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## Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 8

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# PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

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## Editorial note

This issue of the **Newsbrief** covers events in the area of nuclear non-proliferation during the last quarter of 1989.

The **Newsbrief** of the Programme for Promoting Nuclear Non-Proliferation (PPNN) presents information relating to the spread of nuclear-weapon capabilities to additional States and on measures to deter that spread. It also contains references to related issues of disarmament and arms control and to diplomatic, economic and technical developments that have a bearing on the subject of nuclear non-proliferation.

The information included in the **Newsbrief** is derived from reputable sources and every attempt is made to present it as objectively as possible. As editor of the **Newsbrief**, the Chairman of the PPNN Core Group is responsible for its contents. Unless expressly stated, the inclusion of any item does not imply the agreement of the members of the Core Group collectively or individually with its substance or with its relevance to the Programme.

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

For the benefit of readers unacquainted with the Programme for Promoting Nuclear Non-Proliferation (PPNN), under whose aegis the **Newsbrief** appears, its aims and activities are described briefly at the end of this issue.

Readers wishing to comment on any item in the **Newsbrief** or to draw attention to information they believe should have been included are invited to send their remarks to the editor so that they may be published in a subsequent issue.

## I. Topical developments

### a. Background

The period covered by this issue of the **Newsbrief** is characterised by many important political developments which have a direct bearing on international relations and cannot fail to have an impact also on the nuclear non-proliferation scene.

In the last three months, relations between the major nuclear powers have continued to improve. Substantial progress appears to have been made in several sets of disarmament negotiations, notably the preparations for a major cut in strategic nuclear forces, the talks on reducing conventional forces in Europe and the negotiations on a ban on chemical weapons. One remarkable aspect of the new relationship is a growing openness in the exchange of data and a mutual acceptance of the need for verification of various levels of intrusiveness to ensure compliance with disarmament measures.

The profound political changes that have taken place recently in a number of East European states, and are still going on, are bound to have an influence on their relations with other states, on the continent and elsewhere. While this may lead to an eventual re-orientation in the international policies of some of the countries involved, the fact that all are party to the Treaty on the Non-Proliferation of Nuclear Weapons warrants the assumption that they will adhere to their present non-nuclear status. The Treaty's function as an element of stability in international relations becomes especially obvious when, given a state's membership in the NPT, a shift in that state's political power structure fails to raise the alarm it might have triggered otherwise.

The present issue of the **Newsbrief** contains some references to events which, in the editor's view, deserve highlighting.

Among the **NPT Events** (section b, page 2), the discussions between South Africa and the Depositary States have great importance for the non-proliferation system, which would evidently be served by the accession of one of the traditional "hold-out" states. It would also create a novel problem for the IAEA's safeguards, which would have to account for the nuclear material previously produced in South Africa.

The amendment conference of the Partial Test Ban Treaty, listed under **Other Non-Proliferation Developments** (section c, page 3) must be seen in the context of Article VI of the NPT. It is a view widely held, especially among non-aligned nations, that a comprehensive test-ban treaty is a primary component of any serious nuclear disarmament effort. Predictions of the way in which the amendment conference will affect the outcome of the NPT review conference vary widely. A cooperative stance by the Depositary States at the part of the amendment conference preceding the review conference is obviously essential to the success of both events.

One potentially important nuclear disarmament measure would be a treaty to end or limit the production of fissionable material for military purposes. Several decades ago there were Western proposals to this effect and the USSR has now made an initiative in the same direction. The US

Administration has so far responded negatively but, as indicated in section c, page 3, the House of Representatives is inclined towards such a move, while the Senate sees it as a secondary option. The matter should be seen in connection with the problems that plague the American military nuclear fuel cycle. Summaries of the many recent media reports on that subject appear in section g, **Developments of Concern for Vertical Proliferation**, pages 6 and 7.

There are some reports on developments in **Nuclear Trade and International Cooperation** (section d, pages 3-5) that provide instructive sidelights on non-proliferation issues.

Present complications regarding the implementation of the agreement between Brazil and the Federal Republic of Germany illustrate the risks one incurs in not stipulating full-scope safeguards as a condition for substantial nuclear supplies. The assertion made in 1975, at the time the agreement was concluded, that "any safeguards are better than no safeguards at all" clearly applies only when short-term commercial interest is put above international security concerns. The same short-sightedness is still reflected in the resistance put up in Bonn by both the Federal government and industrial associations to proposals to tighten West-German export legislation (see section h, **Developments of Concern for Horizontal Proliferation**, page 7).

Conversely, as illustrated by the new nuclear agreement between Canada and the USSR (section d, page 3), better relations between East and West may foster cooperation in nuclear non-proliferation. It may also be noted from section d, page 5, that the power reactor Pakistan would obtain from China (characterised as being the first nuclear power plant to be supplied to a developing nation by a developing nation) will be under IAEA safeguards. The same will be true for the 25-MW reactor, of which Argentina hopes to export several (see section f, **Peaceful Nuclear Developments**, page 5).

Following recent political developments in Eastern Europe, one notices a growing number of reports on cooperation between the states concerned and Western organisations in various aspects of nuclear energy (see section d., page 4). As in other industrial and scientific areas, the nuclear field obviously offers vast opportunities for cooperation.

Reports from three widely separate parts of the world involve the common element of concern about the physical security of nuclear material and installations. Security conditions for the transport of plutonium extracted in Europe from Japanese fuel have been a subject of discussion for several years (section d, pages 4-5). A power station in Finland has been the object of sabotage involving the reactor core itself (section f., page 5). And, as indicated in section g, pages 6-7, there is criticism of the way nuclear material in at least one American military installation is protected. The question of physical security will obviously come to play an increasingly prominent part as the amount of nuclear material grows and the number of installations increases.

The report about Iraq's attempts to acquire a clandestine enrichment capacity (referred to in section h, **Developments of Concern for Horizontal Proliferation**, page 8) should be read with prudence. The accusation that a party to the NPT, whose entire nuclear effort is required to be under international safeguards, is violating its treaty obligations by conducting an undeclared nuclear activity, must not be made lightly. Under the NPT, which does not make provision for "challenge inspections", an allegation of this kind cannot be checked directly by the IAEA, which has access only to declared facilities and is barred from conducting investigations elsewhere. Assertions regarding a state's moves towards a nuclear capability, which are usually made in secret, therefore are commonly based on hearsay. The usual credibility of the publication that contained the item makes it difficult to ignore it altogether.

## b. NPT Events

- In the general debate at the 33rd General Conference of the International Atomic Energy Agency, the delegate of **France**, speaking on behalf of the member countries of the European Community, expressed the hope that the "vital balance" between non-proliferation and the development of the peaceful uses of nuclear energy would be maintained and strengthened as a result of the international discussions which would take place at the fourth NPT review conference. He added that the states members of the Community, **whether parties to that Treaty or not** (emphasis added, ed.) would not fail to make an active contribution to those discussions (**IAEA Document GC(XXXIII)/OR.314**, para. 21)

- **The Democratic People's Republic of Korea** has begun negotiations with the IAEA on a safeguards agreement pursuant to the Non-Proliferation Treaty. (**NuclearFuel**, October 2, 1989) Informal reports indicate that, after initial problems, the two sides may soon concur on a text — see also below, section h, page 8.

- On 17 November 1989, Kuwait deposited in Washington its instrument of ratification of the NPT. **Kuwait** is the last signatory state to have ratified the Treaty, which it signed on 15 August 1968 (Oral information from Department of State, Washington and Foreign and Commonwealth Office, London).

- In anticipation of **Namibia**'s independence, Rossing Uranium Ltd is seeking an American market for its U308. It is hoped that the new country will become a party to the NPT. At present, the administering authority of the territory, the UN Council on Namibia, is a member of the IAEA (**NuclearFuel**, October 16, 1989)

- **South Africa** has assured the USSR that it is interested in acceding to the NPT. It has also informed the Director General of the IAEA that it still viewed the possibility of NPT adherence in a serious manner. (**NuclearFuel**, October 2, 1989). In December, the question was discussed in Vienna between high-level representatives of South Africa and of the USSR, the UK and the USA (**IAEA Document** GC(XXXIII)/894; **Johannesburg Radio**, 27 September 1989, in JPRS-TND-89-020)

### c. Other Non-Proliferation Developments

- On 15 December 1989 the General Assembly of the United Nations adopted, with 127 votes in favour, 2 against (The UK and the USA) and 22 abstentions (mostly Western and neutral countries), a resolution recommending the establishment of an open-ended preparatory committee to make arrangements for a conference to consider amendments to the Partial Test Ban Treaty of 1963, to convert it into a comprehensive nuclear test ban treaty. This resolution recommended that the committee should meet at United Nations Headquarters in New York from 29 May-1 June 1990; that a first session of the PTBT Amendment Conference should be held from 4-8 June 1990 and that a second session should take place from 7-18 January 1991 (UN Document **A/RES/44/106**, reproduced in Section V., page 11).

  However, the Depositary Powers (USSR, UK, USA), who consider that the amendment conference should not be in two parts, have decided that it should be convened on 8 January 1991, for a period of up to two weeks, and have issued invitations accordingly. Intensive efforts are now being made to find a compromise solution in which account would be taken of both approaches (**The New York Times**, November 15, 1989; UN Documents **A/RES/44/106** and **A/C.1/44/PV.26**).

- **Argentina** is said to consider acceding to the Tlatelolco Treaty, if Latin American states, notably Argentina and **Brazil**, could administer their own system of verifying compliance, rather than accepting IAEA safeguards. Argentina has signed an agreement with **Brazil**, widening nuclear cooperation, and further progress is reported in dissolving tension between the two states in the nuclear area. If means permit, they might work together on the design of an indigenous heavy-water power reactor; the development of a critical facility is also being discussed (**Nucleonics Week**, October 12, 1989; **Nuclear News**, October 1989).

- **Brazil** has decided to allow Argentine scientists to visit its unsafeguarded gas centrifuge uranium enrichment complex at Ipero. The visit was to have taken place on 15 November, immediately before the presidential elections in Brazil (**NuclearFuel**, November 13, 1989).

- **China** has announced that it has stopped production of enriched uranium for military purposes and that its entire enrichment capacity is now available for civilian uses. Western commentators believe that the Chinese enrichment capacity exceeds military requirements and that, moreover, its plutonium production capability is more advanced than had been assumed (**NuclearFuel**, November 13, 1989).

- The new Prime Minister of **India**, V.P. Singh, has said there was a need for a dialogue with **Pakistan**, to avoid a nuclear arms race on the sub-continent; he called the nuclear issue "very vital". Mr. Singh's statement was welcomed by Pakistani officials (**Nucleonics Week**, December 14, 1989).

- Against a background of ongoing safety problems in **United States** military production facilities, budgetary restraints and the growing sense that the likelihood of a nuclear war with the Soviet Union is decreasing, pressure for an agreement with the USSR on a halt in the production of plutonium and highly enriched uranium for military purposes is growing in the American Congress. In the House of Representatives, the International Plutonium Control Act has been adopted by 284 to 138 votes, after the original financial conditions had been left out. The Senate wishes to connect the question of a halt in the production of fissile material in association with that of the use of material recovered from dismantled warheads, viewing it as a second-level issue to be taken up once there is agreement on a major reduction in strategic nuclear weapons. It has asked the Administration to report by 15 July 1990 on security implications and verification aspects of a production stop. The question who would verify a cut-off is open. A senior Soviet official has expressed "pessimism" at the idea that the IAEA might do so (**NuclearFuel**, October 16, 1989; **Congressional Record - Senate**, S 14987, November 6, 1989; **Science**, November 1989; **CRS Issue Brief**, "Proposals for Ending U.S. and Soviet Production of Fissile Materials for Nuclear Weapons", IB89141, November 9, 1989; **The Bulletin of the Atomic Scientists**, December 1989, pp. 42-45). The present problems in US production facilities are more fully referred to in section g., pages. 6-7.

### d. Nuclear Trade and International Cooperation

(When an item under this heading concerns supplies from one state to another, the principal recipient is mentioned first; when it concerns a reciprocal arrangement, states involved are mentioned in alphabetical order.)

- **Brazil**'s agreement with the **Federal Republic of Germany** is criticised in both countries. Many Brazilians seem to see no benefit in extending it. The amalgamation of Brazil's civil and military programmes poses a problem for the Federal Republic, whose government now has difficulty convincing the parliament that nuclear technology supplied by it is not being used for unauthorised purposes — see also section h., page 7 (**Nuclear Engineering International**, November 1989).

- **Canada** and the **USSR** have signed a nuclear cooperation agreement under which, **inter alia**, Canada hopes to supply the USSR with nuclear safety equipment and technology and Canadian-produced uranium would be enriched in the Soviet Union for sale in Europe. The agreement, which makes provision for the nonproliferation assurances required by Canadian policy, is for 30 years and renewable for successive ten-year periods. It is described as "the first comprehensive agreement by the USSR providing for bilateral nonproliferation assurances", and requires prior written consent for transfers of nuclear supplies and technology to a third party, for enrichment of uranium to 20% or higher, and for reprocessing (**Nucleonics Week**, November 30, 1989; **NuclearFuel**, December 11, 1989).

- **China** is planning to import several 1000-MW power plants for use in the northeast of the country, and is talking to several potential suppliers, including the **USSR** (**Nucleonics Week**, September 28, 1989).

- The **Democratic People's Republic of Korea** still has not started building the four VVRR-440 nuclear power reactors it had planned to construct with the help of the **USSR**. According to a report from Seoul, the site for the station has not even been selected. The delay is ascribed to financial problems (**Nucleonics Week**, September 28, 1989).

- **East-West European Cooperation**: late-breaking reports indicate a flurry of talks between countries in East and Western Europe to explore possibilities of cooperation in nuclear matters. There is no official confirmation of reports that the **German Democratic Republic** and the **Federal Republic of Germany** are discussing the creation of joint ventures to finance and construct in the former country up to four 1,300-MW PWRs. Nuclear Power International — a joint venture of firms in **France** and the **Federal Republic of Germany** — and the **USSR** Ministry of Nuclear Energy and Industry have agreed to explore ways of cooperating in the development of PWRs for the Soviet Union. Electricite de **France** has concluded an agreement under which it is at the disposal of the **USSR** for services relating to the construction, safety, operation and maintenance of Soviet reactors. It is negotiating a similar deal with **Hungary**. The **USA**'s Bechtel Power Corp. has contracted to help the **USSR** and **Hungary** in the design of seismic structural modifications for power reactors. The **European Community** and the **USSR** have signed a wide-ranging commercial and economic agreement which, among other subjects, foresees cooperation in nuclear power development, safety and research (**Nucleonics Week**, December 14 and 21, 1989).

- **Egypt** and **Canada** are working together in an exploratory project to determine the former's potential for fabricating Candu-type fuel elements. A feasibility study for a heavy-water production plant in Egypt is also under way in Canada (**NuclearFuel**, December 11, 1989) .

- The talks which utility operators in the **Federal Republic of Germany** were to hold with the reprocessing firms Cogema in **France** and BNFL in the **United Kingdom**, after German reprocessing plans were shelved, have been held up. The delay is said to have been due to disagreement among the utility companies, of whom some are in favour of reprocessing, some are under political pressure not to take a decision and some have economic doubts about reprocessing. The matter has been resolved for now by the decision of Cogema and BNFL to allow utilities to withdraw from reprocessing contracts if compelled to do so by "political force majeure", i.e. if within the next fifteen years the Federal German government eliminates the reprocessing option, as the SPD is thought likely to do if it is returned to power (**Nucleonics Week**, October 19, 1989; **NuclearFuel**, December 11, 1989).

- Siemens/Kraftwerk Union (KWU) of the **Federal Republic of Germany** has agreed to supply Atomenergoexport (AEE) of the **Soviet Union** with safety-monitoring technology for all PWRs operating in the USSR. Similar safety systems have already been supplied for Soviet-design reactors in Czechoslovakia and for PWRs in a number of Western countries (**Nucleonics Week**, November 30, 1989).

- **Hungary** and **Canada** have concluded an agreement to study the feasibility of building a Candu reactor in Hungary that would produce electric power for export to Western Europe (**The Toronto Star**, 27 September 1989, in JPRS-TND-89-021, 6 November 1989; **Nucleonics Week**, November 23, 1989).

- **Hungary** has suspended its agreement with the **USSR** for the design and construction of two VVER-1000 power reactors, Paks-5 and -6. The reasons given are economic difficulties and a rate of increase in electric power consumption that was slower than expected and that could be met by non-nuclear means (**Nucleonics Week**, November 23, 1989).

- **India** is making efforts to advance the construction of the two VVER-1000 PWRs it has purchased in the **USSR.** After an initial delay said to be due to a dispute over the exchange rate and to the need to adapt the Soviet design to Indian requirements, construction was to start in December. It is planned to incorporate the new safety systems developed in cooperation between the Soviet Union and the German firm Siemens AG (**Nucleonics Week**, October 12 and November 9, 1989).

- In **Indonesia** a nuclear research laboratory designed and equipped by **Canada**, and involving the training of 68 engineers and technicians, was to be opened by President Suharto on 11 December 1989 (**Nucleonics Week**, October 26, 1989).

- **Israel** has had discussions with **Canada** about the purchase of a Candu power reactor. It was reported ready to accept IAEA safeguards on the reactor, but Canada is still said to be unwilling **to** supply the reactor (probably because Israel does not accept safeguards on all its nuclear activities, which is the usual Canadian export requirement — editor) (**Nucleonics Week**, September 28, 1989; **The Wall Street Journal**, November 1, 1989).

- Five metric tons of irradiated fuel from **Japan** are the first to be treated in the new UP3 reprocessing plant in **France.** Reports that the Japanese government was considering using destroyers of the Maritime Self Defence Force to escort freighters carrying Japanese plutonium from Europe were denied. The Japanese government has confirmed its previously announced decision to use patrol cutters of the Maritime Safety Agency (MSA) but may build larger boats for the purpose. Officials of the ruling Liberal Democratic Party criticise the plan to use MSA patrol boats (**NuclearFuel**, October 16, 1989; Tokyo

**KYODO**, 6 October 1989, in JPRS-TND-89-020, 26 October 1989; ditto, 16, 25 and 28 October 1989, in JPRS-TND-89-021, 6 November 1989).

- During a visit to **Pakistan** of Prime Minister Li Peng, **China** has promised to supply a 300-MWe PWR, to be built at Chasma, in the Northern Punjab. The purchase is based on the bilateral agreement of 1986, pursuant to which the reactor will be put under IAEA safeguards. The deal is cited as the first export of a nuclear power plant from one developing country to another (**Islamabad Radio - Domestic Service**, and **Beijing Xinhua**, both 16 November 1989, FBIS-NES-89-220; **Nucleonics Week**, November 23, 1989).

- **Canada**'s Prime Minister has assured the Prime Minister of **Pakistan** that he will give sympathetic consideration to the latter's complaint that Canada should have helped Pakistan cope with safety problems at the (Canadian-supplied) Kanupp reactor (**Nucleonics Week**, October 26, 1989).

- In October 1989 **Pakistani** officials held talks in the **Republic of Korea** to explore possibilities for cooperation with that country in constructing nuclear power plants in Pakistan (**Nucleonics Week**, October 19, 1989).

- BNFL, of the **United Kingdom**, has plans to set up a subsidiary in the **United States** to seek clean-up contracts and work on decommissioning American commercial reactors. USSI, the engineering subsidiary of Cogema of **France**, is reported ready to propose to help the **United States** Department of Energy clean up nuclear sites, by conversion of depleted $UF_6$ into solid U308, which is more stable. (**NuclearFuel**, October 30 and December 11, 1989).

- Also in the **United States**, a delegation from the **USSR** has reportedly had talks with General Atomics about the possibility of building an enrichment plant in the US based on Soviet centrifuge technology. In another context, a senior U.S. government official is quoted as having said that the idea (raised at a conference in Paris, in October) of the US Department of Energy purchasing some enrichment services direct from the Soviet Union "has some merit" but it was still unclear if such a deal could be worked out (**NuclearFuel**, October 30 and November 13, 1989).

### e. IAEA Developments

- At a meeting on 2 October 1989, the Board of Governors of the IAEA approved the text of a safeguards agreement with the Socialist Republic of Viet Nam in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (**IAEA News Brief**, October 1989).

- On 11 October 1989, India signed an agreement with the IAEA in Vienna for the application of safeguards to nuclear material supplied by France for use in the Rajasthan facility. (**Delhi Domestic Radio**, 12 October 1989 in FBIS-ME 13 October 1989).

- The safeguards agreement of 20 September 1988 between the **People's Republic of China** and the IAEA entered into force on 18 September 1989 (**IAEA Document** INFCIRC/369, October 1989).

### f. Peaceful Nuclear Developments

- Reports from **Argentina** about the support the new President is willing to give to the nuclear power programme differ, but there seems to be some confidence that funds for the completion of Atucha-2 will be forthcoming, in preference to other nuclear activities. Argentina aims to become a major nuclear exporter, notably of a 25-MW, indigenously developed, PWR. It will require IAEA safeguards in connection with the export of nuclear technology and legislation is needed to implement nuclear export controls. In what is seen as a "setback" for the National Atomic Energy Commission (CNEA), President Menem has rejected the construction of a nuclear-waste repository at Gastre, in Chubut province. The 600-MW Candu-type reactor at Embalse is reported to have unspecified operating problems which have led to several unauthorised shutdowns. (**Nucleonics Week**, October 12 and December 21, 1989; **NuclearFuel**, November 27, 1989).

- In **Finland**, permission was requested for the re-start of the Olkiluoto-1 power reactor, which had been shut since 10 September 1989, after iron filings were found in control rod drives. In three weeks, 20 kilograms of filings have been removed; it is suspected that they were introduced into the reactor during its annual shutdown, last June, as an act of sabotage. The clean-up involved decontamination of 121 control rods and has cost $17-million, including power losses (**Nucleonics Week**, October 12, 1989).

- In **Japan**, the role of public acceptance of nuclear energy is growing. The debate about plans for building an enrichment and reprocessing complex and a waste repository, at Rokkasho village, at the northern tip of Honshu, is seen as a test case for the future of nuclear energy in the country. Japan is contractually bound to take back the nuclear waste from its fuel after reprocessing abroad, and if the project is stopped it cannot do so. Further, not only would its plans to establish its own fuel-cycle facilities be jeopardised, but an anti-nuclear victory at Rokkasho might foster a campaign against nuclear power altogether. In its annual White Paper the Atomic Energy Commission stresses the continuing importance of nuclear energy for the country, which needs to lower its dependence on petroleum and whose energy demand is growing (**Far Eastern Economic Review**, 26 October 1989; **Nucleonics Week**, November 30, 1989).

- Sources in **Pakistan** indicate that a start has been made with the development of indigenously designed and manufactured power reactors. It is the intention to create a consortium to construct five or six reactors during the next fifteen years, with a local component of 80%-85% and at a cost far below world market prices. At the same time, talks are said to be under way with **France** for the supply of a 900-MW PWR to be built at Chasma (**Nucleonics Week**, October 5, 1989; **Nuclear News**, October 1989).

- The **Republic of Korea**, which now operates nine nuclear power plants (six US-designed, one Canadian and one French) has short-term plans for three more. One of these will be a 700-MW Candu pressurised heavy-water reactor (PHWR) to be built in cooperation with **Canada**, and scheduled for completion in 1997, and the other two will be US-designed 1000-MW PWRs, which should be on-stream in 1998 and 1999, respectively (**Nucleonics Week**, September 28 and October 19, 1989; **YONHAP** (Seoul), 13 October 1989, in JPRS-TND-89-021, 6 November 1989; **Journal of Commerce**, October 18, 1989).

- There has been a fire at **Spain**'s oldest reactor, Vandellos-1. The fire does not seem to have affected the reactor core and there have been no reports of radioactive leaks. The incident was classified at the lowest level of emergency and reported to have ended in a "safe shut-down", but local authorities and media criticise the fire-extinguishing equipment and procedures as inadequate and there are calls for the facility to be closed permanently (**The New York Times** and **Nucleonics Week**, October 26, 1989).

- The **USSR** has been using centrifuge technology to enrich uranium since the early 'Sixties. Its present output is 10-million SWU a year, of which it is offering 5-million for sale abroad. Current sales have been reported to be 2-million SWU (**Nuclear News**, October 1989; **Nuclear Fuel**, November 27, 1989).

- **USSR**: Soviet experts have commented on a press report that there had been 250 deaths among those who had taken part in the clean-up after the Chernobyl accident. While not disputing the number, they explained that these deaths were not due to increased radiation: of the 165 persons who received hospital treatment after the accident, 28 had died. Of the 137 survivors, 16 were declared fit to return to work and the other 121 were under medical supervision. All survivors had received radiation doses much higher than any recorded since. The 250 deaths reported might therefore "reflect the natural incidence of death ... and there is good reason to assume that ... 250 deaths in 3.5 years is simply within the natural mortality rate" (**IAEA Press Release** PR 89/32, 10 November 1989).

- In the **United Kingdom** the decision has been taken that the nuclear power stations will not be included in the privatisation of the electric power industry. The Secretary of State for Energy, Mr John Wakeham, told the House of Commons that the eight Magnox and five Advanced Gas-cooled Reactor (AGR) stations in England and Wales and a Pressurised Water Reactor (PWR) station, Sizewell-B, currently under construction would be transferred to a Government-owned company, Nuclear Electric. No new nuclear power developments will be considered before Sizewell-B becomes operational in 1994. In an additional statement on the same day, the Secretary of State for Scotland, Mr Malcolm Rifkind, announced that the Magnox station (scheduled for closure) and the two AGR reactors in Scotland would be transferred to another Government-owned company, Scottish Nuclear Limited. The reasons for withdrawal include increased nuclear costs and demands from the private sector for Government guarantees regarding financing of construction of new nuclear stations (**Hansard**, 9 November 1989).

  It was later announced that although three of the four planned PWRs will not be built, the public inquiry into the second of these reactors will continue. The present nuclear programme is said to be inefficient, unreliable and expensive to run. The single PWR under construction, Sizewell-B is 10% over budget and its power is expected to be the costliest ever produced in a British power station (**The Economist**, October 28 and December 2, 1989; **Nucleonics Week**, December 14, 1989).

- There are calls in the **United States** press for a revival of the nuclear effort in that country by the use of up-to-date, small, safe and cost-effective power reactors, that would offer a "competitive and environmentally benign" energy option. The US Nuclear Regulatory Commission is reportedly on the verge" of granting a full-power operating licence for the Seabrook nuclear power station, three years after construction was completed, at a cost of $6.3-billion. There is an urgent need in the region for additional electricity resources, which, without Seabrook's output, are expected to fall short of requirements by 1992. Local opponents — who have protested against the plant ever since building started in 1976 — and their supporters in Congress are now fighting the decision on the ground that in an emergency, a rapid evacuation of nearby communities would not be possible (**The New York Times**, December 8, 1989; **The Washington Post Weekly Edition**, December 18-24, 1989).

- **United States** experts are of the opinion that the "cold fusion" phenomenon — specifically effects like excess heat and the appearance of higher-than-background levels of tritium — could not be explained as a result of artifacts, equipment error or human error. At a recent scientific workshop the conclusion was reached that more research is desirable.A final report was expected from a special investigative panel of the US Department of Energy (**The New York Times**, October 19, 1989).

### g. Developments of Concern for Vertical Proliferation

- The **United States** Secretary of Energy, Adm. James D. Watkins, is reviewing departmental plans for the production of nuclear material for military purposes. Among considerations mentioned in the press are the acute safety problems existing at most of the present production sites, which are ascribed to bad management by contractors as well as inadequate oversight on the part of the Department of Energy; the need for budget cuts; and the scaled-down estimates of nuclear-material needs. Adm. Watkins has stated that in considering the future activities of his Department's 17 production facilities his chief concern is "safety, rather than production". Early realisation of plans to construct a new plutonium production plant at Idaho Falls appears doubtful, since the smaller quantities of plutonium which are now thought to be needed can be obtained by recycling plutonium removed from dismantled weapons; today's political climate is also expected to make Congress less responsive to a request for the necessary funds. In November, the plutonium processing plant at Rocky Flats, near Denver,

Colorado, was closed down indefinitely, following reports of illegal waste dumping and the discovery that plutonium had accumulated in machinery in near-critical quantities (as seems to have happened in the past also at the Savannah River facility, the Idaho National Engineering Laboratory near Idaho Falls and Los Alamos National Laboratory, where spontaneous reactions are said to have occurred). Among other plants temporarily or permanently closed are the production reactors at Savannah River, which are undergoing a three-year overhaul estimated at $1.66 billion; the Feed Materials Production Center at Fernald, Ohio; the Idaho National Engineering Laboratory (which handles irradiated nuclear material and was closed in October 1989, because newly installed pipes for highly radioactive substances were found to be substandard); and the plutonium reprocessing plant at Hanford, Washington. Amidst reports that several of its contractors have disposed of nuclear waste in violation of legal standards, the Energy Department has announced that it is suspending its two-year, $500 million effort to establish a high-level radioactive waste repository in Nevada, at a site on which it now feels it did not have adequate scientific data. The State of Nevada has refused the Department a permit to make further environmental studies at the site (at Yucca Mountain, 100 miles northwest of Las Vegas) and has filed suit to bar its use as a nuclear waste repository. A re-evaluation has been ordered of a nuclear waste disposal pilot project in New Mexico for plutonium-contaminated waste (**The Washington Post**, November 28, 1989 and **The Washington Post Weekly Edition**, December 11-17, 1989; **The New York Times**, October 25 and 29, November 2 and 29 and December 2, 3, 4, 7, 15, 27 and 29, 1989; **Not Man Apart: The Newsmagazine of Friends of the Earth, U.S.A.**, October/November 1989; **The Bulletin of the Atomic Scientists**, December 1989, pp. 19-24).

- With the tritium-producing Savannah River reactors of the **United States** Department of Energy out of commission, the question of supply continues to be debated in the Administration, the Congress and the press. Even though it now appears that the reactor vessels have not been cracked (as had been feared), it is estimated that the first supplies of tritium from Savannah River will not be available until July 1991 and full production cannot be resumed until the summer of 1992. Senator Thurmond has called for an early start in the construction of new tritium-producing reactors. In August 1989, Energy Secretary Watkins asked for an examination of the feasibility of the use of accelerator technology for tritium production and an assessment of how soon such use could meet US tritium needs and at what cost. A panel of the Energy Research Advisory Board has produced an interim report according to which linear accelerators could be used and do have some safety and environmental advantages, possibly outweighed by factors such as the amount of electric power needed to run them. The Department of Energy has resumed its commercial shipments of small quantities of tritium. These were suspended earlier but resumed in the Summer of 1989, following an investigation of discrepancies that were later ascribed to measurement errors. New discrepancies found in the Autumn led to a report of the Department's inspector general, according to which the previous investigation had been faulty. This has prompted a demand in the House of Representatives for stricter safeguards on tritium exports. A new investigation has now concluded that there is no evidence of diversion or theft; it ascribes the discrepancy to "deficiencies in equipment, measuring methods, procedures, records and management and technical oversight" and the unique properties of tritium. Measurement techniques are being revised but no grounds are found to review the safeguards. Tritium sales were resumed on 1 December (**Congressional Record - Senate, S 12651**, October 5, 1989; **Washington Post**, October 28 and November 1 and 20, 1989; **Inside Energy**/with **Federal Lands**, November 20, 1989; **NuclearFuel**, October 30, November 13 and December 11, 1989; **The New York Times**, October 28, November 1 and December 3 and 31, 1989).

- Also in the **United States**, a report of a congressional subcommittee calls the measures applied at weapons facilities, notably Lawrence Livermore National Laboratory, to protect nuclear material from sabotage or theft, inadequate. Among other reported lapses in management is the practice of the Oak Ridge and Las Vegas regional offices of using private contractors for the screening of plant employees seeking security clearances (**The New York Times**, December 4, 1989).

### h. Developments of Concern for Horizontal Proliferation

- **Brazil**'s previous government is said to have shifted civilian nuclear activities into the unsafeguarded part of its programme, which is run by the military and is thought to be largely devoted to military applications. Consequently, material, equipment and technology obtained abroad, principally from the **Federal Republic of Germany**, and subject to International Atomic Energy Agency safeguards, are feared to be used in ways prohibited under the pertinent agreements. Among activities in Brazil's "parallel programme" is the development of a ballistic missile with a range of 840 miles that can be modified to carry a nuclear warhead. The United States is reportedly trying to persuade **France** not to supply Brazil with rocket-propulsion technology which could be used in the production of ballistic missiles (**The New York Times**, October 19, 1989; **The Journal of Commerce**, November 7, 1989).

  A poll of the views of presidential candidates on nuclear matters, **Folha de Sao Paolo** of 1 September 1989 (in JPRS-TND-89-020, October 26, 1989) found that Fernando Collor de Mello (who has since won the election) saw Brazil's nuclear development programme as incompatible with the economic situation, considered the agreement with the Federal Republic not to be in the national interest and said that the military programme should be pursued: not for the manufacture of nuclear weapons but for the development of submarine technology. In the Federal Republic, too, there is opposition to extension of the agreement but the government wishes to keep it in force, notwithstanding reports of its intelligence service about the military orientation of the parallel programme (**Der Spiegel**, 16 October 1989, in JPRS-TND-89-021, 6 November 1989).

- In the **Federal Republic of Germany**, legislation that would tighten controls on nuclear exports, submitted in response to allegations that German firms had supplied

non-NPT parties such as India, Pakistan and South Africa with unsafeguarded nuclear technology and equipment, is being delayed and is not expected to be adopted before mid-1990. The legislation is meeting opposition in Parliament, where members of the governing party want it to be substantially softened; German industrial organisations are also calling for less stringent legislation that would not affect the competitiveness of German exports. While the Social Democratic opposition claims that the Kohl government wants to put the matter off indefinitely, the United States, which had repeatedly urged the Federal Republic to tighten its legislation, is said to be less concerned about its nuclear aspects than about omissions that would permit the export of missile technology (**Nucleonics Week**, December 7, 1989).

- It is causing concern that two-and-a-half years after it became a party to the NPT, the **Democratic People's Republic of North Korea** has not yet completed its negotiation with the IAEA on the safeguards agreement which the Treaty obliges it to conclude within 18 months. An indigenously constructed 30-MW natural-uranium, graphite-moderated reactor has reportedly been operating for two years at Yongbyon. US experts believe that the reactor is not yet operating at full power and still contains its original fuel load. The reactor would be capable of producing six or seven kilograms of plutonium a year, which, once extracted ("reprocessed"), would suffice for one nuclear device. South Korean sources say that North Korea has almost completed the construction of two reprocessing facilities, making it "capable of manufacturing 13 to 33 nuclear bombs"; Reports in the United States speak of one such plant, which they think is still several years from completion (**The Korean Times**, October 7, 1989, in JPRS-TND-89-020, October 26, 1989; **The New York Times**, October 25, 1989).

- **India** is receiving another "Charlie-1" class nuclear-powered cruise missile submarine from the **USSR**. It is not clear whether this vessel, to be named "Chitra", will replace "Chakra", which was commissioned into the Indian navy on 4 January 1988 and is reported to have experienced radiation-related problems, or is the second of the four nuclear-powered submarines which earlier reports said India would acquire. Also unclear is whether the boat has already arrived, as one report indicates, or will come in 1990, as others maintain (**Amrit Bazar Patrika**, 16 September 1989, as reported in **Strategic Digest** (New Delhi), November 1989; **Jane's Defence Weekly**, 28 October 1989).

- **India**'s ballistic missile development programme, which culminated in successful tests of the "Agni" missile — said to be capable of carrying a one-ton payload for 1,500 miles and a half-ton nuclear weapon for 2,200 miles — is widely seen in the context of that country's relations with **China**. It is reported that the basic design of the "Agni" originated in the **USA**, that its fuelling system is inspired by **French** technology and that the **Federal Republic of Germany** gave India help in rocket guidance, rocket testing and the use of composite materials. By the end of the present century, India is expected to have accumulated more plutonium than China. Press reports allege that the **USSR** has supplied India with heavy water through West German trading firms (G. Milhollin in **The Bulletin of the Atomic Scientists**, November 1989; K. Subrahmanyam in **The Hindu**, October 25, 1989; **Die Tageszeitung** (Berlin), 7 and 13 October and 4 November 1989).

- **Iraq** is reportedly trying to obtain the means to develop a nuclear-weapon capability, using a network of companies in Europe to procure a wide range of equipment and technical expertise, relating both to the production of fissionable material and to weapons design. A detailed British press report claims that Iraq has chosen the uranium enrichment route, using a centrifuge technique. China is said to be helping in the manufacture of the centrifuges and Iraq is also believed to get help from Brazil and Pakistan (**Financial Times**, December 11, 1989).

- American sources allege that **Israel** has successfully tested a ballistic missile capable of carrying a nuclear, chemical or conventional warhead over a range of about 900 miles. US experts believe Israel capable of building a ballistic missile with a range of over 2,800 miles and a payload of 2,200 lbs. There are reports that Israel has helped **South Africa** develop a long-range ballistic missile of its own, in exchange for uranium supplies. These reports, which, if correct, might oblige the Bush administration to impose restrictions on its trade with Israel, are strongly denied by Israel (**The Washington Post**, September 16 and October 26, 29 and 31, 1989; **The New York Times**, October 27 and November 15 and 16, 1989; **The Atlanta Constitution**, November 1, 1989; **Newsweek** and **Time**, November 6, 1989; statements and interviews on **Israeli radio**, on 26, 27, 28, 29 and 30 October, cited in JPRS-TND-89-021).

- The partners in the **Missile Technology Control Regime** (Britain, Canada, the Federal Republic of Germany, France, Italy, Japan and the United States; plus Spain which participated for the first time) met in London on 5 and 6 December. They reaffirmed their determination to maintain controls on exports which could contribute to the proliferation of these weapons and underlined the need to secure wider adherence to the guidelines announced in 1987 to control the transfer of equipment and technology which would make a contribution to any missile system capable of delivering a nuclear weapon (**MTCR Press Release**, London, 7 December 1989).

- In a letter dated October 5, 1989, to the US Senate, as required by American legislation to permit assistance to be furnished and military technology to be sold or transferred, President Bush certified that, "based on the evidence available and on the statutory standard", **Pakistan** did "not now possess a nuclear explosive device". The letter explained that "the statutory standard" was "whether Pakistan possessed a nuclear explosive device, not whether it was attempting to develop, or had developed, various relevant capacities". The President added that since last year's certification Pakistan had "continued its efforts to develop its unsafeguarded nuclear program" and said he remained "extremely troubled by the continued risk of a South Asian nuclear arms race". The certification was welcomed in the Pakistani press but received with mixed feelings in the American press and the Congress. Senator John Glenn has called for congressional reconsideration of United States assistance

to Pakistan (**Presidential Determination** 90-1, October 5, 1989; **The Muslim** (Islamabad), 9 October 1989, in JPRS-TND-89-021, 6 November 1989; **Nucleonics Week**, **The New York Times** and **Washington Post**, October 12, 1989; **Washington Post**, October 13, 1989; **NuclearFuel**, October 16 and November 26, 1989; **Congressional Record - Senate**,S 15880-15896, November 16, and S 16103-16109, November 17, 1989).

- The "semi-commercial" uranium enrichment plant at Valindaba, **South Africa**, is approaching its planned output of 300,000 separative work units (SWU) a year. Two-thirds of this goes to fuel the two power reactors at Koeberg and the rest is meant for export. South Africa says the plant produces only low-enriched uranium, but it could be used to produce weapon-grade uranium by "batch recycling". Alternatively, using some of the low-enriched uranium as feed, the output of weapon-grade uranium of South Africa's pilot-scale enrichment plant might be quadrupled to 200 kilograms a year, enough to make ten nuclear weapons (**The Bulletin of the Atomic Scientists**, October 5, 1989).

- Concern is growing in the **United States** about the spread of ballistic missile technology. The Bush Administration says it has taken "a strong stand" against the proposed sale by **France** of missile technology to **Brazil** and **India**. However, it does not regard either **Israel**'s development of Jericho II or **Saudi Arabia**'s acquisition of CSS2 ballistic missiles from **China** as sufficiently destabilising to jeopardise its relations with those states by threatening to halt arms sales. Meanwhile, new contacts with the Chinese government seem to have achieved a renewal of the latter's promise to restrict its missile exports. There is a report that US assistance funds may have been used by Egypt to buy a computer for use in the Condor II missile project. A bipartisan initiative in the US Senate for a bill to tighten American controls on the export of missile technology and impose trade restrictions on states that do not adhere to the missile proliferation regime is opposed by the Administration as harmful to its efforts to stop this spread by diplomatic means. A British newspaper claims that **West German** firms have assisted **Libya**, as well as **Egypt** and **Iraq**, with missile technology and components, with the help also of **Austrian** and **Swiss** companies (**The Sunday Correspondent**, 15 October 1989, in JPRS-TND-89-021, 6 November 1989; **The New York Times**, October 19 and November 1, and 9, 1989; **Congressional Record -Senate**, S 14600 - 14608, November 2, 1989; **Washington Post**, November 8, 1989; **Financial Times**, December 11, 1989).

- There is debate in the **United States** as to whether the Administration should permit the export to countries suspected of developing nuclear weapons and/or long-range missiles, of supercomputers that can be used to simulate nuclear explosions and the flight of high-speed ballistic missiles. The export of an IBM supercomputer to **Israel** is under consideration by the US Government; **Brazil** and **India** also seek to buy such devices. Several branches of the Government disagree on the matter: the Defense Department is said to be against such exports while the Departments of State and of Commerce want to raise the threshold for defining supercomputers that are subject to export restrictions. In Congress, Senator John Glenn has appealed to the President to stop the export — although the press notes that such computers may be available also from non-American sources (**The New York Times**, October 16, 1989; **News Release** from Senator John Glenn's Office, October 30, 1989; **Congressional Record - Senate**, S 14382-14384, October 31, 1989).

- Recent press reports reveal what appear to be violations by private individuals of nuclear non-proliferation measures. In **Japan**, eleven persons were apprehended trying to sell the United States Embassy two batches of natural uranium, with a total weight of about 4 kg, for $83 million. Seven suspects have since been released, because the nuclear safety law of 1957 under which they were arrested does not ban attempted transfer and possession of nuclear material. In **Greece**, early in October, a British national was arrested for illegal possession of 2.5 kilograms of uranium, which he sought to have assayed at a nuclear research laboratory. This was a sample of an amount of 250 kilograms which the suspect, in cooperation with a South African national, was to offer for sale to Libya, at $180,000 per kilogram. In mid-November an Austrian and a British national transporting 50 kg of low-enriched uranium across the border from Switzerland were arrested in **Austria**. A South African citizen was arrested in **Switzerland** in the same connection. This material is also thought to originate in **South Africa** (**KYODO**, 22 September 1989, in JPRS-TND-89-020, 26 October 1989; **Athens Radio** - domestic service, 11 October 1989 and **Athens News**, 12 October 1989, in JPRS-TND-89-020, 26 October 1989; **Nuclear News**, November 1989; **Tribune de Geneve**, 16 November 1989; **NuclearFuel**, November 27, 1989).

## II. PPNN Activities

- The Directors and several other members of the PPNN Core Group made presentations to a conference on "Nuclear Non-Proliferation: The Role of Private Organisations" on November 6-7 in Washington. This was organised by Leonard S. Spector on behalf of the Carnegie Endowment for International Peace.

- The PPNN Core Group held its sixth semi-annual meeting at the Parkhotel, Baden bei Wien, Austria from 16-19th November 1989. All members were able to attend except Warren Donnelly and Lewis Dunn (United States). The substantive "extended" part of the meeting on Saturday 18th and Sunday 19th November was also attended by five invited paper presenters: Carlos Buechler (IAEA retd — Argentina), Dr. Trevor Findlay (ANU — Australia), Professor George H. Quester (University of Maryland — United States), Professor Lawrence Scheinman (Cornell University — United States) and William Walker (Sussex University — United Kingdom); Dr. Arpad Prandler as an observer for the United Nations; Mrs Hilary Palmer as an observer from the Rockefeller Brothers Fund; and some 24 members of diplomatic missions to the IAEA and IAEA officials.

  The Core Group continued its systematic analysis of the issues likely to be raised in the 1990 NPT Review

Conference by focussing on Articles V, VI, VII and X. These discussions were introduced by papers from: Jayantha Dhanapala, **Article VI and the PTBT Amendment Conference**; Josef Goldblat, **Article VII the NPT and Nuclear Weapon Free Zones**; David Fischer, **Article X and the Nature of the 1995 Extension Conference**; and Trevor Findlay, **Article V: Peaceful Nuclear Explosions and the NPT: Letting a Dead Letter Lie.**

As part of its analysis of "functional issues", papers were considered from: William Walker and Frans Berkhout, **Safeguards and the Expansion of Civil Reprocessing and Plutonium Use**; Warren Donnelly and Lawrence Scheinman, **Possible Functions for the IAEA under a Fissile Material Cut-Off and in Connection with the Destruction of Nuclear Warheads and Decommissioned Facilities**; and Ian Smart, **Compliance with the NPT.**

Finally, in the context of "problem countries and regional questions", discussions took place on papers presented by George Questor, **Israel and South Africa** and Carlos Buechler, **Consequences of New Developments in Latin America.**

In the discussions which followed the presentations, the degree that the controversy surrounding the PTBT Amendment Conference might have a negative influence on the atmosphere for the NPT review conference was raised, as were methods of preventing this occurring. Detailed discussions took place on the degree to which new arms control agreements might lead to requests for expanding the role of the IAEA, and how such an expansion might be financed. Views were also exchanged on the problems posed by those states outside the treaty with significant nuclear facilities; by those which had unsafeguarded activities and might be about to join the treaty and by some of those who were parties.

Single copies of papers prepared for Core Group meetings are available on personal request to John Simpson at the address on the back cover of this **Newsbrief.**

- Upon invitation by the League for the United Nations of the German Democratic Republic Ben Sanders, PPNN Core Group Chairman, visited that country on 20-24 November. On 22 November he gave a lecture about the prospects for the 1990 NPT Review Conference, at the Institute for International Relations. On 23 November he visited the National Board for Atomic Safety and Radiation Protection of the GDR, where he met with the acting Director of that organisation, Dr. Walter Roehnsch, and addressed a group of its staff on the subject of nuclear nonproliferation. He also paid a visit to the Peace Council of the GDR.

- The Second PPNN Conference for working level diplomats on issues likely to arise at the 1990 NPT Review Conference will take place in Guernsey, UK Channel Islands over the weekend of 11-14 May 1990. Attendance will be by invitation only. The conference is intended mainly for members of diplomatic missions based in Geneva who expect to attend the 1990 review conference.

- The Seventh PPNN Core group meeting and second "Extended Core Group Meeting" is scheduled to take place in Geneva from 22-26th June 1990. This meeting will take place in the Graduate Institute, Geneva and in the Geneva Conference Centre. It will include a seminar on the Review Conference for senior diplomats based in Geneva on Monday, 25th June and media presentations on the same subject on Tuesday, 26th June.

- The Eighth PPNN Core Group meeting, which will mainly be devoted to analyses of the 1990 NPT review conference and its consequences, will take place at the University of Virginia, Charlottesville, USA from 9-11th November 1990. This will be the last meeting in the current phase of the PPNN programme.

- PPNN published the fourth volume in its Occasional Paper Series "New Technology, the NPT and the IAEA Safeguards System" by Adolf von Baeckmann and Dennis Fakley in November 1989. **Occasional Paper No.5,** "New Concepts in Nuclear Arms Control: Verified Cut-off and Verified Disposal" by Lawrence Scheinman and Warren Donnelly will be launched at a press conference in Washington on 22nd February. **Copies of all Occasional Papers are distributed to those on the PPNN mailing list as a matter of course. Persons wishing to receive additional copies should write to John Simpson at the address given at the end of this Newsbrief.**

## III. Other Non-Governmental Groups Active in Related Areas

- It is the intention of the editor of the PPNN Newsbrief to ask other groups working in the field for information on their activities, in order to strengthen the PPNN Newsbrief's information role in this area. To this end, questionnaires have been circulated to groups with copies of this **Newsbrief.** This proposal was made at the conference on "Nuclear Non-Proliferation: the Role of Private Organisations" in Washington in November. The Conference itself was attended by some 60 representatives of groups in North America and Europe.

- The annual workshop of the Peace Research Institute, Frankfurt (PRIF) European Nuclear Non-Proliferation Policy Project took place in Constanz, FRG from 8-11 October 1989. Work focused on organising a survey programme to investigate attitudes to nuclear non-proliferation in West European states. First results from this programme are intended to be published prior to the 1990 NPT review conference.

- The PRIF European Nuclear Non-Proliferation Policy Project organised a briefing for Italian government officials who will participate in their country's activities as President of the EEC from July 1990 onwards at ENEA in Rome on Monday, 4th December 1989.

- The Verification Technology Information Centre (VERTIC), based in London, is currently working on a project on the scientific aspects of verification of a comprehensive nuclear test ban treaty. This project is sponsored by Parliamentarians for Global Action (PGA). On 28th November, the VERTIC working group attended a meeting at PGA in New York to discuss progress on preparation of the draft protocols on verification due to be presented at the forthcoming amendment conference of the Partial Test Ban Treaty.

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

**Books:**

Arms Control Association, **Arms Control and National Security**, (Washington DC: Arms Control Association, 1989), 176 pp.

P. Lomas and H. Mueller (eds.), **Western Europe and the Future of the Nuclear Non-Proliferation Treaty**, (Available from Centre for European Policy Studies, 33 Rue Ducale, Brussels, Belgium, 1989) 150pp.

**Articles and other materials:**

T. Cochran, "Black Sea experiment only a start", **The Bulletin of the Atomic Scientists**, Vol. 45, No. 9, November 1989, pp. 12-16. [verification of ship-borne nuclear weapons]

J. Goldblat, "Nuclear Non-Proliferation: A Balance Sheet of Conflicting Trends", **Bulletin of Peace Proposals**, Vol. 20, No. 4, December 1989, pp. 369-87.

W. Lanouette, "Plutonium — no supply, no demand?", **The Bulletin of the Atomic Scientists**, Vol. 45, No. 10, December 1989, pp. 42-45.

G. Milhollin, "India's missiles — with a little help from our friends", **The Bulletin of the Atomic Scientists**, Vol. 45, No. 9, November 1989, pp. 31-35.

A. Miller, "Toward Armageddon: the Proliferation of Unconventional Weapons and Ballistic Missiles in the Middle East", **Occasional Paper No. 36**, Centre for International Relations, Queen's University, Kingston, Ontario, 31pp. [includes section on Israeli nuclear policy]

"Nuclear Glasnost II", **The Amicus Journal**, Fall 1989, pp. 30-33. [NRDC article on Black Sea verification experiment]

J. Singh, "India's Nuclear Policy: A Perspective", **Strategic Analysis**, Vol. XII, No. VIII, November 1989.

G. Thompson, "A Global Approach to Controlling Nuclear Weapons", **Occasional Paper No.2** in the Series "Perspectives on Proliferation", Institute of Resource and Security Studies, October 1989.

A. Vanaik, "Nuclear Insecurity in the Indian Subcontinent: An Uneasy Truce", **Bulletin of Peace Proposals**, Vol. 20, No. 4, December 1989, pp. 389-98.

## V. Documentation

A/RES/44/106

15 December 1989

AMENDMENT OF THE TREATY BANNING NUCLEAR WEAPON TESTS IN THE ATMOSPHERE, IN OUTER SPACE AND UNDER WATER

The General Assembly

Reiterating its conviction that a comprehensive nuclear-test-ban treaty is the highest priority step towards nuclear disarmament,

Recalling its resolution 1910 (XVIII) of 27 November 1963 in which it noted with approval the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water(1) signed on 5 August 1963, and requested the Conference of the Eighteen-Nation Committee on Disarmament(2) to continue with a sense of urgency its negotiations to achieve the objectives set forth in the preamble of the Treaty,

Convinced that, pending the conclusion of a comprehensive nuclear-test-ban treaty, the nuclear-weapon States should suspend all nuclear test explosions through an agreed moratorium or unilateral moratoria,

Noting that Article II of the Treaty provides a procedure for convening a conference of the parties to consider amendments to the Treaty,

Noting also that, in its resolution 42/26 B of 30 November 1987, it recommended that the non-nuclear weapon States parties to the Treaty formally submit an amendment proposal to the depositary Governments with a view to convening a conference at the earliest possible date to consider amendments to the Treaty that would convert it into a comprehensive nuclear-test-ban treaty and that, by its resolution 43/63 B of 7 December 1988, it welcomed the submission of such an amendment proposal,

Noting further that the Ninth Conference of Heads of State or Government of Non-Aligned Countries, held at Belgrade from 4 to 7 September 1989, supported the initiative to convene, as soon as possible in 1990, an amendment conference to convert the Treaty into a comprehensive nuclear-test-ban treaty, (3)

Considering that more than one third of the parties have requested the convening of a conference to consider such an amendment, and that Depositary Governments have announced their intention to comply with their obligations under the Treaty,

Convinced that such a conference will serve to strengthen the Treaty,

1.Recommends that a preparatory committee be established, open to all parties to the Treaty be established to make arrangements for the amendment conference and that such preparatory committee meet at United Nations Headquarters

from 29th May to 1 June 1990, followed by a one week session of the conference from 4 to 8 June 1990 and a second substantive session from 7 to 18 1991;

2.Recommends also that the costs of the conference and its preparatory committee should be shared among the States parties to the Treaty on the basis of the present scale of assessments of the United Nations;

3.Requests the Secretary-General to render the necessary assistance and provide such services, including summary records, as may be required for the amendment conference and its preparation;

4.Invites the amendment conference to transmit to the General Assembly the documents it deems appropriate to keep the assembly duly informed of its ongoing work;

5.Decides to include in the provisional agenda of its forty-fifth session the item entitled "Amendment of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water".

Notes:
(1) United Nations, **Treaty Series**, Vol. 480, No. 6964.
(2) The Committee on Disarmament was redesignated the Conference on Disarmament as from 7 February 1984.
(3) See A/44/551-S/20780, annex.

## Annex — PPNN Papers

### Papers Presented to the Sixth Core Group Meeting, Baden bei Wien, November 1989

30. Jayantha Dhanapala, **Article VI and the PTBT Amendment Conference**
31. Josef Goldblat, **Article VII the NPT and Nuclear Weapon Free Zones**
32. David Fischer, **Article X and the Nature of the 1995 Extension Conference**
33. Trevor Findlay: **Article V: Peaceful Nuclear Explosions and the NPT: Letting a Dead Letter Lie**
34. William Walker and Frans Berkhout, **Safeguards and the Expansion of Civil Reprocessing and Plutonium Use**
35. Warren Donnelly and Lawrence Scheinman, **Possible Functions for the IAEA under a Fissile Material Cut-Off and in Connection with the Destruction of Nuclear Warheads and Decommissioned Facilities** (Revised version to be published as "New Concepts in Nuclear Arms Control: Verified Cutoff and Verified Disposal", PPNN Occasional Paper No.5)
36. George Questor, **Israel and South Africa**
37. Ian Smart, **Compliance with the NPT**
38. Carlos Buechler, **Consequences of New Developments in Latin America**

Single copies of PPNN Papers are available on personal request to John Simpson at the address below. A list of earlier PPNN Papers was printed in **Newsbrief** No.7.

## 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, and particularly among their younger members, 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 the Programme for Promoting Nuclear Non-Proliferation but interested in the subject, to inform and help them alert their respective environments to the issue of nuclear non-proliferation.

The **Newsbrief** is published on behalf of the Programme for Promoting Nuclear Non-Proliferation by the Centre for International Policy Studies, Department of Politics, University of Southampton. Communications relating to its content and other editorial matters should be addressed to Ben Sanders at 240 East 27th Street, New York, New York 10016, USA. Those relating to production and distribution should be addressed to John Simpson, Department of Politics University of Southampton, Southampton, SO9 5NH, United Kingdom.

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