, Poland, Saudi Arabia, Sweden, Tunisia, USSR, UK, US and Venezuela (*IAEA Press Release PR 90/23*, 20 September 1990).
- In his statement to the General Conference, the Director General announced that the sanctions decided upon by the U.N. Security Council against Iraq had made it impractical for the Agency to provide technical assistance, such as experts and equipment, to that country under the Agency's technical co-operation programme. In response, the delegate of Iraq expressed the view that a suspension of technical assistance would be illegal as the relevant Security Council resolution pertained to states and not to international organizations. He implied that the decision might cause his country to reconsider other legal relations with the IAEA (*direct information*).

- A number of statements in the general debate at the General Conference referred to the ideas and proposals concerning safeguards and technical cooperation from the NPT Review Conference which were included in the relevant documents of the Drafting Committee, as circulated in **IAEA Document GC(XXXIV)/INF/291**.

2. Safeguards

- The IAEA's **Safeguards Implementation Report (SIR)** for 1989 records that in that year, as in previous years, the IAEA 'did not detect any event which would indicate the diversion of a significant amount of safeguarded nuclear material — or the misuse of facilities, equipment or non-nuclear materials subject to safeguards — for the manufacture of any nuclear weapon, or for any other military purpose or for the manufacture of any other nuclear explosive device, or for purposes unknown'. The report states that by the end of the year there were 922 installations under safeguards or containing safeguarded material (**IAEA Newsbrief**, Vol. 5, No. 5 (45), June/July 1990).

- Shortly after **Iraq's** invasion of Kuwait there were reports that the IAEA saw no reason to depart from its inspection schedule for the facilities subject to safeguards in that country. Several delegations to the NPT Review Conference suggested that the IAEA should carry out 'special' inspections in Iraq, both in the sense of making more than the routine number of inspections at known sites and of examining other sites, where there is a suspicion that clandestine fuel-cycle activities are under way. There were calls for similar action with respect to **North Korea** which, though a party to the NPT since 1985, has not yet concluded a safeguards agreement with the Agency (North Korea is thought to have built a powerful natural-uranium reactor suitable for the production of high-grade plutonium and to be constructing at least one reprocessing facility). Several speakers pointed out that the standard safeguards agreement provided for both possibilities. The relevant section of the document of the Review Conference Drafting Committee bearing on this subject 'urges the Agency not to hesitate to take full advantage of its rights, including the use of special inspections as outlined in paragraphs 73 and 77 of INFCIRC/153. The Conference notes that as yet no experience exists of such special inspections, and would welcome a study by the Agency of the possible scope, application and procedures of such inspections..'. (*With respect to the DPRK one might, however, question the legal basis for an action pursuant to an agreement that has not yet been concluded — Editor*) (**Nucleonics Week**, August 9 and September 20, 1990; **NuclearFuel**, September 17, 1990; **NPT/CONF.IV/DC/1/Add.3(A)**, para.28, in IAEA Document **GC(XXXIV)/INF/291**, 19 September 1990).

f. Peaceful Nuclear Developments

- After many delays and cost overruns **Argentina** may not complete the 90%-finished Arroyito heavy-water plant. The Swiss contractor, Sulzer Bros., has been withdrawn from the project and the necessary funds (\$140-million) seem to be lacking. The plant was to have been under IAEA safeguards. Argentina apparently hopes to find alternative sources of heavy-water for its nuclear-power needs, which are lower than expected. One reason for this is the inordinate delay in the completion of the Atucha-2 plant, which may, in fact, be scrapped altogether.

The last of six Argentine research reactors using US-supplied highly-enriched uranium has resumed operation after its core was converted to use 8%-20% enriched fuel. In 1980 the US halted the supply of HEU to Argentina, as it refused to put all its facilities under IAEA safeguards (**Nucleonics Week**, July 5, 1990; **NuclearFuel**, August 20, 1990).

- During the past several years **Austria** has repeatedly intervened with the **Czech and Slovak Republic** about the safety of the latter's nuclear power plant at Jaslovské Bohunice, near the Austrian border, 60 kilometers northeast of Vienna. There have been a number of reports about problems at the plant and the Austrian authorities have asked to be permitted to visit it with a view to examining the safety measures in force. Calls to close the power plant have come especially from the Austrian Minister for the Environment, Mrs. Marlies Flemming, an opponent of nuclear energy, who is also calling for the closure of the nuclear power station at Krsko, in **Yugoslavia**. Mrs. Flemming caused a disturbance at the latest General Conference of the IAEA, when she demanded to speak, unscheduled and without a mandate from her Government. Not being given the floor, she handed out a text, which said the IAEA should stop promoting nuclear energy or leave Austria (reports from **Czech Radio and Press** and **Austrian Radio and Press**, in **JPRS-TND-90-013**, 8 August 1990 and **JPRS-TND-90-014**, 23 August 1990; **Nucleonics Week**, September 20, 1990).
- A Presidential working group considering the future of nuclear power in **Brazil** has recommended that the Angra-2 and -3 power plants should be completed. It calls for the construction between 2000 and 2010 of four 1,300-MW nuclear power stations and the continuation of the naval nuclear programme, including ultracentrifuge enrichment (**Nuclear Engineering International**, July 1990).
- **Canada** now has 18 CANDU-type reactors in operation, with a total electrical capacity of 12,603 MW, and four 935-MW units under construction (3,720 MW). The Federal Government has announced its renewed commitment to sustaining nuclear energy as an option for that country. Ten more 881-MW plants are to be built in the Province of Ontario and plans are being discussed for stations in New Brunswick, Saskatchewan and possibly yet another in Ontario. Doubt about the feasibility of these plans has arisen, however, since in Ontario the New Democratic Party, which is on record as being opposed to nuclear power, has unexpectedly won the provincial elections (**Nuclear Engineering International**, August 1990; **NuclearFuel**, September 17, 1990).
- **Cuba** is proceeding with an ambitious nuclear power programme that should make it energy-independent after the drop in the oil supplies it has been receiving from the USSR. Soviet oil is said to have supplied 70% of Cuba's energy needs so far. Four Soviet-type VVRR-440 pressurized-water reactors are being constructed at Juragua and four more are planned (**Christian Science Monitor**, August 10, 1990).
- **Hungary** is reported to have halted its plans to expand its nuclear power programme for the time being (**Kurier [Vienna]**, 2 August 1990, in **JPRS-TND-90-014**).

- **Japan's** nuclear-powered vessel Mutsu, which was completed twenty years ago, has started sea trials (**KYODO Japanese Radio**, 13 July 1990, in JPRS-TND-90-013, 8 August 1990).
- In **Poland** the nuclear power programme has been halted in favour of the use of fossil fuel for energy generation. Construction of the first of four VVRR-440 power reactors, which were to be built at Zamowiec, has been stopped (**International Herald Tribune**, September 6, 1990).
- In the **USSR** an explosion at a nuclear fuel-fabrication facility in Ust-Kamenogorsk, in Khazakstan, has released a large amount of toxic (but not radioactive) beryllium oxide into the atmosphere (**The New York Times**, September 29 and 30, 1990).
- A federal advisory panel in the **United States** has urged the Government to revive research into the use of nuclear fusion which it says holds a bright promise as a 'safe, environmentally benign and affordable source of energy' (**The New York Times**, September 28, 1990).
- In the **United States**, Nevada, South Carolina and Washington (the only states with facilities licenced to store low-level nuclear waste) have warned New York that soon they will no longer accept further shipments of radioactive waste from that state, and that it will have to find its own storage space. Interim sites are now being considered within New York, but the choice of definitive storage sites is said to be years away. Plans of the Governor of Nebraska to set up a waste disposal site in that state have run into local resistance. In several other states where sites are being considered to serve as repositories of waste from neighbouring areas, environmental protest is holding up the definitive selection

An independent review of disease rates around the Three Mile Island nuclear plant in Pennsylvania has not found that radioactivity released in the accident of 1979 has caused any increase in the incidence of cancer during the six-year period following it.

The oldest American nuclear power plant, at Rowe, Massachusetts, has been shut down to repair a small leak in the cooling system. It has been operating for 30 years.

The 849-MW Brunswick-1 and 2 reactors in North Carolina have been shut down by the Nuclear Regulatory Commission after its four operator crews and eight out of 27 licenced operators failed requalification exams. After additional training, they must take the tests again.

Following an incident at the Vogtle-1 reactor in Georgia, when a truck backed into a power pole, cutting off all power to the plant, recommendations have been drawn up for new emergency procedures for use at nuclear reactors at cold shutdown (**Nucleonics Week**, June 14, 1990; **Nuclear Engineering International**, July 1990; **The New York Times**, August 16 and September 30, 1990; **International Herald Tribune**, September 4, 1990).

g. Developments of Concern for Vertical Proliferation

- An American scientific report asserting that radioactive contamination from **France's** underground nuclear tests

at Moruroa, French Polynesia, is leaking into the ocean environment, has been rejected by French authorities. A book published by 'Greenpeace' contends that the tests have killed several people, caused congenital abnormalities and led to outbreaks of fatal food poisoning (**International Herald Tribune**, September 1/2, 4 and 5, 1990).

- **China** has conducted an underground nuclear explosion with a yield between 50 and 200 kilotons (assuming the detonation took place in rock). It is thought to have been the second Chinese nuclear test since September 1988 (**Agence France Presse [Paris]**, 16 August 1990, in JPRS-TND-90-014, 23 August 1990).
- In the **USSR**, according to American scientists visiting the Soviet nuclear-weapon production complex, the disposal of radioactive waste generated in the manufacture of nuclear weapons into 'the open hydrographic network' has led to very serious environmental contamination. The radioactive dose rate at some sites is said to be 'astronomical'. One scientific estimate sets the numbers of workers exposed to radiation between 6000 and 6500 and speaks of a 'collective dose' exceeding that received by survivors of the atomic-bomb explosions in Japan. The system followed in the USSR for the extraction of plutonium is similar to that followed in the United States and large parts of the installations used are said to be contaminated and have broken down (**The New York Times**, August 16, 1990).
- The **United States** Department of Energy has started a huge clean-up effort to undo forty years of neglect at 17 nuclear-weapon production plants and other sites in thirty states. The effort is expected to be the Department's major activity for the next several decennia. Cost estimates vary between \$50 billion to over \$200 billion. The clean-up at the Hanford plutonium-site alone will cost \$57 billion. The situation there is greatly complicated by extensive sub-surface contamination and the concentration of radioactive waste in 177 storage tanks, of which a number contain potentially explosive quantities of hydrogen gas.

Construction of a waste vitrification plant is planned at Hanford for completion at the end of the decade. A similar plant has been built at Savannah River in South Carolina, but this does not yet seem to work properly.

Investigations into working conditions at a number of nuclear-weapon sites are beginning to reveal very serious shortcomings in the protection of the workforce. Accidental emissions of radioactive substances may also have affected persons around the sites. In addition, there is documentation about deliberate emissions of such substances near Hanford in the late 1940s, to help determine how they spread.

The re-start of the reactors at Savannah River, which are the only reactors in the country dedicated to the production of tritium for weapons purposes, is again delayed. The intention had been to start low-energy testing at one of the reactors by late 1990, and start production soon after. The other two reactors were supposed to be started up in the course of 1991. Reports of 'up to 2,000' unanticipated problems with the first reactor raise doubt about the feasibility of this schedule. (**The New York Times**, July 7 and August 6, 12 and 17, 1990; **Christian Science Monitor**,

July 9, 1990; *The Economist*, September 15, 1990; *The Washington Post*, September 21, 1990; *Bulletin of the Atomic Scientists*, September and October, 1990).

- Sailors serving in the **United States** nuclear aircraft carrier 'Nimitz' have complained to news media that crew members were cheating on safety inspections of the ship's reactors and were overworked and not sufficiently trained to react to a nuclear accident. The US Navy has investigated the allegations (*The New York Times*, August 6, 1990).

h. Developments of Concern for Horizontal Proliferation

- A report of the **Brazilian Physics Society** early in the summer of 1990 claimed that a facility operated for the navy at Aramar under the so called 'parallel programme' was capable of enriching uranium to weapon quality; that the Brazilian army had plans to construct a natural-uranium reactor for the production of plutonium near Rio de Janeiro; and that in the Amazon state of Para, at Cachimbo, a shaft had been dug to test nuclear explosives. Citing the constitutional clause restricting the use of nuclear energy to peaceful purposes, scientists and members of the Congress warned of apparent plans by the military to manufacture nuclear weapons and demanded a congressional committee to control all nuclear activities in the country. On 18 September 1990, Brazil's President, Fernando Collor de Mello, ordered the military project dismantled, had the shaft at Para publicly closed, and put Dr. Jose Goldemberg, Secretary of Science and Technology, long a supporter of civilian control of all nuclear activities, at the head of Brazil's nuclear programme. A week later, in a speech to the UN General Assembly, the President called for a ban on all nuclear test explosions in Latin America, and declared that Brazil was renouncing all nuclear explosions. Dr. Goldemberg subsequently revealed that since 1975 there had been a secret military programme in Brazil to develop nuclear weapons. He announced that all nuclear installations in Brazil would be opened for visits by reporters, scientists and legislators and that there would be civilian oversight of all nuclear activities, drawing on experience of the IAEA, including inspection by independent scientists approved by the Senate (*Nature*, Vol. 345, 7 June 1990; *New Scientist*, 16 June 1990; *Jornal Da Tarde* [Sao Paulo], 3 July 1990, *Folha de Sao Paulo*, 4 and 7 July 1990 - all in JPRS-TND-90-013, 8 August 1990; *The Washington Post*, September 26, 1990; *The New York Times*, October 9, 1990).
- In June 1990, the **United States** Government issued a license for the export to **Brazil** of IBM equipment to enhance the capability of the computer owned by the aircraft manufacturer Embraer. This decision is criticised as adding to Brazil's missile-manufacturing capability and because the computer might be used for nuclear purposes. A license has also been given for the re-export of Brazilian-made casings for rocket motors that were treated in the United States to withstand the stress of launch. The casings are considered essential in the development of long-range, nuclear-capable ballistic missiles. A group of companies in **Belgium, France, Germany** and **Sweden** are teaching Brazilian engineers how to produce the Viking rocket engine developed in France. Brazil, meanwhile, is said to be interested in selling missiles to

Iraq and Libya. In this context, it is noted that one of the officials in charge of Brazil's nuclear programme whom the President dismissed, Brig. Gen. de Oliveira Piva, who is also a rocket specialist, heads a group of 21 Brazilian rocketry experts who have been working privately in **Iraq** for several years. The Brazilian Government has asked them to return, terming their continued presence 'illegal', given the UN Security Council decision. It seems that the experts wish to come home but that Iraq has demanded they stay and continue their work. President Collor intends to send the Congress a bill restricting overseas consulting work by former Government employees in areas of sensitive technology. Embraer says it has assured the US government that it will use the supercomputer only in aircraft projects; it denies being involved in deals with Iraq (G. Milhollin and D. Dantzie in *The New York Times*, July 24, 1990; *O Globo* [Rio de Janeiro], 1 August 1990, in JPRS-TND-90-014, 23 August 1990 and 25 and 28 August 1990, in JPRS-TND-90-015-S, 14 September 1990; *O Estado de Sao Paulo*, 15 and 17 August and 2 September 1990, in JPRS-TND-90-015-S, 14 September 1990; G. Milhollin and G. White in *The New Republic*, August 13, 1990; *The Washington Post*, September 22, 1990; *The New York Times*, October 9, 1990).

- Navy sources in **India** have repeated a previous statement, that they neither plan to buy or lease a second nuclear submarine from the USSR, nor to build one (*The Telegraph* [Calcutta], 23 May 1990, in JPRS-TND-90-013, 8 August 1990; *Delhi Radio*, 9 July 1990, in JPRS-TND-90-014, 23 August 1990; *The Times of India*, 14 July 1990, in JPRS-TND-90-016, 20 September 1990).
- The crisis in the area of the Persian Gulf has generated much public information about **Iraq's** conventional, chemical and nuclear potential. The Stockholm International Peace Institute (SIPRI) calls Iraq's military expenditure during the 1980s the highest in the Middle East and puts it at 30 per cent of GDP. Eighty per cent of its arsenal is said to have come from foreign sources, principally in China, France and the USSR.

Other countries have also contributed and there are reports that help in the development and production of weapons of mass destruction and of missiles has come from a range of suppliers in Western Europe, Latin America, the Middle East and the USA. Much of this trade has been conducted clandestinely, but some seems to have occurred with tacit governmental acquiescence.

Over fifty German firms are being investigated under suspicion of having illegally provided equipment or technology to Iraq. German companies are known to have provided Iraq with the means of producing chemical weapons, which it is now understood to make on a large scale and is said to be able to deploy in the warheads of indigenously constructed intermediate-range missiles.

Examples have recently come to light of prohibited transactions being conducted through Iraqi-owned companies in the UK and Switzerland (among others), which buy into high-technology firms or make direct procurements.

Reports of attempts by Swiss companies to export to Iraq components for ultracentrifuges for the enrichment of uranium are thought to be connected to exports by German firms of maraging steel: a material of a quality suitable for

use in the production of centrifuges.

It has also been revealed that a United States firm was in the process of shipping to Iraq three so-called skull melting furnaces designed for casting titanium and other metals used in the construction of missiles and nuclear weapons. After the US Department of Commerce had passed the consentment it was held up by the Customs Service at the request of the State Department, on the grounds that the specifications were more sophisticated than needed for the stated purpose — which the manufacturer had already pointed out.

Publicly available information indicates that Iraq may be seeking the means to put together a gas centrifuge uranium-enrichment facility. There is no reliable indication that actual construction has started, but research on centrifuge enrichment is said to be going on at three widely dispersed sites.

Iraq is known to have 12.3 kilograms of 93% enriched uranium supplied by France for use in the 40-MW(th) Tammuz-1 research reactor destroyed by Israel in 1981. It also has a more modest amount of 80% enriched uranium used in the 5-MW(th) IRT-5000 research reactor obtained from the USSR. Some scientists say that the enriched uranium in Iraq is enough to make one nuclear weapon of low yield; others consider this impractical. Iraq also has a 500-kW pool-type research reactor operating on 93% enriched fuel and a natural-uranium fuel fabrication facility. All nuclear material and associated facilities are under IAEA safeguards and periodically inspected. After the latest inspection, in April 1990, the IAEA stated that all safeguarded material was accounted for (Sources — *military expenditure and arms imports*: SIPRI Fact Sheet of 8 August 1990; *general clandestine trade*: **The Guardian**, 3 July 1990; **The New York Times**, August 18 and September 29, 1990; **Christian Science Monitor**, September 4, 1990; **International Herald Tribune**, September 14 and 15/16, 1990; F. Gaffney in **Washington Times**, September 4, 1990; **The Washington Post**, July 22 (G. Milhollin) and September 17, 1990; **Die Zeit** [Hamburg], 10 August 1990 and **Der Spiegel**, 13, 20 and 27 August and 10 September, all in JPRS-TND-90-015-S, 14 September 1990; *enrichment components*: **NuclearFuel**, August 20, 1990; **Die Tageszeitung** [Berlin] 21 August 1990; **La Suisse**, 22 August 1990; **Neue Zuercher Zeitung**, 16/17 September 1990; *melting furnaces*: **The New York Times**, July 15 and 20, 1990; **Middle East Economic Digest**, 27 July 1990; **The Washington Post**, September 13, 1990; *Iraq's nuclear programme and capabilities*: Warren H. Donnelly: Iraq and Nuclear Weapons — **Congressional Research Service Issue Brief**, Washington, D.C., August 21, 1990, Order Code IB90113; **Nucleonics Week**, August 9, 1990; **The Energy Daily**, August 14, 1990; **Toronto Star**, 18 August 1990; **Defense Week**, August 20, 1990; **NuclearFuel**, August 20, 1990; **Svenska Dagbladet**, 23 August 1990; **The Washington Post**, August 23, 1990; **Nucleonics Week**, September 20, 1990; **International Herald Tribune**, September 21, 1990).

- **Israel** is said to be developing the capability to launch nuclear-tipped cruise missiles from submarines and to be about two years away from that goal, which would give it a second-strike deterrent.

Israeli Science Minister, Yuval Ne'eman, has announced

that his country has chemical weapons and would use them in response to a chemical attack.

With American help Israel is developing a missile, the 'Arrow', for use against short-range missiles. The project is still in an early stage. (**The Jerusalem Post**, 17 July 1990, in JPRS-TND-90-013, 8 August 1990; **The Washington Post**, July 15, 1990; **International Herald Tribune**, July 28/29, 1990; **The New York Times**, July 21 and 28 and August 6, 1990).

- **Pakistan** has announced that its scientists have made a 'major breakthrough' in the indigenous development of the nuclear fuel cycle. September 30 was the deadline for the US Administration to certify to the Congress that Pakistan does not possess a nuclear explosive device and that American assistance to Pakistan will reduce the risk that Pakistan will acquire such a device. Without such certification, the law requires that military and economic assistance to Pakistan be cut off. Several Congressmen are urging a halt in all further aid, but the Administration — which wishes to maintain good relations with Pakistan but also to promote non-proliferation — is suggesting that Congress approve a temporary aid measure without certification, allowing the Administration to prevail on Pakistan to constrain its nuclear activities. (Warren H. Donnelly: **Pakistan and Nuclear Weapons — Congressional Research Service Issue Brief**, Washington D.C., August 13, 1990, Order Code IB86110; **The New York Times**, September 25 and October 2, 1990).
- According to CIA documents obtained by the Natural Resources Defense Council, **South Africa** has had a dedicated nuclear weapons programme since the mid-1970s and by late 1979 may have acquired sufficient fissile material for the fabrication of several nuclear devices. The documents indicate that in 1977 international pressure forced South Africa to suspend preparations for a nuclear test and that **Israelis** have participated in South African nuclear activities.

The U.S. Customs Service recently broke up an illegal export business, York Ltd., in Florida, that had been selling South Africa long-range ballistic missile guidance components for at least a year (**Natural Resources Defense Council** news release, September 26, 1990).

II. PPNN Activities

- On 10th July, those members of the **PPNN Core Group resident in the United Kingdom** participated in an afternoon seminar sponsored jointly with the Council for Arms Control on the issues likely to arise at the 1990 NPT Review Conference. The seminar, held at the Royal Institute for International Affairs, Chatham House, in London, was organised in two sessions. The first, involving principally Mohamed Shaker and John Simpson focused on disarmament and security issues. The second, involving David Fischer and Ian Smart, focused on IAEA safeguards and nuclear supply questions. Approximately fifty London-based media persons and members of the Council for Arms Control attended the seminar.
- **PPNN Occasional Paper Seven: Argentina and Brazil: An Evolving Nuclear Relationship** by John Redick and **PPNN Occasional Paper Eight: The Need for a Strong**

Nuclear Non-Proliferation Treaty: Issues at the Fourth NPT Review Conference by John Simpson and Darryl Howlett were published and distributed at the end of July. On 17th July, they were both presented at a lunch for almost forty international media representatives at the National Press Club in Washington, chaired by Ben Sanders. After introductions by John Redick and John Simpson, both papers stimulated a lively discussion and question-and-answer session.

- Ben Sanders visited Teheran from 29 July to 1 August as a member of the UN Secretary-General's study group on a **nuclear-weapon-free zone in the Middle East**. The group held consultations with the authorities of the Islamic Republic of Iran on measures which would facilitate the establishment of such a zone.
- On 1 August, the administrative base of PPNN, the Centre for International Policy Studies at the University of Southampton changed its name to the **Mountbatten Centre for International Studies**. All other details of the Centre, such as postal address, fax and telephone numbers remain the same. John Simpson, now Professor of International Relations at the University, is to be the Director of the Mountbatten Centre, as well as being a co-director of PPNN.
- Copies of both Volumes I and II of the **PPNN Briefing Book** were published in early August and distributed to all delegations attending the 1990 NPT Review Conference. Subsequently, representatives from many delegations involved in the conference indicated that it had greatly facilitated their work, especially in preparing plenary speeches and during the committee discussions.
- On 15th August the **Arms Control Association** held a Press Conference on the upcoming NPT Review Conference in Geneva. Ben Sanders, the Chairman of the PPNN Core Group, was invited to make a presentation at this meeting.
- Several members of the PPNN Core Group attended all or part of the **1990 NPT Review Conference** from 20 August to 14 September. Those representing PPNN or other non-governmental organisations included Ben Sanders, John Simpson, David Fischer, Joseph Goldblat and Harald Mueller. In addition, Jayantha Dhanapala, Walter Rehak, Mohamed Shaker and Roland Timerbaev were present in Geneva in their official capacities.
- PPNN held a **breakfast meeting in Geneva** on 22 August to offer itself as a resource for members of the media based in the city or attending the NPT Review Conference. Some twenty media persons attended, together with all members of the PPNN Core Group present in Geneva. Copies of PPNN Occasional Papers, Newsbriefs and volumes of the Briefing Book were distributed to those at the meeting, and a very detailed and lively exchange of views took place.
- Ben Sanders and Joseph Goldblat were both invited to make presentations at a meeting organised by the **Friends World Committee for Consultation (Quakers)** in Geneva on 29 August concerning the future of the NPT and the extension conference of 1995. This meeting was

attended by several of the senior diplomats present at the 1990 Review Conference.

- Ben Sanders attended the 34th Regular Session of the **IAEA General Conference** from 18-22 September in his capacity as an observer from PPNN.
- Funding for the first phase of the work of PPNN expires at the end of 1990. The Directors prepared proposals earlier in the year for a slightly expanded range of activities to take PPNN through to the end of 1995 and the NPT extension conference. These are in the process of being assessed by a wide range of funding bodies in the United States, United Kingdom, Germany, Japan and Switzerland. One element of these proposals was the funds to produce and distribute this Newsbrief for a further five years. The Directors are delighted to report that both the B. and G.S. Cadbury Trust in the United Kingdom and the Ford Foundation in the United States have committed substantial funding for the full five year period to 1995, while the Ploughshares Fund has made a contribution to PPNN's work in 1991. As a consequence of these firm commitments, and several other indications of significant future support, the existence of key elements of the existing programme seems assured through to 1995.

III. Other Non-Governmental Groups Active in Related Areas

- **The Center for Science and International Affairs** at Harvard's John F Kennedy School of Government is seeking foreign applicants for Research or Pre-Doctoral Fellowships during academic year 1991-92 under its project on 'Nuclear Proliferation: Developing an International Cadre for the 21st Century'. This project, funded by a grant from the Rockefeller Brothers Fund, seeks to broaden the base of international expertise on non-proliferation through cooperative work between foreign fellows and American experts on nuclear proliferation. Applicants for Research Fellowships should be either recent recipients of the PhD or equivalent degree, university faculty members, or employees of governmental, military, international or private research institutions who have considerable professional experience. Applicants for Pre-Doctoral Fellowships must have passed general examinations prior to appointment, and are required to work on this doctoral dissertations while in residence. Appointments for 1991-92 include a stipend of \$23,500 for Research Fellows and \$13,500 for Pre-Doctoral Fellows. Fellows are provided office space and supplies, use of word processing equipment, and access to Harvard University libraries and other facilities. For further information, please write to Michael F Stafford, Executive Director, Center for Science and International Affairs, John F Kennedy School for Science and International Affairs, John F Kennedy School of Government, 79 John F Kennedy Street, Cambridge, MA 02138.
- Due to space constraints, the special supplement giving details of non-governmental groups working in the non-proliferation area has been held over to a future edition. Any group that did not receive questionnaires earlier this year, but wishes to participate in the supplement, can obtain copies from John Simpson at the address on the back cover.

IV. Some recent books, articles and other materials on Nuclear Non-Proliferation

- Books:

Constanze Eisenbart and Dieter von Ehrenstein (editors), **Nichtverbreitung von Nuklearwaffen - Krise eines Konzept** - (Nuclear Non-Proliferation - a Concept in Jeopardy? -) joint publication of FEST (Protestant Institute for Interdisciplinary Research) and VDW (Union of German Scientists - German National Pugwash Group), Heidelberg, 1990.

Trevor Findlay, **Nuclear Dynamite: The Peaceful Nuclear Explosions Fiasco**, (Brassey's Australia, 1990), 339 pp.

Leonard S. Spector with Jacqueline R. Smith: **Nuclear Ambitions - The Spread of Nuclear Weapons 1989-1990**, a publication of the Nuclear Non-Proliferation Project of the Carnegie Endowment for International Peace; Westview Press, Boulder, San Francisco, Oxford, 1990).

- Articles and Other Materials

Canadian Centre for Arms Control and Disarmament: **The Arms Control Centre Barometer**, Summer 1990 [contains various articles on non-proliferation and the NPT.]

David Albright and Tom Zamora, 'Stopping the Proliferation of Nuclear Weapons', **F.A.S. Public Interest Report**, Vol. 43, No. 7, September 1990, 7 pp.

Charles N. van Doren, 'Prognosis for the NPT Review Conference', **Arms Control Today**, Vol. 20, No. 5, June 1990, 4 pp.

Lewis A. Dunn and James S. Tomashoff, 'New Technologies and the Changing Dimensions of Third World Military Conflict', **Center for National Security Negotiations**, Vol. 2, No. 1, April 1990, 58 pp.

For the Further Strengthening of the International Nuclear Non-Proliferation Regime - Views from the Japanese Private Sector. Publication of the Japan Atomic International Forum, August 1990, 11 pp.

Richard Latter, 'Proliferation of Nuclear, Chemical and Biological Weapons', **Wilton Park Papers**, No. 25, HMSO, London, June 1990, 32 pp.

Baku Nishio and Junzaburo Takagi, 'Japan's Fake Plutonium Shortage', **The Bulletin of Atomic Scientists**, Vol. 46, No. 8, October 1990, pp. 34-8.

'Non-Proliferation Treaty's 1990 Review', **The Bulletin of the Atomic Scientists**, Vol. 46, No. 6, July/August 1990. [Special feature containing nine articles on the 1990 NPT Review Conference, including six authored by members of the PPNN Core Group.]

Tariq Rauf, 'Blocking the Spread of Nuclear Weapons: The Fourth Review Conference of the Non-Proliferation Treaty', **Communique of the Canadian Arms Control Centre**, Number 70, 8 August 1990.

Uzi Rubin, 'Iraq and the Ballistic Missile Scare', **Bulletin of Atomic Scientists**, Vol. 46, No. 8, October 1990, pp. 11-3

Lawrence Scheinman and Nelson F. Sievering, Jr. 'Non-Proliferation and the IAEA: a U.S.-Soviet Agenda', **Report of the Atlantic Council's Program on Nuclear Non-Proliferation**, Washington, D.C. June 1990, 35 pp.

United States Congress, 'Missile Proliferation: the Need for Controls (Missile Technology Control Regime)', **House Committee on Foreign Affairs, Subcommittees on Arms Control, International Security and Science and on International Economic Policy and Trade**, USGPO, Washington, D.C., July 12-Oct. 30, 1989, 217 pp.

United States Congress, 'Nuclear Testing Issues', **Senate Committee on Foreign Relations**, USGPO, Washington, D.C. November 9, 1989, 52 pp.

United States Congress, 'U.S. Capability to Monitor Soviet Compliance with the Threshold Test Ban Treaty (TTBT) and the Peaceful Nuclear Explosions Treaty (PNET)', **Senate Select Committee on Intelligence**, USGPO, Washington, D.C., September 14, 1990.

United States General Accounting Office, 'Arms Control: U.S. Efforts to Control the Transfer of Nuclear-Capable Missile Technology', **General Accounting Office**, USGPO, Washington, D.C., June 1990, 32 pp.

- Research Papers:

Louis Rene Beres, 'Israeli Security and Nuclear Weapons', **PSIS Occasional Papers Number 1/1990**, Programme for Strategic and International Security Studies, Graduate Institute of International Studies, Geneva, 40 pp.

F. Berkhout, T. Suzuki and W. Walker, 'The Approaching Plutonium Surplus: A Japanese/European Predicament', **International Affairs**, Vol. 66, No. 3, 1990, pp. 523-543.

- Periodic Publications

Attention is drawn to the appearance of the following periodic publications in the field of nuclear (non-) proliferation:

Congressional Research Service Issue Briefs on nuclear non-proliferation. These are written by Warren H. Donnelly and re-issued periodically. Topics include the nuclear programmes of Iraq, Iran, Israel and Pakistan and the 1990 NPT Review Conference.

Eye on Supply, a quarterly review published by the Emerging Nuclear Suppliers Project at the Monterey Institute of International Studies, Project Director William C. Potter, Project Manager/Editor Stephanie Saunders Redden; 425 Van Buren Street, Monterey, CA 93940

Proliferation Watch, Edited by Randy Rydell, published by the U.S. Senate Committee on Governmental Affairs, Chairman John Glenn, U.S. Senate, SD-340, Washington D.C. 20510-6250.

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V. Documentation

a. Letter dated 23 August 1990 from the Deputy Head of Delegation, Federal Republic of Germany, and the Deputy Head of Delegation, German Democratic Republic, to the Secretary-General of the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons.

(Text reproduced from NPT/CONF.IV/28)

The Governments of the Federal Republic of Germany and the German Democratic Republic reaffirm their contractual and unilateral undertaking not to manufacture, possess or have control over nuclear, biological and chemical weapons. They declare that the united Germany, too, will abide by this obligation.

Rights and obligations under the instruments of the Treaty of 1 July 1968 on the Non-Proliferation of Nuclear Weapons will continue to apply to the united Germany. The united Germany will seek the continued validity of the non-proliferation regime.

At the Geneva Conference on Disarmament, the united Germany will strive for a comprehensive, worldwide and verifiable ban on chemical weapons at the earliest possible date and intends to be one of the original signatories of the convention.

b. Statement On South Africa's Position on Accession to the Nuclear Non-Proliferation Treaty, Issued by the Minister of Foreign Affairs on 17 September 1990

(Text reproduced from IAEA document GC(XXXIV)/INF/290)

On 21 September 1987 the South African State President indicated that South Africa hoped that it would soon be able to sign the NPT and had decided to open discussions with others to this end. He added that South Africa was an important uranium exporting country and also had a well developed nuclear programme. For these and other reasons consideration of accession to the NPT was a complex matter requiring thorough study and consultation.

Since then various discussions have taken place between South Africa and the three depository states: the United States of America, the USSR and the United Kingdom in which South Africa sought clarification on the implications of accession.

During the past year major events of great historical importance have taken place in Central and Eastern Europe and in the USSR which had led to a lessening of tension between the power blocs of the world.

Various African states have recently expressed the view that the African continent should become a nuclear weapons free zone. These views were again aired at the recently concluded NPT Review Conference in Geneva. The South African Government welcomes these suggestions. Indeed the South African Government has itself consulted a number of African Governments on the desirability of establishing a nuclear weapons free zone at least in the Southern African region. Such a move would further remove suspicions and should strengthen the economic and geographical cohesion of the region. It is of particular significance that one of South Africa's closest neighbours, Mozambique, deposited its instrument of accession to the NPT on 12 September 1990.

Following several rounds of discussions with the three depository states on the question of accession to the Non-Proliferation Treaty, the South African Government is

prepared to accede to the Treaty in the context of an equal commitment by the other states in the Southern African region.

In the meantime the South African Government will continue to respect its non-proliferation responsibilities and commitments. For instance, the Government trusts that in the near future talks can commence with the International Atomic Energy Agency on concluding a comprehensive safeguards agreement on the country's nuclear facilities.

Viewed within the context of the Government's irreversible reform initiatives, the proposed action underscores South Africa's commitment to contribute to peace and regional security in Southern Africa.

South Africa is hopeful that the Thirty Fourth Annual General Conference of the International Atomic Energy Agency which is currently meeting in Vienna will reflect carefully on the significance of the direction taken by South Africa in order to facilitate peace and cooperation in the Southern African region.

c. Draft Resolution on 'Israeli Nuclear Capabilities and Threat' Submitted to the Thirty-fourth Regular Session of the IAEA General Conference.

(Text reproduced from IAEA document GC(XXXIV)/935/Rev.2)

ISRAELI NUCLEAR CAPABILITIES AND THREAT

Draft resolution submitted by Algeria, Egypt, the Islamic Republic of Iran, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Malaysia, Morocco, Qatar, Saudi Arabia, Senegal, Sudan, the Syrian Arab Republic, Tunisia and the United Arab Emirates

The General Conference

- (a) *Recognizing* the urgent need to prevent proliferation of nuclear weapons and a nuclear arms race in the area of the Middle East,
- (b) *Gravely concerned* about Israel's growing nuclear capability and threat to peace and security in the area,
- (c) *Recalling* General Conference resolution GC(XXXIII)/RES/506 concerning Israeli Nuclear Capabilities and Threat,
- (d) *Expressing deep concern* about the continuous co-operation between Israel and South Africa in the nuclear field,
- (e) *Recalling* Security Council resolution 487/1981, which, *inter alia*, requested Israel to submit all its nuclear installations to the Agency's safeguards system and to refrain from attacking or threatening to attack nuclear installations,
- (f) *Deprecating* the continuous refusal by Israel to place all its nuclear installations under the Agency's safeguards,
 1. *Calls once again upon* Israel to comply without delay with Security Council resolution 487/1981 by submitting all its nuclear installations to Agency safeguards;
 2. *Requests* the Director General to deploy further efforts in continuing the consultation with the States concerned in the Middle East area with a view to applying Agency safeguards to all nuclear installations in the area, keeping in mind the relevant recommendations contained in paragraph 75 of the report attached to document GC(XXXIII)/887, as well as various proposals and opinions referred to in the governments' replies

contained in document GC(XXXIV)/926 and the situation in the area of the Middle East, and to report on the matter to the Board of Governors and to the General Conference at its thirty-fifth regular session;

3. *Requests* the Director General to inform the Secretary-General of the United Nations of this resolution; and
4. *Decides* to include in the agenda for its thirty-fifth regular session an item entitled 'Israeli nuclear capabilities and threat.'

d. Draft Resolution on 'South Africa's Nuclear Capabilities and Threat' Submitted to the Thirty-fourth Regular Session of the IAEA General Conference .

(Text reproduced from IAEA document GC(XXXIV)/942)

SOUTH AFRICA'S NUCLEAR CAPABILITIES

Draft resolution submitted by the African Group

SOUTH AFRICA'S NUCLEAR CAPABILITIES

The General Conference,

- (a) *Recalling* the recommendation of the Board of Governors to suspend South Africa from the exercise of the privileges and rights of membership of the Agency as contained in its report GC(XXXI)/807 pursuant to General Conference resolution GC(XXX)/RES/468,
 - (b) *Stressing* that despite the requests of the General Conference and the international community, South Africa has persistently violated international law as well as the purposes and principles of the United Nations, upon which the Agency's activities are based in accordance with Articles III.B.1 and IV.B of the Statute,
- (c) *Also stressing* that the acquisition of a nuclear weapons capability by the racist regime of South Africa constitutes a very grave danger to international peace and security, and in particular jeopardizes the security of African States and increases the danger of the proliferation of nuclear weapons, and
 - (d) *Equally recalling* the resolve of the General Conference to take a decision on the suspension of South Africa expressed in General Conference resolution GC(XXXIII)/RES/524 in accordance with Article XIX.B of the Statute,
 1. *Deplores* South Africa's non-compliance with successive resolutions of the United Nations General Assembly and the General Conference of the IAEA, as well as its non-adherence to the principles and purposes of the United Nations and the Statute of the Agency;
 2. *Resolves* to consider and take a decision on the recommendation of the Board of Governors contained in its report GC(XXXI)/807 to suspend South Africa from the exercise of the privileges and rights of membership of the Agency in accordance with Article XIX.B of the Statute at the Conference's thirty-fifth regular session;
 3. *Requests* the Director General to continue to take all possible measures to ensure the full implementation of resolution GC(XXX)/RES/468 and to report to the General Conference at its thirty-fifth regular session in this regard;
 4. *Further requests* the Director General to bring this resolution to the attention of the Secretary-General of the United Nations, and
 5. *Decides* to include in the agenda for its thirty-fifth regular session an item entitled, 'South Africa's nuclear capabilities'.

The Programme for Promoting Nuclear Non-Proliferation and the Newsbrief

The Programme for Promoting Nuclear Non-Proliferation was established in the Spring of 1987 with the ultimate purpose of helping to strengthen the nuclear non-proliferation regime and with the shorter-term goal of contributing to the success of the fourth review conference of the Non-Proliferation Treaty and of the 1995 conference that will decide on the Treaty's extension. The Programme provides for the creation of an international, non-governmental and informal system of collecting, exchanging and analysing relevant information which should be brought to the attention of government officials, diplomats, the research community, parliamentarians, non-governmental organisations and the media, so as to help foster among those groups, a greater interest in, and a deeper knowledge of, the issues involved.

The central element of the Programme for Promoting Nuclear Non-Proliferation is an international networking exercise based on a Core Group of high-level experts from eleven industrialized and developing nations. These experts give general guidance to the Programme, pool and exchange information on the many different aspects of the question of nuclear (non-)proliferation and make the respective communities of which they form part aware of the need to support the non-proliferation regime and the Treaty. The Core Group customarily meets twice a year.

The **Newsbrief** was initially conceived as a means of communication from the chairman of the Core Group of the Programme for Promoting Nuclear Non-Proliferation to the members, to acquaint them with developments relevant to the aims and activities of the Programme. Given its general nature, however, the **Newsbrief** has become part of the outreach effort which constitutes a major element of the Programme. It is therefore now addressed to a wider, though still limited, audience of persons not directly involved with PPNN but interested in the subject, to inform and help them alert their respective environments to the issue of nuclear non-proliferation.

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