# January 1989

## Programme for Promoting Nuclear Non-Proliferation, Newsbrief, Number 4

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# PROGRAMME FOR PROMOTING NUCLEAR NON-PROLIFERATION

Number 4 **NEWSBRIEF** January 1989

## Editorial note

This issue of the **Newsbrief** is the fourth in a series of informal publications on current events in the area of nuclear non-proliferation that are issued at approximately three-monthly intervals. Previous issues were published in March, July and November of 1988.

Initially conceived as a communication from the chairman of the Core Group of the Programme for Promoting Nuclear Non-Proliferation (PPNN) to the members of that Group, the **Newsbrief** is now distributed to a growing number of other persons interested in the topics covered. For the benefit of readers unacquainted with PPNN or the **Newsbrief**, a short introduction to PPNN's aims and activities and an outline of the purposes of the **Newsbrief** are to be found at the end of this issue.

The **Newsbrief** seeks to present topical items of information on various aspects of nuclear non-proliferation, including references to actual or potential moves towards the spread of nuclear weapons to additional States. It endeavours to do so as objectively as possible, reflecting information made public by reputable sources, without commenting on its validity or drawing conclusions. In selecting items for inclusion, the editor seeks to give a fair representation of positive as well as of negative developments. Readers who nevertheless find substantive grounds to take issue with any item included in the **Newsbrief**, or to otherwise react to its contents are invited to send their comments to the editor, so they may be published in a subsequent issue. One such comment is reproduced in section VI.

The chairman of the PPNN Core Group, as editor of the **Newsbrief**, 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 with its substance or with its relevance to the Programme.

## I. Topical developments

### Introductory Remarks

The present issue of the **Newsbrief** covers developments in the field of non-proliferation from late Summer/early Autumn of 1988 onward. As in preceding issues, readers are once again reminded that questions of international security - including the issue of nuclear non-proliferation - tend to have long histories and that the import of current developments can be fully understood only against the background of that history. The **Newsbrief** obviously cannot present that background for all the items reported. This is one reason why a brief bibliography of new publications is included, to help provide a background against which reports on recent events may be better appreciated.

### a. Present Situation

Events in the year just past give little reason to be sanguine about nuclear proliferation. None of the States with significant nuclear activities outside the international non-proliferation regime has made any move to enable the international community as a whole to assure itself of the strictly peaceful character of those activities. Means of delivery, especially ballistic missiles, are proliferating. A State that has nuclear weapons and intermediate-range missiles to carry them can be relatively confident of hitting a target without interception and without suffering the effects of a nuclear detonation in its more immediate vicinity. The spread of such means of delivery therefore increases concern that nuclear weapons might be used in regional conflicts. Moreover, conventionally armed missiles targeted on near-nuclear countries may prompt a nuclear response or even a preventive strike. This risk is still greater where nuclear-capable countries fear that an actual or potential opponent may use missiles to carry chemical agents.

The increased interest among non-nuclear weapon States in acquiring nuclear-powered submarines may stimulate a new form of nuclear rivalry and a novel kind

of proliferation. The use of such vessels by States that have otherwise submitted all their peaceful nuclear activities to international safeguards complicates the verification of their non-nuclear weapon status, for it means that important parts of their nuclear fuel cycle may be outside safeguards. When this is done by a State like Canada, which prides itself publicly on its safeguards record and its policy of making nuclear exports only to countries that have accepted "full-scope" safeguards, it does little to strengthen the international non-proliferation regime.

The clandestine trade in materials, equipment 'and machines, or parts thereof, for use in unsafeguarded fuel cycle activities in near-nuclear countries, is continuing, sometimes in blatant disregard of export regulations. It is alarming that the governments of some of the exporting countries involved - all of which are parties to the NPT - appear to be unable and even unwilling to prevent such exports and to prosecute violators to the full extent law permits.

Lately, there has been increasing criticism in the public media of the efficacy of the safeguards system operated by the International Atomic Energy Agency, and of the way the Agency applies that system. Much of the comment is based on a lack of understanding and information. At times, the comments seem to be inspired by a tendency to discredit the value of any work done by a UN-related body. Whatever the cause, however, the criticism is dangerously detrimental to the confidence that IAEA safeguards should create. It is therefore crucial that both the Agency and the States that support that body and its role in upholding non-proliferation should do their utmost to enlighten the media and the public in this matter.

Recent developments in the United States also would not seem conducive to strengthening the non-proliferation regime. Revelations by the General Accounting Office of slack security at major weapons laboratories raise concerns about the adequacy of the protection of technological data that might be used in the manufacture of nuclear weapons. Furthermore, the reports of long-standing shortcomings in the management of American installations for the production of weapons materials set a sorry example to nations which may so far have refrained from sacrificing health and safety to speed and quantity in the production of nuclear weapons. Shortages of newly produced plutonium and tritium may have a negative effect on moves to restrict nuclear testing, because it may be taken as a ground for increasing tests to check weapon reliability. Moreover, if such shortages lead to the use of hitherto non-military installations for the production of these materials, the dividing line between military and civilian production in the United States would disappear. That division has long been proclaimed as basic to that country's non-proliferation policy, and a deliberate departure from the principle of separation could be a serious setback to that policy. In this connection it is also relevant to note earlier reports that plutonium produced in British power reactors may have been applied to military purposes, in the United Kingdom as well as in the United States.

And yet on the positive side of the equation, the concept of nuclear non-proliferation appears to have assumed increasingly the character of a behavioral norm for the international community. It is striking that even nations widely suspected of developing nuclear weapons have so far refrained from openly deploying them. Most deny that they are producing nuclear explosives. At least one State which has demonstrated its capacity to detonate a nuclear device maintains that this had peaceful purposes. It would seem fair to suppose that the denials are more than just a cover for secret moves towards a nuclear-weapon capability. They would seem to reflect, at the very least, a recognition that the international community feels uncomfortable with would-be proliferators in its midst. Some of the denials may also be evidence that would-be proliferators themselves feel uncomfortable in that position, and might be open to political solutions that would permit them to step back from the threshold. This view may seem overly optimistic, yet the only way out of the current impasse does seem to lie in a realistic combination of an awareness of impending peril and a willingness to help nuclear hold-out States find solutions that would enable them to be recognized as **bona fide** members of the peaceful nuclear community.

Some comfort may also be gained from three other developments. The first is the entry into force of the US-USSR INF Treaty and the generally constructive and optimistic tone of nuclear arms limitation negotiations. These developments go some way to demonstrating that the nuclear weapon States are fulfilling their responsibilities under Article VI of the NPT. The second is that there has been evidence of a slow growth of bilateral understandings between Argentina and Brazil and between India and Pakistan concerning the need to assure each other of the peaceful nature of their nuclear activities and to create a system of mutual inspection of their nuclear facilities. Unfortunately, none of these States seem prepared at the moment to assimilate such bilateral understandings into the NPT/IAEA non-proliferation regime. Finally, the year has also seen activity by South Africa over its possible acession to the NPT. However, on current evidence, this appears to have been aimed more at postponing the threat of its suspension from the IAEA than paving the way for entry into the Treaty.

### b. NPT Events

On 7 December 1988 the General Assembly of the United Nations adopted - with 137 votes in favour, none against and 11 abstentions - a resolution which noted that an open-ended preparatory committee (for the fourth review conference of the NPT) had been formed of parties to the NPT serving on the Board of Governors of the IAEA or represented on the Conference on Disarmament, as well as any party to the Treaty which may express its interest in participating in the work of the preparatory committee. The resolution (which does not substantively differ from resolutions adopted on the subject in 1973, 1978 and 1983, ed.) requests the Secretary-General "to render the necessary assistance and to provide such services, including summary records, as may be required for the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons and its preparation" (**General Assembly Document Res.43/82**, reproduced in Section V of this Newsbrief). It is understood that the preparatory committee will hold its first session in New York, on 1-5 May 1989.

### c. Other Non-Proliferation Developments

- Following an invitation from the President of Argentina, Raul Alfonsin, the President of **Brazil**, Jose Sarney, visited the pilot reprocessing plant at Ezeiza on 28 and 29 November. The two Presidents issued a "Joint Declaration on Nuclear Policy" in which they, **inter alia** emphasized "the Concordance of the Argentine and Brazilian positions on the main nuclear issues in the field of international politics" and "the strengthening of their mutual confidence obtained through a growing and reciprocal knowledge and through efforts to develop important new projects..." They further "underlined" their decision to start a "Fast Breeder Reactor Joint Project" and "decided", through a Permanent Committee on Nuclear Policy, "to continue promoting the various joint projects and the fluent (sic) exchange of information, experiences and technical visits..." (**Unofficial Translation from Embassy of Argentina**, Washington, D.C. December 14, 1988). Ezeiza was the only nuclear installation in either country that had not yet been opened to view by the other side, under the programme of reciprocal visits agreed in 1985. The reprocessing plant is due for completion in 1990 and is designed to separate 15 kilograms (33 lbs, ed.) of plutonium a year. Argentina claims it is an indigenously constructed facility, and denies reports that companies in Italy and the Federal Republic of Germany have assisted in its completion. Consequently, Argentina will only allow IAEA inspectors into the plant when spent nuclear fuel subject to safeguards by that body is being processed (**Nucleonics Week**, November 24, 1988).

- The Federation of American Scientists is calling on three major American banks, Citicorp, Bank of America and Manufacturers Hannover, to use their financial leverage in **Argentina** and **Brazil** to discourage these countries from developing nuclear weapons. Argentina and Brazil are said to owe these banks collectively more than $ 10-billion. The move takes the form of a draft resolution for consideration by stockholders of the institutions concerned (**Nuclear Fuel**, November 14, 1988).

- An agreement between **India** and the **IAEA** for the application of IAEA safeguards in connection with a nuclear power station to be supplied by the **USSR** was signed in Vienna on 27 September 1988 (**IAEA Newsbriefs**, Vol. 3, No.8, 5 October 1988).

- At her first press conference on Saturday 3rd December 1988, Prime Minister Benazir Bhutto of **Pakistan** stated that "Pakistan is committed to the peaceful use of nuclear energy and Pakistan stands for a weapons-free policy in the nuclear field (source: **Permanent Mission of Pakistan to the United Nations in New York**). There exists doubt, however, that Ms Bhutto will be able to "beat back" the pro-nuclear pressures of the opposition, the army and Pakistani public opinion (**New Republic**, US, December 1988). The presence of **India**'s Prime Minister Rajiv Ghandi in Islamabad for a conference of the South Asian Association of Regional Cooperation enabled the two Prime Ministers to have extensive talks, during which they **inter alia** signed an agreement not to attack each other's nuclear installations. The agreement is "seen by officials of both sides as a possible first step towards a nuclear nonproliferation accord". Experts are reported to have said, however, that this will take some time to achieve, since there are lobbies in both countries thought to be pressing for weapons development (**The New York Times**, December 31, 1988).

- **Norway** has announced that it plans to forbid the export of heavy water (deuterium oxide), following reports that in 1983 a 15-ton shipment of this material, meant for the **Federal Republic of Germany**, had been diverted to **India** ( **The New York Times**, November 4 and 22, 1988; **Nuclear News**, December 1988). A draft agreement between **Norway** and **Israel**, under which the latter would allow Norwegian officials to inspect a portion of the heavy water supplied by Norway under an agreement of 1970 that provided for the material to be used only for peaceful purposes, was rejected by the Norwegian parliament because it did not allow for

the inspection to take place at the Dimona facility (**Wall Street Journal**, October 11, 1988).

- The **United States** is in the process of revising the dual-use export list of the Department of Commerce. This lists the commodities that are controlled for nuclear non-proliferation reasons and includes items that might be useful to a centrifuge enrichment facility (**Nuclear Fuel**, November 28, 1988).

  With effect from 12 December 1988, the Nuclear Regulatory Commission of the **United States** has tightened its regulations for physical protection and security personnel performance with regard to special nuclear material (**Federal Register**, Vol. 53, No. 218, November 10, 1988; Rules and Regulations).

### d. Nuclear Trade

- **Argentina:** Recent discussions with the **United States** on cooperation in matters of nuclear safety may lead to the conclusion of an agreement in that field. Argentina is cooperating, or negotiating nuclear cooperation agreements with several States, involving, among other things, the sale of research reactors, uranium ore processing installations and equipment for the fabrication of fuel elements. The States in question include **Albania** (supply of a research reactor); **Algeria** (supply of a research reactor and 80 kg of uranium enriched to 19.7 %); **Peru** (assistance in the establishment of a nuclear centre); **Rumania** (supply of fuel fabrication machinery); **Turkey** (provision of a new research reactor core; training; possible other areas of cooperation ) and **Zaire** (technical assistance) (**Nuclear Engineering International**, November and December 1988). An "umbrella" agreement for nuclear cooperation was also signed with **Egypt** (**Nucleonics Week**, December 15, 1988). It is noted that as a general rule, IAEA safeguards will apply to all nuclear material covered by these agreements.

  It was expected that during the visit of the President of Argentina to the **Federal Republic of Germany**, in late November 1988, an agreement would be signed under which the latter would agree to finance the completion of Argentina's Atucha-2 nuclear power station (**Nucleonics Week**, November 17, 1988).

- **Iran:** On 26 September 1988 the IAEA Board of Governors approved the supply to the Islamic Republic of Iran of enriched uranium for the continued operation of Iran's 5-MW research reactor, which is being converted from high- to low-enriched uranium. The uranium is to be supplied by **Argentina** and will be under IAEA safeguards by virtue of the fact that Iran is a party to the NPT (**IAEA Newsbriefs**, No. 3, Vol. 8, 5 October 1988). **Argentine** and **West German** companies are assessing the damage to the Bushehr-1 nuclear power complex, which was heavily damaged by Iraqi bombs in 1987. Work on the reactor had stopped when it was about 50% complete, in 1979. The two countries are said to be interested in helping to rebuild Iran's nuclear infrastructure (**Nucleonics Week**,December 8, 1988)

- **Nigeria:** In August 1988, **Argentina** and Nigeria signed an agreement for scientific and technical cooperation that will provide the basis for potential exports of nuclear supplies and services. IAEA safeguards will apply. Nigeria is developing two uranium mines, for which Argentina could provide technical assistance (**Nucleonics Week**, September 22, 1988).

- **Federal Republic of Germany:** Siemens-Kraftwerk Union and Asea Brown Boveri agreed in principle last October to build a 200MW high-temperature gas-cooled reactor at Dimitrovgrad in the **USSR**. Since the proposed deal may involve the export of sensitive (computerised control) technology, American officials are said to have raised objections to the transaction (**New Scientist**, 10 December 1988; **Nuclear Engineering International**, December 1988).

- **India:** An agreement was signed with the **USSR** on 20 November 1988, under which the latter will finance 6-billion rubles worth of industrial projects, including a nuclear power station at Kudankulam in Tamil Nadu, South India. This will consist of two advanced 1000-MW VVER (pressurized water) reactors which will be built by the USSR on a turnkey basis (**Nucleonics Week**, November 24, 1988).

- **Japan:** The **United States** State Department has informed the Congress of the adoption of a "subsequent arrangement" to the nuclear cooperation agreement of 17 July 1988. This "arrangement" gave Japan long-term approval to ship separated plutonium covered by the cooperation convention by sea from Europe. Initially, shipments were to have been made by air only, but Japan feared that it would be unable to build crash-proof casks for air transport. Japan will provide naval escorts for its shipments, plans for which have to be approved by the US Department of Defence (**Washington Post**, November 10, 1988). The new arrangement will enable Japan to have mixed-oxide fuel fabricated in Europe (**Nuclear Fuel**, October 3, 1988).

  Japan's utility companies have announced that they

will stop importing uranium from **South Africa**. The limited trading sanctions Japan has imposed on South Africa do not extend to "strategic materials", including uranium. This material is of particular importance to Japan, which depends on nuclear energy for more than a quarter of its electric power production. South African uranium is said to have accounted for 11 per cent. of Japan's uranium imports. The shortfall will be made up through increased purchases of Australian, Canadian and US uranium. It is noted that Japan normally buys its uranium in the form of hexafluoride. As this is enriched in France or the US before being imported its source cannot always be determined (**The New York Times**, November 2, 1988, **Nuclear Engineering International**, December 1988).

## e. IAEA Developments

### 1. Safeguards

- Under the heading "Plutonium for all: Leaks in Global Safeguards", the Bulletin of the Atomic Scientists of December 1988 contained an article by Richard Bolt, a research officer for Senator Norman K. Sanders of Australia. On the basis of the author's interpretation of the IAEA's **Safeguards Implementation Report,** this raises serious doubts about the adequacy of the Agency's safeguards system. Similar reports have appeared in the daily press; for instance: "At least eight countries may have developed nuclear weapons outside the safeguards of the International Atomic Energy Agency according to the confidential 1987 annual report to the agency's governors" (**The Guardian**, 4 November 1988).

- The Federal Republic of Germany, France, Japan, the United Kingdom and the United States, all holders of commercial reprocessing technology, have set up a group ("LASCAR" - for "Large Scale Reprocessing) to help the IAEA develop **safeguards for the new generation of large reprocessing plants** which are scheduled to come on line in the next few years. The Agency is itself studying safeguards approaches for the growing number of civilian installations with large plutonium inventories, including mixed-oxide fuel fabrication plants (**Nuclear Fuel**, October 31, 1988)

### 2. Board of Governors

- The Board of Governors of the IAEA now has the following 35 members: Algeria, Argentina, Australia, Brazil, Canada, China, Colombia, Cote d'Ivoire, Cuba, Denmark, Egypt, France, German Democratic Republic, Federal Republic of Germany, Ghana, Hungary, India, Indonesia, Japan, Republic of Korea, Kuwait, Libyan Arab Jamahiriya, Malaysia, Mexico, Netherlands, Pakistan, Peru, Senegal, Spain, Switzerland, Turkey, USSR, United Kingdom, United States and Yugoslavia. Its Chairman is Amb. Michael Shenstone (Canada), and its Vice-chairmen are Dr. Georg Sitzlack (GDR) and Amb. Hocine Mesloub (Algeria).

### 3. Finance

- The US Congress has decided that the IAEA should receive in fiscal year 1989 an American voluntary contribution of $ 21.8 million. This is $ 2-million less than the Administration had requested, but $9.5-million more than the Senate had proposed paying. Most of this contribution will be used to support IAEA safeguards. (**Nucleonics Week,** October 6, 1988).

## f. Peaceful Nuclear Developments

- **China:** is planning to complete two power reactors at Qinshan, on the Yellow Sea, South of Shanghai by the mid-1990s. A 300-MW pressurized water unit is now under construction there, and the site has been prepared for three more reactors. Siemens AG Kraftwerk Union of the Federal Republic of Germany is mentioned as a possible supplier of part of the installation (**Nucleonics Week**, November 24, 1988).

- **India:** has been reported as planning to construct ten further power reactors [four of 235-MW and six of 500-MW] to reach a target of 10,000 MWe by the year 2000 (**Nuclear Engineering International**, December 1988). Since it appears that two of these facilities were previously planned but not announced, a total of only eight entirely new reactors would be built under this new programme. They would bring the total of indigenously developed heavy-water reactors in India to 22. The two Soviet-supplied units bring this total up to 24, with a total gross capacity of 8110 MWe. (**Nuclear News**, December 1988).

- **Mexico:** Against environmentalist opposition, the government has ordered the start-up of Mexico's first nuclear power plant, at Laguna Verde, in the state of Vera Cruz. This is one of two 654-MW light water reactors planned in the mid-1960s as part of a programme involving at least eight power reactors. The Laguna Verde plant, which was originally budgeted at $ 550-million, has so far cost more than $ 3.5-billion. Plans for the remaining reactors have been shelved.

- **USSR:** Environmentalist opposition in Lithuania, has forced the suspension of the construction of a

power station there, of the same design as the one which failed at Chernobyl (**The Globe and Mail** (Toronto), October 25, 1988).

- **United States:** the first commercial nuclear power plant, Shippingport is being dismantled. It was commissioned in 1957 and has since then generated 6.5-billion KW electricity. The plant is the largest nuclear unit and the only commercial nuclear reactor in the United States to be dismantled so far: other decommissioned nuclear installations have been mothballed or entombed. Authorities expect that all radioactive material can be removed and the site returned to unrestricted use. The job is expected to be finished by 1990 at a cost of $ 98-million (**The New York Times**, December 15, 1988). Against wide-spread opposition, especially from State officials, the 670-MW 'Pilgrim' nuclear power reactor at Plymouth, Massachusetts, has been cleared to restart after a shut-down of three years (**The New York Times**, January 1, 1989).

### g. Developments of Concern for Vertical Proliferation

- **China:** is reported to have become the third largest nuclear power. Disposing of a "triad" of air-borne, land-based and sea-based nuclear weapons, it aspires to acquire a fourth means of delivery: space-based (**Memorandum of the American Enterprise Institute for Public Policy Research**, Fall 1988, No. 56).

- **United Kingdom:** The research centre of the Atomic Energy Authority at Harwell, which had been publicised as being engaged exclusively in peaceful nuclear research, is reported to be carrying out research and development work related to nuclear weapons on behalf of the Atomic Weapons Establishment at Aldermaston (**The Observer**, 4 December 1988).

- **USSR:** A report being prepared for the **United States** Congress claims that several hundred SS-20 missiles were moved atop their launchers to destruction sites. If correct, this would violate the INF treaty, which provides that missiles should be moved separately from their launchers, so that they cannot be diverted and hidden for subsequent use (**Washington Post**, December 1, 1988).

- **United States:** The nuclear weapons industry is reported to be suffering the consequences of long-standing defects in the operation and management of many of its installations. Operational safety and radiation protection problems in at least 17 facilities, affecting both operating personnel and, in some cases, persons living in the vicinity, have led to a number of them having to be temporarily or permanently closed. The problems seem to have arisen at plutonium and tritium production reactors, nuclear material fabrication plants, a uranium enrichment plant, radioactive waste disposal and treatment installations, weapons research and testing sites and a variety of associated waste processing and dumping operations (**The New York Times**, October 23, December 4, 6, 7, 27 and 31; **Bulletin of the Atomic Scientists**, December 1988; **Arms Control Today**, December 1988).

The Department of Defense is seeking funding for several new production reactors (**Nucleonics Week**, November 17, 1988). These proposals are causing "uneasiness" in Congress, in the light of recent reports that a number of projects started by DOE since 1970, at an expense of about $ 15-billion, were abandoned because the installations involved were inoperable or unnecessary or because it was found that their functions could be undertaken less expensively, more safely or more efficiently in other facilities (**The New York Times**, December 12, 1988).

An Executive Order has been issued for the Nuclear Regulatory Commission to make a plan under which the Federal Government would be able in an emergency to suspend licenses of civilian reactors and converting them to produce "special nuclear materials" (**Executive Order of November 18, 1988**; **The New York Times**, November 22 and 27, 1988). The shut down of the Savannah River production reactors is leading to debate about the consequences of a possible shortage of weapons materials, in particular tritium; decreasing public confidence in the safety of operations conducted by or for the US Department of Energy and concern about the apparent lack of public oversight of these operations; and apprehension about repercussions on non-proliferation of a departure from the traditional doctrine, that the dividing line between civil and military uses of nuclear technology should be carefully maintained. It has also been suggested that a shortage of tritium might be a positive factor supporting moves toward arms reduction (**Science**, Vol. 241, 2 September 1988; **The New York Times**, November 22 and 27 and December 10 and 11, 1988; **GAO/OCG-89-16TR**, November 1988).

In a report to Congress published on 29 September, the Administration stated that a reduction in its strategic nuclear arsenal might increase the need for nuclear testing; that it had not decided what additional testing limits it might agree to, though a 10-kiloton limit was "almost certainly" unacceptable; and that it did not regard "nuclear testing as an evil to be cur-

tailed" (**The Arms Control Reporter**, October 1988). Under the Nuclear Test Ban Readiness Program, a provision of the Federal Law authorizing the 1989 military budget of the US, the Department of Energy is obliged to develop ways to ensure the reliability of nuclear weapons without explosive testing, in preparation for a comprehensive test ban treaty. This law requires, among other things, expanded inspection of American nuclear weapons for faulty components and new programmes to ensure that proven designs can be duplicated if necessary (**The New York Times**, October 10, 1988).

The United States and the **Soviet Union** have failed to resolve their differences over how to monitor compliance with the 1974 Threshold Test Ban Treaty. As a result, the Reagan Administration has not asked the Senate to approve the TTBT (**The New York Times** and **Washington Post**, December 16, 1988).

The Defense Department has decided to modify its ground-based laser and to shift it from the defensive role of shooting down enemy missiles initially foreseen to the offensive function of destroying satellites in space. The device is being upgraded accordingly and could be tested as a "satellite killer" in the course of 1989 (**The New York Times**, January 1, 1989).

The Central Intelligence Agency is reported to have advised the American Joint Chiefs of Staff in a secret briefing in the first part of December, that verification of compliance with a START treaty with the **USSR** which reduced strategic nuclear arsenals by 50% would pose severe problems and might take several years to solve (**Washington Times**, December 21, 1988).

### h. Developments of Concern for Horizontal Proliferation

- **Canada:** The victory of Prime Minister Mulroney's Progressive Conservative Party in Canada's general election in November is thought to make it more likely that Canadian plans to buy a nuclear submarine fleet, postponed pending the outcome of those elections, will be carried out (**Bulletin of the Atomic Scientists**, November 1988; **Defense Week**, November 28, 1988). The **US** Administration has approved the transfer to Canada of American nuclear propulsion technology incorporated in the **UK** Trafalgar-class 4,500-ton hunter-killer submarine. **France** has offered to cooperate with Canada in the development of a Rubis-Amethyste class submarine specially designed to meet that country's purposes (**Jane's Defence Weekly**, 22 October and 12 November 1988; **Strategic Digest**, July 1988).

- **India:** The threat to the non-proliferation regime that arises from the acquisition of nuclear submarines by non-nuclear weapon States comes from the structural infirmity of that regime. If such programmes hasten a reappraisal of the regime, "it would only help promote international efforts for a more just and equitable safeguards system to replace the NPT after it expires in 1995" (**Indian Express (New Delhi)**, October 4, 1988).

  A senior Indian nuclear scientist employed on India's nuclear submarine 'Chakra', Dr. A.V. Suryanarayana, has died. There are reports that his death resulted from radiation exposure (**Jane's Defence Weekly**, 19 November 1988).

  By mid-1989, India will have six operational MiG-23BN and MiG-27M squadrons "armed with nuclear weapons" (**Defense and Foreign Affairs Weekly**, October 3-9, 1988).

- **Israel:** A report by the public prosecutor in Rome, Italy, concludes that Mordechai Vanunu was not kidnapped by the Israeli secret service, as had been widely believed, but was cooperating with the Israeli authorities in a "well-organised disinformation operation" (**The Economist**, September 24, 1988).

  The **US** was reported in November 1988 to be negotiating with Israel for the establishment of a joint missile test bed in that country. The 'Shavit' booster used to launch Israel's first satellite, in September 1988, is believed to be a version of the Jericho-2 ballistic missile (**Jane's Defence Weekly**, 5 November 1988; **Aviation Week and Space Technology**, October 3, 1988).

- **United States**: The programme to develop low-enriched uranium fuel to replace high-enriched fuel in research and test reactors (RERT) may be phased out or at least further curtailed, for lack of funds (**Nuclear Fuel**, October 3, 1988).

  Major weaknesses have been reported in the foreign visitor programme of the United States Department of Energy. Suspected foreign agents and individuals from facilities thought to be engaged in nuclear weapons activities have obtained access to the laboratories without the Department's prior knowledge (**Report by the United States General Accounting Office**, GAO/RCED-89-31, October 1988). The Department of Energy "does not have sufficient checks and balances in its foreign visitor controls to ensure that nonproliferation and security concerns are appropriately considered ..." (**testimony by Keith O. Fultz**, GAO senior associate director, at a hearing by the Senate Committee on Governmental Affairs; October 11, 1988). "As a result, concerns have been raised in the Congress and by non-proliferation experts about the continued

dissemination of nuclear information and the export of nuclear-related equipment and technology." (**GAO/OCG-89-16TR Energy Issues**, November 1988).

## II. PPNN Activities

The PPNN Core Group held its fourth semi-annual meeting from 18 to 20 November 1988 at the University of Virginia, Charlottesville, United States. Members attending were Benson Agu (Nigeria), Jayantha Dhanapala (Sri Lanka), Lewis Dunn (United States), David Fischer (United Kingdom), Jozef Goldblat (Sweden), Oleg Grinevsky (USSR), Harald Mueller (Federal Republic of Germany), Jorge Morelli Pando (Peru), Walter Rehak (German Democratic Republic), Ben Sanders (Netherlands: Chairman), Mohamed Shaker (Egypt), John Simpson (United Kingdom: Rapporteur) and Ian Smart (United Kingdom). Michael Wilmshurst was present as an observer from the IAEA and Derek Boothby as an observer from the United Nations Department of Disarmament Affairs. Also attending by personal invitation were Cesare Merlini (Italy) and Ira Goldman, Jeffrey Kelleher and Carlton Stoiber (United States). John Redick, the local organiser from the University of Virginia, was also present.

The Core Group continued its systematic analysis of the issues likely to be raised in the 1990 NPT Review Conference by focusing on Article IV of the Treaty. This discussion was introduced by a presentation on 'The Right to the Peaceful Uses of Atomic Energy and its Implementation' by Jayantha Dhanapala. As part of its consideration of 'Problem Countries or Regional Questions' Rodney Jones spoke on 'China and Nuclear Non-Proliferation', Charles van Doren on 'China as a Nuclear Supplier' and John Kelso on 'The Treaty of Raratonga'. Finally, in the context of its analysis of 'Functional Issues', presentations were made by Lewis Dunn on 'Verification Approaches Contained in New Disarmament Agreements and their Potential Impact on IAEA Safeguards', Leonard Spector on 'The Use of Commercial Satellite Verification for Non-Proliferation Purposes' and Jan Murray on 'The Future of Nuclear Power and the Uranium Market'.

In the discussions which followed the presentations and the reports made by members on other current topics, the Core Group identified a number of existing and emerging problems facing the non-proliferation regime, and assessed how they might impact upon the 1990 NPT Review Conference. In each area of discussion, proposals for action were generated. Attention was focused in particular on how the majority of NPT parties might obtain additional material benefits from their membership of the Treaty, given the limited number of States with the means to invest in nuclear power programmes.

The Group systematically reviewed its plans and financial position, and identified priorities in expenditure. It agreed that the directors should seek additional funding for an expansion of some of its activities, including publishing the Newsbrief every three months and expanding its circulation. In particular, it was hoped to sustain the pattern two Core Group meetings per year by holding an additional meeting in Vienna from 17-19 November 1989.

The plans for the May 1989 Core Group meeting and the Conference on the NPT for working level diplomats were further elaborated, and decisions on programmes and other arrangements made. The Core Group meeting will be held in Guernsey, one of the British Channel Islands, on 13 and 14 May 1989 and concentrate on: Article VI of the Treaty; on France and the NPT; and on the proliferation and safeguards implications of new technologies. The first PPNN Conference will also be held in Guernsey from 14-17 May 1989 and invitations are being issued to a representative group of States to nominate for attendance working level diplomats and officials likely to participate in the 1990 NPT Review Conference. The aim of the Guernsey conference will be to provide briefings on the main issues likely to arise at the 1990 NPT review conference. These will include current problems in the areas of peaceful nuclear energy and the non-proliferation regime and regional and arms control concerns. It is hoped that the May conference will provide a forum for a frank but constructive exchange of views on these matters.

Single copies of papers prepared for the Core Group's meetings are available upon personal request to John Simpson, Department of Politics, University of Southampton, SO9 5NH, United Kingdom. A list of titles and authors of papers is appended at the end of this **Newsbrief**.

Please note that the **telephone and fax numbers for PPNN's Southampton office** have been changed. The new telephone number from outside the United Kingdom is 703 592522 and the fax number is 703 593939.

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

- A **Task Force on Arms Control and the Proliferation of High Technology Weapons in the Middle East and South Asia** has been set up under the auspices of the Carnegie Endowment for Interna-

tional Peace, in Washington D.C. Chairman is Geoffrey Kemp, Senior Associate at the Endowment; Leonard S. Spector is vice-chairman. The Group will be composed of private American specialists on arms control, weapons technology and regional affairs. The Task Force is supported by grants from the John D. and Catherine T. MacArthur Foundation and the United States Institute of Peace.

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

**Books:**

McGeorge Bundy, **Danger and Survival: Choices about the Bomb in the First Fifty Years**, (Random House, 1988), 750 pp.

W. Lawren, **The General and the Bomb: A Biography of General Leslie R. Groves, Director of the Manhattan Project**, (Dodd, Mead and Co., 1988), 324 pp.

L.S. Spector, **The Undeclared Bomb, The Spread of Nuclear Weapons 1987-1988**, (Cambridge, Mass.: Ballinger Publishing Company, A Carnegie Endowment Book 1988), 493 pp. (pbk.).

U. Schelb (ed.), **Reaktoren und Raketen; Bonn auf dem Weg von der zivilen zur militaerischen Atomenergie? ("Is Bonn on the way from peaceful to military nuclear energy?")**, (Pahl-Rugenstein Verlag GmbH, Cologne, 1987).

**Articles and Other Materials:**

R. Bolt, "Plutonium for all: leaks in global safeguards", **Bulletin of the Atomic Scientists**, Vol. 44, No. 10, December 1988, pp. 14-19.

W.J. Broad, "Beyond the Bomb: Turmoil in the Labs", **The New York Times**, October 9, 1988, pp. 22-25, 72-74, 84, 88, 93.

M.F. Desjardins and T. Rauf, "Opening Pandora's Box? Nuclear-Powered Submarines and the Spread of Nuclear Weapons", **Aurora Papers 8**, Canadian Centre for Arms Control and Disarmament, February 1988 (Revised June, 1988), 60 pp.

"Disposal of the warheads on the nuclear missiles covered by the Treaty between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty): working paper by India, **Strategic Digest**, August 1988, (New Delhi: Institute for Defence Studies and Analyses), pp. 1050-52.

W.H. Donnelly, "Arms Control and Nonproliferation", **Congressional Research Service Review**, Vol. 9, No. 7, July/August 1988, pp. 18-9.

W.H. Donnelly, **U.S.-Japan agreement for nuclear cooperation: maintaining its implementation: issue brief**, Library of Congress (United States), Congressional Research Service.

W.H. Donnelly, **International Atomic Energy Agency: changing the composition of the Board of Governors: issue brief**, Library of Congress (United States), Congressional Research Service.

R. Gandhi, Address to UNSSOD III (Full Text), **Strategic Digest**, August 1988, (New Delhi: Institute for Defence Studies and Analyses), pp. 1033-39.

General Accounting Office (United States), **Export Controls. Assessment of Commerce Department's Report on Missile Technology Controls**, report to Congress, GAO/NSIAD-88-159, May 1988, 5 pp.

B. George, MP, and M. Stenhouse, "Weapon-Free Zones: the Balkan test case", **ADIU Report**, Vol. 10, No. 4, July-August 1988, pp. 1-3.

J. Goldblat, "La Proliferation des Armes nucleaires; Defi de Notre Epoque". Geneva International Peace Research Institute (GIPRI), **Cahier de Recherche No.1**, Geneva, May 1988, 12pp.

D.G. Haglund, "The Canadian SSN Program and the Nonproliferation Question", **Centre for International Relations Occasional Paper no. 29**, (Centre for International Relations, Queen's University, Kingston, Ontario, June 1988), 44 pp.

J. Horan, "Latest scram at Savannah reactors", **Bulletin of the Atomic Scientists**, Vol. 44, No. 10, December 1988, pp. 7-8.

R. Leaver, **The Nukem Scandal and Australian Safeguards**, Working Paper No. 49, Peace Research Centre, Research School of Pacific Studies, (Canberra, Australia: Australian National University, September 1988), 69 pp.

R. Leaver, **Australian Uranium Policy and Non-Proliferation**, Working Paper No. 45, Peace Research Centre, Research School of Pacific Studies, (Canberra, Australia: Australian National University, June 1988), 29 pp.

B.F. Mangan, **Nuclear Nonproliferation: Selected References, 1985-1988**, Congressional Research Service (CRS) report for Congress, 88-682 L, October 1988.

**Pakistan's illegal nuclear procurement in the United States.** Hearing before the Subcommittees on Asian and Pacific Affairs and International Economic Policy and Trade of the Committee on Foreign Affairs, House of Representatives, 100th Congress, 1st Session, July 27, 1987, (Washington D.C.: GP.O., 1988), 39 pp.

Rainbow Group in the European Parliament, **Denuclearize Not Modernize. Nuclear Weapons Ban in the West German Constitution**, (Green-Alternative European Link [GRAEL], European Parliament, 97-113 rue Belliard, Brussels, Belgium and Bonn, December 1988), 100 pp.

D.W. Reicher and J. Salzman, "High-tech protest against plutonium plant", **Bulletin of the Atomic Scientists**, Vol. 44, No. 9, November 1988, pp. 27-30.

B. Sanders, "Preventing the Spread of Nuclear Weapons", in J. Rotblat and L. Valki (eds.), **Coexistence, Cooperation and Common Security - Annals of Pugwash 1986**, (London: The Macmillan Press Ltd, 1988, pp. 3-20.

J. Scarlott, "U.S. offers Palau dollars or democracy", **Bulletin of the Atomic Scientists**, Vol. 44, No. 9, November 1988, pp. 31-5.

R.D. Shuey, W.W. Lenhart, R.A. Snyder, W.H. Donnelly, J.E. Mielke and J.D. Moteff, **Missile Proliferation, Survey of Emerging Missile Forces**, a Congressional Research Service (CRS) report for Congress, 88-642 F, October 3, 1988 (an update of CRS report no. 87-654 SPR, **Ballistic Missile Proliferation Potential of Non-Major Military Forces** of August 6, 1987).

U.S. General Accounting Office, **Energy Issues**, (Washington D.C., G.A.O., 1988, GAO/OCG-89-16TR; B-158195), 38 pp.

## V. Documentation

**United Nations General Assembly**

Resolution 43/82 adopted on 7 December 1988

**Implementation of the conclusions of the Third Review Conference of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons and establishment of a preparatory committee for the Fourth Review Conference**

**The General Assembly**

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

**Noting** the provisions of article VIII, paragraph 3, of that Treaty concerning the holding of successive review conferences,

**Noting** that, in the Final Document of the Third Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, held at Geneva from 27 August to 21 September 1985, the Conference proposed to the Depositary Governments that a fourth conference to review the operation of the Treaty be convened in 1990 and also noting that there appears to be a consensus among the parties that the Fourth Review Conference should be held at Geneva in August/September of that year,

1. **Notes** that, following appropriate consultations, an open-ended preparatory committee has been formed of parties to the Treaty on the Non-Proliferation of Nuclear Weapons serving on the Board of Governors of the International Atomic Energy Agency or represented on the Conference on Disarmament as well as any party to the Treaty which may express its interest in participating in the work of the preparatory committee;

2. **Requests** the Secretary-General to render the necessary assistance and to provide such services, including summary records, as may be required for the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons and its preparation.

## VI. Comments from Readers

Telegram dated 24 November 1988:

"On behalf of Dr. Alves, President, Brazilian Nuclear Energy Commission, we congratulate Editorial Board PPNN Newsbrief which expressed in November issue positive aspects of non-proliferation attitudes such as those related to recent acts emanated from Brazilian Government. In this connection we are pleased to note that NPT is not the only way in practice and good faith to preserve the world from nuclear weapons arsenals. Regards, Bernardino Pontes, Director, Department of Education, Alternative Governor (IAEA)"

## APPENDIX

Papers and Presentations at PPNN Core Group meetings:

### Second Core Group Meeting, Charlottesville, November 1987

1. William C Potter: **Creating a Database on International Nuclear Commerce** (published as Working Paper No 60, Centre for International and Strategic Affairs, University of California, Los Angeles, CA 90024-1486)

2. Tariq Rauf: **The Non-Proliferation Regime and Nuclear Submarines for Canada: A Critical Analysis** (revised and expanded version published (with Marie-France Desjardins) as 'Opening Pandora's Box? Nuclear Powered Submarines and the Spread of Nuclear Weapons' **Aurora Paper 8,** Canadian Centre for Arms Control and Disarmament, 151 Slater Street, Suite 710, Ottawa, Ontario K1P 5H3, Canada)

3. John R Redick: **Nuclear Restraint in Latin America: Argentina and Brazil** (subsequently published as PPNN Occasional Paper No 1)

4. Leonard S Spector: **India, Pakistan and Nuclear Proliferations** (derived from work on 'Nuclear Weapons and South Asian Security' Report of the **Carnegie Task Force on Non-Proliferation and South Asian Security,** Carnegie Endowment for International Peace, 11 Dupont Circle, N.W., Washington DC 20036)

### Third Core Group Meeting, Guernsey, May 1988

5. Ben Agu: **Nigeria and the Nuclear Non-Proliferation Regime**

6. Ben Agu: **Recent Press Attacks on the IAEA Safeguards System**

7. Andrew Barlow: **European Supplier Policies**

8. Lewis Dunn: **Implementation of NPT Articles I and II**

9. Lewis Dunn: **US Perspectives on Nuclear Supply**

10. David Fischer: **Implementation of NPT Article III.1**

11. Jorge Morelli Pando: **The Prospects for the Non-Proliferation Regime in the Latin American Region**

12. Walter Rehak: **Technical Aspects of IAEA Safeguards**

13. Ben Sanders and John Simpson: **Nuclear Submarines and Non- Proliferation: Cause for Concern** (revised version published as PPNN Occasional Paper No 2)

14. Ian Smart: **Nuclear Proliferation in the Middle East**

15. Michael Wilmshurst: **The Future of IAEA Safeguards**

### Fourth Core Group Meeting, Charlottesville, November 1988

16. Jayantha Dhanapala: **The Right to the Peaceful Uses of Nuclear Energy and its Implementation Article IV of the NPT**

17. Charles van Doren: **China as a Nuclear Supplier***

18. Lewis Dunn: **Verification Approaches Contained in New Disarmament Agreements and their potential Impact on IAEA Safeguards**

19. Rodney Jones: **China and the Non-Proliferation Regime: Renegade or Communicant?***

20. Jan Murray: **The Future of Nuclear Power and the Uranium Market**

21. Leonard Spector: **The Use of Commercial Satellite Verification for Non-Proliferation Purposes**

*It is intended to publish papers 17 and 19 together as one Occasional Paper.

ANNEX

**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. To this end, the Programme provides for the crea-

tion 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 a dozen 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 meets approximately twice a year. Between meetings they seek to keep in touch, **inter alia**, through a "**Newsbrief**" which contains information on the work of non-governmental groups in related areas, highlights topical developments of interest to the Programme, features extracts of and references to press reports on relevant issues and draws attention to publications and articles on the topic of nuclear proliferation and on steps that are being taken, or that might be taken, to deter it.

The **Newsbrief** was initially conceived principally 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 he considers to be relevant to the aims and activities of the Programme. Given its general nature, however, the Core Group felt that the **Newsbrief** could play a useful part in the outreach effort which constitutes a major element of the Programme. Accordingly, the **Newsbrief** is 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. It is meant to supply its readers with material that might help them in alerting their respective environments to the issue of nuclear non-proliferation and inform them about developments in that context.

The **Newsbrief** is published as part of the Programme for Promoting Nuclear Non-Proliferation of 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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