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Summary:

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

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Number 13

NEWSBRIEF

Spring 1991

Editorial note

The present issue of the *Newsbrief* reports on events related to the spread of nuclear-weapon capabilities that took place, or on which information came to hand, during the first three months of 1991.

The quarterly *Newsbrief* is published as part of the efforts of the Programme for Promoting Nuclear Non-Proliferation (PPNN) to help deter the spread of nuclear-weapon capabilities. To this end, the *Newsbrief* seeks to present an objective, factual and balanced picture of current events regarding the spread of nuclear-weapon capabilities to additional states and of developments tending to deter that spread. It also refers to developments in nuclear-weapon states that relate to the nuclear armaments and policies of those states.

PPNN's *Newsbriefs* are based on publicly available items derived from reputable and reliable sources. As editor of the *Newsbrief*, the Chairman of PPNN's Core Group is responsible for its contents. Unless expressly stated, the inclusion of an item does not imply the agreement of the members of the Core Group collectively or individually, either with its substance or with its relevance to PPNN's activities.

Readers who wish to comment on items included in the *Newsbrief*, or to draw attention to information not included there, are invited to send their remarks to the editor, for publication in a subsequent issue. One such communication is reproduced in this issue.

I. Topical Developments

a. Background

- On 7–18 January 1991 a conference was held in New York on the subject of **amending the Partial Test Ban Treaty** of 1963 to include a prohibition of underground nuclear tests. The conference, which was presided over by Foreign Minister Alatas of Indonesia, was attended by representatives of 94 out of 117 states parties, most of whom sought an early start of multilateral negotiations on a comprehensive test ban. Issues included the creation of a 'continuing mechanism', pending the reconvening of the conference in 1992 or 1993; the relationship of such a body with the Conference on Disarmament (CD) in Geneva; and conveying a more active role to the *ad hoc* committee for a CTB, that was set up in 1990 without a negotiating mandate. No consensus was reached on any of these issues, nor on a proposal to reconvene in September 1993 and meanwhile set up a working group to consider verification aspects of a CTB. In the end, a mandate for the President to conduct consultations 'with a view to achieving progress on those issues and resuming the work of the Conference

at an appropriate time' was adopted by vote, with 75 delegations voting for, the United Kingdom and the United States against, and 19 states – nine Western; five East European; three neutrals; Israel; and Japan – abstaining.

- Shortly after the start of air operations against Iraq, in January 1991, it was announced at the highest civilian and military level in the United States that **air strikes had destroyed the research reactors at the Tuwaitha Nuclear Research Centre** near Baghdad. The raids were variously described as having been 'a setback to Saddam's nuclear ambitions', having crippled Iraq's 'nuclear capacity' and having involved the destruction of factories that had been 'working on nuclear weapons'. It may be noted that two months previously IAEA inspectors had visited the research centre and ascertained that the reactor fuel was present; that the reactors themselves were militarily irrelevant; and that after the raid there has been no way to ascertain the whereabouts of the nuclear material. It is not clear what other sites may have been involved in the air strike. Most experts remain of the opinion that Iraq was years away from any ability to produce weapons-relevant nuclear material and that, if it was indeed doing research towards that end, the work must have been at an embryonic stage.
- In a little noted statement to a subcommittee of the Senate Committee on Appropriations, in 1990, the United States Secretary of Defense said that his country would 'have to maintain [its] strategic deterrent, not only because the Soviets give every indication of wanting to maintain theirs ... but also, obviously, because there is a growing proliferation of weapons of mass destruction and sophisticated weapons technology in the Third World'. A 'Nuclear Weapons Complex Reconfiguration Study' issued by the US Department of Energy in January 1991 contends that '[t]he changing nature of deterrence and the continued evolution of non-nuclear technologies will likely alter weapon characteristics requirements,

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necessitate more flexible and robust weapons and reduce the yield of the weapons in the stockpile. The United States may be less concerned by the threat of massive concentrations of military forces and more *concerned by rearmament or proliferation of threats by smaller nations.*' [emphases added - ed.]

- **Arms control negotiations between the USSR and the USA are still deadlocked.** Some technical details of the Strategic Arms Reduction Treaty remain to be solved, mainly in respect of verification. With regard to the Treaty on Conventional Forces in Europe (CFE), which was signed in November 1990, disputes have arisen in three areas: the transfer of three Soviet motorized rifle divisions to Naval command, which exempts them from Treaty limits; the question of Soviet armaments that have been moved East of the Urals, out of Treaty restraints; and disagreements over data on Soviet forces in the area covered. According to American sources, some of the problems are due to the unwillingness of the Soviet military to accept concessions that have been made on these matters by the political leadership.
- **The generating capacity of the world's nuclear power plants is increasing slowly.** In 1990, ten new nuclear power reactors were connected with the electric grid; all but one were in industrialized countries. It has been reported by the IAEA that worldwide electrical generating capacity of nuclear plants grew from 318,271 MWe to 324,496 MWe.

b. Non-Proliferation Developments

- **Argentina and Brazil** have continued to discuss their mutual safeguards arrangements preparatory to the negotiation of an agreement with the IAEA. In Brazil there is opposition in Parliament to IAEA safeguards at Brazilian installations (*O Estado de Sao Paulo*, 30 November and 6 December 1991, JPRS-TND-91-002, 5 February 1991).
- The foreign ministers of Argentina and Uruguay are said to believe that **Cuba** will accede to the Tlatelolco Treaty (Eric Ehrmann and Christopher Barton in *The Journal of Commerce*, January 24, 1991).
- On 5-7 March 1991, the countries that have adhered to the **Nuclear Supplier Guidelines** (the 'London Club', now comprising Australia, Belgium, Bulgaria, Canada, Czech and Slovak Federal Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Portugal, Rumania, Spain, Sweden, Switzerland, USSR, UK, USA) held an informal meeting in The Hague, where they set up a working group to reinforce export controls on dual-use nuclear-related equipment, material and technology. The working group will be open to all governments which adhere to the guidelines published in IAEA document INFCIRC/254; it will have an initial meeting in the Hague on 13-15 May, with the goal of reaching conclusions by the end of 1991. A formal meeting of the main Group is planned for 1992 (*Press Statement*, 7 March 1991; *Nucleonics Week*, March 14, 1991).
- In tightening its control on the export of equipment and material that might be used in producing nuclear-weapons

material, the federal government of **Germany** wants to set up a special intelligence unit with powers to intercept communications to detect illegal exports. Information collected by the federal intelligence service (BND) would also be used in investigating such exports. In part of the German press the news that export controls have been made more severe has been received with scepticism (*NuclearFuel*, February 18, 1991; *Deutschlandfunk* (German Radio) quoting *Die Welt* and *Frankfurter Rundschau*, 7 February 1991; *Frankfurter Allgemeine*, 9 February 1991, all in JPRS-TND-91-003, 25 February 1991).

- The treaty between **India and Pakistan**, by which these states undertake not to attack each other's nuclear installations, went into effect on 27 January 1991 (*International Herald Tribune*, January 28, 1991).
- **Mauritius and the Seychelles** support the establishment of a nuclear-weapon-free zone in the southwestern Indian Ocean and Southern Africa and are willing to have contact with **South Africa** to that end (*Le Mauricien*, 13 December, and *Week-End* [Port Louis], 16 December 1990, JPRS-TND-91-002, 5 February 1991).

c. Nuclear Trade and International Cooperation

- **Austria**, which is concerned about the safety of the two Soviet-supplied VVR-440 power reactors at Jaslovské Bohunice, 35 miles north of its border with the **Czech and Slovak Federal Republic**, has offered to provide free electric power to that country if it will shut down the reactor station. In January, there was an electrical fire at one of the reactors, which did not result in any radioactivity leaking. Rumours that the fire was caused by sabotage and was connected with the crisis in the Persian Gulf have been denied. Experts from Siemens AG and from the IAEA who recently conducted inspections at the plant are said not to see any reason for an immediate shut-down (*CTK (Czechoslovak News Service)* and *Pravda* [Bratislava], 16 January 1991; *Bratislava Radio*, 17 January 1991 - all in JPRS-TND-91-002, 5 February 1991; *Washington Post*, January 30, 1991).
- **Belgium, France, Germany and the United Kingdom**, the European countries said to be most interested in the use of nuclear energy, jointly declared on 25 March 1991 their commitment to safe nuclear power as an important and appropriate future energy source and to work together in that area (*Nucleonics Week*, March 28, 1991).
- **Bolivia** is reportedly negotiating with **Peru** about acquiring the zero-power research reactor which Peru bought in **Argentina**, in the late 1970s (*El Comercio*, 15 November 1990, JPRS-TND-91-001, 4 January 1991).
- In **Bulgaria**, the Provisional Executive Committee of the People's Council of Sofia has decided that the nuclear reactor in the municipality of 'Mladost' should be done away with (*DUMA Bulgarian News service*, 29 January 1991, in JPRS-TND-91-003, 25 February 1991).
- **Egypt** reportedly plans to exploit its own natural uranium resources. Press reports speak of a production of 10,000

tons of uranium [of a form not specified – ed.] in the next ten years, which is said to be enough to fuel eight 1,000-MW nuclear plants, supplying 40% of the power the country will require by the year 2000. The uranium would come from granite found in the eastern desert and on the Red Sea coast, phosphates found in coastal areas, and rare earth [monazite sands] (*Al-Sharq Al-Awsat* [London], in *JPRS-TND-91-003*, 25 February 1991).

- **Germany** is terminating the SNR-300 fast breeder project at Kalkar, which has been underway since the early 1970s in cooperation with **Belgium** and the **Netherlands**. The reason appears to be a combination of cost overruns, construction delays and a hold-up in the licensing procedure, due in particular to local political resistance. Belgium and the Netherlands had stopped supporting the project in 1983 (*Nucleonics Week*, March 28, 1991).
- At a joint seminar in **Tokyo Japan** and the **USSR** — the only two states operating non-military ships powered by nuclear means — have exchanged information about nuclear ship-propulsion (*Kyodo* [Tokyo], 28 November 1990, *JPRS-TND-91-001*, 4 January 1991).
- **Pakistan** is buying nuclear power plants from **China** and **France**, at a reported cost of \$2 billion. Details of the purchase of a Chinese 300-MW PWR have been finalized. The talks with France, which is to supply a 900-MW PWR, were suspended last year, apparently as a result of the Persian Gulf conflict. Pakistan is now looking for favourable interest and repayment terms. It cannot yet supply the low-enriched fuel from its own sources but expects to be able to obtain the fuel abroad at economical rates (*Nucleonics Week*, March 28, 1991; *NuclearFuel*, April 1, 1991).
- A shipment of 40 tons of enriched uranium arrived in the **Republic of Korea** from the **USSR** in November 1990. Another 350 tons will be supplied over the next nine years. The Republic of Korea is buying a Candu power reactor from **Canada**, to be constructed at Wolsong, 420 km southeast of Seoul, where one Candu unit is already operating (*Yonhap*, 29 November 1990, *JPRS-TND-90-002*, 4 January 1991; *The Ottawa Citizen*, 28 December 1990, *JPRS-TND-91-002*, 5 February 1991).
- **Romania** is buying monitoring equipment from **Denmark** for its nuclear power station at Cernavoda, 160 km east of Bucharest, which will comprise five Candu reactors (*Berlingske Tidende*, 15 November 1990, *JPRS-TND-91-001*, 4 January 1991).

d. IAEA Developments

1. General

- The IAEA has announced that in 1990 the net electrical generating capacity of the world's operating nuclear power plants increased by 6000 MWe, although the total number of operational reactors declined. During that year, ten nuclear power reactors started producing electricity (1 each in Canada, India and the USSR; 2 each in Japan and the USA; and 3 in France) while 12 were shut down (1 in Spain; 2 each in France, Italy and the UK; and 5 in Germany). As a result, the total number of operating power

reactors was 424; 83 were under construction (*IAEA Newsbrief*, Vol.6, No.1, January/ February 1991; *IAEA Press Release*, PR 91/3, 30 January 1991).

2. Safeguards

- In a statement to the Agency's Board of Governors, on 26 February 1991, the Director General discussed the issue of **safeguards effectiveness**. He said, among other things, that universal reporting to the Agency of exports of nuclear material would considerably strengthen the system; raised the question whether reporting of items like yellow cake would be 'of a value commensurate with the cost and effort'; referred to the application of safeguards to 'nuclear installations or operations per se'; cited a preliminary Agency study affirming that the Agency has the authority to make requests for additional inspections and access to additional locations, if it has bona fide reasons for doing so; and stated that the concept of 'significant quantity' and the provision of advance design information might have to be looked into. In the latter context he said that construction of enrichment or reprocessing plants affects confidence unless information is openly given well in advance of actual construction. The Director General suggested that the Board might wish to consider at its meeting in June 1991 whether and how these questions could be addressed.
- In a letter of 21 February 1991 to the Secretary-General of the United Nations the Permanent Representatives of Australia, Canada, Japan, Poland, and the United States of America called on the **Democratic People's Republic of Korea** to conclude and implement a full scope safeguards agreement with the International Atomic Energy Agency immediately and thus to fulfil its obligations as a State party to the Treaty on the Non-Proliferation of Nuclear Weapons (*UN Document S/22255*, 22 February 1991).

e. Peaceful Nuclear Developments

- **France's** nuclear industry appears to be in trouble although it has the highest proportion of nuclear-generated electric power among industrial nations (75%). Causes are said to include a worsening safety record; the problem of nuclear waste; a shrinking demand for power due to conservation, lower consumption and the growing cross-border trade in electricity; the availability of cheap alternative energy sources such as natural gas; uneconomical production methods; fewer exports; overcommitment to reprocessing and large investments in unprofitable fast breeder technology. The French government has confirmed its policy favouring deep-geologic storage of high-level and long-lived waste but it has not yet resumed the exploratory drilling which it had suspended following violent protests at several sites (*The Economist*, 2 February 1991; *NuclearFuel*, February 18, 1991).
- The uranium mines near Aue, in the former **German Democratic Republic**, which used to provide (as reparations payments for World War II) uranium oxide for Soviet military use, have been closed and a clean-up effort has been started, with federal financing. The Social Democratic Party in **Germany** is opposed to a proposal to build two new 1,300-MW PWRs: one at Greifswald, where four Soviet-supplied PWRs with a combined output of 1,600 MW were shut down in 1990 for safety reasons, and one at Stendal, west of Berlin (*The New York Times*, March 19, 1991; *Nucleonics Week*, March 21 and 28, 1991).

- **Italy** is decommissioning its four power reactors. Decommissioning of the 160-MW BWR at Garigliano, which was shut down in 1978, is said to be at an advanced stage. Plans are being made to decommission the 150-MW Latina gas-cooled reactor, the 860-MW Caorso BWR – both closed in 1986 for maintenance – and the Trino-1 260-MW PWR, which was closed in 1987 for refuelling; after an anti-nuclear referendum in 1987 none had been reopened. The spent fuel of these plants will be reprocessed at various facilities in Europe. The Italian government will, among other things, pay for the unforeseeable shutdown and decommissioning costs and for work at two plants that were under construction before the referendum (*Nucleonics Week*, March 28, 1991).
 - In **Japan**, on 9 February 1991, a rupture in a steam generator tube at the Mihama-2 500-MW PWR of Kansai Electric Power Co. occurred while the reactor was operating at full power. The incident caused the shutdown of the reactor and the activation of the automatic core cooling system. No injuries have been reported and the reactor core seems to be intact. According to official Japanese sources, the radioactivity released into the environment '[does not deviate] from the normal values of radiation monitoring facilities ...' Japanese press reports express criticism of the slow reaction of plant operators to signals that warned of abnormal radioactivity in the coolant. Contrary to earlier reports, technicians at the plant did not start reducing reactor output until the coolant was within a few degrees of boiling and the emergency cooling system took over. Reportedly, two safety valves which workers tried to activate to vent steam from a pressurizer then failed and to prevent further problems operators apparently shut the reactor off manually. The fact that the damaged tube had been inspected in July 1990 during a routine check and had been found to be sound has prompted a review of inspection procedures and it is noted in this connection that indications of tubes cracking had been found at Mihama on four previous occasions. While Japan's nuclear power industry has an admirable safety and performing record (the frequency of unplanned shutdowns of Japanese power reactors is 1/10 that of the USA and the event has not caused Moody's Investor Service to lower its top credit rating of Kansai Electric Power Co.), it is believed that the incident may reinforce public resistance to the use of nuclear energy in Japan and may make it more difficult to realize present plans to construct two new power reactors each year for the next two decades. The anti-nuclear movement may have been given further impetus by reports that three minor incidents have occurred at other nuclear reactors since the event at Mihama-2. A similar defect has also been found at the Kansai-owned Takahama-2 plant, which is shut down (Information from **Japan Atomic Industrial Forum**; **Press Release PRI-124 of the Nuclear Power Safety Administration Division, ANRE/MITI**, and Paper entitled 'First Information on the Incident of No.2 Unit of Mihama Power Station on February 9th 1991', February 12, 1991; **MITI Press Release M2-2**, February 18, 1991; **Asahi Evening News**, February 11, 14, 16 and 19, 1991; **The Japan Times**, February 13 and 14, 1991; **The New York Times**, February 10, 11, 12, and 17, and March 3, 5 and 21, 1991; **Nucleonics Week Special Issue**, February 14, 1991; **Nucleonics Week**, February 14 and March 28, 1991).
 - **Japan's** Minister of International Trade and Industry has called for the establishment of an independent nuclear fuel cycle in that country (**Kyodo** [Tokyo], 23 January 1991, **JPRS-TND-91-002**, 5 February 1991).
 - **Japan's** nuclear-powered ship 'Mutsu', which had been out of operation for twenty years, started the first of five experimental runs on 24 February 1991 (**Kyodo** [Tokyo], 28 November 1990, **JPRS-TND-91-001**, 4 January 1991; **Nucleonics Week**, March 21, 1991).
 - The **Republic of Korea** has plans to develop an advanced type of nuclear reactor by the turn of the century (**The Korea Herald**, 29 January 1991, **JPRS-TND-91-002**, 5 February 1991).
 - In **Sweden**, where ten years ago it was decided to phase out nuclear energy by 2010, but where the present government is said to tacitly accept continued reliance on nuclear power, two minority parties have announced plans to put the issue of dismantling nuclear plants on their political agenda. Conservatives, on the other hand, are said to seek a formal rather than implicit acceptance of nuclear power (**Nucleonics Week**, March 21, 1991).
 - Federal authorities in **Switzerland** are agreed that nuclear power generation should be increased by 10%, or about 300-MW. Since in 1990 the electorate imposed a moratorium on the construction of new nuclear power plants, the increase must be obtained by raising the capacity of existing plants (**Nucleonics Week**, March 21, 1991).
 - There are reports of gross failures in the clean-up following the nuclear disaster at Chernobyl, in the **USSR**, resulting in widespread exposure of the population to radioactive contamination. Information discussed among experts from a variety of international organizations such as the IAEA, UNESCO, FAO and UNSCEAR is said to be inconclusive and to range from indications that the direct effects of the accident on public health were barely measurable to reports that the event is having catastrophic health effects over a wide area (**The New York Times**, February 8, 1991; **Nucleonics Week**, March 21, 1991).
 - A survey in the **United Kingdom** shows that the majority of the British public prefer decommissioning of power reactors by on-site 'entombment' or 'mounding' over dismantlement and piecemeal transport to burial sites (**Nucleonics Week**, March 21, 1991).
 - The **United States Administration** has published its National Energy Strategy (NES), a new energy plan which emphasizes greater energy output through increases in supplies. The plan foresees an increase in domestic oil production and seeks to speed up the review process for new nuclear power plants and to reduce states' powers to block the creation of nuclear waste repositories on their land. A case in point is the proposed Yucca Mountain repository, in Nevada, which, if the new legislation is adopted, that state would be unable to prevent (**The New York Times**, February 9, 1991; **NuclearFuel**, February 18, 1991).
- f. Developments of Concern for Vertical Proliferation**
- According to **USSR** estimates, nuclear weapons-related operations at the Chelyabinsk-40 complex in the southern

Urals have led to the world's highest known concentrated radioactive contamination. Reportedly, the operations released into the biosphere a total of about 1 billion curies between 1949 and 1960, or 20 times as much as was released during the Chernobyl accident. Of this amount 2.5 million curies are said to have been released in an explosion at Kyshtym, in 1957, and 120 million curies were deposited in an open reservoir nearby (*Nucleonics Week*, March 21, 1990).

- Questions about the control of Soviet nuclear weapons in the event of a break-up of the USSR continue. An earlier report in the *Bulletin of the Atomic Scientists* about a statement by V. Lopatin, vice chairman of Russia's committee for public security, who said in Washington that the Soviet republics would one day take control of nuclear weapons on their territories, was rejected as 'absurd' by V. Chernyshev, Tass editor for military issues, in an article in *Krasnaya zvezda* of 17 January 1991 (*The Bulletin of the Atomic Scientists*, January/February 1991, Vol.47, No.1).
- In the **United States** there is concern about nuclear weapons security. In response to uneasiness about possible weaknesses in procedures and technology which might make the reputedly 3,700 nuclear warheads in Europe vulnerable to terrorist sabotage or theft, the Department of Energy is said to have produced a secret study called 'Comprehensive Report on the Recapture/Recovery and Standoff Vulnerabilities, U.S. Nuclear Weapons Deployed in NATO'. The Department of Defense has denied that there is a significant problem, but experts are quoted as saying that some of the older weapons, which have few internal security features, may pose risks and that the Defense Department's estimates of the time it would take to bypass security systems are too long. The question of inadvertent detonation of nuclear warheads is also getting more attention, as a result of reports on several near-accidents with short-range missiles (*The New York Times*, January 29, 1991 and March 11 and 12, 1991).
- In the **United States** the debate about the size and the safety of the nuclear weapons production complex continues. The Department of Energy reportedly plans to curtail its production facilities and expand clean-up operations. It is the plan to construct a single new reactor for the production of tritium. The 'P' reactor at the Savannah River plant, which has been shut down since 1988, will be mothballed. Repairs of the two other reactors are delayed. Plans for laser enrichment of uranium have been shelved. The function of some plants will be limited; functions of other plants will be consolidated and a number of installations will be closed permanently. Meanwhile, clean-up operations are expected to take more time than initially thought. Technical problems are delaying the processing of high-level radioactive wastes at the Hanford production plant, where widespread soil contamination has been detected. The Office of Technology Assessment of the Congress has criticised the clean-up plans of the Department of Energy as understated and called for a new body to oversee the clean-up of waste from military production. Jurisdictional problems are also delaying the opening of what was planned to be the first permanent nuclear waste repository in salt caverns near Carlsbad, New Mexico (*NuclearFuel*, February 18, 1991; *The New York Times*, February 1, 6, 7 and 11 and March 7 and 28, 1991).

- **United States** legislation of 1988, empowering the Administration to restrict foreign investment in American companies if it impairs national security, which lapsed in 1990, will shortly be extended. Meanwhile, a Japanese tool manufacturing company, Fanuc Inc., has dropped its plans to buy a 40% interest in the Moore Special Tool Company of Bridgeport, Connecticut, which manufactures precision tools for machining components of nuclear weapons. The impending purchase had been criticised in Congress, but a governmental review panel had recommended approval (Kevin L. Kearns in *The Washington Post*, January 30, 1991; *The New York Times*, February 20, 1991).

g. Developments of Concern for Horizontal Proliferation

- The **Democratic People's Republic of Korea** has not yet signed the safeguards agreement which it must conclude with the IAEA pursuant to the NPT, to which it acceded in 1985. Japan has made the normalization of relations with the DPRK depend on the conclusion of the safeguards agreement; discussions in Pyongyang on the establishment of full diplomatic relations, which started on 30 January, seem not to have been successful, although there had been indications that the DPRK had been close to accepting the IAEA agreement. The North Korean deputy foreign minister, who headed his country's delegation, has stated that the issue should not be linked with the subject of relations between the two states and that Japan would be better advised to put pressure on the USA to denuclearise the Peninsula. The DPRK has cancelled talks with the Republic of Korea, blaming military provocation by that country and the USA. South Korean sources meanwhile express the view that North Korea will be able to produce nuclear weapons in three to six years; other sources pinpoint the year 1995 (*Kyodo* [Tokyo], 24 November and 1 December 1990 and *Pyongyang Domestic Radio Service*, 16 November 1990 – both in *JPRS-TND-91-001*, 4 January 1991; *Kyodo*, 25 January 1991; *Chunchang Ilbo* [Seoul], 29 January 1991; *Sin Tong-A* [Seoul], 12 December 1990; *Yonhap* [Seoul], 24 January 1991, all in *JPRS-TND-91-002*, 5 February 1991; *Pyongyang News Service KCNA*, in *JPRS-TND-91-003*, 25 February 1991; *The New York Times*, February 19, 1991; Leonard S. Spector and Jacqueline R. Smith 'North Korea: The Next Nuclear Nightmare?' in *Arms Control Today*, March 1991, Volume 21, Number 2).
- In **India**, at the time of conflict in the Persian Gulf, Mr. Rajiv Gandhi – leader of the Congress-I party and former Prime Minister – urged that India's UN representative be instructed to ensure that the multinational forces were not authorized to use nuclear weapons. A spokesman for Congress-I is quoted as adding that in such an eventuality India would be left with no option except to convert its nuclear weapons capability into nuclear weapons capacity. A former Indian defence minister, K. C. Pant, has said that India had no option but to possess a nuclear weapon in view of a nuclear threat from Pakistan. Five people have been arrested trying to sell uranium from the Tarapur Nuclear Power Plant (*Delhi Television*, 11 February 1991; *New Delhi Patriot*, 25 December 1990; *AFP* [French News Agency] from Hong Kong, 2 February 1991 – all in *JPRS-TND-91-003*, 25 February 1991).

It is reported that after three years **India** has returned the 'Charlie I' Class nuclear powered submarine leased to the India Navy by the Soviet Union. Apparently, high

maintenance costs were a major reason for not extending the lease (*Jane's Defence Weekly*, 23 February 1991).

- There is said to be some concern in the United States about the possibility that **Iran** might seek to acquire a nuclear-weapon capability, using an undeclared enrichment facility, for which it might get the components from Eastern Europe. Experts believe that Iran is up to a decade away from posing a nuclear threat. In 1990 President Hashemi Rafsanjani reaffirmed his country's determination to comply with its obligations under the NPT (*International Herald Tribune*, January 28, 1991).
- United States air strikes during recent hostilities with **Iraq** are reported to have destroyed or severely damaged two operational research reactors (the French-supplied 0.5-MW research reactor Tamuz-II and the Soviet 5-MW IRT-5000) at the Tuwaita research centre near Baghdad, and several other installations that were thought to be engaged in experimental nuclear activities, including one site that is said to have contained a small number of centrifuges (probably fewer than 30) for the enrichment of uranium. Counting the highly-enriched uranium in the two reactors (the IRT-5000 reactor uses uranium fuel enriched to 80%), in storage and irradiated, as well as 12.3kg of 93% enriched uranium that remained after the bombing of the Tamuz-I reactor by Israel in 1981, Iraq is thought to have had altogether 20 kilogrammes of highly enriched uranium. This material had been inspected by the IAEA in November 1990 and fully accounted for. There are reports that the material had been removed from the reactor site before the attack, but an inquiry from the IAEA into its present location has remained unanswered. Earlier speculation that Iraq might use it to fabricate a single weapon to be employed in a conflict seems to have been unfounded; however, the fact that its whereabouts are not known is a source of some concern. Most experts meanwhile remain unconvinced that even with the extensive assistance Iraq is said to have been given by a variety of firms and private persons in industrial countries, it could have acquired the capacity to produce a significant quantity of weapons-usable material in less than five years. On the basis of available information, moreover, it is believed that it might have taken up to twice that time to fabricate the actual weapons (*Nucleonics Week*, August 23, September 27, and November 29, 1990 and January 24, February 14, 21 and 28, 1991; *Nuclear Fuel*, October 29 and December 24, 1990 and January 21 and February 4, 1991; Tariq Rauf, 'Iraq's Nuclear Weapon Programme', in *Barometer*, publication of the Canadian Centre for Arms Control and Disarmament, Winter 1990/1991; David Albright and Mark Hibbs: 'Iraq and the Bomb: were they even close?' and 'Hyping the Iraqi Bomb' – both in *Bulletin of the Atomic Scientists*, March 1991, Vol. 27, No. 2; 'Unanswered Questions on Iraq's Nuclear Capability', publication of the *Nuclear Control Institute*, January 24, 1991; Eric Ehrman and Christopher Barton 'Who Helped Arm Saddam' in *The Christian Science Monitor*, January 29, 1991; Enrico Jacchia 'What It Takes To Build a "Dirty" Bomb' in *International Herald Tribune*, February 2-3, 1991; William C. Potter 'The New Iraqi Nuclear Threat' in *Bulletin of the Emerging Nuclear Suppliers Project*, 6 February 1991; Joseph R. Egan 'O.K., Saddam, Where's the Uranium' in *The New York Times*, March 14 1991; *The New York Times*, March 15, 1991; Lee Feinstein, 'Iraqi Nuclear, Chemical and Biological Facilities Attacked', *Gulf War Supplement*

of *Arms Control Today*, March 1991, Volume 21, Number 2).

- The continuing suspension of United States economic and military assistance to **Pakistan**, following the inability of the American Administration to certify that Pakistan did not possess a nuclear explosive device, is the object of growing resentment in that country. Increased anti-American sentiment, thought to have been aggravated by the conflict in the Persian Gulf, is said to prompt the nuclear effort to be intensified. Several influential members of the Pakistani parliament have called on the government to test a nuclear device, but the chief of staff is quoted in the press as saying that the military has no plans to announce that Pakistan will become a nuclear-weapon state (*The Nation* [Lahore], 21 December 1990; *The Muslim* [Islamabad], 25 December 1990 - both in *JPRS-TND-91-002*, 5 February 1991; *Dawn* [Karachi], 31 January 1991, in *JPRS-TND-91-003*, 25 February 1991; *The Journal of Commerce*, January 4, 1991; *Nucleonics Week*, March 28, 1991).

II. PPNN Activities

- Attempts have been continuing to secure funds for the operation of PPNN through to 1995. Grants have been secured recently from the John D. and Catherine T. MacArthur Foundation and the John Merck Fund covering the period 1991-93. The total of the grants received so far will assure the viability of the majority of PPNN activities through the end of 1993, but further grants still need to be secured to fully fund PPNN through to that date and carry out its planned programme through to 1995.
- The PPNN Core Group has been reconstituted. It now consists of: Ambassador Olu Adeniji (Nigeria); Dr Djali Ahimsa (Indonesia); Ambassador Jayantha Dhanapala (Sri Lanka); Dr Lewis Dunn (US); Mr David Fischer (UK); Dr Jozef Goldblat (Sweden); Ambassador Oleg Grinevsky (USSR); Ambassador Davidson Hepburn (Bahamas); Dr Harald Mueller (Germany); Ambassador Yoshio Okawa (Japan); Dr Walter Rehak (Germany); Professor Lawrence Scheinman (US); Ambassador Dr Mohamed I. Shaker (Egypt); Ambassador Adolfo R. Taylhardat (Venezuela) and Ambassador Roland Timerbaev (USSR). The group is Chaired by Ben Sanders; John Simpson is Rapporteur. The Ninth meeting of the PPNN Core Group will be held in Guernsey, UK Channel Islands over the weekend of 18-20 May 1991. Besides discussing PPNN's work for the coming year the Core Group will consider a number of substantive issues including the PTBT Amendment Conference of January 1991.
- Ben Sanders and John Simpson visited Los Alamos National Laboratory, New Mexico in late February and attended a conference on 'Emerging Regional Threats and US National Security' there. They also visited the Monterey Institute for International Studies (MIIS) to discuss with the Director of its Emerging Nuclear Suppliers Project, Bill Potter, methods of collaboration. As a consequence, the material in the PPNN Newsbriefs will be added to the Monterey computer database, and will be available on-line in the near future, by subject and by state. Messrs Sanders and Simpson also gave a seminar at MIIS on 26th February on the current state of the nuclear

non-proliferation system, with particular reference to the Middle-East.

- On behalf of PPNN, Ben Sanders attended the Partial Test Ban Treaty Amendment Conference held at the United Nations Headquarters on 7-18 January 1991. The following are among other events in which he participated: a briefing on verification organized by the NGO Committee on Disarmament at United Nations Headquarters on 10 January; a meeting of the Washington Council on Nonproliferation, at the Brookings Institution in Washington, D.C. on 29 January; a meeting of the Advisory Board for the Nuclear Non-Proliferation Project of the Center for War, Peace and the News Media in Washington, D.C. on 6 February; and a working luncheon to comment on a study by Ambassador Roger Kirk sponsored by the Atlantic Council in Washington, D.C. on 12 February. On 8 March he gave a lecture to the Northwest Corner Coalition for Nuclear Disarmament, in Salisbury, Connecticut, on the impact of the Persian Gulf war on nuclear non-proliferation. On 14 March he gave a seminar on procedural aspects of the 1995 NPT Extension Conference at the Center for Engineering and Environmental Studies of Princeton University.
- John Simpson was resident at the Conference and Institutes Section of the Continuing Education Division of the University of Virginia from 1 February through to the end of the quarter, as well as being a Visiting Fellow in UVA's Institute for Advanced Studies. The purpose of his visit was to start work on a text on nuclear non-proliferation, as well as to develop with Ben Sanders the programme for PPNN through to 1995. He participated in a seminar on 'Confidence- and Security-Building Measures: Technical and Political Approaches' organised by Science Application International Corporation at McLean, near Washington, on 19 March and participated in a panel discussion on 'Will the NPT Survive beyond 1995?' at the annual International Studies Association Conference in Vancouver, Canada on 22 March.
- Darryl Howlett, PPNN Information Officer, presented a paper to a 'Conference on Confidence-Building Measures in the Asia-Pacific Region' at the UN regional centre, Khatmandu, Nepal 24-26 January 1991.

III. Other Non-Governmental Groups Active in Related Areas

- Activities are underway to set up **Armswatch**, a North-South networking program. This will be aimed at enhancing information flows on the International Post-Cold War Security Agenda, including weapons proliferation issues, by co-opting correspondents from states in the South and supplying them with modern communications technology. Further details may be obtained from Armswatch Center for War, Peace and the News Media, Department of Journalism and Mass Communication, New York University, Ten Washington Place, New York, NY 10003; Fax No. 212-995-4143.
- **The Canadian Institute for International Peace and Security (CIIPS)** is holding a conference on 'Supply-Side Control of Weapons Proliferation' in Ottawa from 18-21 June 1991. This will include two sessions devoted to

nuclear proliferation issues. Further details can be obtained from CIIPS, 360 Albert, Suite 900, Ottawa, Ontario, K1R 7X7, Canada.

- The next meeting of the **UK National Non-Proliferation Study Group**, jointly sponsored by the British members of PPNN and the Defence and Non-Proliferation Department of the Foreign and Commonwealth Office will take place on 28 June in London.

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

- Books:

Grigori Medvedev, **The Truth About Chernobyl**, translated from the Russian by Evelyn Rossiter, Foreword by Andre Sakharov, (New York: Basic Books, 1991), 274 pp.

Regina Cowen Karp (ed.), **Security with Nuclear Weapons?**, (Oxford: Oxford University Press for SIPRI, 1991).

David Fischer and Harald Mueller, **A Treaty in Trouble. Europe and the NPT after the Fourth Review Conference**, PRIF Reports No. 17, (Frankfurt am Main: Peace Research Institute Frankfurt, 1991).

Janne E. Nolan, **Trappings of Power**, (Washington D.C.: Brookings Institute, 1991).

Zachary Davis and Warren Donnelly, **Non-Proliferation: A Compilation of Basic Documents on the International, U.S. Statutory and U.S. Executive Branch Components of Non-Proliferation Policy**, (Washington D.C.: Congressional Research Service, December 18, 1990).

Finding Common Ground: US Export Controls in a Changed Environment, National Academy Press, 2101 Constitution Avenue NW, Washington DC 20418.

Michael Hamel-Green, **The South Pacific Nuclear Free Zone Treaty: A Critical Assessment**, (Canberra: Peace Research Centre, Research School of Pacific Studies, Australia National University, 1991).

Yan Kong, **China and Nuclear Proliferation, 1980-1990: A Select Annotated Bibliography of English-Language Publications**, CSIA Working Paper No. 90-3, (Cambridge, Mass.: Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University, December 31, 1990).

- Articles and Other Materials:

David Albright and Mark Hibbs, 'Iraq and the Bomb: were they even close?', **Bulletin of the Atomic Scientists**, March 1991, Vol. 27, No. 2.

David Albright and Mark Hibbs, 'Hyping the Iraqi Bomb', **Bulletin of the Atomic Scientists**, March 1991, Vol. 27, No. 2.

Kathleen C. Bailey, 'Can Missile Proliferation Be Reversed?', **Orbis, A Journal of World Affairs**, Winter 1991.

Patricia Lewis, 'The PTBT Amendment Conference', **Bulletin of Arms Control**, Number 1, February 1991.

William C. Potter: 'The New Iraqi Nuclear Threat', **Bulletin of the Emerging Nuclear Suppliers Project (ENSP)**, 6 February 1991.

William Potter and Adam Stulberg, 'The Soviet Union and the Spread of Ballistic Missiles', *Survival*, November/December 1990.

Tariq Rauf, 'Iraq's Nuclear Weapon Programme', in *Barometer*, publication of the Canadian Centre for Arms Control and Disarmament, Winter 1990/1991.

Lawrence Scheinman, 'Nuclear Non-Proliferation and IAEA Safeguards: The International System and the Experience in Iraq', *Bulletin of The Atlantic Council of the United States*, Vol. II, No. 3, February 13, 1991.

Lawrence Scheinman and I.C. Gverdzteli, 'Verifying a Production Cutoff for Nuclear Explosive Material: Strategies for Verification and the Role of the IAEA', in F. Calogero, M.L. Goldberger and S.P. Kapitza (eds.), *Verification: Monitoring Disarmament*, (Boulder, Colo.: Westview Press, 1991).

Leon Sloss, *Reexamining Nuclear Policy in a Changing World*, Report No. 11 of CNSS, Los Alamos National Laboratory, December 1990.

Leonard S. Spector and Jacqueline R. Smith, 'North Korea: The Next Nuclear Nightmare?' in *Arms Control Today*, March 1991, Vol. 21, No. 2.

Tom A. Zamora, 'LTBT Amendment Conference to Continue, But No Test Ban in Sight', *Arms Control Today*, March 1991, Vol. 21, No. 2.

- Research Papers:

Matthias Kuentzel, *Die Bundesrepublik Deutschland Zwischen Nuklearambition und Atomwaffenverzicht: Eine Untersuchung der Kontroverse um den Beitritt zum Atomwaffen-Spervvertrag* (The Federal Republic of Germany between Nuclear Ambition and Renunciation: an Investigation into its Accession to the NPT). Doctoral Dissertation presented at Hamburg University, Hamburg, 1991, 401 pp.

Small and Medium Reactors (SMRs), Issue Brief of the OECD Nuclear Energy Agency, December 1990.

Warren H. Donnelly and Zachary S. Davis, *Nuclear Nonproliferation Issues in the 102d Congress*, Issue Brief of the Congressional Research Service, The Library of Congress, Washington, D.C., February 25, 1991.

V. Comments from Readers

Mr. Paul Leventhal, President of the Nuclear Control Institute in Washington, D.C., has drawn the editor's attention to a 'serious omission' in the reporting by the *Newsbrief* [See Issue 12 - Winter 1990/1991 - section I, d.2; first item - ed.] of that institute's exchange of correspondence with IAEA Director General Hans Blix. The text of Mr. Leventhal's letter is reproduced below.

There is a serious omission in your reporting of the Nuclear Control Institute's exchange of correspondence with the IAEA Director General Hans Blix. Your report makes no mention of the central subject of this correspondence, which was apparent from the correspondence itself and was featured in the November 12, 1990 NuclearFuel story ('Blix Says IAEA Does Not Dispute Utility of Reactor-Grade Plutonium for Weapons' cited in your [Newsbrief] report. It is puzzling, therefore, that your news item made no reference to the fact that Dr. Blix had provided clarification that 'there is no debate ... in the Agency's Department of Safeguards' that high burn-up reactor-grade plutonium is 'capable of use in a nuclear explosive device.'

Dr. Blix made this statement in a letter to me of November 1, 1990 after other senior IAEA officials had expressed persistent skepticism to representatives of the Institute, during a visit to Vienna in June, that such material could be used in an explosive device.

The Institute had followed up by commissioning a paper by J. Carlson Mark, former head of the Theoretical Division of the Los Alamos National Laboratory, ('Reactor Grade Plutonium's Explosive Properties', August 1990) in which Dr. Mark stated that an implosion device of the type used in the 1945 Trinity test 'would be capable of bringing reactor-grade plutonium of any degree of burnup to a state in which it could provide yields in the multi-kiloton range.' After we submitted the paper to Dr. Blix for the Agency's review, he stated in a letter to me of September 19, 1990 that the 'paper by Dr. Mark is an interesting contribution to the debate regarding the usefulness of such material.' (emphasis supplied.)

It is noteworthy, therefore, that Dr. Blix eventually conceded that 'there is no debate' within the IAEA on the weapons utility of reactor-grade plutonium. The undeniable physical reality of the weapons potential of such plutonium is central to the question of whether the IAEA should be lowering its safeguards requirements for such material, a matter now under consideration by the Agency's Standing Advisory Group on Safeguards Implementation (SAGSI). It is also central to why, as you phrase it, 'the Nuclear Control Institute ... persistently expresses the fear that the IAEA is lowering its safeguards requirements with respect to reactor-grade plutonium.'

The Programme for Promoting Nuclear Non-Proliferation and the Newsbrief

The *Newsbrief* is part of the outreach effort which constitutes a major element of the Programme for Promoting Nuclear Non-Proliferation (PPNN). It is addressed to an audience interested in the subject of nuclear (non-)proliferation, to inform and help them alert their respective environments to the issue of nuclear non-proliferation.

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