

NUCLEAR-RELATED TRADE AND COOPERATION DEVELOPMENTS FOR SELECTED STATES, JULY-OCTOBER 1995

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OVERVIEW

Nuclear nonproliferation worldwide saw two divergent trends continue from July to October 1995. On the one hand, some nuclear threshold states (**Argentina** and **Brazil**) and a rollback state (**South Africa**) began to reap the political and economic benefits of their changed nonproliferation policies. On the other hand, one rollback state (**Belarus**) experienced difficulties in moving its nonproliferation goals forward, and **Iraq**, **Iran**, and **North Korea** continued to be sources of concern. Moreover, the relaxation of international and U.S. export controls as formulated in the post-COCOM (**New Forum**) proposals worried some nonproliferation specialists.

South Africa, **Argentina**, and **Brazil**, which had voluntarily halted their nuclear weapons programs, reaped the benefits of their acceptance into the international nonproliferation regime. The three countries were removed from the U. S. Department of Energy's list of countries of proliferation concern, allowing them greater access to U.S. nuclear goods and services. **South Africa** signed a nuclear cooperation agreement with the **United States**, while **Argentina** and **Brazil** are expected to sign one in the near future. After passing a stricter export control law on dual-use items, **Brazil** purchased fuel fabrication equipment from **Germany**, conducted nuclear cooperation talks with **Russia** and the **United States**, and announced that construction of the mothballed Angra-2 nuclear reactor would be resumed.

Substantial progress was also made in the development of regional nuclear-weapon-free zones (NWFZs), with the **Organization for African Unity** adopting a NWFZ in Africa; the **United States**, **France**, and the **United Kingdom** announcing they may sign the protocols to the **South Pacific NWFZ**; and **ASEAN** expected to sign a NWFZ treaty in December 1995. Less progress occurred regarding ongoing proposals to create a NWFZ in the **Middle East**.

Despite signing new cooperative agreements with Western countries, the nuclear successor states of the former Soviet Union continued to face formidable domestic nonproliferation and disarmament challenges. **Belarus** signed nonproliferation and physical security agreements with **Japan** and the **United States** respectively, while **Ukraine's** announcement that its nuclear disarmament is proceeding on schedule was qualified by a warning that this process may be hindered or delayed if promised aid from **France**, **Italy**, **Spain**, and the **United Kingdom** is not forthcoming.

Nuclear warhead dismantlement in **Ukraine** reached 90 percent completion, with a total of nearly 600 warheads transferred to **Russia**. **Belarus**, however, held up withdrawal of the remaining 18 SS-25s from its territory, issuing a compensation-related ultimatum to **Russia** and voicing displeasure that promised disarmament aid from **Italy**, the **United Kingdom**, and the **United States** had not been released. Agreements with **France** on nuclear power plant construction, with **Ukraine** on scientific/technological cooperation, and with the **United States** on sealing the Degelen Mountain nuclear testing tunnels, moved **Kazakhstan** closer to its nonproliferation objectives.

Steady advances at the fifth Gore-Chernomyrdin Commission meeting in Moscow were overshadowed by the release of a classified **Russian** report detailing the dangerous conditions at military and civilian nuclear facilities. A number of smuggling incidents were reported involving **Estonia**, **Lithuania**, and **Russia**—none of which involved weapons-grade material—reinforcing the West's concern over inadequate nuclear material protection, control, and accounting (MPC&A) mechanisms. Meanwhile, President Yeltsin appointed Minatom Director Viktor Mikhailov to the Security Council and issued an executive order transferring oversight for military-related nuclear facilities to the Ministry of Defense.

Talks continued between the Korean Peninsula Energy Development Organization (**KEDO**) and **North Korea**. After much dickering about **South Korea's** role in the reactor transfer and payment for site surveys, the two sides seemed close to hammering out a supply contract. Issues such as **North Korea's** demands for \$1 billion worth of supplementary facilities and a decades-long repayment schedule have been eased back onto mutually acceptable ground. However, Congress has reduced the proposed fiscal year 1996 budget for U.S. shipments of heavy oil by almost half, and there are indications that funding for the light water reactors may also be in jeopardy. The **IAEA**—whose calls for inspection of plutonium levels in 8,000 spent fuel rods removed by **North Korea** from its five MW reactor were deemed “not implementable” by the United States—has said it is unable to ascertain **North Korea's** nuclear history.

The defection of Hussein Kamel, considered the mastermind of **Iraq's** weapons of mass destruction programs, led to **Iraqi** disclosures that it conducted a “crash program”

before the Gulf War to build its first nuclear weapon. UNSCOM sources further revealed that **Iraq** was developing a radiological weapon.

Despite intense **U.S.** pressure and some opposition from the **Russian** military, Minatom continued its nuclear deal with **Iran**. New provisions to the deal provide for **Russian** construction of one VVER-1,000 reactor at Bushehr, but could potentially be expanded to include the supply of up to four reactors. The contract also includes the training of **Iranian** nuclear technicians at **Russian** facilities and a fuel supply contract stipulating that spent fuel from the reactor will be returned to **Russia**. In contrast, under **U.S.** pressure, **China** reportedly canceled its deal to provide **Iran** with two 300 MW reactors.

International export controls were also relaxed as **U.S.** proposals for a system of prior notification were rejected at negotiations to create the **New Forum**. Meanwhile, the **U.S.** government unilaterally relaxed export restrictions on the sale of supercomputers from 1,500 million theoretical operations per second (MTOPS) to between 7,000 and 12,000 MTOPS.

Finally, **China** has conducted two nuclear tests in an attempt to certify its latest generation of nuclear weapons. **China's** ability to overcome the technical challenges of miniaturization in time to avoid renegeing on its pledge to sign the **Comprehensive Test Ban Treaty** remains uncertain.

Andrew Koch, Adam Moody, and Holly Porteous

NOTE:

A date marked with an "" indicates that an event was reported on that date; a date without an "*" is the date when an event actually occurred.*

*The numbers listed in parentheses following the bibliographic references refer to the identification number of the document in the CNS Nuclear Database from which the news summaries are abstracted. Because of the rapidly changing nature of the subject matter, **The Nonproliferation Review** is unable to guarantee that the information reported herein is complete or accurate, and disclaims liability to any party for any loss or damage caused by errors or omissions.*

ALGERIA

ALGERIA WITH PRC

6/95*

U.S. government analysts say Algeria's 15 MW reactor, secretly built by China in the 1980s, produces less weapons-grade plutonium than generally believed. The analysts say that the Algerian plant is fueled by 3 percent enriched uranium instead of natural uranium, which allows only 1 kg of plutonium to be formed per year of operation. The reactor is also capable of producing 1 kg of plutonium by irradiating uranium "blanks" [blankets]. Thus, the reactor would only be capable of producing a maximum yearly supply of 2 kg plutonium.

Risk Report, 6/95, p. 12 (13763).

ARGENTINA

ARGENTINA WITH BRAZIL

10/28/95-10/29/95

Argentina's Foreign Minister Guido Di Tella and Defense Minister Oscar Chameleon meet in Sao Paulo with Brazilian Foreign Minister Luiz Felipe Lampreia and Strategic Affairs Secretary Ronaldo Motta Sardenberg to discuss nuclear and space collaboration.

Telam (Buenos Aires), 10/28/95; in FBIS-LAT-95-210, 10/28/95 (13498).

ARGENTINA WITH BRAZIL, CUBA, AND MEXICO

10/95

Cuban, Brazilian, Argentine, and Mexican nuclear specialists conclude a 15-day meeting in Cienfuegos, Cuba, on the handling of nuclear fuel and nuclear waste as well as the development of more radiologically secure nuclear facilities.

Omar Giorki, *Tele Rebelde* and Cuba Vision Networks (Havana), 10/5/95; in FBIS-LAT-95-197, 10/5/95 (13482).

ARGENTINA WITH ISRAEL AND UNITED STATES

7/30/95-8/5/95

Specialists from the U.S., Argentina, and Israel hold a secret meeting to analyze Syrian efforts to obtain nuclear technology and equipment.

Shim'on Schiffer, *Yedi'ot Aharonot* (Tel Aviv), 7/28/95, p. 1; in FBIS-NES-95-145, 7/28/95 (13307).

ARGENTINA WITH SOUTH KOREA

9/29/95

In Seoul, Argentine President Carlos Menem and South Korean President Kim Yong-sam sign the Cooperation Agreement on the Peaceful Use of Nuclear Energy. The agreement covers development, design, construction, and operation of nuclear reactors; "fuel cycle installation"; the production and use of radioisotopes; nuclear energy technology, safeguards, and physical protection; training of scientists and technicians; exchange of knowledge between experts; and the establishment of working groups to exchange equipment and services related to nuclear energy.

Noticias Argentinas News Agency (Buenos Aires), 9/29/95; in BBC Monitoring Service: Latin America, 10/6/95 (13799). *Telam* (Buenos Aires), 10/7/95; in FBIS-LAT-95-196, 10/7/95 (13849). *Yonhap* (Seoul), 9/29/95; in FBIS-EAS-95-189, 9/29/95 (13379).

ARGENTINA WITH SYRIA

7/14/95*

Israeli government officials express concern over Syrian attempts to purchase a 5 MW research reactor and a radioactive waste disposal facility from Argentina. Israeli Atomic Energy Commission officials are concerned that "such cooperation could provide an opportunity and cover for irresponsible elements in Argentina to develop relations with Syria on far more dangerous issues" and view the potential import of nuclear facilities as proof of Syria's desire "to build a comprehensive national nuclear project."

Shim'on Schiffer, *Yedi'ot Aharonot* (Tel Aviv), 7/14/95, pp. 1, 9; in FBIS-NES-95-135, 7/14/95 (13305).

7/18/95

An anonymous Argentine official refutes allegations that Argentina is planning to export a nuclear reactor to Syria.

Nuclear Proliferation News, 8/6/95, pp. 8-9 (13319).

7/23/95

Argentine Foreign Minister Guido Di Tella says if Syria's effort to obtain a nuclear reactor places Israel in "jeopardy," then "the project is out." According to Di Tella, Syria was interested in a reactor larger than the 3 MW unit that had been under discussion. Syrian technicians are slated to visit Argentina in late 8/95.

Nuclear Proliferation News, 8/7/95, pp. 8-9 (13319).

7/24/95

Argentine Vice-Foreign Minister Fernando Petrella announces that Argentina will export a reactor to Syria once Middle Eastern security is established and a "bilateral agreement on the peaceful use of nuclear energy" is reached.

Nuclear Proliferation News, 8/7/95, pp. 8-9 (13319).

7/30/95-7/31/95

During a trip to Tel Aviv, Argentine Foreign Minister Guido Di Tella explains that Argentina will not export a nuclear reactor to Syria until a peace agreement is completed between Israel and Syria. The Argentine firm Invap SE recently disclosed that in the early 1990s, the firm agreed to export a 20 MW research reactor to Syria but the deal was prevented by the Argentine government "for political reasons."

Mark Hibbs and Neal Sandler, *Nucleonics Week*, 8/3/95, pp. 1, 16 (13376).

8/14/95*

In an effort to alleviate international concern over the possible sale of a nuclear reactor to Syria, Argentine Vice-Foreign Minister Fernando Petrella states that "Argentina has absolute transparency on matters of technology transfers and will not hold back any information from the international control organizations." Petrella's statement addresses earlier U.S. and Israeli concerns over the presence of a nuclear reactor in Syria.

Reuter, 8/14/95; in Executive News Service, 8/14/95 (13345). *Noticias Argentinas* (Buenos Aires), 8/2/95; in FBIS-LAT-95-149, 8/2/95 (13345).

8/17/95

Argentine Foreign Relations Undersecretary Guillermo Gonzalez and Syrian Foreign Ministry Atomic Energy Directorate head Ibrahim Othman meet and sign a letter expressing Argentina's willingness to set a time frame of two years to negotiate the export of a 5 MW reactor to Syria. The Syrian delegation voices its desire to obtain a 5 MW reactor which could be upgraded to 10 MW. The agreement calls for Argentina to construct a facility in Syria to treat medium- and low-level radioactive waste and to provide technical and training assistance.

Telam (Buenos Aires), 8/18/95; in FBIS-TAC-95-016-L, 8/18/95 (13316). Radio Monte Carlo (Paris), 8/21/95; in FBIS-NES-95-162, 8/21/95 (13316).

8/21/95

A Syrian delegation is expected to arrive in Buenos Aires to discuss a schedule for the sale of a nuclear reactor, designed by the Argentine firm Invap SE, to the Syrian Atomic Energy Agency.

Shim'on Schiffer, *Yedi'ot Aharonot* (Tel Aviv), 7/28/95, p. 1 (13307). Mark Hibbs and Neal Sandler, *Nucleonics Week*, 8/3/95, pp. 1, 16 (13376).

ARGENTINA WITH UNITED STATES

8/18/95

The U.S. Department of Energy (DOE) removes Argentina from a list of countries of proliferation concern, noting that Argentina joined the NPT and signed the Treaty of Tlatelolco. Accordingly, the U.S. relaxes restrictions on U.S. companies wishing to sell nuclear-related goods and services to Argentina, permitting them to export civilian nuclear materials to Argentina without first obtaining DOE authorization.

George Lobsenz, *Energy Daily*, 9/19/95, p. 3 (14030).

10/19/95

A U.S. State Department official states that a nuclear cooperation accord with Argentina may be signed and submitted to Congress "possibly within a few weeks." The official adds, "we think at this moment that Argentina has a sterling nonproliferation record."

Kathleen Hart, *NuclearFuel*, 10/23/95, pp. 4-5 (13679).

ARMENIA

ARMENIA, BELARUS, GEORGIA, KAZAKHSTAN, AND RUSSIA WITH ISTC

9/29/95*

The International Science and Technology Center (ISTC) governing board approves 23 new civil technical and scientific projects. The board also approves a measure that will "expand the potential funding base for ISTC projects" through the involvement of additional governmental and non-governmental entities not party to the ISTC agreement. The new projects bring the total number of approved ISTC-funded projects to almost 180, and expand the funding base to \$75 million. Approximately 10,500 scientists are involved in ISTC projects in Armenia, Belarus, Georgia, Kazakhstan, and Russia.

Finansoviye Izvestiya (Moscow), 9/29/95, p. 1 (13281). *Post-Soviet Nuclear & Defense Monitor*, 10/13/95, pp. 12-14 (13612).

ASSOCIATION OF SOUTH EAST ASIAN NATIONS (ASEAN)

INTERNAL DEVELOPMENTS

9/13/95

Senior officials of ASEAN countries agree to accelerate the process of creating a regional nuclear-weapon-free zone (NWFZ). The draft treaty for the NWFZ, said to be 90 percent complete, will be presented at the full ASEAN summit meeting in 12/95. A Philippine official says the draft accord seeks to "declare the whole region nuclear-free...[meaning] no introduction, no acquisition, no use and no production" of nuclear weapons in the region. It is likely that the treaty will not prohibit the transshipment of nuclear weapons.

Nuclear Proliferation News, 9/27/95, p. 6 (14027).

10/95

ASEAN representatives fail to agree on the wording of a regional treaty banning nuclear weapons at a meeting in Jakarta, Indonesia. Indonesia is pushing hard for completion of the Southeast Asia Nuclear-Weapon-Free Zone (SEANWFZ) Treaty, put on hold during the Cold War in deference to U.S. interests. The treaty would ban the development, acquisition, and ownership of nuclear weapons by the ASEAN parties and prohibit the deployment, testing, and use of nuclear weapons as well as the dumping of nuclear waste and radioactive substances in the SEANWFZ. In 12/95, the delegates hope to open the treaty for signing at the Bangkok summit of ASEAN leaders. Prospective ASEAN members Burma, Cambodia, and Laos are expected to sign.

Bangkok Post, 10/31/95, p. 8; in FBIS-EAS-95-215, 10/31/95 (13687). Saritdet Marukhathat, *Bangkok Post*, 9/16/95, p. 3; in FBIS-EAS-95-182, 9/16/95 (13687). Hiroyuki Okita, *Nihon Keizai Shimbun* (Tokyo), 7/30/95, p. 4; in FBIS-TAC-95-016-L, 7/30/95 (13687).

10/17/95

Thai Foreign Minister Kasemsamosan Kasemi warns against the premature establishment of a NWFZ by ASEAN, citing U.S. concern over the movement of its nuclear-powered vessels through Southeast Asian waters as an important consideration.

Bangkok Post, 10/18/95, p. 8; in FBIS-EAS-95-201, 10/18/95 (13687).

10/28/95

Senior officials from 10 Asian countries conclude a proposed agenda for an Asia-Europe summit in 3/96. This planned summit between seven member states of ASEAN, Japan, PRC, South Korea, and the European Union nations is unprecedented. The agenda proposed by the participating Asian nations, which includes discussion of nuclear nonproliferation, nuclear disarmament and arms control, will be presented to the Europeans at a preparatory conference to be held in Madrid from 12/19/95 to 12/20/95.

Kyodo (Tokyo), 10/28/95; in FBIS-EAS-95-210, 10/28/95 (13850).

BELARUS

BELARUS WITH:

Armenia, Georgia, Kazakhstan, Russia, and ISTC, 100

BELARUS WITH ESTONIA AND UKRAINE

8/21/95*

Ukrainian border guards seize approximately 1 kg of red mercury from individuals in a Ford Sierra automobile on the Ukrainian-Belarusian border. The automobile, marked with Estonian license plates, was headed to Belarus when officials discovered the material under the front wheelwell. According to the State Committee for the Defense of Ukrainian Borders, this is the first time in 1995 that Ukrainian officials have seized this type of contraband. The Ukrainian Security Service is in the process of determining the material's origin and ultimate destination.

Unian (Kiev), 8/21/95; in FBIS-TAC-95-016-L, 8/21/95 (13420).

BELARUS WITH IRAN

8/8/95

A Belarusian Foreign Ministry senior official refutes charges that Belarus may participate in nuclear deals with Iran. The official says "the sales of nuclear arms components or technological cooperation in that area have never been mentioned."

Interfax (Moscow), 8/8/95; in FBIS-TAC-95-016-L, 8/8/95 (13338).

BELARUS WITH JAPAN

8/14/95*

Belarus and Japan sign an agreement to cooperate in the field of nonproliferation. Japan will provide Belarus with \$5.2 million in aid.

Segodnya (Moscow), 8/15/95, p. 4 (13447).

BELARUS WITH RUSSIA

7/6/95

An article in *Izvestiya* says that Belarusian

President Aleksandr Lukashenka ordered the Belarusian Ministry of Defense to stop issuing passes that allow Russian Strategic Missile Forces to withdraw missile armaments and combat equipment from Belarusian territory. The article also says that the Belarusian military is preventing Russian trains that are to be used to remove the last SS-25s from Belarus from entering the country. Belarus's decision to suspend the removal of remaining strategic nuclear weapons on its territory (nine SS-25s at Mozyr, and nine SS-25s at Lida) has been confirmed by "numerous sources." According to the *Izvestiya* article, the order to suspend withdrawals was prompted by Lukashenka's visit to a Russian Strategic Missile Forces division in Lida, during which Lukashenka said the decision of Belarus's previous administration to withdraw Russian Strategic Missile Forces was a "big political mistake." According to Colonel General Igor Sergeev, commander in chief of Russian Strategic Missile Forces, Belarus and Russia are seeking a resolution to the "present situation." Other reports describe the current suspension in transferring strategic nuclear weapons as "indefinite."

Viktor Litovkin, *Izvestiya* (Moscow), 7/6/95, pp. 1-2 (14041). *Nuclear Nonproliferation News*, 8/7/95, p. 6 (13419). Yuriy Drakakhurst, *Belaruskaya Delovaya Gazeta* (Minsk), 8/3/95, p. 3; in FBIS-TAC-95-016-L, 8/3/95 (13751).

7/10/95*

A senior Belarusian official says the "sole reason" Belarus is "hold[ing] up" the withdrawal of Russian Strategic Missile Forces from Belarus is the poor state in which Russian units leave their military installations. The official says Belarus only recently adopted a *modus operandi* for taking over the nuclear missile bases, which are in such poor condition that they must be decontaminated and thoroughly cleaned prior to being used for any purpose, civilian or military. According to the official, the withdrawal process should be completed "by the end of 1996" under the current schedule. The official also says that, in an effort to keep the withdrawal of Russian Strategic Missile Forces depoliticized, Belarusian officials issued a permit on 7/6/95 for a Russian unit to leave the country.

Aleksandr Korzun, Igor Porshnev, Yevgeni Terekhov,

and others, Interfax (Moscow), 7/10/95; in FBIS-SOV-95-132, 7/11/95 (14040).

7/24/95*

Belarus has delayed the repatriation of 18 SS-25s to Russia because Italy, Russia, the U.K., and the U.S. have failed to compensate Belarus for the first two stages of the disarmament process. Under the terms of a previous agreement, Russia is to compensate Belarus for the value of transferred strategic nuclear weapons. However, according to Belarusian President Aleksandr Lukashenka, Russia has yet to send "a single kopeck" for the weapons. Lukashenka says that Belarus has shouldered the nearly \$400 million cost of the withdrawal's initial phases. The U.S. has sent nearly \$100 million in disarmament assistance to Belarus, but Belarus is apparently seeking to bargain for more assistance before resuming transfers. According to other reports, Presidents Yeltsin and Lukashenka agreed to suspend future transfers because neither side has the financial resources to remove the weapons and accommodate displaced troops.

Interfax (Moscow), 7/24/95; in FBIS-SOV-95-142, 7/24/95 (13415). Yuriy Drakakhurst, *Belaruskaya Delovaya Gazeta* (Minsk), 8/3/95, p. 3; in FBIS-TAC-95-016-L, 8/3/95 (13751). *Nuclear Proliferation News*, 8/7/95, p. 6 (13419).

8/3/95*

According to Russian Strategic Rocket Forces General Igor Sergeev, Belarus has not issued permits to remove nuclear warheads since 7/95 because Russian troops are leaving "military settlements and training grounds in an inappropriate condition." Belarusian Deputy Foreign Minister Andrey Sannikov confirms Sergeev's assessment of the situation and says a joint commission comprised of Russian and Belarusian officials has convened to solve the problems.

Yuriy Drakakhurst, *Belaruskaya Delovaya Gazeta* (Minsk), 8/3/95, p. 3; in FBIS-TAC-95-016-L, 8/3/95 (13751).

8/5/95

The Belarusian Ministry of Foreign Affairs issues a statement saying that Belarus has not stopped transfers of nuclear missiles to Russia, but plans to "slow the pace." In the statement, the Ministry criticizes the Russian media for misrepresenting an earlier statement made by Lukashenka, suggesting

that Lukashenka would terminate Belarusian nuclear disarmament. According to the statement, Lukashenka "never said that disarmament would be halted."

Post Soviet Nuclear & Defense Monitor, 8/18/95, pp. 2-3 (13245).

8/8/95

Belarus issues an ultimatum demanding that Russia cancel the \$400 million debt it owes for Russian natural gas or face the suspension of SS-25 withdrawals from Belarusian territory. According to a Belarusian official, negotiations over the issue continue.

Umit Enginsoy, *Defense News*, 8/21/95, p. 1 (13419).

9/2/95*

According to Viktor Yesin, chief of the Russian Strategic Missile Forces Main Staff, the Russian military does not have the financial resources to continue to "maintain" the 18 SS-25s that remain in Belarus, including support for personnel and maintenance of military installations. In addition, Yesin says that Russia has not planned any funds for these purposes beyond 1995.

Krasnaya Zvezda (Moscow), 9/2/95, p. 4; in FBIS-SOV-95-172, 9/2/95 (13608).

9/28/95*

According to the information acquired by some "experts," Belarus is unlikely to resume transfers of nuclear missiles to Russia before 1997.

Itar-Tass (Moscow), 9/28/95; in FBIS-SOV-95-189, 9/28/95 (13423).

BELARUS WITH UNITED STATES

6/23/95

Belarus and the U.S. sign two agreements under which the U.S. will provide \$19 million for improvements in physical security at the Sosny nuclear facility and the dismantlement of Belarusian nuclear infrastructure.

Itar-Tass (Moscow), 6/23/95; in FBIS-TAC-95-014-L, 6/23/95 (13248).

8/14/95*

Belarusian Foreign Minister Vladimir Senko says that the Ministry of Foreign Affairs is searching for ways to make nuclear disarmament more cost-effective. According to

a Ministry official, as part of that effort Belarus has signed an agreement under which the U.S. will compensate Belarus for facilitating U.S. inspections in Belarus.

Segodnya (Moscow), 8/15/95, p. 4 (13447).

9/5/95

The U.S. Senate passes the Department of Defense Appropriations Act, providing \$325 million for Cooperative Threat Reduction (CTR) programs and on 9/6/95 ratifies the National Defense Authorization Act (NDAA), related legislation that makes available an additional \$365 million in CTR funds.

Post-Soviet Nuclear & Defense Monitor, 9/22/95, p. 1 (13587).

10/19/95

A U.S. State Department official says that the U.S. and Belarus are "close to initialing the text [of a nuclear cooperation agreement]," but that the agreement may not enter into force for another year.

Kathleen Hart, *NuclearFuel*, 10/23/95, pp. 4-5 (13679).

BRAZIL

INTERNAL DEVELOPMENTS

7/12/95*

Brazilian President Fernando Henrique Cardoso passes on legislation to Congress mandating export regulations for "sensitive items and services directly related to them." According to the proposed bill, the export of sensitive dual-use items used to develop weapons of mass destruction (WMD) would need to be authorized by the appropriate federal agency and the Strategic Affairs Secretariat of the Presidency.

Ronaldo Motta Sardenberg, *O Globo* (Rio de Janeiro), 7/12/95, p. 6; in FBIS-TAC-95-004, 7/12/95 (13317).

8/24/95

The Brazilian National Nuclear Energy Commission (CNEN) reports that the radioactive storage facilities at Bahia Minerais and Minerais house thorium and uranium

waste.

Voz do Brasil Network (Brasilia), 8/24/95; in FBIS-TEN-95-013, 8/24/95 (13296).

9/12/95*

The Brazilian Navy ministry intends to use part of its proposed 330.7 million reais budget to construct a nuclear submarine. Brazilian President Fernando Henrique Cardoso pledges to release the 1.2 billion reais budgeted in 1996 to the branches of the armed forces, although the promised allocation remains subject to modification by Congress.

Sonia Mossri, *Folha de Sao Paulo*, 9/12/95, Section 1, p. 5; in FBIS-LAT-95-179, 9/12/95 (13300).

9/15/95

Construction of the Angra-2 nuclear facility will be resumed in 1/96 after a 10-year interruption, according to President Laercio Simoes Machado of Furnas Electric Power Plants, Inc. Machado estimates that finishing the construction will cost \$1.4 billion and investment in the plant for calendar year 1996 will total \$460 million. Furnas intends to begin work on the plant in 1/96 and to have the plant operational by 1999.

O Globo (Rio de Janeiro), 9/16/95, p. 27; in FBIS-LAT-95-184, 9/16/95 (13299).

9/18/95*

Financial constraints force Brazilian Navy Minister Mauro Cesar Pereira to temporarily abandon nuclear submarine development and to allocate resources for the construction of conventional submarines instead. Explaining the decision, Pereira says "right now it would be foolish to continue the nuclear submarine project." The Brazilian Navy intends to reactivate the nuclear submarine project at a later date.

Alexandre Secco, *Folha de Sao Paulo*, 9/18/95, p. 7; in FBIS-TAC-95-005, 9/18/95 (13534).

10/5/95

The Brazilian Senate enacts a law granting the Strategic Affairs Secretariat (SAE) powers of oversight for export controls of all dual-use goods and services. Brazilian Senator Hugo Napoleao predicts "the new law will pave the way for Brazilian access to sensitive technology."

Jornal do Brasil (Rio de Janeiro), 10/6/95, p. 4; in FBIS-LAT-95-196, 10/6/95 (13369).

10/31/95*

Brazilian Mines and Energy Minister Raimundo Brito replaces Nuclebras Engineering, Inc. (Nuclen) President Evaldo Cesario de Oliveira with former Furnas Electric Power Plants, Inc. President Ronaldo Fabricio in an attempt to quicken the pace of construction at the Angra-2 nuclear power plant. Nuclen, a firm "linked" to Furnas, is responsible for leading all necessary engineering projects and assisting in the electro-mechanical construction of the plant.

Tania Malheiros, *Jornal do Brasil* (Rio de Janeiro), 10/31/95, p. 2; in FBIS-LAT-95-214, 10/31/95 (13538).

BRAZIL WITH:

Argentina, 99

Argentina, Cuba, and Mexico, 99

Cuba (Juragua Plant), 104

BRAZIL WITH GERMANY

8/3/95

A shipment of at least 10 MT of uranium, enriched by Urenco and converted into pellets by Germany, arrives in Rio de Janeiro, according to Nuclear Industries of Brazil (INB) representative Alexandre Rodrigues. The shipment of enriched uranium, which by itself is insufficient for the fifth reload at the Angra-1 nuclear power plant, is held at INB's Fuel Elements Factory (FEC) in Resende until further shipments, expected to arrive by 2/96, are delivered. On 10/19/95, 16 MT of uranium, an amount sufficient to fuel the Angra-1 nuclear power reactor for 14 months and valued at 10 million reais, arrives in Resende [supplier not specified]. According to Furnas Electric Power Plants, Inc., a total of 32.5 MT of uranium will be transported to Angra-1, and the plant will be closed in 3/96 for reloading. Furnas will pay INB almost 40 million reais for the fuel.

Tania Malheiros, *Agencia Estado* (Sao Paulo), 8/4/95; in FBIS-TAC-95-016-L, 8/4/95 (13298). Rede Globo Television (Rio de Janeiro), 10/19/95; in FBIS-LAT-95-203, 10/19/95 (13500).

8/3/95

INB representative Alexandre Rodrigues announces that INB President Roberto

Nogueira da Franca visited Germany in an attempt to obtain \$20 million worth of manufacturing equipment needed for the FEC to produce uranium pellets in Brazil.

Tania Malheiros, *Agencia Estado* (Sao Paulo), 8/4/95; in FBIS-TAC-95-016-L, 8/4/95 (13298).

9/18/95

Brazilian President Fernando Henrique Cardoso arrives in Bonn for a "state visit" and will discuss bilateral Brazilian-German nuclear collaboration with German President Roman Herzog and Prime Minister Helmut Kohl. Brazilian Strategic Affairs Secretary Ronaldo Sardenberg says Brazil plans to "reactivate" a 1974 agreement with Germany, valid until 1999, which provides for the construction of eight nuclear power plants, including Angra-2.

Odaíl Figueiredo, *O Estado de Sao Paulo* (Sao Paulo), 9/19/95, p. A4; in FBIS-TAC-95-005, 9/19/95 (13535).

10/29/95*

INB concludes a \$12 million deal to purchase an assembly line from Germany's Siemens for the production of uranium powder and pellets. Employed in the uranium fabrication process, the powder and pellets are part of a larger plan to operate Brazil's Angra-1 and -2 nuclear plants with indigenously made fuel. The assembly line will be installed at INB's FEC in Resende by the end of 1997. INB agrees to subject all uranium powder and pellets manufactured at FEC to IAEA safeguards. Brazil is in the process of upgrading its ultracentrifuge fuel enrichment facility at the Navy Aramar Experimental Center in Ipero from laboratory to industrial capacity in order to enrich its own uranium. There are 1,000 ultracentrifuges at Aramar; 6,000 are needed to commercialize the Brazilian uranium enrichment industry. INB President Nogueira da Franca says Nuclebras Isotope Enrichment, Inc. (Nuclei) in Resende can manufacture up to 100 MT of uranium and 145 fuel elements. Nuclei equipment and technology will be combined with Aramar know-how in an effort to produce enough uranium to make Brazil self-sufficient in fueling Angra-1 and -2.

Tania Malheiros, *Jornal do Brasil* (Rio de Janeiro), 10/29/95, p. 3; in FBIS-LAT-95-213, 10/29/95 (13681).

BRAZIL WITH INDIA, INDONESIA, PRC, AND RUSSIA

9/11/95*

Russian Minister of Atomic Energy Viktor Mikhailov says Russia would like to export nuclear power plant technology to Brazil, China, India, and Indonesia. Russia would also like to export enrichment services to unspecified countries in an effort to fully utilize its annual 20 million SWU capacity and increase profits.

Kathleen Hart, *NuclearFuel*, 9/11/95, p. 4 (13748).

BRAZIL WITH RUSSIA

10/22/95

During a U.N. meeting in New York, Russian President Boris Yeltsin and Brazilian President Fernando Henrique Cardoso decide to create a bilateral commission, headed by Russian Foreign Minister Viktor Chernomyrdin and Brazilian Vice-President Marco Maciel, for cooperation in the development of atomic energy, space, and aircraft construction.

Itar-Tass (Moscow), 10/22/95; in FBIS-SOV-95-204, 10/22/95 (13507).

BRAZIL WITH UNITED STATES

7/21/95

The Brazilian Strategic Affairs Secretariat (SAE) and the National Nuclear Energy Commission (CNEN) pass on to the Brazilian Foreign Ministry a U.S. proposal for a bilateral nuclear cooperation agreement. The Foreign Ministry will now work out the final terms of the agreement with the U.S.

Miriam Leitao, *O Globo* (Rio de Janeiro), 7/22/95, p. 22; in FBIS-LAT-95-143, 7/22/95 (13302).

8/18/95

The U.S. Department of Energy (DOE) removes Brazil from a list of countries of proliferation concern, noting that Brazil signed the Treaty of Tlatelolco. Accordingly, the U.S. relaxes restrictions on U.S. companies wishing to sell nuclear related goods and services to Brazil, permitting them to export civilian nuclear materials to Brazil without first obtaining DOE authorization.

George Lobsenz, *Energy Daily*, 9/19/95, p. 3 (14030).

10/19/95

A U.S. State Department official characterizes U.S. negotiations with Brazil on a nuclear cooperation agreement as "sporadic," but notes "it appears we're not very far apart."

Kathleen Hart, *NuclearFuel*, 10/23/95, pp. 4-5 (13679).

CUBA

INTERNAL DEVELOPMENTS

8/11/95

In an interview, Cuban journalist Jorge Pettinau asserts that Cuba has a "vast nuclear program that includes other projects" besides the development of the two reactors at Juragua. Pettinau adds that "it will not be a matter of only receiving because Cuba produces certain things that can be offered, so Cuban nuclear development might be of importance to Latin America."

Oswaldo Rodriguez, Radio Rebelde Network (Havana), 8/11/95; in FBIS-LAT-95-157, 8/11/95 (13304).

10/20/95

Cuban police arrest journalist Olanec Noguera Roce after he reports on Cuba's Juragua nuclear facility. The Independent Press Bureau of Cuba (BPIC) "expressed its concern" over the treatment of Roce.

AFP (Paris), 10/25/95; in FBIS-LAT-95-207, 10/25/95 (13648).

CUBA WITH:

Argentina, Brazil, and Mexico, 99

JURAGUA PLANT IN CUBA

(Cuba with Brazil, France, Germany, Italy, Russia, and United Kingdom)

7/95

Upon questioning by the U.S. General Accounting Office (GAO), firms suspected of involvement in completing the Juragua nuclear power facility, including Italy's Ansaldo, the U.K.'s National Nuclear Cor-

poration (NNC), Germany's Siemens AG, and France's EdF International, deny participating in a consortium to fund work on completing the two reactors. NNC and Ansaldo are, however, conducting a study to determine the cost of completing the plant. Deputy Director of the Juragua plant Manuel Leon estimates it will cost \$700-800 million to make the facility operational.

Kathleen Hart, *Nucleonics Week*, 8/3/95, pp. 1-2 (13371). Barbara Bethancourt, Havana Radio, 7/1/95; in FBIS-LAT-95-128, 7/1/95 (13372).

7/95

The Italian firm Ansaldo, the Russian designers of VVER-440 reactors, and the Brazilian firm Empresa Brasileira de Engenharia (EBE) are conducting a nine-month joint feasibility study to determine the cost of completing Cuba's Juragua nuclear power plant.

Nuclear News, 8/95, p. 75 (13375).

7/95

Juragua Nuclear Power Plant Director Issac Alayon Gutierrez explains that Cuba has negotiated the purchase of unspecified equipment for the Juragua nuclear power plant from Russia. Gutierrez adds that once a feasibility study undertaken by Brazilian, Italian, and U.K. firms is finished, "negotiations to create an economic partnership responsible for completing and operating the nuclear plant will begin, and...involve the participation of Cuba, Russia, and interested third-party-partners." Gutierrez notes the reactor is 90 percent complete and 70-80 percent of the equipment at the site has been preserved since its 1992 mothballing. A second unit at Juragua is 20 percent complete.

Argel Calcines, Prensa Latina (Havana), 7/21/95; in FBIS-LAT-95-142, 7/21/95 (13367). *NucNet News*, 8/9/95 (13372). *Nuclear News*, 8/95, p. 75 (13375).

7/95

U.S. Congresswoman Ileana Ros-Lehtinen presents a letter to President Clinton, co-signed by 130 members of Congress, calling for "strong action" against the development of a nuclear plant in Cuba. The letter claims the Juragua plant would present a "national security threat to the U.S."

Kathleen Hart, *Nucleonics Week*, 8/3/95, pp. 1-2 (13371).

7/6/95*

Voicing its dissatisfaction with Russian assistance to Cuba's Juragua nuclear power plant, the U.S. House of Representatives cuts assistance to the former Soviet republics by \$15 million.

Roberto Morejon, Havana Radio, 7/6/95; in FBIS-LAT-95-129, 7/6/95 (13314).

8/3/95

Testifying before a House International Relations subcommittee, Center for Security Policy representative Roger Robinson urges swift Congressional action to prevent the completion of two Russian-designed nuclear reactors at Juragua and calls for "swift and decisive penalties" against foreign companies willing to assist Cuba.

CANA (Bridgetown), 8/3/95; in FBIS-LAT-95-150, 8/3/95 (13314).

8/8/95*

Russian Ministry of Atomic Energy Public Relations Department Chief Georgiy Kaurov voices Russia's intention to restart work on a Russian VVER reactor in Cuba despite U.S. pressure. Kaurov says Russia has already earmarked \$30 million in credits to purchase equipment for the plant.

Anna Babkina, Itar-Tass (Moscow), 8/8/95; in FBIS-SOV-95-152, 8/8/95 (13313).

8/9/95

Cuba's IAEA Representative David Perez Martin discloses that Ansaldo (Italy), NNC (U.K.), Furnas (Brazil), and an unnamed British firm have nearly completed a feasibility study analyzing the cost of completing Cuba's Juragua nuclear facility.

NucNet News, 8/9/95 (13372).

10/10/95-10/15/95

During an official visit to Cuba, Russian First Deputy Prime Minister Oleg Soskovets pledges to assist Cuba in the completion of two Soviet made VVER-400 light water reactors (LWRs) at Juragua and signs a memorandum extending \$30 million in credit to maintain the reactors until construction is resumed. According to Russian Deputy Energy Minister Yevgeniy Reshetnikov, officials from Russia and Cuba will begin searching in 11/95 for corporations to join a consortium to finance the approximately

\$750 million necessary to complete the reactors within three to four years.

Alan Philips, *Washington Times*, 10/17/95, p. A9 (13680).

10/14/95*

Proposed financing of the \$750 million needed to complete the Juragua power plant is as follows: Cuba will provide \$208 million; Russia will contribute \$349 million; and the remaining \$191 million is to be supplied by foreign investors. Potential investors for the Cuban project include Germany's Siemens and two unnamed firms, one Brazilian and the other German.

Reuter, 10/14/95; in *Executive News Service*, 10/16/95 (13680). *Prensa Latina* (Havana), 10/14/95; in FBIS-LAT-95-200, 10/14/95 (13680).

CUBA WITH MEXICO

9/7/95-9/10/95

Cuban and Mexican delegations meeting in Havana make plans to investigate potential nuclear cooperation.

Notimex (Mexico City), 9/11/95; in FBIS-LAT-95-176, 9/11/95 (13311).

EGYPT

INTERNAL DEVELOPMENTS

7/24/95

Egyptian Minister of Scientific Research Salah Hedayat reveals that Egypt began developing a clandestine nuclear weapons program in the early 1960s under President Gamal Abdel-Nasser. Hedayat adds that Nasser continued the program until his death in 1970. The program was subsequently abandoned by his successor Anwar Sadat. The 1979 Camp David Peace Treaty signed by Sadat was "linked to an understanding" that Egypt would sign the NPT, according to the Cairo newspaper *al Ahrar*. The newspaper also states that while Egypt was pursuing its nuclear weapons program, over 380 Egyptian scientists received doctorates in nuclear physics.

Deutsche Presse Agentur; in *Washington Times*, 7/25/95, p. A13 (13295).

10/12/95*

Director of the Egyptian Foreign Ministry's Disarmament Department Mahmud Karim expresses Egypt's willingness to host a signing ceremony formalizing an IAEA resolution to create a nuclear-weapon-free zone (NWFZ) in Africa and a structure for the peaceful utilization of nuclear energy. Karim, acknowledging Egypt's support for the IAEA system of inspections and safeguards, points out that the resolution links the creation of a NWFZ in Africa with the future establishment of a NWFZ in the Middle East.

Mena (Cairo), 10/12/95; in FBIS-NES-95-198, 10/12/95 (13505).

ESTONIA

ESTONIA WITH:

Belarus and Ukraine, 101

ESTONIA WITH FINLAND AND RUSSIA

8/9/95

Estonian Police Secretary Helle Sagris reports that charges are being brought against two Estonian citizens found to be in possession of an undisclosed amount of Radium-226 that was produced at a Russian military plant. The Estonians—one the owner of a Tartu-based company, the other a State Waterways Department employee—said they planned to sell the material for \$3 million to an unknown buyer in Finland. The men were arrested in early 8/95 after a two-month joint investigation by the Estonian Security Police and Interpol. The material was reportedly smuggled into Estonia via Kazan with the assistance of middlemen in St. Petersburg.

Aleksei Toom, *Kommersant-Daily* (Moscow), 8/9/95, p. 15; in FBIS-TAC-95-016-L, 8/9/95 (13450).

9/7/95*

According to Mark Sinisoo, senior counselor to the Estonian Ministry of Foreign Affairs, nuclear material may be missing from Estonia's Sillamae uranium mill, a facility that modifies enrichment levels in highly-

enriched uranium. Documentation obtained from secret archives in 1994 revealed inconsistencies in material balances.

Ann MacLachlan, *Nucleonics Week*, 9/7/95, p. 7 (13284).

ESTONIA WITH RUSSIA

8/10/95

Russia transfers control of the first building at the former Paldiski naval base to the Estonian Defense Ministry. Estonia will assume "de facto responsibility" for Paldiski on 9/22/95; however, Russia will be responsible for "all liability claims for damages" until 9/25/95.

Jane's Defense Weekly, 8/26/95, p. 11 (13270). Ann MacLachlan, *Nucleonics Week*, 9/7/95, p. 7 (13284).

9/26/95

In a ceremony marking the complete withdrawal of Russian forces from Estonia, a group of Russian technicians passes control of the Paldiski naval complex to Estonian President Lennart Meri. An unknown quantity of nuclear waste remains at Paldiski, a portion of which has been stored "haphazardly," according to Arvo Niitenberg, head of the state company in charge of "clearing up" the site. Niitenberg indicates that Estonia lacks the 48 million pounds sterling necessary to store the nuclear material safely, and expresses doubt that the job can be finished in five to seven years, as the Estonian government had planned. The U.S. and Sweden have extended technical assistance and a total of 2.6 million pounds sterling in financial aid to Estonia to deal with this matter, but Niitenberg states that the international community must provide more assistance.

Jon Henley, *Guardian*, 9/27/95 (13599).

GEORGIA

GEORGIA WITH:

Armenia, Belarus, Kazakhstan, Russia, and ISTC, 100

GEORGIA WITH IAEA

6/95

The IAEA Board of Governors endorses Georgia's IAEA membership application and advises the IAEA's General Conference to approve the application. The Conference begins on 9/18/95 in Vienna.

IAEA Newsbriefs, 6/95-7/95, p. 7 (13251).

INDIA

INTERNAL DEVELOPMENTS

4/15/95

India's Tarapur nuclear power reactor shuts down following the discovery of a leak from its waste immobilization plant. The waste immobilization plant, built by the Bhabha Atomic Research Centre (BARC) with indigenous expertise, treats radioactive waste water containing Cesium-137.

Rahul Bedi, *Washington Times*, 7/8/95, p. A5 (13328). R. Abreu, *India Today*, 7/31/95, p. 42 (13328).

6/95*

India is building a third reprocessing facility at Kalpakkam to serve an experimental fast breeder reactor (FBR) there and a future 50 MWe FBR. India has one vitrification plant at Tarapur for reprocessing high-level radioactive waste (HLW) and is building two others, one at Trombay and the other at Kalpakkam.

Simon Rippon, *Nuclear News*, 6/95, pp. 42-43 (13571).

6/95*

Indian Foreign Minister Pranab Mukherjee states that India's determination to remain a

non-party to the NPT has been reinforced by France's plans to resume nuclear testing.

Trust and Verify, 6/95-7/95, p. 1 (13394).

7/95

The Indian government announces that India has achieved a "comprehensive capability in the entire nuclear fuel cycle." According to the Indian government, India has "achieved self-reliance" in heavy water technology and reactor control systems. Indian personnel have also "achieved success" in the design, construction, and operation of nuclear reactors, nuclear fuel reprocessing, and waste management.

All India Radio Network (Delhi), 7/20/95; in FBIS-NES-95-139, 7/20/95 (13332).

8/95

Indian Vice-Admiral and Flag Officer Commander-in-Chief Eastern Naval Command Premvir S. Das states that the Indian Navy requires nuclear powered submarines. Work on the submarine itself lags behind the work BARC is doing on the submarine's reactor. BARC recently finished work on a land-based testing facility for the submarine's reactor.

Rahul Bedi, *Jane's Defence Weekly*, 8/26/95, p. 3 (13320).

9/3/95*

An editorial cites Western intelligence sources as claiming that Indian scientists have given a hydrogen bomb developed at BARC to the Indian Army. The report says work on the bomb has been proceeding for five years.

Jang (Rawalpindi), 9/3/95, p. 10; in FBIS-NES-95-171, 9/3/95 (13324).

9/25/95*

India's Atomic Energy Commission Chairman and Department of Atomic Energy (DAE) Secretary Rajagopal Chidambaram says India will soon load mixed-oxide (MOX) fuel at the U.S.-supplied Tarapur-2 boiling water reactor (BWR). In 1994, two MOX assemblies were loaded at Tarapur-1. According to Chidambaram, the two Tarapur reactors will be loaded with far less than the maximum allowable 30 percent of MOX fuel.

Mark Hibbs, *NuclearFuel*, 9/25/95, pp. 18-19 (14036).

9/25/95*

India's Atomic Energy Commission Chairman and DAE Secretary Rajagopal Chidambaram says India has nearly completed the construction of the Kalpakkam reprocessing plant and has installed hot cell components there. Operations at the plant are expected to begin within twelve months. The material produced at the plant could be used as fuel for a prototype 500 MW FBR. Chidambaram estimates that even using advanced separation technology, the Kalpakkam plant would require "several years" before extracting a sufficient amount of plutonium to fuel the FBR. Subject to financing, the proposed FBR could be constructed within seven years.

Mark Hibbs, *NuclearFuel*, 9/25/95, pp. 18-19 (14036).

10/95*

With three new Indian facilities for uranium dioxide (UO₂) production, fuel assembly fabrication, and zircaloy fabrication, India hopes to double its nuclear fuel production to 600 t/y in 1995. India's Nuclear Fuel Complex (NFC) cuts \$30 million from projected costs of \$100 million using indigenous technology.

Nuclear Engineering International, 10/95, p. 5 (13777).

10/15/95*

India's Department of Atomic Energy and NPC seek to increase India's nuclear energy production 10-fold over 20 years by using "plutonium uranium monocarbide" [sic].

UPI (New Delhi), 10/15/95; in Executive News Service, 10/16/95 (13696).

INDIA WITH:

Brazil, Indonesia, PRC, and Russia, 103

INDIA WITH ISRAEL, PAKISTAN, PRC, RUSSIA, AND UNITED STATES

10/5/95*

U.S. Undersecretary of State Lynn Davis says the U.S. plans to relax export restrictions on supercomputers. Davis says the decision was based on a study by the Defense Department which concluded that supercomputers are becoming more popu-

lar on the international market and that sales of some high-speed computers would not hurt the U.S. advantage in the field. The U.S. will probably raise the licensing threshold of supercomputer sales from 1,500 million theoretical operations per second (MTOPS) to a level between 7,000 and 12,000 MTOPS. Licenses would be stricter for sales to military end-users, at the level of 2,000 MTOPS. Currently, end-users are required to allow extensive and expensive surveillance and security measures which prevent the technology from being used in military applications. Wisconsin Project on Nuclear Arms Control Director Gary Milhollin argues that relaxing export controls of supercomputers will aid the nuclear weapons programs of China, Russia, India, Israel, and Pakistan. The U.S. Department of Energy and the Arms Control and Disarmament Agency also oppose the idea, which was proposed by the Commerce and Defense Departments.

Bill Gertz, *Washington Times*, 10/5/95, p. A10 (13953). *The Export Practitioner*, 9/30/95 (13953). R. Jeffrey Smith, *Washington Post*, 9/19/95, p. A3 (13823).

INDIA WITH PAKISTAN, PRC, RUSSIA, AND UNITED STATES

8/28/95

After holding separate meetings on nuclear nonproliferation in South Asia with Pakistani President Farooq Leghari and Prime Minister Benazir Bhutto, and Indian Prime Minister P.V. Narasimha Rao, U.S. Senate Intelligence Committee Chairman Arlen Specter and U.S. Senator Hank Brown propose that "five power talks" between the U.S., Russia, China, Pakistan, and India be held. Specter and Brown assert that the talks would be a positive step toward the ultimate elimination of nuclear weapons in South Asia. Specter and Brown say that by late 9/95, the U.S. State Department will produce in writing both the U.S. proposal for talks and India's agreement to participate, as requested by Bhutto. A government spokesman announces that Pakistan is ready to join the five-nation conference, and is willing to discuss the total elimination of weapons of mass destruction (WMD) in South Asia, as well as the formation of a nondiscrimina-

tory regional nonproliferation regime. Specter states that Rao voiced his interest "in seeing zero nuclear weapons in the region in a range of 10 to 15 years." On 8/28/95, an Indian foreign affairs spokesman refutes the report that India will join talks with Pakistan, Russia, China, and the U.S. to address nonproliferation in South Asia. According to the spokesman, India has consistently opposed a regional approach for a solution to the nuclear proliferation issue and is in favour of a global solution on a nondiscriminatory basis.

Washington Times, 8/29/95, p. A8 (13497). Radio Pakistan Network (Islamabad), 8/28/95; in FBIS-TAC-95-005, 8/28/95 (13497). AFB (Hong Kong), 8/28/95; in FBIS-TAC-95-005, 8/28/95 (13831). *Hindu*, 10/14/95, p. 9 (13497). Shahid-ur-Rehman Khan, *Nucleonics Week*, 8/31/95, p. 11 (13638). Anwar Iqbal, UPI, 8/28/95; in Executive News Service, 8/28/95 (13638).

INDIA WITH PRC

9/5/95*

Former Indian Atomic Energy Commission Chairman Dr. M.R. Srinivasan says in an interview that India is probably buying enriched uranium from China, instead of producing its own mixed-oxide (MOX) fuel. According to Srinivasan, India's MOX fuel fabrication line cannot produce enough fuel to meet India's needs.

N. Ramakrishnan, *Business Line* (Madras), 9/5/95, p. 24; in FBIS-TAC-95-005, 9/5/95 (13834).

INDIA WITH RUSSIA

8/4/95

Regarding Russia's commitment to providing India with nuclear technological assistance, Russian Foreign Minister Andrei Kozyrev states, "Our cooperation is based on our own regulations and our own laws, and we will take into account the interests of nonproliferation of nuclear weapons and weapons of mass destruction."

Andrei Kirillov, *Itar-Tass* (Moscow), 8/4/95; in FBIS-SOV-95-151, 8/4/95 (13397).

9/95

A group of Russian officials visit India to consider the completion of construction on two Soviet VVER-1000 nuclear reactors at Koodankulam, which had been left unfinished after the collapse of the Soviet Union.

Existing proposals would see Russia equipping the plants with essential components, while India undertakes construction and perhaps provision of instrumentation as well.

Nuclear Engineering International, 10/95, p. 5 (13664).

10/9/95*

Russian "minister counsellor" Anwar Azimov says the second session of the Indian-Russian Joint Committee for bilateral trade, scheduled to begin on 10/9/95, will not address civilian nuclear cooperation.

Nelson Graves, *Reuter* (New Delhi), 10/9/95; in Executive News Service, 10/9/95 (13697).

INDONESIA

INTERNAL DEVELOPMENTS

7/17/95

Indonesian President Suharto meets with IAEA Director General Hans Blix and reaffirms his country's commitment to build its first nuclear power plant near Mount Muria in central Java. Indonesia plans to construct 12 600 MW light water reactors (LWRs) in Java by 2020. Blix promises to support the Indonesian program, noting "we have a nuclear technical cooperation program" and "will also be ready to assist in the field of nuclear power."

UPI, 7/17/95; in Executive News Service, 7/19/95 (13452).

INDONESIA WITH:

Brazil, India, PRC, and Russia, 103

INDONESIA WITH KAZAKHSTAN

8/8/95*

In Jakarta, Kazakhstani President Nursultan Nazarbayev signs an agreement for Kazakhstan-origin enriched uranium to be delivered to an Indonesian nuclear power plant.

Tulegen Askarov, *Ekspress-K* (Almaty), 8/8/95, p. 3; in FBIS-SOV-95-158, 8/8/95 (13761).

9/1/95*

The sale of 200 MT of uranium dioxide to the Indonesian company PT Bola Canaya Biry is approved by the government of Kazakhstan.

BBC Monitoring Summary of World Broadcasts, 9/1/95; in *Uranium Institute News Briefing*, 8/30/95-9/5/95 (13560).

INDONESIA WITH:

North Korea (KEDO), 124

IRAN

INTERNAL DEVELOPMENTS

7/2/95

IAEA Director General Hans Blix tells a press conference in Moscow that the IAEA found no evidence of a nuclear weapons program in Iran. IAEA Safeguard Division Director General H. Tanei declares in a letter to IAEA headquarters that there is no record of Iran obtaining any nuclear material within the last 13 years. According to one U.S. official, "there has been no material breach of the Treaty [NPT] per se." However, IAEA spokesman David Kyd notes, "We don't give the Iranians a clean bill of health; we just haven't seen anything to indicate otherwise." These statements contradict President Clinton's accusation that Iran is seeking to obtain nuclear weapons.

IRNA (Tehran), 7/29/95; in FBIS-TAC-95-004, 7/29/95 (13511). *Risk Report*, 8/95, p. 5 (13550). *Yomiuri Shimbun* (Japan), 7/4/95; *Mainichi Shimbun* (Japan), 7/4/95 (13511).

7/2/95

Iranian President Hashemi Rafsanjani reaffirms that Iran is not engaged in a nuclear weapons program, a fact that Rafsanjani says has been verified by IAEA inspections. Rafsanjani stresses that Russia should proceed with the sale of nuclear technology to Iran despite "inappropriate" opposition from the U.S.

Reuter (Washington), 7/2/95; in *Executive News Service*, 7/3/95 (13273).

9/12/95

Iranian Ambassador to Russia Mehdi Safari declares to Russian journalists that Iran does not intend to build nuclear weapons, and adds that the Bushehr nuclear power station will be Iran's "first and last."

Vadim Markushin. *Krasnaya Zvezda*, 9/12/95, p. 3; in FBIS-SOV-95-176, 9/12/95 (13469).

9/30/95

At a Castiglione, Italy conference sponsored by the Union of Scientists for Disarmament, Iranian representative to the Chemical Weapons Convention at the Hague Hassan Mashadi declares that Iran is "keeping its nuclear options open." Mashadi adds "Iran does not believe it should renounce the [nuclear weapons] option if its survival is at stake... You cannot expect a nation with legitimate security concerns to sit idly by in the face of a threat. If you tell them not to go nuclear, then what option do you leave open for them?" Independent Iranian analyst Shahram Chubin says there are "clear signs" that Iran is keeping open a nuclear weapons option and claims that Iran has legitimate reasons to think it necessary to do this. He notes, however, that the possession of two or three weapons "will only generate concern."

Iran Brief, 11/9/95, pp. 1-2 (14005).

10/12/95*

An Iranian program administered by Supreme Security Council representative Dr. Larijani divides work on Iran's nuclear weapons program among many different agencies in order to keep the program clandestine. Larijani personally recruits foreign nuclear specialists to work in Iran. Among the organizations participating in the program are the Revolutionary Guard nuclear research department, the University of Tehran, and Sharif University.

Intelligence Newsletter, 10/12/95, p. 7 (13644).

10/14/95*

The Tehran newspaper *Kayhan Javai* reports that the Israeli government is concerned about Iranian attempts to obtain nuclear weapons and has threatened to use force to stop them. According to Iranian Deputy Foreign Minister for Arab-African Affairs Hosni Sheykhoslam, Iran considers the

Israeli threat to be an empty one.

James Bruce, *Jane's Defence Weekly*, 10/14/95, p. 18 (13781). IRNA (Tehran), 10/21/95; in FBIS-NES-95-204, 10/21/95 (13781).

IRAN WITH:

Belarus, 101

IRAN WITH COMMONWEALTH OF INDEPENDENT STATES

9/1/95

Israeli Interior Minister Ehud Baraq says "the Iranians have a plan to manufacture an atom bomb in the year 2001," and intend to find specialists from the former Soviet Union to provide assistance.

Ha'aretz (Tel Aviv), 9/3/95, p. A5; in FBIS-TAC-95-005, 9/3/95 (13554).

9/24/95*

Iran's nuclear program has annual expenditures of approximately 1 billion pounds sterling. Nuclear specialists from the former Soviet Union, who have been offered "lucrative" contracts, contribute to Iran's nuclear development.

Con Coughlin, *Sunday Telegraph* (London), 9/24/95 (13642).

IRAN WITH CZECH REPUBLIC

10/20/95

Skoda Plzen management states that, while the Czech company is increasing commercial cooperation with Iran, "it ruled out the possibility that Skoda would like to conduct business in Iranian weapons and nuclear technology."

Mlada Fronta Dnes (Prague), 10/21/95, pp. 1-2; in FBIS-EEU-95-206, 10/25/95 (13576).

IRAN WITH GERMANY

8/95

Magnetfabrik Bonn GmbH (MFB) officials deny allegations made in Herbert Krosney's book "Deadly Business" that the German company "received a substantive order from Iran" for aluminum-nickel-cobalt (Alnico) centrifuge magnets. MFB also denies having been approached by Iran's Sharif University of Technology, the site of Iran's gas centrifuge development program. Since 1993, the German Federal Export Control

Office (BAFA) has approved MFB sales of ferritic magnets to Iran after determining that they could not be used for uranium enrichment.

Mark Hibbs, *NuclearFuel*, 8/29/95, pp. 1, 13-14 (13702).

IRAN WITH IRAQ, PRC, AND RUSSIA

10/6/95*

Iraqi defector, General Hussein Kamel, says in an interview that Iran is building a nuclear weapon with assistance from Russia and China. Citing Iraqi intelligence service reports, Kamel estimates that Iran's atomic bomb may be complete by 1996 or 1997.

Jeanne Assouly and Chritian Hoche, *Le Vif/L'Express* (Brussels), 10/6/95, pp. 69, 70, 73 (13828).

IRAN WITH IRAQ AND SOUTH AFRICA

10/26/95

Transvaal Attorney-General Jan D'Oliveira's office says it discussed with South African Police Commissioner Gorge Fivaz unsettled murder cases allegedly involving red mercury deals. Investigator Charles Landman maintains that high-ranking South African military officers and politicians have been involved in these deals. Landman claims that in 1994 Israel's Mossad was involved in at least one murder, allegedly carried out to prevent a shipment of red mercury from South Africa to either Iran or Iraq. Other cases allegedly involving red mercury were the 11/91 murders of arms dealers Don Lange, Dirk Stoffberg, chemical engineer Wynand van Wyk, and Stoffberg's wife.

Reuter, 10/26/95; in Executive News Service, 10/26/95 (13669).

IRAN WITH ISRAEL

8/9/95*

Iran has been attempting to infiltrate Israel's Dimona nuclear complex in order to obtain information about the facility. The Iranians are said to "recruit people and infiltrate them as innocent workers in the nuclear reactor."

Roni Daniyel, Channel 2 Television Network (Jerusalem), 8/9/95; in FBIS-NES-95-154, 8/9/95 (13315).

IRAN WITH ISRAEL AND RUSSIA

9/3/95*

Israel and Russia secretly reach an agreement "on restricting Iran's nuclear option." Russia pledges to monitor the reactors it will export to Iran in order to prevent the use of the installations for military purposes.

Qobi Marenko, Channel 2 Television Network (Jerusalem), 9/3/95; in FBIS-NES-95-171, 9/3/95 (13335).

10/15/95*

The Cairo newspaper *Al Ahram* reports that anonymous officials from the Russian Ministries of Defense and Atomic Energy noted they were under pressure from Israel to end bilateral Russian-Iranian nuclear collaboration. If an attack on the Iranian nuclear reactors under construction with Russian assistance harms Russian citizens or interests, the officials will urge Russia to destroy all nuclear facilities in Israel's Negev Desert. According to *Al Ahram*, Israel threatened to attack the Iranian nuclear reactors.

IRNA (Tehran), 10/17/95; in FBIS-NES-95-200, 10/17/95 (13502).

IRAN WITH KAZAKHSTAN AND UNITED STATES

7/9/95

Kazakh and U.S. officials report that in 1992-93, Iran sought an agreement with Kazakhstan to purchase low-enriched uranium (LEU) and beryllium from the Ust-Kamenogorsk fuel fabrication facility, which produces uranium dioxide pellets for Soviet-designed VVER-1000 reactors. According to Yergali Bayadilov, general director of Kazakhstan's Nuclear Energy Agency, Iran wanted to purchase safeguarded LEU to fuel a VVER-1000 reactor which will be supplied by Russia in the near future. Kazakhstan's "chief official for nuclear materials accounting and control" and U.S. officials state there is no substance to media reports that Iran sought to smuggle or steal over 500 kg of highly-enriched uranium (HEU) from Ust-Kamenogorsk—material later transferred to the U.S. under Project Sapphire. U.S. officials add that Iran was interested in purchasing beryllium from a metal processing plant located near the Ust-

Kamenogorsk facility. Iran could have used the beryllium in research reactors that would later be supplied by Russia. Ust-Kamenogorsk beryllium is pure enough to be utilized in nuclear weapons and missile programs as well.

Mark Hibbs, *NuclearFuel*, 7/17/95, pp. 11-12 (13272).

IRAN WITH PRC

7/7/95*

China plans to supply Iran with nuclear reactors, scientific and technical training, expertise, and components for missile production. According to Western intelligence sources, China already supplies Iran "with its strongest and biggest nuclear backing."

Aluf Ben, *Ha'aretz* (Tel Aviv), 7/7/95, p. B1; in FBIS-NES-95-133, 7/7/95 (13993). David Albright, *Bulletin of the Atomic Scientists*, 7/95-8/95, pp. 21-26 (13954).

7/95*

A top U.S. official says that in addition to supplying uranium-processing facilities, China has assisted Iran in developing uranium mining, fuel fabrication, and zirconium tube production, and may provide uranium metal and uranium hexafluoride manufacturing plants in the near future.

David Albright, *Bulletin of the Atomic Scientists*, 7/95-8/95, pp. 21-26 (13954).

9/95*

Western intelligence sources say Iran has obtained gas centrifuge design data and is now seeking component technology that will enable its military to enrich uranium for a nuclear weapons program. Particularly worrying, say senior U.S. officials, is a deal pending between China and Iran which would see the transfer of a turnkey facility to convert uranium to hexafluoride gas. Given the fact that reactor-grade uranium is easily obtainable in the world market, they say, there is no rationale for Iran's efforts to build or acquire centrifuges other than a nuclear weapons program.

Risk Report, 9/95, pp. 1, 3, 4 (13842).

9/12/95*

Chinese Ambassador to Iran Hua Liming acknowledges that in 1992 China and Iran signed an agreement regarding the supply

of two 300 MW nuclear reactors and that "commercial negotiations" are ongoing. Due to disagreements over site location and handling of spent fuel, as well as financial and technical difficulties, it is uncertain whether the transaction will actually take place.

Resalat (Tehran), 9/12/95; in FBIS-TAC-95-005, 9/12/95 (13954). David Albright, *Bulletin of the Atomic Scientists*, 7/95-8/95, pp. 21-26 (13954).

9/24/95

The Chinese Ambassador to Iran says uranium enrichment and other nuclear technologies that China is supplying to Iran are intended only for peaceful uses and are part of an agreement signed 10 years ago.

Martin Walker, *Guardian* (London), 9/25/95 (13956).

9/25/95*

According to unnamed sources, China has agreed to supply Iran with a calutron uranium enrichment system to be installed at Karaj.

Con Coughlin, *Washington Times*, 9/25/95, pp. A1, A8 (13845).

9/26/95

Chen Jian, a spokesman for the Chinese Foreign Ministry, denies accusations that China is building an enrichment plant in Iran. According to Chen, "[T]here isn't any nuclear cooperation between China and Iran that is not under the safeguard of [sic] the International Atomic Energy Agency (IAEA)." Chen adds that China has never exported any sensitive reprocessing, uranium enrichment, or heavy water production technology or equipment.

Xinhua (Beijing), 9/26/95; in FBIS-CHI-95-186, 9/26/95 (13354).

9/27/95

Chinese Foreign Minister Qian Qichen reportedly tells U.S. Secretary of State Warren Christopher that China will cancel its plans to supply two 300 MW reactors to Iran. Even though the U.S. has been pressuring China to cancel the reactor deal, Qian says that the decision was made by China unilaterally. Russia expresses its concern that the U.S. may use China's decision in order to push Russia to cancel its deal with Iran as well. Iran is also reportedly experiencing many technical problems, including

a lack of nuclear expertise.

Elaine Sciolino, *New York Times*, 9/28/95, pp. A1, A3 (13950). John M. Goshko, *Washington Post*, 9/28/95, p. A22 (13950). Amir Taheri, *Al-Sharq al-Awsat* (London), 9/30/95; in FBIS-NES-95-193, 9/30/95 (13950).

9/28/95

U.S. officials say the U.S. accepts China's word that China has backed out of a contract to supply two 300 MW reactors to Iran. A U.S. official says that, during talks with U.S. Secretary of State Christopher, Chinese Foreign Minister Qian Qichen had said the deal had been "terminated." According to Gary Milhollin of the Wisconsin Project On Nuclear Arms Control, China had also considered exporting a 30 to 50 MW research reactor to Iran. Milhollin theorizes that China's cancellation indicates Iran could not pay for the deal and it got a better offer from Russia.

Carol Giacomo, *Reuter* (Washington), 9/28/95; in *Executive News Service*, 9/28/95 (13960). *Washington Post*, 9/30/95, p. A9 (13926).

9/29/95

Chinese Foreign Minister Qian Qichen rejects the U.S. statement that the sale of two 300 MW reactors to Iran has been canceled. Qian says the deal has been "suspended for the time being" because of a disagreement between the two sides over the final site selection. On 9/29/95, Iranian diplomat Hossein Aminian Tossi says in Beijing that he had seen reports of the cancellation of the deal, but they had not been confirmed. The same day, Iran's Foreign Ministry states that it had no knowledge of any change in the two countries' bilateral agreement on peaceful nuclear cooperation.

Washington Post, 9/30/95, p. A9 (13926). Jeffrey Parker, *Reuter* (Beijing), 9/29/95; in *Reuter Insurance Briefing*, 9/29/95 (13926). *Arms Control Today*, 10/95, p. 24 (13926). Irna (Tehran), 9/28/95; in FBIS-NES-95-190, 9/28/95 (13957). *Nuclear Proliferation News*, 10/12/95, p. 14 (13959).

9/29/95*

Fifteen Chinese nuclear experts are reportedly working at Iran's secret nuclear facility at Isfahan.

Con Coughlin, *Sunday Telegraph* (London), 10/1/95 (13926).

10/3/95*

Responding to a report by the U.K.'s *Sunday Telegraph* that China is supplying Iran with uranium enrichment technology, a Russian nuclear expert says it is unlikely that China would be able to provide such technology. China possesses gaseous diffusion technology, the oldest and least efficient method of uranium enrichment, and needs the fuel produced with this technology for its reactors. China is purchasing new centrifuge technology from Russia, but the plant produces only 4 percent enriched uranium for use as reactor fuel. Also, as the gas centrifuge plant is still being built, there is nothing that China could have sold to Iran to help it enrich uranium.

Andrei Kabannikov, *Komsomol'skaya Pravda*, 10/3/95, p. 7 (13846). *Interfax* (Moscow); in *Reuter Insurance Briefing*, 9/27/95 (13963).

10/5/95*

Iranian sources deny that China has announced the cancellation of the sale of two 300 MW reactors to Iran. They say the deal has been temporarily put on hold because the two sides have not agreed on a site. Iran wanted the reactors to be built near the Bushehr site but the Chinese chose a site near Darkhovin. Iran considers the Darkhovin site unsuitable because of its close proximity to the border with Iraq.

Mark Hibbs, *Nucleonics Week*, 10/5/95, pp. 1, 8-9 (13961). *Intelligence Newsletter*, 10/12/95, p. 1 (13961). *Voice of the Islamic Republic of Iran* (Tehran), 10/4/95; in FBIS-NES-95-196, 10/4/95 (13962). Irna (Tehran), 10/9/95; in FBIS-NES-95-195, 10/9/95 (13969).

IRAN WITH RUSSIA

6/8/95*

According to an "official high-level Russian division" report, during the Shah's rule Iran "conducted studies and research in the nuclear field in violation of the nuclear non-proliferation treaty." The report assumes that "remnants" of past nuclear weapons design activity are still present in Iran, and says "it is possible that Iran has unassembled equipment, radioactive materials, and other devices it has bought." The report also states that the Gulf War convinced Iran of the need to obtain nuclear weapons for deterring future aggression. However, because Iran

gives the development and modernization of its army a higher priority than its nuclear weapons program, future nuclear weapons production will be "difficult to achieve." The report concludes: "Allowing Iran to obtain the technology for the production of nuclear weapons will not serve Russia's interests."

Al-Sharq (Doha), 6/8/95-6/9/95; in FBIS-TAC-95-014-L, 8/10/95 (13489).

6/15/95*

Russia and Iran are negotiating the inclusion of a "nuclear powered desalination plant" as part of the Bushehr complex. The project, included in the 2/95 Russian-Iranian nuclear cooperation agreement, would be the first of its kind outside of the former Soviet Union. Officials from both sides discuss the Russian APWS-40 desalination system and BN-350 reactor, produced by Russia's OKMB Mechanical Engineering.

Foreign Report, 6/15/95, p. 24 (13392).

6/17/95

The G-7 summit in Halifax, Canada, reaches a decision obliging all countries, including Russia, to "immediately stop" their cooperation with Iran "as soon as any evidence showing Iran's intention to produce nuclear weapons was provided." According to a Russian Atomic Energy Ministry (Minatom) spokesman, Moscow will continue with the Russian-Iranian nuclear deal since no such evidence exists.

Voice of the Islamic Republic of Iran First Program Network (Tehran), 7/1/95; in FBIS-TAC-95-014-L, 7/1/95 (13468).

7/24/95

In an interview, Aide to the Russian Prime Minister for International Issues Mikhail Tarasov confirms that "Russia will not train Iranian specialists in nuclear power engineering," and that a list of supplies delivered to Iran from Russia will be subject to U.S. approval.

Aleksandr Korzun, Igor Porshnev, and Yevgeniy Terekhov, *Interfax* (Moscow), 7/24/95; in FBIS-TAC-95-004, 7/24/95 (13553).

8/1/95

At an ASEAN security forum in Brunei, U.S. Secretary of State Warren Christopher tries "to no avail" to convince Russian Foreign Minister Andrei Kozyrev to stop

Russia's nuclear deal with Iran. Christopher expresses to Kozyrev U.S. concern that Iran may work on "a long-term programme of nuclear weapons creation." Kozyrev rejects Christopher's explanation, claiming Russia has no evidence of an Iranian nuclear weapons program.

Itar-Tass (Moscow), 8/1/95; in FBIS-TAC-95-004, 8/1/95 (13510).

8/2/95

In an editorial, International Chernobyl Safety Foundation Information and Analysis Center Director Vladimir Kuznetsov objects to the proposed Russian sale of VVER-1000 nuclear reactors to Iran.

Vladimir Kuznetsov, *Trud* (Moscow), p. 2; in FBIS-SOV-95-148, 8/2/95 (13391).

8/17/95

A Minatom delegation headed by Deputy Minister Yevgeniy Reshetnikov visits Tehran to renegotiate parts of the contract providing for the construction of Iran's first unit at the Bushehr nuclear power station. Minatom seeks to guarantee that Russian nuclear fuel burned in Iranian reactors will be returned to Russia as spent fuel for reprocessing. According to the contract, Russia will begin supplying fuel when the power station is completed in 2001, and will continue until 2030. Russian First Deputy Atomic Energy Minister Lev Ryabev says the fuel from Bushehr will be reprocessed at the Mayak nuclear facility near Chelyabinsk as "an additional service." The ore-dressing plant in Krasnoyarsk-26 will be used as a permanent storage facility. Iran also expresses interest in building a second unit at Bushehr using a VVER-100 LWR, and third and fourth units employing VVER-440 reactors.

Segodnya, 8/18/95, p. 3 (13557). *Interfax* (Moscow), 8/17/95; in FBIS-TAC-95-016-L, 8/17/95 (13708). Aleksandr Korzun, Igor Porshnev, and Yevgeniy Terekhov, *Interfax* (Moscow), 8/7/95; in FBIS-SOV-95-152, 8/7/95 (13551).

8/24/95

During a visit to Iran, Minatom Deputy Minister Yevgeniy Reshetnikov signs an extension to a 1/95 contract with Iran providing for construction of the nuclear power plant in Bushehr. The contract is amended to include the supply of Russian nuclear fuel

to Iran for 10 years, a change that adds \$300 million to the \$800 million contract. The nuclear fuel will be provided by the Novobinsk nuclear plant and returned for reprocessing and storage at the RT-2 nuclear facility in Zheleznogorsk (formerly Krasnoyarsk-26). Responding to allegations that Russia may secretly provide Iran with nuclear technologies, Russian Minister of Atomic Energy Viktor Mikhailov explains there is only one contract, signed between Russia and Iran, for the sale of one VVER-1000 reactor and for the provision of its nuclear fuel supply. Mikhailov says the contract "in principle" includes "the eventual supply of up to four reactors for the Bushehr site," and adds that Russia "first must fine-tune [its] cooperation working on the first generating unit."

Nuclear News, 10/95, p. 47 (13556). Martin Sieff, *Washington Times*, 8/29/95, p. A7 (13558).

9/95

Minatom Construction Department head Eduard Akopyan states that Russia will provide Iran with the results of an assessment of the incomplete Bushehr nuclear station and construction designs of unit-1. Akopyan adds that Russia signed two agreements with Iran providing for the construction of the Bushehr nuclear power station and the supply of two Russian LWRs. At a 9/5/95 news conference, Akopyan says Russia has not signed "secret military" agreements with Iran, and has no intention of doing so in the future.

Boris Kononov, *Nucleonics Week*, 9/7/95, pp. 7-8 (13508). *Washington Times*, 9/6/95, p. A13 (13709).

9/95*

During a trip to Iran, Minatom Deputy Minister Yevgeniy Reshetnikov says construction on Iran's Bushehr nuclear power station will start within three months, after Russian specialists complete a feasibility study regarding the installation of the VVER-1000 reactors. Despite U.S. insistence that Russia cancel its deal with Iran, Reshetnikov considers the termination of the \$1 billion contract to be "out of the question." As soon as construction at the complex begins, the number of Russian nuclear experts working at Bushehr may increase from 200 to 3,000.

Nuclear News, 9/95, p. 18 (13551). *New York Times*, 8/21/95, p. A2 (13551).

9/95*

Iran wants to buy 2,000 tons of Russian natural uranium, ostensibly for the Bushehr reactor project.

Risk Report, 9/95, pp. 1, 3-4 (13842).

9/5/95*

Minatom's Committee for International Relations Chairman Mikhail Fyodorov states that a scientific-research center with a "model reactor" for training nuclear specialists in Iran will be needed to comply with the "agreement on scientific-technical cooperation." Official talks on the founding of the center have begun.

Washington Times, 9/6/95, p. A13 (13709). *Interfax* (Moscow), 9/5/95; in FBIS-TAC-95-005, 9/5/95 (13709).

9/7/95*

Due to seismological instability, Russia and Iran decide to build two VVER-440 nuclear reactors originally planned for a site in northern Iran at Bushehr instead. Russia had agreed to construct two 400 MW nuclear reactors for Iran's Neka research center, which was unknown to the IAEA before 8/95.

Boris Konovalov, *Nucleonics Week*, 9/7/95, pp. 7-8 (13508). *Arms Control Today*, 9/95, p. 36 (13556). Con Coughlin, *Sunday Telegraph*, 9/24/95 (13954).

9/14/95

At a meeting with Russian Foreign Minister Andrei Kozyrev in Moscow, Israeli Prime Minister Yitzhak Rabin criticizes the sale of Russian reactors to Iran. In response, Kozyrev explains that the "peaceful" Russian-Iranian agreement complies with NPT requirements and points out that, unlike Israel, Iran has signed the NPT. "We have reliable information that Iran is not planning to make nuclear weapons," a senior Minatom official says in an interview with *Interfax*. Israel says it is ready to make economic concessions if Russia cancels its nuclear contract with Iran, but Russian officials reject this possibility.

International Herald Tribune, 9/15/95 (13549). *Financial Times*, 9/15/95 (13549). Aleksei Chukurov, *Komsomolskaya Pravda*, 9/16/95, p. 1 (13549).

9/18/95

At the IAEA General Conference in Vienna, Russian Minister of Atomic Energy Viktor Mikhailov assures U.S. Department of Energy (DOE) Secretary Hazel O'Leary that "unconfirmed reports" on Russian assistance to Iran in building underground nuclear installations are unsubstantiated. Mikhailov rejects the suggestion that nuclear training provided by Russia to Iran could be used for nuclear weapons development. Security measures designed to block information leaks from Minatom "impressed" DOE representatives, but did not eliminate U.S. opposition to the Russia-Iran nuclear agreement.

Mark Hibbs, *Nucleonics Week*, 10/5/95, pp. 9-10 (14016).

9/24/95*

Russian Minister of Atomic Energy Viktor Mikhailov is criticized by "many top brass in Moscow" for negotiating the sale of nuclear technology to Iran. According to a senior Russian defense official, Mikhailov is "a law unto himself and not even the President can control him." Despite Russian Foreign Ministry support for Mikhailov's view that the agreement is "purely [a] commercial deal," Russian military officers disapprove of Mikhailov's efforts. These military officers fear Russian nuclear deals with Iran may contribute to an Iranian nuclear weapons program. With the Russian military stretched thin battling internal strife, Russian military officials are concerned about the prospects of a nuclear-armed Iran, saying, "that's all we need—mad mullahs with nukes."

Carey Schofield, *Sunday Telegraph* (London), 9/24/95 (13712).

10/95

An \$800 million contract for the completion of the first 1,000 MW nuclear reactor at Bushehr is scheduled to officially enter into force. Russian Minister of Atomic Energy Viktor Mikhailov says Iran will make an initial payment of approximately \$20 million to Russia by the end of 1995. Russia will have 55 months to complete the construction of the first unit. If the project is successful, the contract will be extended to include the completion of Bushehr-2.

Boris Konovalov, *Nucleonics Week*, 9/7/95, pp. 7-8

(13508). *Nuclear Engineering International*, 10/95, p. 12 (14022).

10/12/95*

Approximately 100 scientists from Russia, including famed Russian atomic scientist Khaled Nikov, work on Iran's nuclear program. Most of the scientists work at Bushehr and Mo'alleh Kalayeh.

Intelligence Newsletter, 10/12/95, p. 7 (13644).

10/25/95

Minatom Deputy Minister Yevgeniy Reshetnikov states that Russia plans to train Iranian nuclear specialists to run the Bushehr nuclear power reactor.

Interfax (Moscow), 10/25/95; in FBIS-SOV-95-207, 10/25/95 (13643).

10/26/95

Minatom representatives visit Iran and provide the Iranian government with a feasibility study on the incomplete Bushehr nuclear facility.

Interfax (Moscow), 10/25/95; in FBIS-SOV-95-207, 10/25/95 (13643).

IRAN WITH RUSSIA AND UNITED STATES

6/30/95

U.S. Vice President Al Gore and Russian Prime Minister Viktor Chernomyrdin fail to resolve a dispute over the pending Russian sale of nuclear reactors to Iran. Chernomyrdin declares that Russia will complete the nuclear reactor while strengthening measures to ensure that nuclear weapons are not developed in Iran.

Reuter (Moscow), 7/1/95; in *Executive News Service*, 7/1/95 (13273). *Voice of the Islamic Republic of Iran First Program Network* (Tehran), 7/1/95; in FBIS-TAC-95-014-L, 7/1/95 (13468). Pavel Felgengauer, *Segodnya*, 7/1/95, p. 2 (13553).

9/6/95

An aide to Mitch McConnell, the Senate Appropriations Foreign Operations Subcommittee Chairman, says McConnell is "actively considering" preventing approval for a proposed \$250 million in economic aid to Russia for FY 1996 because of the Russian-Iranian reactor agreement. The Nunn-Lugar program would not be affected by the move.

R. Jeffrey Smith, *Washington Post*, 9/7/95, p. A33 (14034).

10/24/95

A U.S. House-Senate conference committee proposes a provision to the 1996 foreign aid bill that would halt all assistance to Russia 90 days after the bill enters into force, unless Russia breaks off its nuclear cooperation with Iran. However, the bill permits the provision to be waived and U.S. aid to Russia to continue if the U.S. President determines it is "important to the national security interests of the United States."

Thomas W. Lippman, *Washington Post*, 10/25/95, p. A6 (13683).

IRAN WITH SOUTH AFRICA

8/95

The U.S. urges South Africa not to share nuclear-related information with Iran. A 3/95 meeting between South African Mineral and Energy Affairs Minister Pik Botha and Iran's Atomic Energy Agency President on nuclear issues gives the U.S. cause for concern. South African Foreign Affairs Minister Alfred Nzo also voices concern in a 4/13/95 letter to Botha, left unsent by Nzo because the Department of Foreign Affairs determined that the talks focused on nuclear isotopes for medical purposes. On 8/19/95, however, Botha states the talks covered a previously discarded scheme for South Africa to sell enriched uranium to Iran.

Edyth Bulbing, *Sunday Times* (Johannesburg), 8/20/95, p. 2; in FBIS-TAC-95-016-L, 8/20/95 (13364).

8/95

South African Foreign Minister Alfred Nzo announces that South Africa concluded a bilateral agreement with Iran to establish nuclear technology assistance "for peaceful purposes." Nzo says South Africa's cooperation with Iran is "within the scope" of the NPT.

UPI, 9/12/95; in Executive News Service, 9/12/95 (13464). SAfm Radio Network (Johannesburg), 8/22/95; in FBIS-TAC-95-016-L, 8/22/95 (13464).

9/12/95

South African Energy Minister Pik Botha denies that any nuclear agreement has been reached with Iran.

Iran Brief, 10/9/95, p. 2 (13775).

9/14/95*

Responding to a report in the Israeli newspaper, *Ma'Ariv*, that a "high-ranking South African source" said South African nuclear assistance to Iran would not be of "military use," South African Foreign Minister Alfred Nzo says South Africa "has not entered into any agreement concerning nuclear cooperation with Iran."

David Makovsky, *Jerusalem Post*, 9/14/95, p. 1; in FBIS-NES-95-178, 9/14/95 (13464).

Late 9/95

South Africa's Atomic Energy Corporation (AEC) Chairman Waldo Stumpf says South Africa should be "extremely circumspect about any form of nuclear cooperation with Iran." Stumpf assures U.S. Energy Secretary Hazel O'Leary that no bilateral efforts for nuclear development have been made with Iran. Iran has expressed interest in purchasing radioisotopes from the AEC.

Iran Brief, 10/9/95, p. 2 (13775). *Jane's Defence Weekly*, 9/9/95, p. 23 (13775).

IRAN WITH UKRAINE

9/13/95

Ukraine is not selling Iran nuclear technology or equipment, Ukrainian President Leonid Kuchma assures Israeli Prime Minister Yitzhak Rabin in Kiev.

Shim'on Schiffer, *Yedi'ot Aharonot* (Tel Aviv), 9/13/95, pp. 1, 19; in FBIS-SOV-95-177, 9/13/95 (13346).

IRAN WITH UNITED STATES

9/12/95

A foreign assistance budget that would prohibit any future U.S. aid to countries which agree to assist Iran in developing nuclear-related capabilities is passed by a U.S. Senate Appropriations subcommittee. On 6/8/95, the U.S. House of Representatives passed a similar amendment to the American Overseas Interests Act (H.R. 1561) stipulating an automatic cut-off of foreign assistance to any state that supplies Iran with nuclear reactor technology. The Clinton administration says it will veto the bill. Pro-Israeli lobbying organizations such as the American-Israeli Public Affairs Committee (AIPAC) support legislation of this type.

David Rogers, *Wall Street Journal*, 9/13/95, p. A5

(13548). *Post-Soviet Nuclear & Defense Monitor*, 9/1/95, pp. 1-2 (13548). *Risk Report*, 9/95, p. 9 (13501).

10/11/95

Testifying before the Senate Banking Committee, CIA Deputy Director for Intelligence John Gannon says U.S. economic sanctions approved by President Clinton in 4/95 against Iran have resulted in Iranian hard-currency shortages. Senator Alfonse M. D'Amato has proposed stricter sanctions that include halting any U.S.-Iranian trade activity or financial assistance and prohibiting free passage to the U.S. by international companies which provide Iran with oil industry technology or machinery. The Clinton administration opposes the D'Amato legislation.

Bill Gertz, *Washington Times*, 10/12/95, p. A16 (14004). R. Jeffrey Smith, *Washington Post*, 10/12/95, p. 6 (14004).

IRAQ

INTERNAL DEVELOPMENTS

7/9/95

IAEA Action Team head Maurizio Zifferero says a monitoring system to ensure that Iraq does not develop nuclear weapons is working in a "routine manner." Zifferero tells reporters "there is no problem" concerning Iraq's "nuclear file."

AFP (Paris), 7/9/95; in FBIS-NES-95-131, 7/9/95 (13330).

7/24/95

The IAEA releases the results of an investigation which concludes that Iraq was not continuing its nuclear weapons program, as alleged by the *Sunday Times* (London). The IAEA report finds that the documents were not authentic and states "no credible evidence was found to suggest that the activities reported in the documents were or are being carried out by Iraq."

UPI, 7/24/95; in Executive News Service, 7/24/95 (13329). Anthony Goodman, Reuter, 7/24/95; in Executive News Service, 7/24/95 (13329).

8/10/95

Hussein Kamel, considered the mastermind of Iraq's weapons of mass destruction (WMD) programs, defects to Jordan along with his brother Saddam Kamel, their wives, and their families. [Kamel had previously served as Minister of Military Industrialization Organization and Minister of Defense.]

AFP, 8/10/95 (13399).

8/13/95*

While Iraq calls UNSCOM head Rolf Ekeus and IAEA Director General Hans Blix to Baghdad to examine newly released information, the U.S. approaches Iraqi defector Hussein Kamel in Amman, Jordan. U.S. officials are interested in obtaining information from Kamel regarding Iraq's nuclear and biological weapons programs.

AFP (Paris), 8/13/95; in FBIS-NES-95-156, 8/13/95 (13490). *Times* (London), 8/14/95 (13490).

8/13/95

Iraqi Deputy Prime Minister Tariq Aziz states that Iraq will provide information on its WMD programs that had been withheld from the U.N. by Iraqi defector Hussein Kamel. Aziz claims that after Kamel's defection, "several MIO [Military Industrialization Organization] officials said this traitor had ordered them to hide important information from UNSCOM on Iraq's past weapons programs." Aziz says Kamel had withheld the information to provide the U.S. with a reason to continue sanctions against Iraq. The new Iraqi disclosures contradict Iraqi President Saddam Hussein's earlier statements that all information on Iraq's WMD programs had already been disclosed. Commenting on the new disclosures, Aziz Al-yan, who is a member of the opposition Iraqi National Congress Executive Council says, "It's a desperate attempt to save the regime by circumventing Husayn Kamil [sic], who knows the details of all the armament programs." Al-yan says that in the 1980s, Kamel frequently visited the U.S., Europe, and Chile to purchase weapons for Iraq.

AFP (Paris), 8/13/95; in FBIS-NES-95-156, 8/13/95 (13490). Reuter, AFP; in *Independent*, 8/14/95 (13490). *Times* (London), 8/14/95 (13490).

8/17/95

After meeting with Iraqi Deputy Prime Minister Tariq Aziz in Baghdad, UNSCOM head Rolf Ekeus says UNSCOM has obtained new information regarding Iraq's nuclear and other WMD programs. The new information suggests that at the start of the Gulf War, Iraq was less than a year away from building its first nuclear weapon. The new information also confirms earlier suspicions that Iraq continued its nuclear weapons program after the Gulf War, and possessed more uranium enrichment equipment than previously disclosed.

Evelyn Leopold, Reuter, 8/25/95; in *Executive News Service*, 8/25/95 (13581).

8/20/95

UNSCOM head Rolf Ekeus and IAEA Action Team head Maurizio Zifferero meet with Iraqi defector Hussein Kamel in Jordan following a four-day trip to Baghdad.

Mark Hibbs, *Nucleonics Week*, 8/17/95, pp. 1-2 (13579).

8/20/95

UNSCOM receives 147 boxes of documents in electronic, audiovisual, microfiche, and hard copy format related to Iraq's WMD programs.

Evelyn Leopold, Reuter, 8/25/95; in *Executive News Service*, 8/25/95 (13581).

8/25/95*

In a written statement, IAEA Director General Hans Blix tells the U.N. Security Council that the IAEA's earlier conclusion that Iraq's nuclear weapons program was "fundamentally under control" remains valid. He also says that Iraqi officials turned over a 9/1/95 Al Atheer project team report showing the role of "the Al Qa Qaa establishment in the development of the implosive package." Blix says the report, which is being translated, seems to show Iraq's "work on weaponisation" was halted in 1/91.

Reuter, 8/25/95; in *Executive News Service*, 8/25/95 (13582). Rolf Ekeus, Statement To The U.N. Security Council, 8/25/95 (14037).

8/25/95

U.S. Ambassador to the U.N. Madeleine Albright states that "Iraq had launched a crash program to deploy a nuclear device before the Gulf War and their target date

was April 1991." Albright also mentions that the program was postponed because the 1/91 military operation led by the U.S. rendered Iraqi nuclear facilities non-operational.

Washington Post, 8/26/95, pp. A1, A4 (13460).

8/28/95*

Iraqi defector Hussein Kamel tells the London-based weekly *Al-Wasat* that Iraq is providing the U.N. with all of its information on Iraq's WMD programs. Hussein Kamel says Baghdad has revealed a huge amount of information and is in the process of handing over the rest.

AFP (Paris), 8/28/95; in FBIS-NES-95-166, 8/28/95 (13399).

8/29/95

IAEA official Maurizio Zifferero says that as part of a "crash program" begun in 9/90, Iraq planned to extract highly-enriched uranium (HEU) from its French and Soviet-designed research reactors to use in a nuclear weapon. Iraq planned to divert 12.3 kg of partially-irradiated 93 percent HEU from the French reactor, as well as 13.7 kg of 80 percent enriched fresh fuel and 7.2 kg of irradiated fuel (both of Soviet origin) in order to meet a goal of producing approximately 20 kg of 93 percent HEU. Iraq set a goal of completing a nuclear weapon by 4/91, but IAEA officials said it was unlikely that this could have been achieved, even if the program had not been stopped by allied bombing in 1/91. Iraqi officials in 8/95 say they had planned to convert the French-supplied HEU to a weapons-usable form and re-enrich the 80 percent enriched material to 93 percent U-235 in a cascade of 50 centrifuges. The 93 percent material was to be converted to metal form using the hot cells at the Tuwaitha complex. Iraqi experts estimated that up to 200 g of the 93 percent HEU could be purified per day, but IAEA experts estimated it would take longer, with 12 to 18 months required to convert the HEU for weapons use. In addition, in order to build the planned cascade of 50 centrifuges, Iraq would have had to "cannibalize" all of its independent centrifuge development programs and link different types of centrifuges together, a technically difficult task. One senior IAEA official said that Iraq "was at

least one year away' from building centrifuges that would work in a small cascade." The cascade was to be built at the Rashdiyah facility. According to intelligence sources, Iraq now says it possessed more centrifuge equipment than it previously admitted, and some of this equipment may not have been destroyed. A statement made by IAEA Director General Hans Blix after the disclosures notes, however, that the IAEA is convinced "there is no nuclear programme in the sense of any centrifuge operating or any production of fissionable material." Zifferero reveals that in order to test the nuclear device, Iraq had been considering both an underground test and actual use against an enemy.

Barbara Crossette, *New York Times*, 8/30/95, p. A4 (13460). Steve Pagani, Reuter, 8/29/95; in Executive News Service, 8/29/95 (13582). Reuter, 8/25/95; in Executive News Service, 8/25/95 (13582). Barbara Crossette, *New York Times*, 8/26/95, pp. 1, 3 (13582). Mark Hibbs, *Nucleonics Week*, 8/31/95, pp. 1, 9-11 (14032). Evan Medeiros, *Arms Control Today*, 9/95, pp. 27, 32 (14032).

9/12/95*

A senior U.N. nuclear investigator states there is no concrete evidence that Iraq maintains a nuclear weapons program. UNSCOM officials are currently undertaking a close examination of thousands of Iraqi documents.

Wall Street Journal, 9/12/95, p. A1 (13365).

9/21/95

In an interview with CNN, Iraqi defector Hussein Kamel claims that Iraq planned to build a 12 MT nuclear weapon, which was later scaled down to weigh 6 MT. Kamel says Iraq ultimately hoped to design a 300-500 kg warhead, which Iraqi missiles would be capable of delivering. According to Kamel, Iraqi President Saddam Hussein ordered Iraqi scientists to develop "some kind of nuclear device at the time of the Gulf War." Regarding the current state of Iraq's nuclear program, Kamel claims that "Iraq is not going to repeat that."

UPI, 9/22/95; in Executive News Service, 9/22/95 (13698). Reuter, 9/21/95; in Executive News Service, 9/21/95 (13698).

9/22/95

The IAEA General Conference adopts a resolution denouncing Iraq for violating

U.N. Security Council resolutions by concealing nuclear weapons program-related data since 1991. The resolution calls for Iraq to immediately surrender all of its undivulged information, equipment, and material related to nuclear weapons, in accordance with Security Council resolutions, and renews the IAEA's commitment to examine all information received by the IAEA in 8/95. IAEA Director General Hans Blix reconfirms that an earlier IAEA assessment of Iraq's nuclear program has not been changed by Hussein Kamel's 8/95 revelations, stating, "We are convinced that the program has been rendered harmless and has been neutralized."

IAEA Press Release (Vienna), 9/22/95; in FBIS-TAC-95-005, 9/22/95 (13922). *Nuclear Proliferation News*, 10/12/95, pp. 1-3 (13922). Mark Hibbs, *Nucleonics Week*, 9/28/95, pp. 13-14 (13645).

10/1/95

After extensive discussions with Iraqi Deputy Prime Minister Tariq Aziz in Baghdad, UNSCOM head Rolf Ekeus states "Iraq has provided us with new information in all areas" including its nuclear weapons program. Ekeus, however, says questions remain unanswered regarding Iraqi WMD programs due to the noncompliance of the Iraqi defense bureaucracy. On 9/29/95, Ekeus announces that UNSCOM is searching for more information regarding Iraq's WMD programs.

AFP (Paris), 9/30/95; in FBIS-NES-95-190, 9/30/95 (13646). Jack Redden, Reuter, 10/1/95; in Executive News Service, 10/1/95 (13674).

10/11/95

UNSCOM head Rolf Ekeus submits an updated assessment on the Iraqi nuclear and other WMD programs to the U.N. Security Council.

AFP (Paris), 9/30/95; in FBIS-NES-95-190, 9/30/95 (13646).

10/11/95

The IAEA states that no final assessment of Iraq's nuclear program is feasible before the analysis of Iraqi disclosures from 8/95 is completed.

Reuter, 10/11/95; in Executive News Service, 10/11/95 (13674).

10/13/95

The U.N. Security Council requests that UNSCOM carry out a stricter investigation of Iraq's WMD programs. U.S. Ambassador to the U.N. Madeleine Albright says that, given the 8/95 Iraqi revelations regarding their WMD programs, the current inspections are "inadequate" and should be "upgraded." UNSCOM head Rolf Ekeus says in 1996 an additional \$20 million is to be used for new equipment and other resources to reinforce UNSCOM's WMD inspections. Ekeus says the new information forces UNSCOM to reconsider assessments of the Iraqi WMD program, and he pledges that UNSCOM will expedite the cross-verification of newly declared information.

UPI, 10/13/95; in Executive News Service, 10/13/95 (13675). Evelyn Leopold, *Washington Post*, 10/12/95, p. A18 (13675). Evelyn Leopold, *Washington Times*, 10/12/95, p. A17 (13675). Charles Miller, Press Association (London), 10/11/95; in FBIS-NES-95-197, 10/11/95 (13675).

10/19/95

A U.N. source says UNSCOM suspects Iraq was developing a radiological weapon that would emit lethal radioactive matter without an explosion. Iraqi President Saddam Hussein allegedly ordered the weapon built at the Tuwaitha nuclear facility following Iraq's invasion of Kuwait. According to a 1993 Russian intelligence report on the proliferation of WMD, during the Gulf War, Russia considered the Iraqi use of radiation weapons against Israel a "real possibility."

Reuter, 10/19/95; in Executive News Service, 10/20/95 (13690).

IRAQ WITH:

Iran, PRC, and Russia, 109
Iran and South Africa, 109

IRAQ WITH LIBYA

10/25/95*

A Jordanian newspaper reports that an Iraqi Military Industrialization Organization (MIO) delegation, headed by Dr. Jafar Diya, arrives in Libya to oversee the installation of small nuclear furnaces located at Sidi Abu Zurayq in the desert, 380 km southwest of Tripoli. A shipment of Iraqi nuclear fuel is expected to reach Libya over the next few weeks for enrichment at the furnaces under

MIO supervision. The arrangement is part of an Iraqi-Libyan initiative through which Iraq seeks to transfer its nuclear program to Libya in order to remove it from U.N. surveillance. According to one source, Iraq transported "semi-enriched" nuclear fuel to the Aba Agricultural and Scientific Research Center, east of Baghdad, under the direction of MIO Director Lieutenant General Amir Rashid. The transfer was made following the U.N. suspension of inspections there, ostensibly because all equipment had been removed from the site. A worker at the Aba center says Iraq hides its nuclear fuel in large underground storage facilities near the center.

Al-Bilad (Amman), 10/25/95, p. 6; in FBIS-TAC-95-006, 10/25/95 (14015).

ISRAEL

INTERNAL DEVELOPMENTS

4/7/95-4/10/95

At a conference entitled "Strategic Stability in the Period After the Cold War and the Future of Nuclear Weapons," former Center of Military Analysis of Israel Director Ilan Amit announces that Israel has 228 nuclear warheads and does not intend to join the NPT.

Yaderniy Kontrol, 7/95, p. 9 (13458).

8/15/95

At a George Washington University forum entitled "Preventing Super-Terrorism," leading Israeli nuclear physicist Yuval Ne'eman recommends that Israel "abandon its present stance and explicitly go nuclear" if Tehran obtains a nuclear bomb. Asserting that an Iranian nuclear capability would place the world "on the brink of a new holocaust," Ne'eman argues that Israel will need a credible and effective second strike capability in order to deter the nuclear threat from Iran.

Iran Brief, 10/9/95, p. 3 (13503).

9/17/95

During a court appearance, imprisoned Israeli spy Mordechai Vanunu asks to return to Italy. Israeli officials maintain that

Vanunu's isolated confinement prevents him from disclosing secret atomic information.

Reuter, 9/17/95; in Executive News Service, 9/17/95 (13308).

ISRAEL WITH:

Argentina and United States, 99
India, Pakistan, PRC, Russia, and U.S., 106
Iran, 109
Iran and Russia, 109

ISRAEL WITH PAKISTAN

6/95

The Pakistan Federal Investigation Agency arrests Dr. Mubashar on suspicion of passing nuclear secrets to Israel, an unnamed high government source tells the *Muslim*. The Pakistani-born Australian Mubashar and his Australian wife Sandra Ahmed allegedly passed vital information about Pakistan's nuclear facilities to members of the Israeli intelligence agency Mossad. A second report claims that at the prompting of Ahmed, a Mossad agent, Mubashar unsuccessfully attempted to pass classified nuclear information about the Kahuta plant on floppy disk during installation of computer equipment at the Pakistan Atomic Energy Commission. Mubashar, who runs Media Link, a computer company that has supplied computers and other equipment to sensitive Pakistani facilities over the last few years, has been under surveillance for about six months. In late 5/95, three employees of Media Link are also arrested. In a previous espionage attempt, Israel tried to blackmail Pakistani scientists to gain access to "nuclear secrets," including information about the Karachi nuclear power plant and the Kahuta plant.

Muslim (Islamabad), 4/7/95, pp. 1, 11; in FBIS-NES-95-128, 7/4/95 (13331). *Nation* (Islamabad), 8/10/95, p. 11; in FBIS-TAC-95-016-L, 8/10/95 (13331).

ISRAEL WITH RUSSIA

9/11/95

Minatom First Deputy Minister Lev Ryabev conveys Russia's willingness to assist Israel with the development of nuclear power, provided that Israel accedes to the NPT.

Interfax (Moscow), 9/11/95; in FBIS-SOV-95-176, 9/11/95 (13312).

JAPAN

INTERNAL DEVELOPMENTS

4/95*

Eight Japanese ministries submit nuclear budget proposals for FY 1995, with total outlays of 5.7 billion yen for nuclear non-proliferation, 1.364 billion yen of which is for plutonium actinide reprocessing research.

Tetsuro Kitagishi, *Genshiroyokyu Kogyo* (Tokyo), 4/95, pp. 77-80; in FBIS-JST-95-056, 9/6/95 (13650).

6/19/95

Japan's Nuclear Safety Commission (NSC) sanctions the use of mixed-oxide (MOX) fuel in light water reactors (LWRs) after finding no appreciable difference in utility between MOX and normal enriched uranium. The Japan Atomic Energy Commission foresees the use of MOX fuel in about 10 reactors over the next five years, rising to almost 20 by 2010.

Nuclear News, 8/95, pp. 77-78 (13343).

7/95*

A Japanese Ministry of International Trade and Industry (MITI) official states that he expects a proposed "catch-all" export-control clause, which would require an exporter to notify the government of any shipment of material that could be used in weapons of mass destruction (WMD), to become law by 1996.

Risk Report, 7/95-8/95, pp. 1, 9 (13654).

7/4/95

The Japan Atomic Energy Research Institute (JAERI) announces that construction of a trial facility for the burning of high-level radioactive waste (HLW) in Tokai, Ibaraki Prefecture, could start as early as 1996.

Kyodo News Service (Tokyo), 7/4/95; in FBIS-EAS-95-047, 7/5/95 (14018).

7/7/95*

JAERI and a consortium of research institutes develop a method of collecting uranium from seawater. The cost of "harvesting" uranium from seawater and processing it through the stage prior to yellowcake is calculated at 40,000 yen per kg of material, making this method not yet economically feasible. The volume of dissolved uranium available from sea harvest is thought to be almost 1,000 times greater than the estimated 5 million tons of natural uranium available on land.

Nihon Keizai Shimbun (Tokyo), 11/12/94, p. 13; in FBIS-JST-95-047, 7/7/95 (13496).

7/14/95

The Japan Atomic Industrial Forum (JAIF) task force meets for the first time to address the development of nuclear-related export opportunities and requests for technology transfers. By 12/95, the JAIF task force, composed of the Power Reactor and Nuclear Fuel Development Corporation (PNC), JAERI, construction companies, and trading firms, plans to release a report on nuclear cooperation in Asia from a business standpoint.

Atoms in Japan, 8/95, p. 22 (13487).

7/16/95

Japan Nuclear Fuel says the start-up of Rokkasho-mura's reprocessing facility in Aomori prefecture will be postponed until 6/97. Japan expects the 800-ton capacity plant to be fully operational by 2000.

Nuclear Engineering International, 9/95, p. 3 (13404). Tadashi Tange, Toshiro Funaya, and Shingo Matsuoka, *Nuclear Engineering International*, 9/95, pp. 42-44 (13404).

7/18/95

JAIF officials discuss JAIF's request for the FY 1996 nuclear budget with Japanese Atomic Energy Commission (AEC) members Makiko Tanaka, Ryutaro Hashimoto, and Yohei Kono. The officials discuss transparency and nuclear cooperation, and call for increased research and development in nuclear fusion, with particular attention to the International Thermonuclear Experimental Reactor (ITER) and the High Temperature Engineering Test Reactor. JAIF also seeks bilateral nuclear cooperation with and streamlined delivery of nuclear materi-

als and equipment to "neighboring Asian nations."

Atoms in Japan, 8/95, p. 21 (13561).

8/95

Cost concerns prompt the AEC to scrap its advanced thermal reactor (ATR) program, intended to construct reactors capable of burning MOX fuel, until its fast breeder reactor (FBR) program can be realized.

Andrew Pollack, *New York Times*, 8/30/95, p. A6 (13491).

8/95*

Japan anticipates having a fully operational system for recycling spent fuel using FBR technology by 2030. Waste management, enrichment, and reprocessing facilities are either operating or in the works, with the enrichment facility expected to produce 1.5 million SWU per year—one-fiftieth of Japanese demand—by the turn of the century. No sooner than 2010, a MOX fuel plant with a 100-ton per year output is expected to be running at Rokkasho-mura.

Sandie Ramoutar, *Core Issues*, 8/95-9/95, pp. 6-9 (13488).

8/9/95*

According to North Korea, Japan's call for a U.N. resolution to ban nuclear testing is a cover for its "nuclear arming maneuvers." North Korea claims that Japan has not forsaken its goal of building a nuclear arsenal.

Korean Central Broadcasting Network (Pyongyang), 8/9/95; in FBIS-EAS-95-154, 8/9/95 (13467).

8/10/95

A Japanese Foreign Ministry official states that Japan has no motivation to change its status as a non-nuclear weapon state (NNWS), saying "even following the conclusion of the Cold War, there has been no change in the significance of the U.S. nuclear umbrella to Japan." On 7/1/95, Japanese Foreign Ministry National Security Policy Division Director Sumio Tarui says, "It is the most unlikely story for Japan to develop nuclear weapons."

Asahi Shimbun (Tokyo), 8/11/95, p. 3; in FBIS-EAS-95-157, 8/11/95 (13657). Kyodo News Service (Tokyo), 7/1/95; in FBIS-TAC-95-014-L, 7/1/95 (13657).

8/11/95

MITI announces it expects that "know" ex-

port controls for dual-use items that can be used to make or design WMD will enter into force in 4/96. Current Japanese export controls apply to a list of 80 items; the "know" controls would include other items not on the current list of 80 if it is "known" that a device will be used for WMD. The exporting company is responsible for determining whether or not a requested item is on the list, or known to be used for WMD, and report relevant information to MITI. The new controls are meant to address products such as personal computers not on the high-tech list, in light of their role in Iraq's nuclear weapons program. MITI states that the controls will apply to all countries, although transactions to Western nations may be subject to less scrutiny.

Asahi Shimbun (Tokyo), 9/4/95, p. 2; in FBIS-EAS-95-171, 9/4/95 (13656). *Yomiuri Shimbun* (Tokyo), 8/12/95, p. 7; in FBIS-EAS-95-159, 8/12/95 (13656).

8/21/95

PNC makes public its plans for a Deep Underground Research Facility to study the geological disposal of HLW. The 60 billion yen, 20-year project will include two facilities—one situated 1,000 meters underground, the other at surface level—and will be located at PNC's Tono Geoscience Center in Gifu Prefecture.

Atoms in Japan, 9/95, pp. 14-15 (13569).

8/25/95

AEC aborts plans to construct a 606 MWe demonstration ATR in Ohma, Aomori Prefecture. Instead of the ATR, AEC proposes a 1,350 MWe advanced boiling water reactor (ABWR), which can consume twice as much plutonium with a full MOX fuel core as the demo-ATR. However, AEC Chairman and Minister for Science and Technology Yasuoki Urano states that AEC remains interested in developing ATR technology. Experts expect that the ABWR will start up early next century, but won't operate with a full MOX core until 2010.

Atoms in Japan, 9/95, pp. 10-11 (13663). Naoaki Usui, *Nucleonics Week*, 9/7/95, p. 5 (13663).

8/29/95

Japan's 280 MW FBR Monju located in Tsuruga, Fukui Prefecture, comes on line for the first time and produces electricity for one hour. PNC President Hiroshi Oishi

states that Monju will operate at full power no later than 1/97. Critics of Monju doubt the reactor can turn a profit considering the \$6 billion spent on construction, the relative abundance of uranium and plutonium on the world market, and the fact that full commercial operation is not expected before 2030.

Kyodo News Service (Tokyo), 8/29/95; in FBIS-EAS-95-170, 8/29/95 (13491). Naoaki Usui, *Nucleonics Week*, 9/7/95, pp. 5-6 (13491). Andrew Pollack, *New York Times*, 8/30/95, p. A6 (13491).

9/95

Officials report that PNC is disassembling hot cell rows filled with plutonium residue and installing equipment to assist in monitoring material flows at Tokai Mura's Plutonium Fuels Processing Facility (PFPF). In 1994, a 70 kg "holdup inventory" of plutonium at the PFPF resulted in an IAEA Department of Safeguards' request for assurance that the material had not been diverted. According to the reports, three-quarters of the "holdup" plutonium has been removed and recorded.

Mark Hibbs, *NuclearFuel*, 10/9/95, pp. 11-12 (14014).

9/95*

The Recycle Equipment Test Facility (RETF) being built by PNC at its Tokai site will be completed by 1998 at a cost of \$1.2 billion. The facility will test equipment and techniques for use in a FBR reprocessing pilot plant.

John Nedderman, *Nuclear Engineering International*, 9/95, pp. 46-47 (13684).

9/95*

The nuclear energy portion of MITI Agency of Natural Resources and Energy's 134.3 billion yen budget request for FY 1996 is 41.3 billion yen, up 15.2 percent from last year. The abandonment of the demo-ATR project produces a shift in funding distribution, with the portion allocated to developing the full-MOX-core ABWR increasing 3.9 billion yen, from 1.6 billion yen to 5.5 billion yen. The amount requested for the nuclear fuel cycle is down 25.3 percent to 13.5 billion yen. Technologies for uranium enrichment, fuel reprocessing, MOX fuel fabrication for LWRs, and disposal of

radioactive waste will also be developed.

Atoms in Japan, 9/95, pp. 8-9 (14021).

9/26/95

In a speech to the U.N. General Assembly (UNGA), Japanese Foreign Minister Yohei Kono calls for a U.N. resolution to ban nuclear testing. Kono plans to use the resolution to pressure nuclear weapon states (NWS) into complying with the spirit of the NPT and suspending nuclear testing until the conclusion of a comprehensive test ban treaty (CTBT).

Jiji Press Newswire, 9/26/95; in Reuter Insurance Briefing, 9/27/95 (13688). *Mainichi Shimbun* (Tokyo), 7/20/95, p. 3; in FBIS-TAC-95-004, 7/20/95 (13688).

10/5/95

PNC Chairman Hiroshi Oishi announces that the prototype FBR Monju attained a 1.18 breeding ratio (number of fissionable atoms produced in the reactor compared with fissionable atoms consumed), well on the way to its target of 1.2. Oishi predicts that the FBR will surpass the LWR in cost effectiveness around 2030, when FBRs are projected to enter commercial operation.

Nikkan Kogyo Shimbun (Tokyo), 10/6/95, p. 5; in FBIS-JST-95-073, 10/6/95 (13787).

10/13/95

Using recycled plutonium, Japan's prototype FBR Monju generates 112 MWe, 40 percent of its capacity.

Kyodo News Service (Tokyo), 10/13/95; in FBIS-EAS-95-203, 10/13/95 (13564).

10/18/95

The Aomori Prefectural Assembly approves a bid for the construction of the ITER near the village of Rokkasho. Naka, in Ibaraki Prefecture, and Tomakomai, in Hokkaido, already offered to host the reactor, which will be used to study nuclear fusion and is expected to begin operations in 2005.

Kyodo News Service (Tokyo), 10/23/95; in FBIS-EAS-95-207, 10/23/95 (13659).

10/24/95

Japan's AEC delivers its annual report which shows a 2,191 kg increase in the country's plutonium inventory to 13,072 kg (end of 1994), of which 8,720 kg is abroad. Not included in this figure is plutonium already loaded in the 100 MW experimental fast

reactor Joyo, the 165 MW prototype ATR Fugen, and the 280 MW prototype FBR Monju. Fluctuations in plutonium stockpiles are registered at PNC's Tokai Reprocessing Company, where inventory increased from 326 kg to 836 kg. The loading of Monju's first plutonium fuel core produces a 591 kg decrease in the plutonium stockpiled for loading reactors and critical facilities.

Naoaki Usui, *Nucleonics Week*, 10/26/95, pp. 15-16 (14012).

10/31/95

The U.S. Senate releases a report showing the Japanese sect Aum Shinrikyo planned to obtain materials to build nuclear and chemical arms.

Christopher Drew, *New York Times*, 11/1/95, p. A5 (13790).

JAPAN WITH:

Belarus, 101

JAPAN WITH BELGIUM, FRANCE, UNITED KINGDOM, AND UNITED STATES

9/18/95*

Japan will no longer import reprocessed plutonium directly from the U.K. or France, but will reprocess it first into mixed-oxide (MOX) fuel at a Belgonucleaire plant in Belgium. To expedite the deal, government-level negotiations between Japan and Belgium on a nuclear cooperation contract are underway. Negotiations are also forthcoming with the U.S., which must approve the shipment of plutonium from the U.K. and France to Belgium under the Japan-U.S. Atomic Energy Agreement. Transportation of MOX fuel should begin in three or four years. To date, Japan has obtained 4.9 tons of plutonium from France and 1.3 tons from the U.K.

Nihon Keizai Shimbun (Tokyo), 9/18/95, p. 1; in FBIS-EAS-95-184, 9/18/95 (13559).

JAPAN WITH CANADA, PRC, SOUTH KOREA, AND UNITED STATES

9/16/95*

At the 39th Plenary Session of the IAEA, held in Vienna from 9/18/95 to 9/22/95, South Korean Science and Technology Min-

ister Chong Kun-mo discusses possible nuclear cooperation with key officials from eight countries, including the U.S. Secretary of Energy, Japan's Minister of Science and Technology, the president of Canada's Atomic Energy Control Board, and the president of the China National Nuclear Industry Corporation.

Yonhap (Seoul), 9/16/95; in FBIS-EAS-95-182, 9/16/95 (13796).

JAPAN WITH FRANCE

7/4/95

A shipment of mixed-oxide (MOX) fuel utilizing plutonium returned from France arrives at Power Reactor and Nuclear Fuel Development Cooperation's (PNCs) 280 MW fast breeder reactor (FBR) Monju, marking the first delivery of such fuel to Japan.

Atoms in Japan, 7/95, p. 17 (13387).

9/29/95*

Framatome sets up a Tokyo division and now has eight offices in Asia with plans to expand further.

NucNet News, 9/29/95 (13789).

JAPAN WITH KAZAKHSTAN

8/8/95*

Hitachi, Japan's foremost producer of nuclear power industry equipment and fuel processing technology, is prepared to cooperate with Kazakhstan in the field of nuclear energy.

Tulegen Askarov, *Ekspress-K* (Almaty), 8/8/95, p. 3; in FBIS-SOV-95-158, 8/8/95 (13761).

JAPAN WITH MARSHALL ISLANDS, SOUTH KOREA, AND TAIWAN

9/19/95*

The Marshall Islands negotiate with Japan, Taiwan, and South Korea over the possible use of Enewetak atoll as a repository for spent nuclear fuel.

Radio Australia (Melbourne), 9/19/95; in FBIS-EAS-95-182, 9/19/95 (13568).

JAPAN WITH:

North Korea (KEDO), 124

JAPAN WITH PRC

7/25/95

Japanese and Chinese senior Foreign Ministry officials hold talks in Beijing to discuss nuclear disarmament and other issues. China states that it is in favor of a total test ban, but still wants to conduct "peaceful" nuclear explosions, which, according to experts, would be used to monitor the safety of its nuclear weapons. The discussions also include the issue of the NPT's indefinite extension. Japan expresses interest in additional talks and the possible creation of a mechanism for periodic discussions between Japan and China.

International Defense Review, 10/95, p. 6 (13833).

8/17/95

At its Lop Nor test site, China conducts its second nuclear test of 1995, its 43rd test in total. In response, Japan cuts grant aid to China to \$5.2 million, roughly six percent of the \$81.2 million granted to China in 1994. Before signing the Comprehensive Test Ban Treaty in 1996, China reportedly intends to perform another test in 1995 and two or three more tests in 1996. The second test will be held next year. Japan threatens to make further cuts to its foreign aid to China if the tests are carried out.

Arms Control Today, 10/95, p. 24 (13812). *Tokyo Shimbun*, 8/25/95, p. 1; in FBIS-EAS-95-165, 8/25/95 (13358). Willis Witter, *Washington Times*, 8/30/95, p. A9 (13358).

8/29/95

Japan states that it is dropping most of its grant aid to China in response to Chinese nuclear testing.

Andrew Pollack, *New York Times*, 8/30/95, p. A6 (13491).

10/31/95

According to sources close to the Japanese embassy in China, China has canceled plans to conduct another nuclear test in 1995. China apparently canceled the test due to Japanese threats to further reduce economic assistance to China and to reconsider the scope and terms of assistance in the event of another test. Japan now plans to consider providing a 141 billion yen credit to China in response to the cancellation.

Itar-Tass (Moscow), 10/31/95; in FBIS-CHI-95-211, 10/31/95 (13951).

JAPAN WITH RUSSIA

8/4/95*

Japan plans to rescind its offer to finance the clean-up of liquid radioactive waste in Russia's Maritime Territory. On 7/25/95, the job's contractor was to be named, but no announcement has been made. The waste currently resides in tankers filled to capacity in Vladivostok. According to the Russian newspaper *Segodnya*, Japan's blueprints for a reprocessing facility to treat the waste fail to meet Russian safety standards.

Oleg Vnusov, NTV (Moscow), 8/4/95; in FBIS-SOV-95-151, 8/4/95 (13405). Natalia Gorodetskaya, *Segodnya*, 7/15/95, p. 2 (13405).

9/95

At a conference in Versailles, Tokyo University nuclear engineering professor and fuel cycle expert Atsuyuki Suzuki suggests that Japan contribute to nuclear disarmament by purchasing Russian weapons-grade plutonium. Suzuki says the benefits for Japan, which faces a near-term plutonium shortage, and for Russia, which will annually generate almost 5 MT of plutonium through weapons dismantlement, could outweigh Japanese public resistance to importing plutonium. Use of the Russian plutonium may be confined to the government-owned ATR Fugen and fast breeder reactor FBR Monju. With adjustments, Fugen should be able to deplete 1 MT of plutonium per year and load up to 4 MT in its core, Suzuki says. Monju, he adds, is capable of loading as much as 1,900 kg of plutonium per year over a two-year cycle.

Ann MacLachlan, *NuclearFuel*, 10/9/95, pp. 8-9 (13565).

10/24/95*

According to a notice from the British Crown Agency company to Russian Maritime officials, the Japanese government will not call the international tenders, first announced in 10/94, for the construction of radioactive waste storage and reprocessing facilities at defense plants in the Russian Maritime region. According to Valeriy Shafranovskiy, acting chairman of the Committee for Natural Resources of the Maritime region, the Japanese government has not yet provided an explanation for its ac-

tion. The Japanese government had promised to call international tenders and allocate a portion of the \$100 million pledged to Russia for the dismantlement of former Soviet nuclear facilities for the construction of storage and reprocessing facilities. Construction of the facilities was to be finished by 9/95. Although specialists from the Far Eastern department of the Russian Academy of Sciences have suggested using "their own technologies for the utilization of radioactive waste," which they claim are less expensive and more efficient than foreign technologies, Maritime officials favor foreign projects. Maritime officials claim that there are no funds available for "domestic projects."

Eduard Popov, *Itar-Tass (Moscow)*, 10/24/95; in FBIS-TAC-95-006, 10/24/95 (13913).

JAPAN WITH RUSSIA AND UNITED STATES

6/95

Facilities in Japan are vying with facilities in the U.S. and Russia to become the site of the International Thermonuclear Experimental Reactor (ITER). Competing for the ITER are the Japan Atomic Energy Research Institute's (JAERIs) Naka Fusion Research Establishment in Ibaraki Prefecture, Tomakomai Eastern Industrial Park in Hokkaido, and Rokkasho-mura in Aomori Prefecture. On 6/14/95, the Rokkasho-mura village assembly expresses unanimous support for siting the ITER at the Mutsu-Ogawara locale. Japan has allocated 21.9 billion yen for research on the ITER.

Atoms in Japan, 7/95, pp. 13-14 (13486). Tetsuro Kitagishi, *Genshiryokyu Kogyo (Tokyo)*, 4/95, pp. 77-80; in FBIS-JST-95-056, 9/6/95 (13650).

7/26/95-7/27/95

The 8th Council of the ITER convenes in San Diego to discuss design and site requirements for the Japanese, European, Russian, and U.S. joint venture. The council's Interim Design Report sets as goals the attainment of "1,000-sec controlled-nuclear-fuel combustion and self-ignition, and the testing of high-heat flux nuclear engineering equipment." Projected construction costs for the main facility are \$5-6.5 billion. The ITER's annual operating expenses are estimated at \$350-400 million. In early 1996, the parties will begin to discuss pos-

sible sites for the project.

Atoms in Japan, 9/95, pp. 12-13 (13788).

JAPAN WITH SOUTH KOREA

9/22/95

The defense ministers of Japan and South Korea agree to work together more closely on military matters to counter the North Korean nuclear threat.

Washington Times, 9/23/95, p. A9 (13999).

JAPAN WITH SYRIA

Mid-9/95

Japanese Deputy Foreign Minister Shuji Yanai rejects allegations that Japan is planning to sell a nuclear reactor to Syria. Yanai explains that Japan is actually exporting a hydroelectric power station to Syria.

Alon Pinkas, *Jerusalem Post*, 9/18/95, p. 2; in FBIS-NES-95-180, 9/18/95 (13301).

JAPAN WITH UNITED KINGDOM

9/19/95

The nuclear freighter Pacific Pintail leaves Japan for Sellafield, U.K., loaded with 35 spent fuel assemblies from Hokkaido Electric Power Company's (HEPCO's) Tomari-1 and -2 pressurized water reactors (PWRs).

Nuke Info Tokyo, 9/95-10/95, p. 9 (14026). *Japan Times*, 9/20/95; in *Uranium Institute News Briefing*, 9/20/95-9/26/95 (13384).

10/95

British Nuclear Fuel, Ltd. (BNFL) opens an office in Tokyo. Starting in 1997, BNFL's services will include those of a commercial-scale mixed-oxide (MOX) fuel fabrication plant now under construction.

BNFL News, 10/95, p. 3 (13660).

JAPAN WITH UNITED STATES

10/17/95*

The U.S. Argonne National Laboratory and Japan's Central Research Institute of Electric Power Industry (CREIPE) discover a more efficient technique for extracting uranium and plutonium from the spent fuel of fast breeder reactors (FBRs). The new dry method is based on the concept of electrolysis. Assembling the equipment needed to conduct dry method separation costs ap-

proximately one-fifth that of wet method equipment construction.

Nikkei Sangyo Shimbun, 10/17/95, p. 5; in FBIS-JST-95-073, 10/17/95 (14028).

KAZAKHSTAN

INTERNAL DEVELOPMENTS

7/29/95*

In a statement to U.N. Secretary General Boutros Boutros-Ghali, President Nursultan Nazarbayev announces that Kazakhstan is "completely free of nuclear weapons," having removed over 1,200 nuclear warheads from its territory by 4/95.

Jane's Defence Weekly, 7/29/95, p. 12 (13230).

8/8/95*

A "sizable group" of nuclear industry employees in Kazakhstan is opposed to the country's non-nuclear weapon status. Disgruntled workers in Kazakhstan's nuclear weapons development sector have few options for alternative employment: they will not be allowed to emigrate en masse, and Russia is not capable of integrating all Kazakhstani nuclear engineers into its economy.

Tulegen Askarov, *Ekspress-K (Almaty)*, 8/8/95, p. 3; in FBIS-SOV-95-158, 8/8/95 (13761).

9/25/95*

Kazakhstan remains the only former Soviet republic to lack a state policy on nuclear waste management, a fact that is complicating the disposal of Kazakhstan's nearly 232.9 million MT of waste. Most of Kazakhstan's waste, 220.6 million MT, was produced by the mining and processing industry. The remaining 12.3 million MT of waste was generated during nuclear explosions.

Aziya-Ezh (Almaty), 9/95, p. 7; in FBIS-SOV-95-185-S, 9/25/95 (13291).

10/12/95*

According to Tuseyn Ozhakhliyev, chief of the Radiation Hygiene Division of the Almaty Sanitary and Epidemiological Directorate, no burial sites for radioactive waste currently exist in Kazakhstan. Currently over 4,000 "sources" of radioactive

waste, a figure that increases monthly, have yet to be buried. Storage prices at the Baikal-1 complex on the Semipalatinsk test site, which is designed for reception and long-term storage of radioactive sources prior to burial, are excessively high and prevent organizations from using their services. According to Yergali Bayadilov, general director of Kazakhstan's Nuclear Energy Agency, a plan to use the tunnels at the Degelen Mountain nuclear test tunnel complex at Semipalatinsk as a temporary state storage facility is being considered.

Karavan-Blitz (Almaty), 10/12/95, p. 2; in FBIS-TEN-95-015, 10/12/95 (13737). Anatoliy Ladin, *Krasnaya Zvezda* (Moscow), 10/17/95, p. 3 (13737).

10/18/95

The government of Kazakhstan adopts a resolution calling for the further development of the nuclear power industry. The government also adopts a proposal to construct a modern nuclear power station on the territory of the former nuclear test site at Semipalatinsk. Draft nuclear regulatory laws and a plan for the development of the nuclear industry through the year 2030 are to be prepared and submitted to the government by the end of 1995. Three Kazakh ministries are to develop a technical and economic report outlining ideal sites for nuclear power stations in the country.

Panorama (Almaty), 11/1/95, p. 1; in FBIS-SOV-95-212, 11/1/95 (13724).

10/27/95*

According to "local scientists and specialists," customs officers in Kazakhstan cannot differentiate between smuggled nuclear material, components used in the manufacturing of tactical or strategic nuclear weapons, and conventional freight.

Tulegen Askarov, *Ekspress-K* (Almaty), 10/27/95, p. 2; in FBIS-SOV-95-224-8, 10/27/95 (13734).

KAZAKHSTAN WITH:

Armenia, Belarus, Georgia,
Russia, and ISTC, 100

KAZAKHSTAN WITH CANADA

Mid-8/95

During the week of 8/13/95, Canada's Cameco, Inc. and Uranerz Exploration and Mining, Ltd. and the Kazakh Nuclear En-

ergy Company (KATEP) sign an agreement of intent to start a joint venture. The agreement is backed by the Kazakhstan government and provides each participant with an equal stake in the venture, started in order to exploit the low-cost Inkai and Mynkuduk uranium deposits in Kazakhstan's Chu-Sarysuu region. KATEP is expected to export the material produced by the joint venture. Uranerz and Cameco have pledged 40 million Canadian dollars in investments to develop the deposits.

Nuclear News, 10/95, p. 48 (13483). Interfax (Moscow), 8/17/95; in FBIS-SOV-95-160, 8/17/95 (13483). *Nukem*, 10/95, pp. 4-20 (13732).

KAZAKHSTAN WITH FRANCE

8/8/95*

President Nursultan Nazarbayev holds discussions in Almaty with representatives of the French firm Bouygues concerning the construction of five or six nuclear power plants in Kazakhstan.

Tulegen Askarov, *Ekspress-K* (Almaty), 8/8/95, p. 3; in FBIS-SOV-95-158, 8/8/95 (13761).

10/27/95*

An article in *Ekspress-K* asserts that Kazakhstan can legally deploy certain types of nuclear weapons on its territory without violating Kazakh treaty obligations, and that the "door to deployment" of Russian or French nuclear weapons "remains open." Kazakhstan may find it necessary to "walk the French nuclear path" as a means of reciprocity for France's assistance in writing the Kazakh constitution and constructing nuclear power plants which, when completed, will close Kazakhstan's uranium fuel cycle.

Tulegen Askarov, *Ekspress-K* (Almaty), 10/27/95, p. 2; in FBIS-SOV-95-224-8, 10/27/95 (13734).

KAZAKHSTAN WITH:

Indonesia, 107
Iran and United States, 109
Japan, 119

KAZAKHSTAN WITH LIBYA

8/10/95

Kazakhstan's Atomic Energy Agency general director Yergali Bayadilov denies allegations that Kazakhstan intends to export

uranium to Libya. Responding to a report by Libya's Jana News Agency that Libya "intends to buy quantities of the radioactive uranium" from Kazakhstan, Bayadilov says, "Kazakhstan has not been approached by Libya, and we are not prepared to sell nuclear fuel to Libya." On 8/14/95, Kazakh Vice-Foreign Minister Bulat Nurgaliyev also refutes the allegations, saying, "There have not been any contacts with Libya in respect to the possible sale of concentrated or enriched uranium." Nurgaliyev notes Kazakhstan would only sell uranium to nations that are signatories to the NPT and abide by IAEA safeguards.

Reuter, 8/10/95; in Executive News Service, 8/10/95 (13306). Interfax (Moscow), 8/14/95; in FBIS-SOV-95-157, 8/14/94 (13306). Libyan Television Network (Tripoli), 8/8/95; in FBIS-TAC-95-016-L, 8/8/95 (13318).

KAZAKHSTAN WITH PRC

8/20/95*

As part of its program to build regional security cooperation with neighboring countries, China has offered nuclear security guarantees to Kazakhstan.

Yan Xuetong, *Xiandai Guoji Guanzi* (Beijing), 8/20/95, pp. 23-28 (13973).

9/14/95*

At a conference in Beijing, Kazakhstan's President N. Nazarbayev expresses concern over Chinese underground nuclear tests near the Kazakh border. After three years of entreaties from Kazakhstan, China consents to the formation of a joint Chinese-Kazakh commission to observe underground test sites and report any shifts in radioactivity toward Kazakhstan. The establishment date and authority of the commission have not yet been decided.

Vladimir Skosyrev, *Izvestiya* (Moscow), 9/14/95, p. 3; in *The Current Digest*, 1995, p. 25 (13810).

KAZAKHSTAN WITH RUSSIA

6/30/95*

Russia and Kazakhstan have invested in a number of joint studies including one at Semipalatinsk on the safe use of nuclear energy. The issues of physical security of nuclear facilities, shipment of "special loads," and the observance of regulations on

“access to research results” have surfaced in Russian and Kazakh legislation.

Yuri Kirinitsyanov, *Rossiiskaya Gazeta* (Moscow), 6/30/95, p. 7 (13233).

7/10/95

Russian Prime Minister Viktor Chernomyrdin signs Decree No. 688 setting in motion a 9/9/94 Russian-Kazakh agreement to create the Interros interstate financial-industrial group. Cooperation in the nuclear industry will be a “priority area” for Interros.

Viktor Chernomyrdin, *Rossiiskaya Gazeta* (Moscow), 7/18/95, p. 6 (13229).

8/29/95*

The Russian-Kazakh inter-governmental group Interros gains control over a package of government-owned shares in the Ulba state holding company, a metallurgical facility in Kazakhstan that supplies nuclear fuel to power stations in the CIS countries. According to Kazakh Deputy Prime Minister Vitali Mette, Ulba will be merged with Russian facilities to form a single technological cycle for nuclear fuel production.

Elena Rubleva, *Finansovye Izvestiya* (Moscow), 8/29/95, p. 2; in *WPS*, 9/20/95, p. 21 (13515).

KAZAKHSTAN WITH UKRAINE

9/21/95

Ukrainian President Leonid Kuchma and Kazakh President Nursultan Nazarbayev sign cooperation agreements on science and technology and discuss bilateral research initiatives in nuclear physics and nuclear power engineering.

Vasyl Mykhalchuk, UT-1 Television Network (Kiev), 9/21/95; in FBIS-SOV-95-184, 9/21/95 (13285).

KAZAKHSTAN WITH UNITED STATES

10/3/95

U.S. Assistant Secretary of Defense Ashton Carter and Kazakh Foreign Minister Kassmjomart Tokayev sign an agreement under which the U.S. will provide up to \$171 million in Cooperative Threat Reduction (CTR) funds for the decommissioning and sealing of 186 tunnels at the Degelen Mountain nuclear test tunnel complex at Semipalatinsk. In FY 1995, \$6 million in

CTR funds were allocated to assess the project and to fund the first tunnel closures. The U.S. Defense Nuclear Agency and the National Nuclear Center of Kazakhstan will implement the Degelen project within the framework of the CTR Nuclear Infrastructure Elimination Initiative in Kazakhstan.

U.S. Department of Defense News Release, 10/3/95; in USIA Wireless File, 10/4/95, pp. 10-11 (13726). *Nuclear Proliferation News*, 10/12/95, p. 14 (13726). *Post-Soviet Nuclear & Defense Monitor*, 10/13/95, p. 7 (13726).

10/13/95*

Ten CTR projects with a total of \$131.5 million in funding are currently underway in Kazakhstan. The CTR funds include \$8 million for material protection, control, and accounting (MPC&A) and physical protection and \$7.26 million for work on export controls, as well as funds for a government communications link and defense conversion project. The International Science and Technology Center, which is partially supported by CTR funds, recently awarded \$200,000 to the Kazakhstan Institute of Atomic Energy’s National Nuclear Center. Kazakhstan joined the ISTC in 6/95.

Post-Soviet Nuclear & Defense Monitor, 10/13/95, p. 15 (13736).

10/13/95*

The U.S. Department of Energy’s Los Alamos National Laboratory is working with Kazakhstan on a nuclear material control project.

Post-Soviet Nuclear & Defense Monitor, 10/13/95, pp. 8-12 (13741).

LIBYA

LIBYA WITH GERMANY, ITALY, KUWAIT, AND UNITED STATES

7/95

The U.S.-based Halliburton Company pays \$3.8 million in fines to the U.S. Department of Justice (\$1.2 million) and Commerce (\$2.6 million) for illegal sales of “neutron pulse generators” to Libya in the late 1980s. The sales were made by Halliburton

Germany GmbH and Halliburton Italiana through subsidiaries in Kuwait and Libya. Halliburton’s subsidiary in Libya confiscated the pulse generators and eventually returned them to the U.S. Halliburton CEO Thomas Cruikshank maintains that the deal was made due to the company’s then-insufficient internal export control procedures and training.

Export Practitioner, 7/31/95, p. 5 (14035).

LIBYA WITH:

Iraq, 115

Kazakhstan, 121

LITHUANIA

INTERNAL DEVELOPMENTS

9/6/95*

The Lithuanian government plans to shut down the first 1300 MW LWR at the Ignalina nuclear power station by 2005, and the second reactor by 2010. According to Lithuanian Ministry of Energy estimates, \$300 million will be needed in order to shut down the first reactor. Lithuania adopted this decision in part due to the high cost of nuclear fuel and the lack of waste storage facilities.

Nikolai Lashkevich, *Izvestiya* (Moscow), 9/6/95, p. 3 (13618).

LITHUANIA WITH NORTH KOREA, RUSSIA, AND SWITZERLAND

10/16/95

According to a *U.S. News and World Report* article and a 10/15/95 60 Minutes television report, four tons of beryllium and 19.8 lbs (9 kg) of cesium were stolen from a Russian facility in 1993 by Russian organized crime gangs. The shipment was seized in Lithuania before it could be shipped to a “mystery buyer” in Switzerland who may have “represented Korean interests.”

Reuter (New York), 10/14/95; in *Executive News Service*, 10/16/95 (13881).

LITHUANIA WITH RUSSIA

9/95

The Lithuanian State Energy System and Russia's foreign trading firm "Energiya" sign a \$60 million contract under which Lithuania will provide Russia with up to 4 billion kW/h of electricity in exchange for Russian nuclear fuel. The agreement extends through 4/96. The parties will negotiate separate contracts on prices and quantities of fuel and electricity to be exchanged on a monthly basis.

BNS (Tallinn), 10/2/95; in FBIS-SOV-95-191, 10/2/95 (13524).

10/28/95

Russian police arrest two Lithuanian citizens at the Smolensk train station for attempting to smuggle 14 kg of Cesium-134 and Cesium-137 across the Russian border.

Moskovskiy Komsomolets (Moscow), 11/4/95, p. 1; in WPS, 11/10/95, p. 5 (13905).

NEW FORUM

9/17/95

Twenty-eight nations, including the U.S., Russia, and Eastern European countries, finish negotiations to establish the umbrella organization "New Forum," as a successor to COCOM. The countries discuss military and dual-use export regulations and related topics such as pre-notification. Future member states, including Poland, Russia, Hungary, the Czech Republic, and most NATO countries, have agreed to the following measures: (a) to notify one another of trade license agreements and exports related to the transshipment of conventional arms and dual-use technology to rogue states such as North Korea, Libya, and Iraq; (b) to notify one another after refusing a request for a trade license; and (c) not to enact the U.S. proposal to establish a system of "prior notification." Membership in the New Forum does not allow states the unilateral right to veto a given export. Unlike COCOM, New Forum lacks lists of specific countries to whom exports are to be controlled and of

technologies whose transfer is to be restricted, a fact that will likely hamper the new organization's effectiveness.

Barbara Starr, *Jane's Defence Weekly*, 8/5/95, p. 5 (13373). Ronald van de Krol, *Financial Times*, 9/14/95 (13714). *Export Practitioner*, 9/30/95, pp. 2-3 (13714).

NORTH KOREA

INTERNAL DEVELOPMENTS

7/94

In an interview, North Korean Prime Minister Kang Song-san's son-in-law, Kang Myong-to, who defected in 5/94, estimated that North Korea possessed five to six nuclear warheads but declined to make a public statement for fear of international reaction.

Choe Won-ki, *Chungang Ilbo* (Seoul), 8/28/95, p. 3; in FBIS-TAC-95-005, 8/28/95 (13964).

8/28/95*

North Korean Prime Minister Kang Song-san's son-in-law, Kang Myong-to, says in an interview that subterranean facilities he observed under construction in North Korea's Chagang Province in 1989 are probably used to store plutonium or to produce nuclear warheads. Kang says it is telling that the North Korean Third Bureau of Engineers, a military unit administered by the Central Committee which specializes in the construction of nuclear facilities, was put in charge of the project. Kang refers to a 1989 discussion with Puhung Trading Corporation President Kim Yang-ku, in which Kim said that the construction in Chagang was for a "project to build nuclear facilities." According to Kang, Puhung is a company responsible for obtaining imported materials for the Third Bureau of Engineers. Kang speculates that easy access to nearby munitions plants may have been the impetus for constructing nuclear facilities in the region.

Choe Won-ki, *Chungang Ilbo* (Seoul), 8/28/95, p. 3; in FBIS-TAC-95-005, 8/28/95 (13964).

9/95*

Inspection of nuclear facilities in North Korea's nuclear program is problematic because many separate and independent government departments are involved, each of them in charge of different sites and accountable only to the Central People's Committee. The following government departments are associated with a number of nuclear sites which may be subject to future international inspection: the Mining Industry Committee, responsible for the Pyongsan, Unggi, Haegum-gang, and Hamhung uranium mining facilities; the Ministry of Nuclear Energy, responsible for the Kusong uranium processing facility and the Sinpo nuclear power plant (an uncompleted Soviet project); the Academy of Sciences, which oversees the University of Chemical Industry, Hamhung, the Kim Il-sung University, and Kimchaek University of Technology; the Ministry of Public Security, which controls the Yongbyon Nuclear Research Center and affiliated Pakchon facilities and jointly administers the Yongbyon-related Kuryong River nuclear explosives test site with the Ministry of Defense; and the Ministry of Defense, which also controls the Kilchu nuclear warfare training base and the Pakchon air force base. North Korean defectors have indicated that there are other facilities that should be examined as well, but these claims have yet to be confirmed.

Peter Lewis Young, *Jane's Intelligence Review*, 9/95, pp. 418-419 (13857).

10/24/95

A signed article in the North Korean publication *Nodong Sinmun* calls for the dismantling of nuclear weapons and terms this the most important aspect of complete global disarmament. The article stresses North Korea's support for the creation of a nuclear free zone, saying Northeast Asia has "the largest number of nuclear weapons" and is therefore in "greatest danger of war."

Korean Central Broadcasting Network (Pyongyang), 10/24/95; in FBIS-EAS-95-205, 10/24/95 (13958).

NORTH KOREA WITH IAEA

9/11/95

An IAEA official says that, during talks from 9/11/95 to 9/19/95, a team of IAEA

negotiators will try to persuade North Korea to allow examination of its plutonium to enable the IAEA to determine the total amount of plutonium in North Korea's possession. The IAEA is requesting that North Korea permit inspections of its spent fuel rods before they are processed for storage by U.S. technicians. Plutonium levels cannot be measured after the fuel has been stored.

Yonhap (Seoul), 9/12/95; in FBIS-EAS-95-176, 9/12/95 (13945).

9/15/95-9/20/95

The IAEA sends a safeguards inspection team to North Korea. In addition to their regular monitoring duties, the officials will monitor North Korean compliance with the 10/21/94 Agreed Framework.

Evan S. Medeiros, *Arms Control Today*, 10/95, p. 22 (13971).

9/18/95-9/22/95

At the 39th IAEA General Conference, 103 member states adopt a resolution concerning the implementation of the IAEA-DPRK safeguards agreement. The resolution calls on North Korea to cooperate with the IAEA to "preserve intact" all data pertinent to determining the "accuracy and completeness" of North Korea's original nuclear inventory report until North Korea "comes into full compliance with its safeguards agreement." The resolution on North Korea echoes Director General Hans Blix's opening statement on 9/18/95, in which he noted that "limited progress" was made during recent IAEA-DPRK technical talks related to the safeguards agreement. According to Blix, unresolved concerns include disposition of spent nuclear fuel from North Korea's 5 MW reactor and installation of waste tank monitoring equipment at its reprocessing plant. North Korea has only agreed to "study" a document provided by the IAEA containing proposals on associated technical matters.

IAEA Press Release (Vienna), 9/22/95; in FBIS-TAC-95-005, 9/22/95 (13922).

9/25/95

IAEA Secretary General Hans Blix tells a special IAEA Board of Governors meeting that North Korea has denied the IAEA permission to measure the amount of plutonium

in its 8,000 spent nuclear fuel rods or in the liquid wastes at its radio-chemical laboratory. Blix says North Korea agreed only to allow IAEA inspectors to determine if the fuel rods were irradiated and to photograph the radio-chemical laboratory. North Korea has indicated it will condition examination of the fuel rods on progress in negotiations for a LWR supply contract.

Cha Man-sun, KBS-1 Radio Network (Seoul), 9/26/95; in FBIS-EAS-95-186, 9/26/95 (13945). Yonhap (Seoul), 9/12/95; in FBIS-EAS-95-176, 9/12/95 (13945).

Late 9/95

The U.S. rejects as "not implementable" the IAEA's recent requests to verify North Korea's nuclear history, reportedly preferring to continue working-level talks with North Korea. The U.S. wants to store North Korea's spent fuel rods and delay inspection for four or five years, when the rods could be examined in conjunction with special inspections of North Korea's undeclared nuclear facilities. Nuclear experts insist that it will be impossible to discover North Korea's nuclear past if the rods are not examined prior to storage. A U.S. official is quoted as saying that IAEA Director General Hans Blix's stance and that of the Agency Secretariat represented an "abrogation of the Geneva agreement."

Pak Tu-sik, *Choson Ilbo* (Seoul), 9/21/95, p. 2; in FBIS-EAS-95-183, 9/21/95 (13862). *Kyonghyan Sinmun* (Seoul), 9/26/95, p. 3; in FBIS-EAS-95-186, 9/26/95 (13862).

10/13/95

IAEA Director General Hans Blix says in a report to the U.N. Security Council that North Korea has denied IAEA inspectors permission to evaluate the plutonium levels in North Korea's spent nuclear fuel. Blix notes that North Korea has only provided the IAEA with minimal access to Yongbyon nuclear facilities.

KBS-1 Radio Network (Seoul), 10/14/95; in FBIS-EAS-95-202, 10/14/95 (13865).

NORTH KOREA WITH IAEA AND SOUTH KOREA

9/16/95*

During the 39th Plenary Session of the IAEA, held in Vienna from 9/18/95 to 9/22/95, South Korean Science and Technol-

ogy Minister Chong Kung-mo recommends that the IAEA strengthen its inspection role in verifying North Korea's adherence to the Non-Proliferation Treaty (NPT). Chong encourages North Korea to concede to the IAEA's safety measures and ensure the transparency of its nuclear development.

Yonhap (Seoul), 9/16/95; in FBIS-EAS-95-182, 9/16/95 (13796).

KOREAN PENINSULA ENERGY DEVELOPMENT ORGANIZATION (KEDO)

(North Korea with Australia, Brunei, Canada, France, Germany, Indonesia, Japan, Kuwait, Malaysia, New Zealand, Philippines, Saudi Arabia, South Korea, Thailand, United Arab Emirates, United Kingdom, and United States)

6/15/95

Russian Ambassador to China Igor Rogachev says during an interview that Russia and the PRC are "closely cooperating with each other with regard to the question of the Korean Peninsula," but neither country has as much influence on North Korea as they once did. In the same interview, Russian Vice Foreign Minister Aleksandr Panov suggests that the U.S., Japan, and South Korea have "ulterior motives" for providing LWRs to North Korea and says it is unlikely that Russia or China will be willing to play a "cameo role" in KEDO. Panov adds that Russia would not favor the imposition of sanctions against North Korea if it refused to accept LWRs supplied by South Korea, and that China would probably take the same position.

Interfax (Moscow), 7/27/95; in FBIS-SOV-95-145, 7/27/95 (13949).

6/29/95

U.S. Ambassador-at-Large Robert Gallucci says that, if the South Korean firm designated as main contractor in the LWR project subcontracts to a U.S. firm such as Combustion Engineering (ABB-CE), the U.S.-DPRK 10/21/94 framework agreement will have to be supplemented by an additional U.S.-DPRK agreement and will require Congressional approval. Gallucci says up to 20 percent of 50,000 tons of oil provided to North Korea under the 1/95 accord was di-

verted, probably for the production of steel.
Nuclear Proliferation News, 7/11/95 (13870).

Early 7/95

The Philippines pledges a minimum of \$100,000 to support KEDO.

Merlinda Manalo, *Manila Standard*, 7/13/95, p. 4; in FBIS-EAS-95-129, 7/3/95 (13472).

Early 7/95

South Korea awaits North Korea's response to a proposal that would allow 400 South Korean engineers and technicians to make preparations and site surveys for the LWR project in North Korea by the end of 1995.

Merlinda Manalo, *Manila Standard*, 7/13/95, p. 4; in FBIS-EAS-95-129, 7/3/95 (13472).

7/5/95

KEDO Executive Director Stephen Bosworth meets with South Korean officials, including Unification Minister Na Ung-pae and Foreign Minister Kon No-myong, to consider the formation of a delegation from KEDO for upcoming LWR contract talks with North Korea. The authority of the KEDO Secretary General, a position to which Bosworth is provisionally appointed, is also discussed.

Yonhap (Seoul), 7/1/95; in FBIS-EAS-95-128, 7/1/95 (13938).

7/12/95

A Japanese Foreign Ministry official says Japan wants to send a team of investigators to North Korea to study the future site of the LWRs prior to the finalization of a LWR supply contract between North Korea and KEDO.

Nihon Keizai Shimbun, 7/13/95; in Nikkei Telecom Database (Tokyo), 7/13/95; in FBIS-EAS-95-135-A, 7/13/95 (13475).

7/12/95

South Korean Ambassador to the U.S. Pak Kon-u says South Korea will send technicians numbering in the thousands to North Korea, once construction of the LWRs has begun.

KBS-1 Radio Network (Seoul), 7/12/95; in FBIS-EAS-95-134, 7/12/95 (13869).

7/14/95

South Korean Foreign Minister Kong No-myong indicates that a U.S. company will probably lead a LWR site survey mission to

North Korea in 8/95 to facilitate the administrative processes of KEDO. According to Kong, South Korea's "central role" in the North Korea LWR project will, nevertheless, be preserved.

Munwha Ilbo (Seoul), 7/15/95, p. 1; in FBIS-EAS-95-136, 7/15/95 (13936). Han Chong-ho, *Munwha Ilbo* (Seoul), 7/5/95, p. 2; in FBIS-EAS-95-128, 7/5/95 (13936). Yonhap (Seoul), 7/5/95; in FBIS-EAS-95-128, 7/5/95 (13936).

7/19/95

KEDO begins operations of its New York office.

Munwha Ilbo (Seoul), 7/19/95, p. 2; in FBIS-EAS-95-138, 7/19/95 (13868).

7/21/95

A South Korean official announces that the U.S. companies Combustion Engineering (ABB-CE), General Electric, and Sargent and Lundy will act as technical consultants to South Korean companies that will build LWRs in North Korea. The official explains that the Korea Electric Power Corporation (KEPCO), as main contractor, will be responsible for the management of the LWR project. South Korean companies will provide infrastructure for the project, including civil engineering, machinery, and electricity, without assistance from U.S. companies.

Yonhap (Seoul), 7/21/95; in FBIS-EAS-95-140, 7/21/95 (13867). Son Ki-yong, *Korea Times* (Seoul), 7/23/95, p. 2; in FBIS-EAS-95-141, 7/23/95 (13867).

7/24/95

The South Korean Secretary General of the Office of Planning for the Light Water Reactor Project Choe Tong-chin says a Memorandum of Understanding (MoU) between the South Korean company, KEPCO, and the U.S. firm, ABB-CE, has the inappropriate effect of guaranteeing the U.S. company a significant role in the LWR construction project in North Korea. The MoU, signed on 3/9/95, stipulates that KEPCO will not be required to pay royalties to ABB-CE if the role the U.S. firm is allowed to play in constructing South Korean Standard nuclear reactors (modeled after ABB-CE System 80 reactors) elsewhere is equal to that it played in constructing South Korea's Ulchin 3 and 4 reactors. Choe notes that the South Korean Foreign Ministry had not

been advised in advance of the MoU and says that, as a commercial agreement, the MoU could not lawfully constrain decisions of the South Korean government or of KEDO regarding the LWR project in North Korea.

KEPCO President Yi Chong-hun says the company agreed to the MoU to prevent ABB-CE from pursuing contracts in North Korea on its own and to resolve questions about royalties. A contract for the transfer of technology between ABB-CE and KEPCO indicated that ABB-CE would receive royalties equal to four to five percent of design and construction costs of the Korean Standard reactor when it is exported to third countries. But the MoU did not stipulate whether North Korea can be considered part of Korea and, therefore, exempt from royalties. This point was clarified on 7/10/95, when an official from the South Korean company Korea Atomic Energy Research Institute (KAERI) said it had confirmed with ABB-CE that the MoU does not apply to reactors constructed in North Korea.

Yonhap (Seoul), 7/24/95; in FBIS-EAS-95-141, 7/24/95 (13935). Yonhap (Seoul), 7/21/95; in FBIS-EAS-95-140, 7/21/95 (13935). Han Chong-ho, *Munwha Ilbo* (Seoul), 7/21/95, p. 1; in FBIS-EAS-95-140, 7/21/95 (13935). KBS-1 Television Network (Seoul), 7/22/95; in FBIS-EAS-95-141, 7/22/95 (13935). Yonhap (Seoul), 7/10/95; in FBIS-EAS-95-131, 7/10/95 (13935).

7/25/95

A South Korean official says the South Korean government has received a letter from the U.S. addressing the role of the program coordinator in the construction of LWRs in North Korea. In the letter, the U.S. informs South Korea that it wants to enhance the role of the program coordinator by giving it the authority to veto specification standards of LWR components in the reactor design. The U.S. wants the program coordinator to oversee and approve the reactor design and approve spending by the project's prime contractor. The South Korean official expresses concern that a strong program coordinator could threaten the central role that South Korea is supposed to play in the project. According to the official, South Korea prefers to restrict the role of the program coordinator to prevent it from order-

ing main LWR components from U.S. companies rather than from South Korea.

Choe Won-ki, *Chungang Ilbo* (Seoul), 7/26/95, p. 2; in FBIS-EAS-95-143, 7/26/95 (13940).

7/26/95*

A South Korea government source says a U.S. firm, either Burns and Roe or Sargent and Lundy, will probably be chosen to be program coordinator for KEDO.

Yi To-un, *Seoul Sinmun*, 7/26/95, p. 4; in FBIS-EAS-95-143, 7/26/95 (13972).

7/30/95

Russian Deputy Foreign Minister Aleksandr Panov says a Russian Ministry of Atomic Energy (Minatom) envoy will visit the New York headquarters of KEDO to discuss Russia's potential participation in the organization. Panov says Minatom will make the final decision as to whether or not Russia joins KEDO. He indicates that Russia does not want to play an unimportant role.

Interfax (Moscow), 7/27/95; in FBIS-SOV-95-145, 7/27/95 (13949).

7/31/95

The U.S., South Korea, and Japan convene a meeting of the KEDO Executive Council in New York, during which they discuss when and how to set up a LWR supply contract with North Korea. During the meeting, they create three advisory committees to manage the construction of the LWRs, the disposal of North Korea's spent nuclear fuel rods, and the transfer of heavy oil to North Korea. At the meeting, South Korean Secretary General of the Office of Planning for the Light-Water Reactor Project Choe Tong-chin, Japanese Nuclear Ambassador Tetsuya Endo, and U.S. Ambassador-at-Large Robert Gallucci inaugurate Stephen Bosworth as KEDO Executive Director and establish the KEDO Secretariat. It is determined that a LWR site survey team will go to North Korea in mid 8/95, although a separate delegation from KEDO will not, due to North Korea's resistance.

Yi Kwang-chul, KBS-1 Radio Network (Seoul), 7/31/95; in FBIS-EAS-95-147, 7/31/95 (13937). Yonhap (Seoul), 7/14/95; in FBIS-EAS-95-135, 7/14/95 (13937). Yonhap (Seoul), 7/29/95; in FBIS-EAS-95-146, 7/29/95 (13937).

8/95

The U.S. State Department says 12 coun-

tries have promised to contribute a total of \$16.8 million to KEDO to finance construction of LWRs in North Korea under the 10/21/94 U.S.-DPRK nuclear accord. Contributions include \$5.8 million from Japan; \$1.8 million from South Korea; \$5 million from Australia; \$1.8 million from Italy, over a three-year period; \$1.2 million from Canada; \$1.8 million from the U.K.; \$320,000 from New Zealand; \$300,000 from Malaysia, Singapore, and Brunei together; \$120,000 from Finland; and \$25,000 from Greece. Indonesia's contribution will be a shipment of 3,000 MT of heating oil to North Korea. The Netherlands has also offered \$500,000 for the project. Although these contributions only cover a small portion of the overall \$4 billion in estimated LWR project costs, the U.S. administration was pleased with the show of international support for the project.

Nucleonics Week, 8/10/95, pp. 1, 8 (13939). Evan S. Medeiros, *Arms Control Today*, 9/95, p. 29 (13939).

8/1/95

KEDO holds its first general meeting in New York. Representatives from 31 countries are present at the meeting, including Russia, Egypt, and Israel. Though it was invited, China does not attend.

Nucleonics Week, 8/10/95, pp. 1, 8 (13939).

8/7/95

A European Commission spokesperson says the Commission will make a final decision on its proposed \$20 million contribution to KEDO in late 1995.

Nucleonics Week, 8/10/95, pp. 1, 8 (13939).

8/8/95

A South Korean official says the U.S. will install monitoring equipment in North Korean power plants to ensure that the 100,000 tons of heavy oil supplied to it under the terms of the 10/21/94 U.S.-DPRK framework agreement is used only for heating and power generation.

Hang Chong-ho, *Munwha Ilbo* (Seoul), 8/8/95, p. 1; in FBIS-EAS-95-152, 8/8/95 (13859).

8/15/95

A team of 10 nuclear experts from KEDO travels to Sinpo, North Korea, to survey a proposed site for the construction of LWRs.

The survey team is headed by Sol Rosen from the U.S. State Department Office of the Nuclear Ambassador. Following the survey mission, the KEDO team of experts says North Korea has requested that KEDO pay \$2.5 million in outstanding survey debts from the canceled Soviet project to build two VVER-440 reactors at Sinpo. North Korea supplied the KEDO team with a cursory report on the findings of the Soviet survey, conducted in 1985, but says a previous agreement with Moscow prevents disclosure of details, including geological data, until the \$2.5 million is paid.

Reuter (Beijing), 8/15/95; in Executive News Service, 8/15/95 (13866). KBS-1 Television Network (Seoul), 8/15/95; in FBIS-EAS-95-158, 8/15/95 (13866). Yonhap (Seoul), 8/14/95; in FBIS-EAS-95-156, 8/14/95 (13866). Yonhap (Seoul), 8/9/95; in FBIS-EAS-95-153, 8/9/95 (13866). *Nuclear News*, 10/95, pp. 44-45 (13866).

8/16/95

Under contract with KEDO, the South Korean firm Yukong Ltd. prepares to ship 40,000 tons of heavy oil to North Korea in two shipments of 20,000 tons each. The first oil shipment is due to leave the South Korean port of Ulsan on 8/17/95 on a Chinese tanker supplied by KEDO, and the second shipment is to be completed by 8/24/95. As per a U.S.-DPRK agreement during talks on 6/15/95, an additional 60,000 tons is to be provided to North Korea in two shipments of 30,000 tons in 9/95 and 10/95.

Reuter (Seoul), 8/16/95; in Executive News Service, 8/16/95 (13859). Yonhap (Seoul), 8/16/95; in FBIS-EAS-95-158, 8/16/95 (13859). Han Chong-ho, *Munwha Ilbo* (Seoul), 8/8/95, p. 1; in FBIS-EAS-95-152, 8/8/95 (13859).

9/11/95-9/12/95

KEDO meets with North Korean officials in Kuala Lumpur, Malaysia, to discuss the contract for building two LWRs in North Korea. If the negotiations advance as hoped, expert-level talks will be held between the KEDO delegation, which is led by Special Aide to the U.S. Nuclear Ambassador Gary Samore, and the North Korean delegation, which is led by Yi Yong-ho, Deputy Director of the Foreign Ministry's America bureau. During the negotiations, the U.S. and North Korea each present draft contracts outlining "scope of supply" and repayment terms for the construction of the \$4.5 bil-

lion LWRs. An unnamed diplomatic official says the main point of contention at the talks is a North Korean request for supplementary items, such as a simulator to help train nuclear technicians, roads, electrical and port facilities, and fuel processing plants at the reactor site. These demands would cost KEDO some \$1 billion. KEDO and U.S. officials say such aid would not be consistent with the 10/21/94 Agreed Framework. Nonetheless, KEDO is deliberating paying land acquisition costs for the reactor site. Another significant difference in opinion involves repayment terms. KEDO wants North Korea to repay the costs of the reactor project over 15 years with no grace period, but North Korea is requesting a 30-year repayment period with a 10-year grace period. KEDO and North Korea both recognize the need for separate agreements on "communications and exchanges of people and goods for the project." According to one diplomat, North Korea has shown "flexibility" when discussing its request for supplementary facilities and more liberal repayment terms.

Evan S. Medeiros, *Arms Control Today*, 10/95, p. 22 (13971). Yonhap (Seoul), 9/11/95; in FBIS-EAS-95-175, 9/11/95 (13971). Yonhap (Seoul), 9/12/95; in BBC Monitoring Service: Asia-Pacific, 9/13/95 (13971). Reuter, 9/12/95; in Executive News Service, 9/12/95 (13976).

9/12/95

Thailand pledges \$300,000 to KEDO.

Yonhap; in *Munhwa Ilbo* (Seoul), 9/13/95, p. 2; in FBIS-EAS-95-177, 9/13/95 (13470).

9/14/95-9/16/95

During a two-day meeting of the executive board of KEDO, U.S. delegates propose that linkages be drawn between the scope of LWR supply and terms of payment and issues such as the implementation of nuclear inspections, a nuclear freeze, and compensation in the event of radioactive leaks. Both Japan and South Korea criticize the proposal on the grounds that the package deal would likely "expand the scope of LWR supply" and increase the expense of the project for the main contractor, South Korea. Nonetheless, acceptance of the proposal is inevitable according to some South Korean government officials.

Choe Won-ki, *Chungang Ilbo* (Seoul), 9/20/95, p. 1; in FBIS-EAS-95-183 (13990).

9/15/95

A KEDO official says that, during the 9/11/95 to 9/12/95 LWR talks between KEDO and North Korea, North Korea did not object to KEDO using the term "ROK" when referring to the type of LWRs the DPRK will receive under the terms of the agreement. North Korea had objected to South Korean reactors in the past.

Kyonghyang Sinmun (Seoul), 9/16/95, p. 2; in FBIS-EAS-95-180, 9/16/95 (13974).

9/15/95

Stephen Bosworth, Executive Director of KEDO, predicts during a press conference in Seoul that the contract between North Korea and KEDO for LWRs will be completed soon. Bosworth calls reports of a North Korean demand for extra facilities totaling \$1 billion "an exaggeration." During his three-day stay in South Korea, Bosworth will confer with the primary contractor, KEPCO, about a commercial contract. Bosworth also says that the U.S. program coordinator to the project will act in an advisory capacity, but will not have a larger part in the project than KEPCO. Bosworth called the program coordinator a "technical arm of KEDO." According to Bosworth, heavy oil shipments to North Korea will continue, although KEDO is having difficulties financing the shipments.

Yonhap (Seoul), 9/15/95; in FBIS-EAS-95-179, 9/15/95 (13979). *Korea Herald* (Seoul), 9/16/95, p. 2; in FBIS-EAS-95-180, 9/16/95 (13979).

9/18/95

The U.S. House of Representatives adopts a resolution urging President Clinton not to improve relations or ease economic restrictions with North Korea until it makes efforts to resume talks with South Korea and fulfills the terms of the North-South Declaration on the Denuclearization of the Korean Peninsula.

Reuter, 9/18/95; in Executive News Service, 9/18/95 (13860).

9/20/95*

Ambassador-at-Large Robert Gallucci is assigned a new position and the structure of the U.S. policy-making team that handles North Korea's nuclear program is changed.

Pak Tu-sik, *Choson Ilbo* (Seoul), 9/21/95, p. 2; in FBIS-EAS-95-183, 9/21/95 (13862).

9/21/95

The U.S. Senate approves a 1996 foreign aid bill that would place conditions on funding for the supply of LWRs to North Korea under the 10/21/94 U.S.-DPRK Agreed Framework. The new bill requires North Korea to relax trade barriers with South Korea and put a South Korean contractor in charge of the LWR project before U.S. funds are released. The U.S. administration is expected to try to have the conditions taken out of this bill in the House-Senate conference.

Thomas W. Lippman, *Washington Post*, 9/23/95, pp. 1, 14 (13856).

9/21/95

South Korean Foreign Ministry spokesman So Tae-won says the exact amount South Korea, Japan, and the U.S. will contribute to finance the North Korea LWR project has not been confirmed. According to So, the three countries will not consider how to divide the LWR project costs until the exact figure has been determined and North Korea and KEDO have agreed on a LWR supply contract. So refutes South Korean Ambassador to Japan Kim Tae-chi's 9/20/95 statement that South Korea would shoulder three-quarters of the \$4 billion LWR project costs but confirms South Korea's main role in implementing and financing the project.

Yonhap (Seoul), 9/21/95; in FBIS-EAS-95-183, 9/21/95 (13858).

9/21/95

KEDO proposes to hold high-level talks with North Korea in New York around 10/16/95. The participants in this second round of talks will attempt to reach a compromise on five issues which surfaced during the initial talks in Kuala Lumpur.

Yonhap (Seoul), 9/21/95; in FBIS-EAS-95-183, 9/21/95 (13989). *Kyodo* (Tokyo), 9/14/95; in FBIS-EAS-95-178, 9/14/95 (13989).

9/23/95

The South Korean National Unification Board presents the National Assembly with a draft agreement on the peaceful use of nuclear energy with North Korea which would guarantee the free exchange of workers, materials, and equipment during the construction of LWRs in North Korea. The Board expresses the hope that these ideas

will be incorporated in the final LWR supply contract between KEDO and North Korea.

Pak Song-won, *Seoul Sinmun* (Seoul), 9/24/95, p. 2; in FBIS-EAS-95-185, 9/24/95 (13476).

9/25/95

North Korea receives the second of three KEDO heavy fuel oil shipments. With financial help from member countries, KEDO plans to send 500,000 tons of fuel oil to North Korea by 1996.

Evan Medeiros, *Arms Control Today*, 10/95, p. 22 (13971).

9/26/95

South Korea appeals to Kuwait to participate in the KEDO consortium and send heavy fuel oil to North Korea. Kuwait decides to confer with other Gulf Cooperation Council member states and to consider the proposal.

Kim Kyong-ho, *Korea Herald* (Seoul), 9/28/95, pp. 1, 10; in FBIS-EAS-95-189, 9/28/95 (13977).

9/28/95

In an interview, a spokesman from the North Korean Foreign Ministry says North Korea will not pay any of the costs for the LWRs it is set to receive as part of the DPRK-KEDO negotiations before it has determined that the reactors have been constructed "in a way a commercial operation can be carried out." The Foreign Ministry spokesman adds that North Korea has the right to inspect the safety of the reactors because they will be owned and operated by North Korea.

KCBN (Pyongyang), 9/28/95; in FBIS-TAC-95-005, 9/28/95 (13984).

9/28/95

North Korea's Foreign Ministry expresses dissatisfaction with the slow implementation of the 10/21/94 U.S.-DPRK Agreed Framework. In a statement delivered by the North Korean Central News Agency (KCNA), the Foreign Ministry says, "It is self-evident that we cannot continue to unilaterally fulfil our obligation - nuclear freeze - if the U.S. side does not fulfill its obligations concerning the provision of light water reactors...KEDO must bear all the money needed not only for the infrastructure construction...but for the whole of the

project and compensate for what we have invested for the establishment of an independent nuclear power industry for scores of years." North Korea has reportedly discussed receiving thermal power plants instead of LWRs with U.S. officials. North Korea, the U.S., and KEDO have not officially commented on the report.

Nuclear Nonproliferation News, 10/12/95, pp. 15-16 (13988). *Seoul Sinmun*, 10/2/95, p. 1; in FBIS-EAS-95-190, 10/2/95 (13988).

9/29/95

Argentine President Carlos Menem reassures South Korean President Kim Yong-sam that Argentina is committed to supporting the 10/21/94 U.S.-DPRK Agreed Framework and the "complete solution of the North Korea nuclear issue." Menem says Argentina will give serious thought to South Korea's request that it join KEDO.

Yonhap (Seoul), 9/29/95; in FBIS-EAS-95-190, 9/29/95 (13477).

9/29/95

The Thai Foreign Ministry says Thailand will provide oil to North Korea as an alternative source of energy until the completion of the LWR project in North Korea.

Yonhap; in *Munhwa Ilbo* (Seoul), 9/13/95, p. 2; in FBIS-EAS-95-177, 9/13/95 (13470).

9/30/95

KEDO and North Korea start working-level talks on the supply of two 1,000 MW LWRs to North Korea. Among the topics to be covered during the working-level talks are North Korea's repayment terms for the cost of the reactor program and the extent to which training, safety equipment, and other technology will be provided with the reactors. If specific details are not included in the KEDO-DPRK supply contract, they will be included in the contract between KEDO and KEPCO. The supply contract may be completed in 10/95 during senior-level negotiations between KEDO and North Korea. A U.S. State Department source says that North Korea had not asked for thermal nuclear reactors instead of LWRs at the Kuala Lumpur round of talks in 9/95. KEDO confirmed in a 9/25/95 statement that it would provide North Korea with two LWRs and level the reactor site, although this latter provision has not been completely

worked out. Since 9/1/95, a group of technicians, including those from the U.S. firm Centec-21, have been at the Yongbyon nuclear facility trying to stabilize the spent fuel storage pond and to clarify the water in the pond. A Department of Energy contractor, NAC International, will spend up to six months canning 8,000 spent fuel rods from the fuel pool, possibly beginning as early as the middle of 10/95.

Kathleen Hart, *Nucleonics Week*, 10/5/95, p. 10 (13985).

Late 9/95

Carnegie Endowment for Peace Senior Researcher Selig Harrison says during an interview that the North Korean military had protested the failure to complete an agreement on the supply of LWRs to North Korea that was to be signed within six months of the 10/21/94 U.S.-DPRK nuclear accord. According to Harrison, North Korea seems willing to consider allowing South Korean technicians to participate in LWR construction in North Korea.

KBS Radio (Seoul), 10/1/95; in BBC Monitoring Services: Asia-Pacific, 10/3/95 (13925).

Late 9/95

Three North Korean nuclear technical experts and one "security expert" prepare to tour LWR sites in the U.S., viewing the design of Combustion Engineering's (CE) System 80 LWR model for the first time. The CE System 80 LWR was modified to produce the South Korean [Korean Standard] LWR model. The main site the North Koreans are to visit is the Palo Verde nuclear power plant in Arizona, where three 1,300 MW System 80 LWRs are located.

Mark Hibbs, *Nucleonics Week*, 9/21/95, p. 3 (13853).

Late 9/95

South Korean officials say the U.S. is shifting the financial burden of the LWR project in North Korea to South Korea, as a result of commitments made by the Clinton administration to protect U.S. voters from paying the bulk of LWR supply costs.

Mark Hibbs, *Nucleonics Week*, 9/21/95, p. 3 (13853).

10/95

A South Korean official says opposition from the North Korean military, particularly

its reluctance to send diplomatic pouches through Panmunjom, is causing setbacks in the opening of liaison offices between the U.S. and North Korea. According to a South Korean official involved in the LWR talks, North Korean negotiators' statements that this issue would be "difficult for hard-line military forces to accept," are an indication of the military's "strong influence over policy making in North Korea."

Kim Hyon-ho, *et al.*, *Choson Ilbo* (Seoul), 10/12/95, p. 31; in FBIS-EAS-95-198, 10/12/95 (13946).

10/4/95

U.S. Senator Frank Murkowski submits a Senate bill aimed at imposing stringent regulations on the implementation of the 10/21/94 U.S.-DPRK nuclear accord. The proposed bill is co-authored by Senators Jesse Helms, John McCain and Don Nickles. If enacted, the proposed legislation would make the establishment of full diplomatic and economic ties between the U.S. and North Korea contingent upon North Korea's compliance with certain stipulations of the accord, and would restrict the U.S. government from financing fuel exports to North Korea in the event that North Korea is found to be diverting the fuel or resuming its nuclear weapons program. The bill would require North Korea to improve relations with South Korea through North-South dialogue, adhere to IAEA safeguards, permit inspection of two possible nuclear waste disposal sites, facilitate the relocation of its spent nuclear fuel to a third country, and agree to permanently disassemble its graphite reactors. Murkowski explains that the proposed legislation would clarify how and when each side must take action to comply with the U.S.-DPRK accord, stressing that the U.S. position should be clear in order to guarantee that North Korea conforms to the agreed freeze of its nuclear weapons program.

Yonhap (Seoul), 10/5/95; in FBIS-EAS-95-193, 10/5/95 (13861).

10/9/95

The United States and South Korea agree that special inspections of unregistered North Korean facilities should be carried out as part of the LWR supply contract. During expert talks between KEDO and

North Korea and at high-level talks scheduled for 10/16/95 in New York, the U.S. and South Korea will "strongly demand" that North Korea allow special inspections to be specified in the agreement. Inspections will commence when the major components of the LWRs have been supplied to North Korea, between the end of 1998 and the beginning of 1999. The U.S. and South Korea will also set a timetable for the dismantling of North Korea's graphite-moderated reactors, currently in a state of freeze. North Korea claims to have never agreed to special inspections, maintaining that this is an issue to be discussed between North Korea and the U.S. at a later date.

Ko Tae-song, *Hanguk Ilbo* (Seoul), 10/9/95, p. 1; in FBIS-EAS-95-195 (13991).

10/12/95-10/26/95

During the second round of the KEDO-North Korea high-level talks in New York, North Korea demands that KEDO provide national power distribution facilities and a nuclear fuel plant in addition to LWRs. KEDO refuses, stating that the demand falls outside guidelines established at the first round of high-level talks in Kuala Lumpur during 6/95. KEDO and North Korea discuss such issues as the range of additional facilities, terms of payment, compensation for accidents which might occur during construction and after completion of the plant, the transparency of KEDO's construction of the plant, and North Korea's obligation to maintain a nuclear freeze and accept inspections of its nuclear facilities.

The two sides agree to add an annex covering additional details to the reactor supply contract. The contents of the annex will be discussed during the expert-level talks. The primary contract will cover the terms of North Korea's repayment, the terms under which North Korea will implement the Geneva agreement, the administrative support and services to be provided by North Korea, and the construction costs to be shouldered by KEDO. KEDO's estimated budget will be adjusted as the project proceeds to reflect cost increases.

Yonhap (Seoul), 10/20/95; in FBIS-EAS-95-211, 10/20/95 (14002). Yonhap (Seoul), 10/29/95; in FBIS-EAS-95-212, 10/29/95 (14003).

10/13/95

U.S. State Department Spokesman Nicholas Burns says the U.S. is certain North Korea will fulfil its obligations under the 10/21/94 U.S.-DPRK Agreed Framework, including special inspections of its nuclear facilities, despite a reported statement to the contrary made by North Korean Mission to the U.N. Ambassador Han Song-yol. The State Department says the accord requires North Korea to satisfy all IAEA safeguards requirements and to settle remaining questions about its past nuclear activities before the transfer of key LWR components can take place.

Yonhap (Seoul), 10/14/95; in FBIS-EAS-95-202, 10/14/95 (13941).

10/13/95

An editorial in *Nodong Sinmun* says the agreement for the provision of LWRs to North Korea is political in nature and must be solved by political means. The agreement must adhere to the principle of "simultaneous acts" [actions]. According to this principle, says the editorial, the United States cannot demand money from North Korea before the LWRs are completed and operating. North Korea also maintains that, as part of the DPRK-U.S. framework agreement, the United States is responsible for the construction of infrastructure as well as the LWRs.

KCNA (Pyongyang), 10/13/95; in FBIS-EAS-95-198, 10/13/95 (14000). Chong Yonchu, *Hangyore Sinmun* (Seoul), 10/23/95, p. 7; in FBIS-EAS-95-204, 10/23/95 (14001).

10/14/95

The Executive Council of KEDO rejects North Korea's request for an additional \$1 billion worth of supplementary LWR facilities. The South Korean Head of the Office of Planning for the Light Water Reactor Project Choe Tong-chin says North Korea's demand is unreasonable, adding that an additional request involving a 30-year repayment plan with a 10-year grace period is also unacceptable. The issue is to be discussed further during high-level negotiations between KEDO and North Korea set for 10/16/95.

Yi Kwang-chol, KBS-1 Radio Network (Seoul), 10/14/95; FBIS-EAS-95-202, 10/14/95 (13943).

10/19/95

Japanese Prime Minister Tomiichi Murayama asks Amir and Crown Prince of Kuwait Shaykh Jabir al-Ahmad al-Sabah for Kuwait to help supply crude oil to North Korea, through KEDO, as a source of alternative energy until the completion of LWRs in North Korea. Al-Sabah says his foreign minister will consider the request.

Kyodo (Tokyo), 10/19/95; in FBIS-EAS-95-202, 10/19/95 (13864).

10/20/95

During summit talks, Canadian Prime Minister Jean Chretien tells South Korean President Kim Yong-sam that Canada will become an active member of KEDO.

Chon Si-yong, *Korea Herald* (Seoul), 10/21/95, pp. 1, 9; in FBIS-EAS-95-204, 10/21/95 (13947).

10/21/95

One year after its signing, the 10/21/94 U.S.-DPRK Agreed Framework remains unimplemented. According to the *Washington Post*, this may be due to KEDO's financial problems, as well as mistrust between the U.S. and DPRK. South Korea and Japan have agreed only to finance the reactors and oppose any other expenditures. Fewer than a dozen nations have contributed a total of about \$10 million, while the U.S. House of Representatives wants to cut the proposed U.S. contribution of \$23 million for 1996 by 40 percent. In any case, the consortium's planned oil shipments to North Korea will be underfunded by some \$40 million. Liaison offices between the U.S. and North Korea have yet to be opened because North Korea opposes an overland supply route for the U.S. office through the demilitarized zone.

Washington Post, 10/21/95, p. A26 (13843).

10/31/95*

Asked if South Korea would pay for the cost of power transmission and distribution facilities and a nuclear fuel plant for the North Koreans, Deputy Prime Minister Na Ung-pae tells the Assembly Unification and Foreign Affairs Committee that South Korea cannot provide funding beyond the standard scope of supply.

Yonhap (Seoul), 10/31/95; in FBIS-EAS-95-210, 10/31/95 (13793).

10/31/95*

Responding to North Korea's demand for additional facilities for the proposed LWRs, KEDO agrees to the construction of roads, a port, and workers' lodging quarters; and says it will furnish the water and electricity necessary for the construction of the reactors. The South Korean government insists that it cannot shoulder further expenses. Regarding the expenses involved in the construction of the reactors, a South Korean government official states that, "the amount of expenses required for the construction of light-water reactors, which is estimated to be \$4 billion in consideration of the expanded scope of light-water reactor provision and of the price increase, will further increase drastically."

Kim Yon-kwang, *Choson Ilbo* (Seoul) 10/31/95, p. 2; in FBIS-EAS-95-212, 10/31/95 (13986).

**NORTH KOREA WITH:
Lithuania, Russia, and
Switzerland, 122**

NORTH KOREA WITH SOUTH KOREA

10/12/95

South Korean National Assembly Representative Son Se-il says that during a visit to South Korea in 7/92, North Korean Chairman of External Economic Affairs Kim Tal-hyon proposed a North-South collaborative project to construct a nuclear power plant in North Korea. Son says South Korea's then-Deputy Prime Minister Choe Kak-kyu did not reply to the proposal due to complications stemming from a North Korean espionage incident.

Yonhap (Seoul), 10/12/95; in FBIS-EAS-95-198, 10/12/95 (13955).

ORGANIZATION FOR AFRICAN UNITY (OAU)

5/95

A draft treaty to create a nuclear-weapon-free zone (NWFZ) in Africa is agreed upon. The draft treaty, which must now be ratified by the Organization for African Unity's

(OAU's) Council of Ministers, envisions that the IAEA will ensure that participating states comply with their commitments under the treaty.

IAEA Newsbriefs, 6/95-7/95, p. 6 (13494).

6/28/95

The summit conference of the OAU adopts a NWFZ treaty, an unidentified OAU senior official announces on 7/6/95. The treaty contains an amendment put forth by Mauritius calling for the NWFZ to include nearby islands, in addition to the African continent.

Asahi Shimbun (Tokyo), 7/7/95 (13454).

PAKISTAN

INTERNAL DEVELOPMENTS

6/24/95

Pakistan Atomic Energy Commission (PAEC) Chairman Ishfaq Ahmad Khan rejects allegations printed in the 6/18/95 edition of the *Muslim* (Islamabad) claiming that Pakistan is halting efforts to complete the Chashma-2 nuclear power reactor due to financial problems and U.S. pressure. Khan says, "Construction of a 300 MW, PWR-based, nuclear power plant is proceeding according to schedule at Chashma while the feasibility of the installation of additional power stations is being studied." The report also says that in 5/95, a Chashma design bureau employing 50 scientists and engineers was closed.

Shahid-ur-Rehman Khan, *Nucleonics Week*, 7/6/95, p. 5 (13398).

7/6/95*

The government of Pakistan budgets just under \$1 million for uranium exploration in the Deara Ghazi Khan and Mianwali districts.

Shahid-ur-Rehman Khan, *Nucleonics Week*, 7/6/95, p. 5 (13398).

7/21/95

The Pakistani Senate Standing Committee on Foreign Affairs, citing "security concerns arising from India's military preponderance

ance,” states in a report that “no other option remains for Pakistan except to fall back on nuclear capability as the weapon of last resort.” The report adds that “Pakistan has far greater justification to acquire a nuclear option than India or Israel which enjoy overwhelming military superiority over their neighbors.” The report also urges Pakistan’s government-run nuclear industry to recommence producing weapons-grade uranium.

Nuclear Proliferation News, 8/7/95, p. 10 (13770). Zia Mian and Abdul Nayyar, *INESAP-Information Bulletin*, 10/95, pp. 8-9 (14023).

8/13/95*

Foreign press reports claim that Pakistan has a “nuclear aerial fission bomb” and has perfected the explosive’s detonation mechanism enabling it to be carried under one of Pakistan’s F-16’s.

Savita Pandey, All India Radio Network (Delhi), 8/13/95; in FBIS-NES-95-156, 8/13/95 (13334).

9/95*

Former army staff head General Mirza Aslam Beg says Pakistan’s nuclear program has been less expensive than 10 F-16’s and notes its nuclear development acted as a stabilizer of South Asian security.

Asian Defence Journal, 9/95, p. 104 (13694).

10/18/95

Pakistan celebrates the inception of the uranium exploration and mining project at Qabul Khel in the North-West Frontier Province. Pakistani Minister for Petroleum and Natural Resources Anwar Saifullah Khan states that Pakistani scientists are already capable of establishing and operating a uranium processing plant.

Business Recorder (Karachi), 10/23/95, p. 3; in FBIS-NES-95-211, 10/23/95 (13672).

10/21/95

Pakistani Senator Tariq Chaudhry condemns Prime Minister Benazir Bhutto and former Prime Minister Nawaz Sharif’s continuous support for keeping Pakistan’s nuclear weapons program “capped” since 1989.

Nation (Islamabad), 10/22/95, pp. 1, 15; in FBIS-NES-95-204, 10/22/95 (13691).

PAKISTAN WITH GERMANY

8/28/95*

Telephone Industries of Pakistan Ltd. (PVT), a joint venture of Germany’s Siemens AG and Pakistan’s state-owned Post, Telephone, and Telegraph (PTT) company, renews efforts to obtain specialized magnet parts from Germany. Siemens spokesman Reiner Schoenrueck says such efforts violate PVT’s procurement guidelines, which stipulate that “any equipment which Telephone Industries wants in Germany must be obtained through Siemens itself.” In 1991, the Pakistani Embassy in Bonn attempted to bypass German export controls by ordering aluminum-nickel-cobalt (Alnico)-260 S-ring magnets from Magnetfabrik Bonn GmbH (MFB) on behalf of PVT. In early 1992, the German Federal Economic Office, now the Federal Export Control Office (BAFA), rescinded initial approval for the deal believing that the ring magnets would be used in gas ultracentrifuges for Pakistan’s nuclear program.

Mark Hibbs, *NuclearFuel*, 8/28/95, pp. 1, 13-14 (13702).

PAKISTAN WITH:

India, Israel, PRC, Russia, and U.S., 106

India, PRC, Russia, and United States, 107

Israel, 116

PAKISTAN WITH PRC

6/4/95*

Citing U.S. intelligence officials, Leonard Spector of the Carnegie Foundation says China is helping Pakistan construct a research plutonium facility at Khushab which could provide Pakistan with plutonium for nuclear weapons. Spector says Pakistan can already construct nuclear weapons in “hours” by using highly-enriched uranium. The aid is also alarming because, according to Spector, “It means the Pakistanis have not frozen their nuclear weapons programme as had been believed.”

Asian Recorder, p. 24,842, 6/4/95-6/10/95 (13928).

6/14/95*

Construction of the 300 MW Chashma nuclear reactor that China exported to Pakistan is said to be underway with completion expected on schedule. There are also plans for Pakistan to make nuclear power plant parts. China is training 148 Pakistani technicians at Qinshan, producing 83 graduates by 7/14/95.

Yang Zhiping, *Zhongguo Hegongye Bao*, (Beijing), 6/14/95, p. 1; in FBIS-CST-95-011, 6/14/95 (13348). *Zhongguo Hegongye Bao*, (Beijing), 6/21/95, p. 4; in FBIS-CST-95-011, 6/21/95 (13348). *Nuclear Europe Worldscan*, 7/8/95, pp. 69-70 (13348). Xinhua (Beijing), 7/14/95; in FBIS-CHI-95-135, 7/14/95 (13348).

PAKISTAN WITH SOUTH KOREA

9/95

The ROK agrees to supply a pressure vessel for the Chashma plant that China is building in Pakistan, because China said in 9/95 that it would be unable to supply this item. However, Deputy Director General of the ROK Ministry of Foreign Affairs Jong-Moo Choi says South Korea will formally apply for membership in the Nuclear Suppliers Group (NSG) in 10/95. If the ROK is accepted, it will not be able to supply nuclear equipment to countries such as Pakistan, which are not under full-scope IAEA safeguards.

Mark Hibbs, *Nucleonics Week*, 9/28/95, p. 1 (13844).

PAKISTAN WITH UNITED STATES

7/27/95

A U.S. State Department spokesman states that the U.S. is considering a proposal for a one-time waiver of the Pressler Amendment, whose passage froze a 1989 sale of 28 F-16 jets to Pakistan although Pakistan had already paid for them. The measure, proposed by Senator Hank Brown, will be considered by the Senate after the 8/95 recess, possibly as part of the foreign aid bill to be voted on in 9/95. The Brown Amendment would allow the U.S. to sell Pakistan spare parts for its F-16’s, although the sale of the 28 F-16’s would not be permitted to go

through. The U.S., however, could sell the jets elsewhere and refund Pakistan the money it has already paid. The House of Representatives will vote on a similar bill put forth by Congressman Doug Bereuter. The Pressler Amendment forbids U.S. aid or military exports to Pakistan unless the U.S. president can verify that Pakistan "does not possess a nuclear explosive device." On 9/23/95, an Indian Foreign Ministry official says that U.S. enactment of the Brown Amendment will exacerbate the arms race in South Asia and is the equivalent of the U.S. legitimizing Pakistan's nuclear ambitions.

Nuclear Proliferation News, 8/7/95, p. 10 (13770). Bruce Fein, *Washington Times*, 8/8/95, p. 2 (13770). *Washington Times*, 9/23/95, p. A10 (13774). Elaine Sciolino, *New York Times*, 9/22/95, p. A3 (13635).

9/16/95*

According to an editorial in the Pakistani newspaper *Jang*, CIA Director John Deutch says the CIA will destroy Pakistan's nuclear program through a secret operation. The editorial adds that although Pakistan has achieved the capability and technology to produce nuclear weapons, its current nuclear development efforts are for peaceful purposes.

Jang (Rawalpindi), 9/16/95, p. 10; in FBIS-NES-95-180, 9/16/95 (13395).

9/21/95

The U.S. Senate passes the Brown Amendment. On 10/24/95, a U.S. House-Senate conference committee approves the amendment.

Elaine Sciolino, *New York Times*, 9/22/95, p. A3 (13635). Thomas W. Lippman and Dan Morgan, *Washington Post*, 9/21/95, p. A9 (13635).

PEOPLE'S REPUBLIC OF CHINA (PRC)

INTERNAL DEVELOPMENTS

5/17/95*

The Zhongnan Geological Bureau of the Chinese Nuclear Industry Corporation will

construct the Nuclear Industry Southern Leaching Technology Laboratory in Changsha to extract hard rock uranium deposits in Southern China by means of underground leaching.

Huang Huanjun, *Zhongguo Hegongye Bao* (Beijing), 5/17/95, p. 1; in FBIS-CST-95-014, 5/17/95 (13795).

7/13/95

China says it plans to produce and export 1,200 MW reactors in the next 10 years.

Reuter (Beijing); in Executive News Service, 7/13/95 (13816).

7/14/95*

Chinese scientists say they have developed a new nuclear isotope, Protactinium (Pa)-239, using a heavy ion accelerator. Terming the new development a "major breakthrough in the country's basic research in nuclear physics," the scientists say the isotope represents an important contribution to "research on nuclear structure in the heavy-mass neutron-rich zone."

Xinhua (Beijing), 7/14/95; in FBIS-CHI-95-136, 7/14/95 (13888).

7/14/95

China begins construction of its first 10 MW high temperature reactor near Beijing. The reactor is scheduled to achieve criticality in 1999 and begin operation in 2000. The Institute of Nuclear Energy Technology, the Nuclear Power Institute of China, and the Beijing Institute of Nuclear Engineering will participate in the project.

Nuclear Engineering International, 9/95, pp. 2-3 (13360).

7/25/95

Chinese nuclear industry experts recommend that China exploit foreign research breakthroughs and advanced technology to free up resources needed to complete an experimental fast neutron reactor by 2000.

Zhongguo Tongxun She (Hong Kong), 7/25/95; in FBIS-CHI-95-149, 7/25/95 (13817).

8/17/95

The Australian Seismological Center reports that China has carried out a nuclear test with a yield estimated to be up to 80 kt of TNT, about half the size of a test China conducted in 5/95. [This figure conflicts with earlier reports that the 5/95 test had a yield of 95

kt.]

Charles Hutzler, *Washington Times*, 8/18/95, p. A13 (13356). Radio Australia (Melbourne), 8/17/95; in FBIS-EAS-95-159, 8/17/95 (13356).

8/19/95

A Washington, D.C.-based non-governmental organization, International Campaign for Tibet, says China stored nuclear weapons in Tibet. China only admits that it stored radioactive waste on the shores of Lake Kokonor, Tibet, according to World Tibet Network News.

Reuter Textline Database (London), 8/21/95; in FBIS-TEN-95-007-L, 8/21/95 (13361).

10/17/95

Chinese Vice Premier and Minister of Foreign Affairs Qian Qichen urges all nuclear states to sign an agreement on no-first-use of nuclear weapons against non-nuclear weapon states and nuclear-free zones. Chinese Ambassador for Disarmament Affairs at the U.N. General Assembly Sha Zukang says China will stop all tests once it signs the Comprehensive Test Ban Treaty (CTBT). Sha Zukang says the CTBT should not limit peaceful nuclear explosions or peaceful use of nuclear energy.

Xinhua (Beijing), 10/18/95; in FBIS-CHI-95-201, 10/18/95 (13818). Chen Dawei and Tang Dianwei, *Zhongguo Xinwen She* (Beijing), 9/30/95; in FBIS-CHI-95-190, 9/30/95 (13818).

10/25/95

A Japanese government source says China intends to postpone its third nuclear test this year. China may resume its nuclear tests after the spring of 1996.

Yomiuri Shimbun (Tokyo), 10/26/95, p. 2; in FBIS-EAS-95-208, 10/26/95 (13794).

**PRC WITH:
Algeria, 99**

PRC WITH CANADA

9/12/95

Canada signs an agreement with China to build a 300 MW nuclear reactor in Guangdong province.

Finansovye Izvestia, 9/12/95, p. 1 (13819).

10/13/95

China and Canada sign a memorandum of understanding which could lead to China's

purchase of two 700 MW CANDU reactors for its Qinshan site. The MoU indicates China's interest in acquiring CANDU technology and an agreement in principle to negotiate a deal. The deal could be worth more than 1 billion Canadian dollars and could involve some 100 Canadian companies.

Ray Silver, *Nucleonics Week*, 10/19/95, p. 3 (13874).

PRC WITH:

Brazil, India, Indonesia, PRC and Russia, 103

Canada, Japan, South Korea, and United States, 118

PRC WITH FINLAND, GERMANY, AND RUSSIA

6/95

A contract for the supply of two 1,000 MW Russian PWRs to China's Wufangdian Province is expected to be signed on 9/1/95. The Russian firm, Atomenergoexport, will handle commercial aspects, St. Petersburg's Atomenergoprojekt will act as design engineer, Finnish utility Imatran Voima Oy will provide software, and the German-Russian joint venture, Nuclearcontrol, will develop control systems for the reactors.

Nuclear News, 8/95, p. 75 (13351).

PRC WITH FRANCE

Late 6/95

In the third week of 6/95, China announces that the signing of the 9.5 billion Hong Kong dollar Daya Bay 2 nuclear power plant contracts will be postponed until 10/15/95. Daya Bay 2, which will be composed of two reactors similar to the reactors at Daya Bay, will be constructed in Lingao. Construction is scheduled to begin in early 1996. The plant is expected to be completed by 2002 or 2003.

Alex Lo, *Eastern Express* (Hong Kong), 7/29/95-7/30/95, p. 4; in FBIS-CHI-95-147, 7/31/95 (13809).

7/14/95

France's Framatome signs a contract with China to build the new Lingao nuclear power station in Guangdong Province. The new

plant will be modeled after the Daya Bay nuclear plant recently completed in Guangdong Province. Under the 6 billion franc contract, Framatome will provide an extension of the scope of technical cooperation, deliver two 985 MW PWRs, and fabricate fuel assemblies.

NucNet, 7/18/95, p. 13 (13359).

10/25/95

China signs contracts for the receipt of two additional 1,000 MW French PWRs to be constructed at Lingao. The PWRs are similar to those at China's Daya Bay power station. The contracts, totaling \$1.6 billion, are signed between the French companies of Framatome, GEC Alsthom, and Electricité de France (EdF) and China's Lingao Nuclear Power Co., a subsidiary of the China Guangdong Nuclear Power Co. (CGNPC). Framatome will supply the two nuclear islands and the first two cores; GEC Alsthom will provide two conventional islands and related equipment; and EDF will provide technical assistance. Construction is planned to begin in 1996. Units 1 and 2 are planned to be operational in 2002 and 2003, respectively.

Ann MacLachlan, *Nucleonics Week*, 10/26/95, p. 3 (13952).

PRC WITH FRANCE AND UNITED KINGDOM

10/26/95*

Framatome SA, Electricité de France, and a joint venture between Britain's General Electric Co. and France's Alcatel-Alsthom, GEC-Alsthom, agree to build two 985-MW reactors in southern China. Construction is scheduled to begin in 1996, with completion planned for 2003.

Wall Street Journal (New York), 10/26/95, p. A16 (13841).

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India, Pakistan, Russia, and United States, 107

Iran, 109

Iran, Iraq, and Russia, 109

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Taiwan, 152

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PRC WITH PERU

10/9/95

Chinese Premier Li Peng and other Chinese officials arrive in Lima on a three-day official visit. On 10/10/95, after meeting with Peruvian Energy and Mines Minister Amado Yataco, the president of the China Nuclear Industry Corporation, Jiang Xinxiong, announces that Peru and China will collaborate on a nuclear development cooperation program. No specific projects have been planned.

EFE (Madrid), 10/10/95; in FBIS-CHI-95-197, 10/10/95 (13764).

PRC WITH ROMANIA

10/4/95

The technical manager of Romag SA's heavy water production facility at Halinga, Dumitru Sirbu, says Romania could start selling heavy water to other countries, including South Korea and China, by 1997. Sirbu says "eventually all surpluses of heavy water produced here would be available for export." Sirbu adds that all four heavy water production units at Halinga, each with an annual capacity of 90 MT, will be running by mid-1996.

Adrian Dascalu, Reuter, 10/4/95; in Executive News Service, 10/4/95 (13639).

PRC WITH RUSSIA

7/18/95

The Director of the Ural electrochemical plant in Novouralsk, Vitaly Kornilov, says that over the next two years the firm will supply China with \$8 million worth of equipment for a uranium enrichment facility the Russian Atomic Energy Ministry is constructing in China. The plant will produce enriched uranium concentrate with a Uranium-235 content of up to five percent. Under the terms of the contract, China will pay 74 percent of the project's costs with hard currency and pay for equipment and automation systems with consumer goods.

Interfax (Moscow), 7/18/95; in FBIS-TAC-95-004, 7/18/95 (13352).

9/95

Well-placed official sources say a 200,000 SWU/yr centrifuge enrichment plant being constructed by Russia's Ministry of Atomic Energy (Minatom) in Shaanxi Province in China will be in operation before the end of 1996. China intends to place the plant under IAEA safeguards and have a permanent inspector there. Under the contract terms, China cannot obtain Russian technology. The configuration of the plant's cascades will prevent China from producing HEU, but China will be allowed to add more centrifuges to the plant to increase its capacity. The plant will produce low-enriched uranium to fuel China's Qinshan PWRs. The two 1,000 MW PWRs planned for Liaoning by Minatom will be fueled by SWU from Minatom plants in Russia. Russian sources say that under the amended Russian suspension agreement, any Russian uranium enriched in the Chinese plant will be considered acceptable for export to the U.S.

Mark Hibbs, *NuclearFuel*, 9/20/95, pp. 1, 16 (13353).

9/25/95

Private sector sources say that Russia's Minatom will begin negotiations with China on the sale of HEU for research reactor fuel. Diplomatic sources express concern that, because none of China's research reactors are subject to IAEA safeguards inspections, the HEU could be diverted to make fuel for China's nuclear-powered submarines.

Mark Hibbs, *NuclearFuel*, 9/25/95, p. 7 (13822).

9/28/95

Russian Vice Premier Oleg Davydov says Russia's participation in construction of the Liaoning nuclear power plant in China is part of an attempt to establish a long-term cooperation with China. Davydov says that Russia and China have already reached agreement on the general plans for the Liaoning project.

Grigory Arslanov, *Itar-Tass* (Moscow), 9/28/95; in FBIS-SOV-95-189, 9/28/95 (13829).

10/5/95*

The Russian Federation Ministry of Atomic Energy confirms that it will start building

two VVER-1,000 PWRs in China in 1996. Chinese scientists have conducted a safety analysis of the Liaoning Province site which has been chosen for the reactors. The total contract is estimated at \$2 billion. Russia has agreed to provide training for the Chinese personnel, which, according to Russian officials, will be more comprehensive than that given to Iran.

Nucleonics Week, 10/5/95, pp. 1, 8 (13847). *Xinhua* (Beijing), 10/24/95; in FBIS-CHI-95-206, 10/24/95 (13875).

PRC WITH SOUTH KOREA

7/9/95

A South Korean Foreign Ministry official indicates that progress has been made on a plan to export South Korean nuclear reactors to China. South Korea's Korea Atomic Energy Research Institute (KAERI) has reportedly sought to adapt South Korean Ulchin reactors to serve as a model for construction of the second reactor unit in China's Guangdong 2 project.

Yi Sang-man, *Chungang Ilbo* (Seoul), 7/10/95, p. 2; in FBIS-EAS-95-131, 7/10/95 (13835).

9/18/95

South Korean officials say South Korea will sell a reactor pressure vessel to China for the Qinshan-2 power reactor, beating out Japan's Mitsubishi Heavy Industries (MHI) for the contract. The \$20 million contract was signed by Korea Heavy Industries & Construction Co. Ltd. (KHIC), the China Nuclear Energy Industry Corporation (CNEIC) and the Kohap Group. KHIC will manufacture the first pressure vessel. The second pressure vessel, expected to be delivered by 1998, will be built jointly by CNEIC and the Nuclear Power Institute of China. The Kohap Group will manage finances and sales support.

Mark Hibbs, *Nucleonics Week*, 9/21/95, pp. 1-2 (13825). *China Nuclear Industry Newspaper* (Beijing), 7/19/95, p. 2; in FBIS-EAS-95-161, 7/19/95 (13825).

10/4/95

South Korea's Minister of Science and Technology Chong Kun-mo and China's Minister of the State Science and Technology Commission and Member of the PRC State Council, Song Jian, hold the third meeting

of the ROK-PRC Science and Technology Joint Committee in Beijing. At this meeting, South Korea and China agree to form the ROK-PRC Nuclear Energy Joint Committee. Vice minister-level officials from the two countries will act as senior delegates to the joint committee. Nuclear energy experts from both countries will meet and select nuclear energy-related collaborative projects.

Hanguk Ilbo (Seoul), 10/5/95, p. 2; in FBIS-EAS-95-194, 10/5/95 (13765).

PRC WITH TAIWAN

7/28/95

Speaking before Taiwan's National Assembly, Taiwanese President Li Teng-hui says "whether [or not] we need the protection of nuclear weapons...we should re-study the question from a long-term point of view." On 7/31/95, however, after a Politburo-level Chinese official announces that the development of a Taiwanese nuclear arsenal would provoke an invasion by the Chinese People's Liberation Army (PLA) in order to protect Taiwan from a "dangerous and war-mongering leader," Li denies any revival of the island's nuclear weapons program, stating the Republic of China (Taiwan) has the power to make a nuclear arsenal, but "we definitely will not develop nuclear weapons." On 7/29/95, Presidential Press Officer Ting Yuan-chao says government policy restricts nuclear research programs to peaceful purposes. Several members of the National Assembly support the development of nuclear weapons to counter a perceived threat from the PRC.

AFP (Hong Kong), 7/31/95; in FBIS-CHI-95-147, 7/31/95 (13767). *Wen Wei Po* (Hong Kong), 8/1/95, p. A2; in FBIS-CHI-95-149, 8/1/95 (13767). *South China Morning Post* (Hong Kong), 7/31/95, pp. 1, 6; in FBIS-CHI-95-146, 7/31/95 (13480).

10/6/95

Speaking of the military threat from the PRC, Premier Lien Chan tells Taiwan's Legislative Yuan that, while it is necessary to develop an effective means to contain China, there is no need to develop nuclear armaments.

China Broadcasting Corporation News Network (Taipei), 10/6/95; in FBIS-CHI-95-196, 10/6/95 (13766).

10/13/95

National Defense Minister Chiang Chungling says Taiwan will not develop nuclear weapons, even though it faces an increasing Chinese military threat.

Bear Lee, CNA (Taipei), 10/14/95; in FBIS-CHI-95-200, 10/14/95 (13887).

PRC WITH UNITED KINGDOM

10/13/95

Hong Kong-based Standard Chartered Bank announces that it has granted a \$24.5 million loan to the State Development Bank of China (SDB) for the supply of equipment for the second phase of the Qinshan Nuclear Power Plant, located in the Zhejiang Province. This is the first time that the SDB has received buyer's credit from the United Kingdom, and this is the first loan received for the production of the second phase of Qinshan.

Xinhua (Beijing), 10/13/95; in FBIS-CHI-95-199, 10/13/95 (13801).

PRC WITH UNITED STATES

1/95*

The U.S. Commerce Department has singled out two Chinese research organizations for inclusion on a list of suspect entities which would require a license to purchase sensitive U.S. imports. The two organizations, Fudan University and the Shanghai Institute of Nuclear Research, were chosen due to their work in tomography, which can aid in the non-destructive testing of missile solid fuel and nuclear explosive detonation packages. Since the late 1980s, Fudan University has obtained more than 20 licenses to acquire sensitive U.S. exports.

Risk Report, 1/95-2/95, p. 12 (13994).

9/30/95

Clinton administration officials say Chinese President Jiang Zemin will be invited to meet with President Clinton in New York in 10/95. The issues for discussion will include nuclear nonproliferation, North Korea, and military cooperation.

Thomas Lippman, *Washington Post*, 10/1/95, p. 33 (13821). Donald Lambro, *Washington Times*, 8/28/95, pp. A1, A8 (13983).

10/2/95

U.S. Secretary of State Warren Christopher tells reporters that President Clinton will meet on 10/24/95 with Chinese President Jiang Zemin in New York. As to the possible sale by China of two small nuclear reactors to Iran, Christopher states, "With respect to the Iran nuclear situation, the Chinese foreign minister indicated they were not going forward with that particular transaction for various reasons, and that seems to be where the matter now rests."

Susan Cornwell, Reuter (Washington), 10/2/95; in Executive News Service, 10/2/95 (13479).

10/9/95*

The U.S. House decides to cut funding for the U.S.-China Joint Defense Conversion Commission. The Commission, created by U.S. Defense Secretary William Perry and Chinese General Ding Henggao, director of the Commission for Science, Technology and Industry for National Defense (COSTIND), was established in 1994.

William Triplett, *Defense News*, 10/9/95, pp. 23-24 (13998).

10/12/95

Assistant Director of the Wisconsin Project on Nuclear Arms Control Gerard White tells the U.S. Senate Committee on Foreign Relations Subcommittee on East Asian and Pacific Affairs that China is a major supplier to countries of proliferation concern. According to White, China possesses 300 to 450 nuclear warheads, but it may have manufactured enough weapons-grade uranium and plutonium for a total of at least 900 to 1,350 warheads. In 1994, says White, "the U.S. Commerce Department permitted nuclear dual-use exports to China valued at some one billion dollars."

Federal News Service, 10/12/95 (13933).

RUSSIA

INTERNAL DEVELOPMENTS

1995

Two cases of low-enriched uranium theft occur at the Mashinostroitelnyy Plant in Elektrostal.

Nezavisimaya Gazeta (Moscow), 10/17/95, p. 6 (13898). *Vesti* (St. Petersburg), 9/14/95, p. 1; in WPS, 11/3/95, p. 5 (13758).

4/95*

According to the Chinese journal *Studies In S & T Management*, as many as 9,200 scientists emigrated from Russia in 1992, causing the country to lose its leading role in some fields of science. The journal reports that the U.S. is capitalizing on the political and economic chaos in the former Soviet Union by "conducting a large-scale commandeering" of former Soviet nuclear physicists.

Wang Zhangbao, *Keji Guanli Yanjiu* (Guangzhou), 3/95-4/95, pp. 27, 31-33; in FBIS-CST-95-011, 8/22/95 (13293).

6/23/95*

Vice Admiral V. Tomilin, chief of the Russian Navy Main Directorate, reports that 8,000 cubic meters of liquid and solid radioactive waste, more than 25,000 spent fuel assemblies, and five operative nuclear submarine reactors are located in the Murmansk region. More than 100 trainloads of spent nuclear fuel are currently awaiting removal from Murmansk. In 1994, shipping and reprocessing one rail car of spent fuel cost 2.3 billion rubles.

Komsomolskaya Pravda (Moscow), 6/23/95, p. 5 (13411).

7/7/95

Russian President Boris Yeltsin appoints Russian Minister of Atomic Energy Viktor Mikhailov to the Security Council of the Russian Federation. Mikhailov is the first atomic energy minister to serve on the Security Council.

Yaderniy Kontrol (Moscow), 8/95, p. 1 (13446).

7/13/95*

The Russian Federal Nuclear Center (FNC) in Snezhinsk has developed an "environmental monitoring" technique that is capable of exposing clandestine nuclear weapons manufacturing throughout the world. FNC scientists claim that using the new method guarantees detection, and say the method is capable of discerning between peaceful nuclear activities and nuclear weapons production. According to Rodion Voznyuk, head of the system developments center at

the All-Russian Technical Physics Scientific Research Institute, explosions that take place in the development of nuclear weapons release "so-called hot particles" that can be detected in water, sediment, plant, and soil samples. Use of this technique will reportedly confirm whether Iran, Iraq, North Korea, or other countries are engaged in clandestine nuclear weapons programs.

Russian Television Network (Moscow), 7/13/95; in FBIS-SOV-95-142, 7/13/95 (13241). Radio Rossii Network (Moscow), 7/8/95; in FBIS-SOV-95-131, 7/8/95 (13241). Sergei Sergeev, Russian Public Television (Moscow), 8/10/95; in FBIS-TAC-95-016-L, 8/10/95 (13431). *Rabochaya Tribuna* (Moscow), 8/18/95, p. 6; in FBIS-SOV-95-162, 8/18/95 (13431).

7/13/95*

By the year 2000, Russia must decommission 160 of the Navy's nuclear submarines because they have either reached the end of their service life, or are simply "not required." According to Captain First Rank Stanislav Golovinskiy, deputy chief of the Northern Fleet Technical Directorate, due to a lack of funding for the removal of reactor cores, decommissioned submarines are being kept afloat. Dozens of decommissioned submarines are already located "all over" the Kola Peninsula. Liquid and solid radioactive waste tanks of the fleet are "practically full." The special train used to transport spent fuel to reprocessing facilities can carry fuel elements from only two submarines per trip, at a cost of 10 billion rubles. However, the train makes only three trips to the North each year, and these are dedicated primarily to transporting reactor cores removed from active submarines, which are given priority on account of their combat status. The cost of dismantling just one nuclear submarine is 500 million rubles, and although the service life of a nuclear submarine is 25 years, some submarines over 35 years in age are still awaiting dismantlement. According to Golovinskiy, officials are "exerting every last ounce of energy" to keep decommissioned submarines afloat, and are using "every trick" to move nuclear reactor cores to treatment facilities.

Dmitriy Litovkin, *Krasnaya Zvezda* (Moscow), 7/13/95, p. 1 (13428).

7/24/95*

Although a solid nuclear waste burial site for the European part of Russia is being constructed on Novaya Zemlya, no such facility is being constructed for the Far East, despite the tremendous need. Solid nuclear waste has accumulated at the Zvezda facility in the Far East for 30 years; there are at least 450 containers at the facility. According to V.A. Maslakov, director of the Zvezda facility, Russia has the technology to resolve its solid waste management problem, but lacks the financial resources.

Russian Public Television (Moscow), 7/24/95; in FBIS-TEN-95-012, 7/24/95 (13277).

7/26/95

Russian President Boris Yeltsin issues Executive Order 350, a revision to the "Regulations for Federal Supervision of Nuclear and Radiation Safety," transferring authority to oversee "nuclear and radiation safety in developing, producing, testing, operating, storing, and disposing of nuclear weapons and military nuclear power plants" from the Russian Nuclear and Radiation Safety Supervision Committee (Gosatomnadzor) to the Ministry of Defense. According to Minatom spokesman Georgi Kaurov, concerns about the safety of nuclear weapons and a desire to limit access to nuclear secrets were behind Yeltsin's decision to issue the directive. Before being issued a permit to use nuclear power or radioactive materials, all Russian nuclear facilities were required to satisfy safety criteria established by Gosatomnadzor. The Ministry of Defense did not recognize Gosatomnadzor's authority even before Yeltsin's directive. Russian sources indicate that other nuclear agencies are attempting to exclude themselves from Gosatomnadzor guidelines. Russian Academy of Science member Sergei Zelentsov emphasizes that 16 ministries and government offices have jurisdiction over Russian nuclear weapons, making the concealment of accidents and work deficiencies practically impossible.

Lev Lin, *Kuranty* (Moscow), 8/15/95, p. 4; in FBIS-SOV-95-158, 8/15/95 (13235). Viktor Litovkin, *Izvestiya* (Moscow), 9/29/95, p. 1 (13634). *Nezavisimaya Gazeta* (Moscow), 10/17/95, p. 6 (13898). Dmitriy Kukanov and Natalia Timashova, *Izvestiya* (Moscow), 9/15/95, pp. 1-2 (13753).

7/27/95*

The dismantling of Russian nuclear warheads has yielded roughly 100 MT of weapons-grade plutonium and 500 MT of weapons-grade uranium. In addition, through the reprocessing of spent nuclear fuel, Russia is adding 1 MT of reactor-grade plutonium to an existing stockpile of nearly 30 MT.

Boris Kononov, *Izvestiya* (Moscow), 7/27/95, p. 5 (13442).

7/27/95*

U.S. intelligence sources report that poor maintenance of weapons storage facilities in Russia poses a threat to the security of Russian nuclear weapons. While Russian President Boris Yeltsin, General Mikhail Kolesnikov, and Defense Minister Pavel Grachev are known to have the authority to launch nuclear weapons independently, a former U.S. intelligence official says that several other Russian officials may also have such authority. Moreover, U.S. officials note that Russian nuclear weapons are poorly designed and lack sufficient "fail-safe mechanisms" to prevent an unauthorized or unintentional launch.

Bill Gertz and Rowan Scarborough, *Washington Times*, 7/27/95 (13598).

7/29/95

The Russian government passes resolution No. 773, which establishes a mechanism for accepting spent fuel from foreign countries. The resolution allows Russia to accept spent fuel from nuclear plants built by the USSR and plants being built by Russia (such as those in Iran), as well as those built by other countries. The resolution enters into force on 9/1/95.

Natalya Timashova, *Izvestiya*, 9/13/95, p. 2 (14043). *Yaderniy Kontrol*, 9/95, pp. 14-15 (14038).

8/3/95*

The Maritime [Primorski] krai, home to the Russian Pacific Fleet's central base, is in need of a liquid nuclear waste recycling facility. According to specialists, two of Russia's storage tankers for liquid waste will not hold up for two more years. According to Y. Stomatyuk, chairman of the Committee for Natural Resources, the safety of decommissioned submarines or storage tankers cannot be certified.

O. Zhurman, Russian Television Network (Moscow), 7/31/95; in FBIS-SOV-95-149, 8/3/95 (13278).

8/6/95*

The release of a classified report, compiled on 5/19/95 by Russian scientists and military experts at the request of Russian President Boris Yeltsin, reveals that conditions at Russian civilian and military nuclear facilities are more dangerous than previously assumed in the West, and that "catastrophic" conditions exist at a number of nuclear plants. The report indicates that the safety situation in the strategic armed forces is grim: currently there are no technically qualified officers, and units are staffed with half the required personnel. Only recently did Russian Foreign Minister Andrei Kozyrev publicly acknowledge that plutonium theft and smuggling are indeed occurring in Russia. While no figures related to the amount of stolen nuclear materials are included in the analysis, the report indicates that "large quantities" of weapons-grade plutonium are missing from Arzamas-16's Avangard facility. The report is critical of Russian border guards for their carelessness in "controlling officials in charge of secrets." In the past, border guards have permitted officials "in charge of secrets" to leave the country for a \$100 bribe.

Nikolai Nor-Mesek, *Welt Am Sonntag* (Hamburg), 8/6/95, p. 11; in FBIS-TEN-95-012, 8/6/95 (13432).

8/13/95

Russian Minister of Atomic Energy Viktor Mikhailov says that the value of Russia's nuclear exports will reach \$1.5 billion in 1995, and will double in the next three to four years.

Interfax (Moscow), 8/14/95; in FBIS-SOV-95-157, 8/14/95 (13237).

8/13/95

According to Russian Minister of Atomic Energy Viktor Mikhailov, nearly one million people are employed within the Russian nuclear industry, earning an average wage of 720,000 rubles [per month]. The current population of Russian "closed cities" is 2.5 million.

Interfax (Moscow), 8/14/95; in FBIS-SOV-95-157, 8/14/95 (13237).

8/13/95*

Inspections of Minatom facilities in 1994 reveal that procedures used at nuclear installations do not accurately account for fissile materials. The Russian Federation Prosecutor General's office has concluded that the physical protection of Russian nuclear facilities has not improved, notwithstanding Russian Minister of Atomic Energy Viktor Mikhailov's special order to improve accounting procedures and safeguards for nuclear materials. The Prosecutor General's office also identifies several facilities where deficiencies in safety and security are known to exist, but have not been corrected. Several earlier smuggling cases illustrate the "leniency of security" at Russian nuclear installations as well as the smugglers' awareness of defective accounting procedures. An instrument operator at the Eko-Luch Scientific Production Association in Podolsk stole three containers holding radioactive material. The same individual had managed to accumulate 1.5 kg of U-235 by repeatedly stealing 50-70 g quantities of the material, which was part of the facility's "technological surplus." Two employees at Shop No. 103 at the All-Russian Research Institute of Theoretical Physics in Chelyabinsk-70 stole 5.5 kg of U-238. A former employee at Arzamas-16 was arrested with 5.1 kg of U-238, which he had attempted to sell through middlemen in Ukraine. An investigation determined that the material had been produced at Arzamas-16, but officials have not been able to ascertain who actually stole the material, or how it was removed from the facility.

Aleksandr Mytsykov, *Moskovskie Novosti* (Moscow), 8/13/95-8/20/95, p. 20 (13584).

8/15/95*

More than 10 "really obsolete" nuclear submarines have been awaiting dismantlement, some for over 15 years, at the Russian Northern Fleet's recycling plant in Severodvinsk. Since nuclear waste storage facilities in Severodvinsk and Murmansk are completely full, reactors cannot be removed from decommissioned submarines. Limited financial resources in the Northern Fleet are impeding the process of dismantling and storing reactor components.

Valeri Anuchin, Russian Public Television (Mos-

cow), 8/15/95; in FBIS-TEN-95-013, 8/15/95 (13434).

8/15/95*

Russian Foreign Ministry spokesman Mikhail Demurin says that Russia is actively pursuing the creation of a comprehensive and enforceable "non-discriminatory treaty" to ban nuclear tests by the end of 1996. However, Russia intends to reserve the right "to carry out certain acts" to verify the safety of its nuclear arsenal. According to Demurin, the "character and scope of such acts is subject to updating."

Ria Novosti (Moscow), 8/15/95; in FBIS-TAC-95-016-L, 8/15/95 (13416).

8/17/95*

Russian President Boris Yeltsin announces the creation of a "dual purpose technology" program to apply to civilian sector technologies currently utilized in the country's defense-related industries. The "dual purpose technology" program may assist in stemming the tide of Russian scientific emigration, estimated to be approaching 90,000 emigres each year, most of whom go abroad for temporary work. Of those who emigrate, more than 50 percent are physicists. The majority (60 percent) of emigrants go to Germany, with 25 percent and 10 percent of the remainder going to Israel and the U.S., respectively. However, in 8/95, Russian television reported that no nuclear physicists with weapon expertise have permanently settled abroad, notwithstanding Iraqi President Saddam Hussein's purported \$300,000 per year offer to entice Russian nuclear weapons specialists to work in Iraq.

Vera Rich, *Physics World Electronic News* (Bristol), 8/17/95; in FBIS-SOV-95-161, 8/17/95 (13280).

8/23/95*

The Kurchatov Institute Russian Scientific Center in Moscow has exhausted 80-90 percent of its spent fuel storage capacity. Facilities that began housing spent fuel in the mid-1940s now hold more than 200 MT of waste.

V. M. Kuznetsov, *Izvestiya* (Moscow), 8/23/95, p. 7 (13259).

8/25/95*

The Russian Prosecutor General's Office rules that Russian Minister of Atomic En-

ergy Viktor Mikhailov's approval of the statute "On the Procedure for Ensuring a Special Regime of the Safe Functioning of Enterprises and Installations Located in Closed Administrative-Territorial Formations" violates the constitutional rights of citizens, and is thus "counter to the law." The Prosecutor's Office says that the Russian legislature alone has the authority to issue orders concerning closed administrative-territorial formations. Furthermore, provisions within the statute that call for the detention of "violators of the procedure for passing through checkpoints" at said installations violate "administrative legislation."

Rossiiskiy Vestnik (Moscow), 8/25/95, p. 1; in FBIS-SOV-95-166, 8/25/95 (13430).

8/28/95

Viktor Anufriyenko of Russia's Obninsk Energy Physics Institute (OEPI) says that the OEPI is developing a new nuclear reactor that generates about "1.3 kg of new fuel per kilogram of spent fuel."

Aleksei Ivlev, NTV Television (Moscow), 8/28/95; in FBIS-SOV-95-179, 8/28/95 (13441).

8/30/95*

Thirty MT of plutonium from reprocessed fuel is stockpiled in Russia's South Urals region and is waiting to be used as fuel in fast-neutron reactors. According to Mayak Combine Director V. Fetisov, the utilization of fast-neutron reactors would allow Russia to curtail the "growing stream of weapons-grade plutonium" by using the material to generate energy rather than storing it in dumps.

Boris Kononov, *Izvestiya* (Moscow), 8/30/95, p. 2 (13750).

8/31/95*

Russian President Boris Yeltsin's Council for Scientific and Technological Policy holds its first working session and approves the construction of underground nuclear power stations. The underground plants will use reactors from Russian naval ice-breakers and missile cruisers, and will be fueled with highly-enriched uranium. The first 300 MW underground plant will be constructed at Krasnoyarsk-26 (Zheleznogorsk) to replace Krasnoyarsk's second plutonium-producing reactor, which is slated for closure

by the year 2000. The project provides for the replacement of any reactor when necessary, thus permitting an "infinitely long" use (up to 500 years) of the underground site.

Boris Kononov, *Segodnya* (Moscow), 8/31/95, p. 9 (13513).

9/1/95

The Russian parliament sanctions the storage and eventual reprocessing of foreign spent fuel at the yet-to-be completed RT-2 facility at Krasnoyarsk-26. On 9/5/95, Minatom spokesman Georgi Kaurov announces that, in an effort to generate revenue, Russia is prepared to store foreign spent fuel at RT-2 until the reprocessing plant comes on line. RT-2 is only 25 percent complete and, due to financial constraints, is not likely to be finished before 2005. When finished, RT-2 will reprocess spent fuel from VVER-1000 reactors. The facility will charge a fee for reprocessing and Russia will retain plutonium and uranium derived from reprocessing; nuclear waste will be returned to the country of origin. Although Kaurov states that RT-2 has adequate storage space to accommodate spent fuel until the facility is completed, a recent *Izvestiya* report indicates that Russia does not have the ability to store or reprocess its own waste, and that spent fuel imports would fill storage at RT-2 by the year 2000.

Reuter (Moscow), 9/5/95; in Executive News Service, 9/5/95 (13292). *Nuclear Engineering International*, 10/95, p. 12 (13603).

9/1/95*

Vyacheslav Tikhonov, a senior scientific specialist at the Russian Institute of National Population Problems (INPP), says that Russia has little hope of retaining specialists in the nuclear and aerospace industries, given the current rate of personnel loss and persistent funding shortages in these fields. An INPP survey of displaced Russian scientists reveals the following: 80 percent of surveyed defense workers report that their skills are not currently in demand in Russia's economy, but that their skills are "easily" transferrable to the civilian sector; 75 percent of those surveyed indicate a desire to emigrate from Russia; and 50 percent of "those desiring work abroad" say that the country from which the work originated is

irrelevant, and that a country's ability to provide remuneration is more important than the country's political posture.

Post-Soviet Nuclear & Defense Monitor, 9/1/95, pp. 7-8 (13294).

9/5/95

Igor Kupriyanov, deputy director of Tekhsnabexport, says that Russia has the capacity to capture up to 30 percent of the global uranium market. However, an anti-dumping action initiated by the U.S. in 1993 has limited Russia's share of the international market to only five or six percent.

Veronika Romanenkova, Itar-Tass (Moscow), 9/5/95; in FBIS-SOV-95-172, 9/5/95 (13234).

9/5/95*

Thirty decommissioned nuclear submarines, most of which have spent fuel on board, are still afloat in the White Sea. Russian Navy spent fuel storage sites are currently filled to capacity. According to Aleksei Yablokov, chairman of the Interdepartmental Ecological Security Commission of the Russian Security Council, it will take Russia 150 years to implement its dismantlement obligations under START II unless new "unconventional" technology is found.

Irina Zernova, *Smena* (St. Petersburg), 9/5/95, p. 4; in *WPS*, 11/3/95, pp. 9-11 (13901).

9/7/95

Russian Minister of Atomic Energy Viktor Mikhailov says that Russia does not intend to dump enriched uranium on Western markets. Mikhailov says that the Urals Electromagnetic Facility is using fourth- and fifth-generation centrifuges to enrich uranium. The facility comprises almost half of Russia's annual 20 million SWU capacity.

Nuclear News, 10/95, p. 18 (13529).

9/7/95*

Russia has accumulated more than 600,000 MT of radioactive waste, and economic constraints have caused the processing of "metallic radioactive waste" to come to a virtual standstill. Radioactive waste is being buried in "special sarcophagi" or is left in the open.

Rossiiskiy Vestnik (Moscow), 9/7/95, p. 1; in FBIS-SOV-95-173, 9/7/95 (13255).

9/16/95*

An article in *Izvestiya* reports that "stockpiles of nuclear submarine ballistic missiles" are stored at Revda-3, a secret Russian Northern Fleet base in Murmansk Oblast. Although the Russian military has not publicly acknowledged the existence of nuclear warheads at the site, a memorandum to the START I treaty confirms the existence of nuclear weapons at Murmansk; Russia's commitment under START I to "eliminate and partially recycle RSM-25 ("Ripple"), RSM-40 ("Height"), and RSM-50 ("Wave") naval missiles" at the site is being implemented. Although the base has seven years from the 9/1/90 signing of the START I treaty to remove 1,924 missiles, it does not have the resources to complete the task. According to seamen at the base, the Russian government is not providing funding for the process, estimated to cost over 2 billion rubles. To date, the Revda base has eliminated 23 ballistic missiles.

Viktor Litovkin, *Izvestiya* (Moscow), 9/16/95, p. 1; in FBIS-SOV-95-180, 9/16/95 (13899).

9/16/95*

Due to financial constraints, the Severodvinsk Zvezda Science and Production Association is dismantling only two of the 12 nuclear submarines slated for dismantlement. Since facilities to store nuclear waste retrieved from the submarines have reached their capacity, submarines are left afloat with the waste still on board. Anatoli Shepure, head of the nuclear and radiation safety department at the Zvezda facility, states that the Russian Navy is not fulfilling its obligation to accept nuclear waste from Zvezda.

Vladimir Loyter, Russian Television Network (Moscow), 9/16/95; in FBIS-TEN-95-013, 9/16/95 (13254).

9/18/95*

According to the German television program "Report Baden-Baden," the Russian Navy has not removed nuclear reactors, spent fuel, or nuclear waste from over 50 decommissioned submarines because no storage space is available. According to Admiral Oleg Yerofeyev, commander of Russia's Northern Fleet, 95 percent of storage capacity for solid nuclear waste has been exhausted. "Report Baden-Baden" cites a Gosatomnadzor internal re-

port as saying that the Northern and Pacific Fleets have over 30,000 fuel cells in unsafe temporary storage.

Reuter (Bonn), 9/18/95; in Executive News Service, 9/18/95 (13433).

9/20/95*

Many of Russia's active nuclear power stations lack plans for disposal of radioactive waste. Facilities at Kursk, the Leningrad Combine, and Smolensk are full, nearly full, or over capacity. Storage facilities at Beloyarsk are expected to be filled in two or three years.

Marina Yelmanova, *Kuranty* (Moscow), 9/20/95, p. 4; in FBIS-TEN-95-015, 9/20/95 (13602).

9/20/95*

Over 140 nuclear reactors from Russia's 96 decommissioned nuclear submarines are awaiting disposal. According to Admiral Oleg Yerofeyev, commander of the Russian Northern Fleet, 50 percent of solid radioactive waste storage capacity and 60 percent of liquid radioactive waste storage capacity has been exhausted. At an unguarded facility a few kilometers from Severodvinsk, solid nuclear waste is buried 5 m below the asphalt. Zapadnaya Litsa, a closed military installation near the Norwegian border, is the only interim storage facility for Northern Fleet spent fuel. Fuel elements are often stored outside and left unguarded. According to Aleksei Yablokov, chairman of the Russian Interdepartmental Ecological Security Commission and advisor to Russian President Boris Yeltsin, it will take over 100 years to remove all the fuel elements from the shore near Zapadnaya Litsa using the four available trains.

Klaus Weidmann, ARD Television Network (Munich), 9/18/95; in FBIS-SOV-95-182, 9/20/95 (13426).

9/21/95*

According to Yuri Vishnevski, chairman of Gosatomnadzor, in the past three years Gosatomnadzor was allowed to make only occasional inspections of military facilities, and was not allowed to maintain continuous supervision. Vishnevski says his agency should not be held accountable for the situation at military nuclear facilities. No state system presently exists for assessing and monitoring nuclear materials in Russia, now

that the Ministry of Defense has taken over the responsibility of monitoring conditions at military nuclear installations. According to a *Segodnya* article, the entire reason for the existence of Gosatomnadzor has vanished.

Sergei Danilyuk, *Segodnya* (Moscow), 9/21/95, p. 9 (13427). Russian Public Television (Moscow), 9/16/95; in FBIS-SOV-95-180, 9/16/95 (13427).

9/21/95*

By the year 2000, Russia's nuclear waste stores will increase by 20 to 30 percent as a result of nuclear submarine dismantlement. Liquid waste storage facilities at Bilibino, Kalinin, Kola, and Leningrad nuclear power stations are from 75 to 80 percent filled. Moreover, sources indicate that at least 11, and perhaps as many as 22, regions in Russia do not allow nuclear waste to be transported across their territories. The Murmansk oblast permits waste transfers, but only when waste is being transported out of the region. A waste crisis is developing at nuclear power stations with RBMK-type reactors due to the fact that RBMK fuel is not currently being reprocessed.

Sergei Danilyuk, *Segodnya* (Moscow), 9/21/95, p. 9 (13427). Russian Public Television, 9/16/95; in FBIS-SOV-95-180, 9/16/95 (13427).

9/23/95

Russian Prime Minister Viktor Chernomyrdin prohibits the practice of cutting power to "installations of the armed forces and the defense industry" after "Kolenergo," the utility for the Kola Peninsula, stopped supplying electricity to the Northern Fleet submarine base on 9/21/95. Armed soldiers forced engineers at the plant to restore power, but not before control over nuclear reactors aboard four decommissioned submarines was lost. Chernomyrdin also "scrapped" a law that gave utilities the authority to cut power to military facilities if they failed to pay debts within 30 days.

International Herald Tribune, 9/25/95, p. 1 (13425). *Washington Times*, 9/24/95, p. A9 (13425).

9/28/95*

Russian Naval Commander Admiral Feliks Gromov reports that the Russian Navy has decommissioned 140 nuclear-powered submarines, fewer than half of which have had their nuclear reactors removed.

Aleksandr Naumov, NTV, 9/28/95; in FBIS-SOV-95-189, 9/28/95 (13289).

9/28/95*

Captain First Class Viktor Kruglov, deputy head of the Department of Nuclear Safety in Russia's Ministry of Defense, says that Russia's more than 120 decommissioned nuclear submarines are under constant monitoring. According to Kruglov, of the 147 nuclear vessels decommissioned to date, only 42 have had their reactors removed. The lone train available to remove submarine waste is controlled by Minatom, which allows only six trips annually to Ministry of Defense facilities. According to Kruglov, at this rate it will take 30 years to transport just the nuclear waste from the submarines.

Anatoli Yurkin, Itar-Tass, 9/28/95; in FBIS-UMA-95-192-S, 9/28/95 (13290). *Nuclear Proliferation News*, 10/12/95, pp. 13-14 (13596).

9/28/95*

One of Russia's submarine dismantlement facilities, which is operated by the Navy, is capable of handling two to three submarines per year. Submarines that need to be decommissioned are located either near Murmansk, or at the Siberian port of Severodvinsk. Approximately 30,000 fuel assemblies (500 MT of spent fuel) aboard roughly 50 submarines need to be removed. The Northern and Pacific Fleets produce about 3,000-3,500 cubic meters of spent fuel per year.

Mark Hibbs, *NuclearFuel*, 9/28/95, p. 12 (13435). *Moskovskaya Pravda* (Moscow), 9/21/95, p. 2; in *WPS*, 9/28/95, p. 15 (13615).

10/95*

Minatom is circumventing an environmental law prohibiting the import of radioactive waste by designating spent nuclear fuel as "raw material." This redefinition makes it possible for Minatom to permit Finnish spent nuclear fuel shipments to the Mayak Production Association to continue. Russian legislation is in the works that would clearly define spent nuclear fuel as waste. Under the terms of a draft law, imports of spent fuel would be allowed only within the framework of international agreements approved by the Russian parliament. However, it is unlikely that Russian President Boris Yeltsin will sign the bill into law, given

his recent decree allowing the government to establish procedures for the import and reprocessing of foreign spent fuel.

Nuclear Engineering International, 10/95, p. 12 (13603).

10/3/95

Valeri Maslakov, director of the Zvezda ship-repair enterprise, reports that the Primorye Territory is in desperate need of a disposal site for the solid radioactive waste generated during the servicing of Russian Pacific Fleet nuclear submarines. Maslakov indicates that the processing of liquid radioactive waste is less of a concern. During the prolonged debate over an international tender to construct a liquid waste facility, the Fleet constructed a facility on its own, and has already processed nearly 50 percent of the liquid waste in Primorye. Maslakov expects \$7 million in U.S. equipment for submarine dismantlement to be installed at Zvezda by the end of 1995, enabling the facility to scrap up to five submarines per year. However, Zvezda cannot begin to dismantle submarines until a solid waste disposal site is built in the region.

Interfax (Moscow), 10/3/95; in FBIS-TAC-95-006, 10/3/95 (13725).

10/4/95*

According to an official from Gosatomnadzor, an unguarded 1,840 cubic meter solid nuclear waste store with a failed drainage system is discovered in Mironova Gora, a village in the Arkhangelsk region.

Interfax (Moscow), 10/4/95; in FBIS-SOV-95-192, 10/4/95 (13408).

10/10/95

General Andrei Terekhov of the Russian Interior Ministry (MVD) reports that no instances of weapons-grade material theft have been registered in Russia. According to Terekhov, thieves usually target radioactive materials that have no weapons applications. Moreover, Terekhov says that there are no mafia-type organizations in Russia that specialize in the illicit trade of nuclear materials. According to MVD statistics, nine cases of radioactive material theft occurred in the first nine months of 1995. Another source reports that of a total of 13 incidents involving illegal radioactive materials theft in 1995, only three involved the

theft of nuclear materials; none of the stolen materials was usable in nuclear weapons. The MVD also says that the majority of reported incidents transpired at Minatom facilities, and that on-site staff were responsible for 90 percent of the thefts.

Interfax (Moscow), 10/10/95; in FBIS-SOV-95-196, 10/10/95 (13591). *Yaderniy Kontrol* (Moscow), 10/95, p. 20 (13910).

10/17/95

Naval chemical service chief Captain First Class Valeri Danilyan states that the Russian Pacific Fleet "urgently" needs a facility that can fully process liquid radioactive waste, of which the Fleet has accumulated 3,000 MT. The Navy operates three installations that have processed roughly 1,500 MT of radioactive waste in 1995. However, Danilyan indicates that these facilities are inadequate because they do not completely "recycle" liquid waste or solidify it into a form suitable for burial.

Interfax (Moscow), 10/17/95; in FBIS-TAC-95-006, 10/17/95 (13727).

10/18/95*

The MVD says it has evidence suggesting that Chechen rebel groups led by Shamil Basayev may commit acts of terrorism against Russian nuclear facilities, many of which are located in densely-populated areas near Moscow. On 7/6/95, Basayev threatened to use radioactive materials against Moscow and other strategic targets in Russia should peace negotiations be unsuccessful. General Sergei Korolev of the Russian Interior Troops reports that in 1994-95, the MVD assigned an additional 6,000 troops and additional "armored technology" to guard nuclear facilities against terrorists. Nikolai Bondarev, director of Operating Conditions at the Kurchatov Institute, a facility housing large quantities of highly-enriched uranium in the form of fuel rods, has not ruled out the threat of an attack, saying that terrorists might be tempted to use nuclear weapons. Specialists assert that the security system employed at the Kurchatov Institute provides adequate protection against theft and terrorist attacks. However, not all Russian nuclear facilities are equipped with such systems.

2x2 Television (Moscow), 10/18/95; in FBIS-SOV-95-202, 10/18/95 (13519). 2x2 Television (Mos-

cow), 10/16/95; in FBIS-SOV-95-200, 10/16/95 (13449). Interfax (Moscow), 10/10/95; in FBIS-SOV-95-196, 10/10/95 (13591). AFP (Paris), 7/6/95; in FBIS-TAC-95-014-L, 7/6/95 (13271).

10/20/95

The Duma passes the federal law "On the Use of Nuclear Energy." Another federal law, "On Nuclear Arms," which is currently being drafted, will apply to all military uses of nuclear energy, including testing, manufacturing, designing, and using "nuclear arms and military-purpose nuclear energy installations." The two laws will not overlap in terms of issue areas addressed.

Pavel Kuznetsov, Itar-Tass (Moscow), 10/20/95; in FBIS-SOV-95-204, 10/20/95 (13528).

10/25/95*

A container of radioactive material, some of which is pure cesium, is discovered in a men's rest room at Sheremetyevo-2 airport.

Sergei Shmelev, *Segodnya* (Moscow), 10/25/95, p. 6 (13902).

10/29/95*

The former Soviet Union has dismantled 720 nuclear weapon systems since 1990. According to U.S. Pentagon officials, this represents a 33 percent reduction in the former Soviet Union's nuclear arsenal.

Bill Gertz, *Washington Times*, 10/29/95, p. A1 (13900).

RUSSIA WITH:

Armenia, Belarus, Georgia, Kazakhstan, and ISTC, 100 Belarus, 101

RUSSIA WITH BELGIUM

7/95

Russian atomic energy industry sources say that Belgium is a "potential candidate" for participation in a Russian weapons-grade plutonium utilization project.

Gennadiy Aleksandrov, *Segodnya*, 7/26/95, p. 7 (13457).

RUSSIA WITH BELGIUM, CANADA, FRANCE, GERMANY, AND UNITED KINGDOM

7/26/95*

Russian nuclear industry officials are con-

sidering a Canadian proposal to use Russian weapons-grade plutonium as fuel in two Canadian CANDU reactors. Under the proposal, a facility would be built in Russia to convert metallic weapons-grade plutonium into an oxide form. The resulting plutonium-oxide would be blended with depleted uranium to form mixed-oxide (MOX) fuel. Fuel assemblies would then be fabricated to match the standards for CANDU reactors. Over the course of the 25-year project, the two reactors would consume an estimated 50 MT of weapons-grade plutonium. Canada could begin burning Russian plutonium within four years. According to Canadian officials, spent fuel from the CANDU reactors would be disposed of on Canadian territory. Russia is considering expanding the project to include the U.K. and France. Both nations could offer expertise in producing MOX fuel assemblies for light water reactors, and the U.K. could be a potential purchaser of Russian MOX fuel. Germany and Belgium are also under consideration as partners in the program.

Gennadi Aleksandrov, *Segodnya* (Moscow), 7/26/95, p. 7; in FBIS-SOV-95-164-S, 7/26/95 (13583). Ray Silver, *Nucleonics Week*, 8/24/95, pp. 11-12 (13586).

RUSSIA WITH:

**Brazil, 103
Brazil, India, Indonesia, and PRC, 103**

RUSSIA WITH BULGARIA AND UKRAINE

9/1/95

According to a Bulgarian police report, a Russian/Ukrainian group smuggling nuclear materials has been "broken." The only information the Bulgarian officials disclose is that "the materials seized were of strategic value and included rare metals."

UPI, 9/1/95; in Executive News Service, 9/1/95 (13336).

Mid-9/95

Ukraine agrees to allow Russian nuclear fuel bound for Bulgaria's Kozloduy nuclear power plant to pass through its territory. Bulgaria is expected to receive the shipment on 10/17/95.

Khorizont Radio Network (Sofia), 9/29/95; in FBIS-EEU-95-190, 9/29/95 (13400).

RUSSIA WITH CANADA

8/24/95*

Ontario Hydro Nuclear (OHN) and Atomic Energy of Canada Limited have submitted a joint proposal to the U.S. Department of Energy to convert weapons-grade plutonium to mixed-oxide fuel for use in Canada's four Bruce reactors. According to Don Anderson, manager of OHN, within 12 to 15 years the Bruce reactors could burn 50 MT of plutonium from both Russian and U.S. stockpiles. Within 25 years, the Bruce reactors could totally eliminate excess plutonium stocks in Russia and the U.S. Russia continues to use the BN-600 fast breeder reactor to test the feasibility of using weapons-grade plutonium as a commercial fuel source, but the BN-600 fast-breeder program has been frozen due to limited financial resources. Sources close to the Russian Ministry of Atomic Energy (Minatom) say that Russia is planning to shelve the fast-breeder program for the near term, and is instead considering the Canadian plan to utilize weapons-grade plutonium as light water reactor (LWR) fuel.

Gennadi Aleksandrov, *Segodnya* (Moscow), 7/26/95, p. 7 (13723). Ray Silver, *Nucleonics Week*, 8/24/95, pp. 11-12 (13586).

8/95

Atomic Energy of Canada, Ltd. (AECL) experts travel to Russia as part of a study to evaluate the feasibility of building a CANDU reactor fuel plant in Russia and selling the fuel to Canada. The study, to be completed in the next six to nine months, assumes that Canada will retain all spent fuel and considers Canadian utilities' incentives to purchase plutonium instead of uranium. Russia and Canada have considered building a conversion facility at Chelyabinsk. Although Canada might insist that equipment transfers be subject to IAEA safeguards, it may agree to an alternative proposal which would apply safeguards to fabricated fuel leaving Russia.

Mark Hibbs, *Nucleonics Week*, 9/7/95, p. 10 (13537).

9/11/95*

Supporters of a German plan to manufacture MOX fuel at Siemens' Hanau plant in Germany claim that, according to a classi-

fied study solicited by the U.S. Department of Energy (DOE), the Canadian nuclear industry found it could be 10 times more expensive to burn MOX in CANDU reactors instead of natural uranium. Nevertheless, because the utilization of Russian weapons-grade plutonium in MOX fabrication would signal an important step toward disarmament, AECL is considering plans to make MOX fuel in Russia and looking for a way to subsidize the use of MOX in Canada. German proponents believe that if the Russian Ministry of Atomic Energy (Minatom) provides the plutonium free of charge, then MOX processing will cost \$260 less per kg than uranium. Minatom, however, refuses to relinquish any plutonium to third parties free of charge.

Mark Hibbs, *NuclearFuel*, 9/11/95, p. 8 (13540).

10/95

AECL Vice-President for Marketing Ken Petrunik and John Kargar of AECL's Moscow branch participate in a preliminary meeting with Minatom officials to examine the feasibility of constructing two CANDU-6 power stations near Vladivostok. One report states that on 10/25/95, an agreement will be signed to build two 700 MW nuclear reactors in the Russian Far East, with Canada providing 80 percent of the project costs and the Russian government supplying 20 percent. A second report claims that Russia will finance 30 percent of the \$2.6 billion deal, and AECL will fund the remaining 70 percent with foreign investors. Presidium Chairman of the Far Eastern Branch of the Russian Academy of Sciences Georgiy Yelyakov objects to the project, arguing that the plant will not be economical and could cause another Chernobyl.

Ray Silver, *Nucleonics Week*, 10/19/95, p. 4 (13499). Lidiya Smirnova, *Segodnya* (Moscow), 10/20/95, p. 2; in FBIS-SOV-95-204, 10/20/95 (13499). Reuter, 10/27/95; in Executive News Service, 10/27/95 (13499).

10/5/95*

During an official visit to Ottawa by Russian Prime Minister Viktor Chernomyrdin, Russia and Canada discuss expanding "contacts in the nuclear industry." Chernomyrdin says, "I am confident that we will cooperate in the field of nuclear engineering."

Nikolay Ivanov, Russian Public Television First

Channel Network (Moscow); in FBIS-SOV-95-194, 10/5/95 (13531). Gennadiy Yezhov and Nikolay Setunskiy, Itar-Tass (Moscow), 10/5/95; in FBIS-SOV-95-194, 10/5/95 (13531).

RUSSIA WITH:

Cuba (Juragua Plant), 104

RUSSIA WITH CZECH REPUBLIC AND SLOVAKIA

7/6/95

A Russian-Czech consortium that includes the Czech company, Skoda Prague, tentatively agrees to provide \$150 million in credits to the Slovak government for work on its two VVER-440 reactors at Mochovce. Of this sum, \$70 million is to buy fuel from Russia, \$50 million is for Skoda, and \$30 million is to pay Russian engineers. The contract for the loan is due to be signed on 9/1/95.

Nuclear News, 9/95, p. 41 (13577). *Pravda* (Bratislava), 7/7/95, p. 1; in FBIS-SOV-95-132, 7/7/95 (13577).

9/5/95

Slovak Ministry of Economics spokesman Josef Sucha discloses that Slovakia has rejected a financing proposal put together by the European Bank for Reconstruction and Development (EBRD) and Euratom for Electricite de France (EdF) and German companies to complete two VVER-440 reactors at Mochovce. Sucha says Slovakia's principal objection is to the precondition that it close its Bohunice-1 and -2 VVER-440 reactors by 2000. While Slovakia has not formally rejected the EBRD plan, it is considering an alternative proposal whereby Ceska Sporitelna (Czech Savings Bank) and Komerčna Banka (Czech Commercial Bank) would each lend Slovakia \$200 million. The alternate proposal also foresees Russia lending Slovakia \$80 million, and Slovakia, in turn, purchasing Russian nuclear fuel "as long as nuclear power stations operate in Slovakia."

Mark Hibbs, Ann MacLachlan, and Hannah Wolfson, *Nucleonics Week*, 9/14/95, pp. 1, 8-9, (13772). Eva Laukova, *Pravda* (Bratislava), 9/16/95, pp. 1, 3; in FBIS-EEU-95-182, 9/16/95 (13786).

9/29/95*

Skoda Prague, the general contractor to Slovakia's Mochovce nuclear power plant,

will be charged with technical aspects of the plant's construction, while Hydrostav Bratislava of Slovakia will be responsible for civil engineering. Energoprojekt Prague of the Czech Republic will work as the project's general designer, with assistance from Russian designers.

NucNet News, 9/29/95; in *Uranium Institute News Briefing*, 9/27/95-10/3/95 (13700).

10/95

The Slovak utility Slovenske Electrarne AS (SE) declares that it will sign final contracts to finance the completion of the Mochovce VVER-440 nuclear power reactor in early 1996. A Slovak government document says Slovakia is "considering technical rather than financial assistance" from EdF and "is interested in funding for the plant from Russia, including a loan of \$80 million based on the condition that nuclear fuel worth \$70 million is purchased from Russia."

Hannah Wolfson, *Nucleonics Week*, 10/5/95, p. 2 (13782).

RUSSIA WITH:

Estonia, 105

Estonia and Finland, 105

RUSSIA WITH FINLAND, NORWAY, AND SWEDEN

10/12/95*

In spring 1996, Russian nuclear submarines slated to be taken out of service will be decontaminated, according to an agreement reached at a meeting of the foreign affairs ministers of the Council of Countries Accessing the Barents Sea. Russia cannot handle the radioactive waste and atomic reactors of these ships alone, but Sweden, Finland, and Norway promise to help decontaminate the submarines.

Radio Sweden; in *Rossiiskaya Gazeta*, 10/12/95, p. 1 (13720).

RUSSIA WITH FRANCE

10/9/95*

Russia and France are conducting a feasibility study to convert plutonium from nuclear weapons into MOX in a reprocessing facility known as TOMOX (Transformation Objects-MOX). The results of the

study will be submitted to French and Russian officials in late 1996. The TOMOX plant would convert 1,300 kg of weapons plutonium per year into 1.5 MT of MOX fuel for Russia's 600 MW BN-600 fast breeder reactor (FBR) at Beloyarsk and 20 MT for its four VVER reactors at Balakovo. French and Russian studies indicate the BN-600 could recycle about 300 kg of plutonium per year using 24 percent MOX fuel, while the VVER-1,000 units could process 250 kg per year using 30 percent MOX fuel. The TOMOX plan is part of Aida-MOX, a French-Russian collaboration researching ways to use plutonium extracted from weapons in a MOX fabrication plant. Various technical processes related to MOX fabrication are being explored by Minatom's Inorganic Materials Institute (VNIINM), France's Commissariat à l'Énergie Atomique (CEA), the Dimitrovgrad Atomic Reactors Institute (RILAR), and Russia's Khlopin Institute. Russian plutonium management project manager for CEA's Fuel Cycle Division, Bruno Sicard, says that CEA has subcontracted the TOMOX study to Cogema and its subsidiary SNG. Sicard adds that the facility's location has not been determined, but one option under consideration is to couple it to the half-complete A-300 breeder MOX fuel plant near Chelyabinsk.

Ann MacLachlan, *NuclearFuel*, 10/9/95, pp. 6-8 (14011) Gennadiy Aleksandrov, *Segodnya*, 7/26/95, p. 7 (13457)..

RUSSIA WITH:

France, Germany, Ukraine and United States, 154

RUSSIA WITH GERMANY

7/95

Russian atomic energy industry sources say that Germany is a "potential candidate" for participation in a Russian weapons-grade plutonium utilization project.

Gennadiy Aleksandrov, *Segodnya*, 7/26/95, p. 7 (13457).

Early 7/95

German utility officials, supported by the Free Democratic Party, announce a plan to use the Hanau facility for the manufacture of mixed-oxide (MOX) fuel to eliminate

Russian weapons-grade plutonium and German spent fuel. Simultaneously, German officials push to locate a disposal site for spent nuclear fuel on Russian territory. One estimate places the expected cost of MOX fuel at 1,500 Deutsche marks (DM)/kg, significantly less than the enriched uranium world market price of 4,000-5,000 DM/kg. The plan, which would require government subsidies to Germany's Siemens, raises a number of legal and security questions related to plutonium transportation methods and routes; it would necessitate transshipping plutonium through third countries such as Ukraine, Slovakia, the Czech Republic, and Austria. Russian Minister of Atomic Energy Viktor Mikhailov states, "There has been no discussion on this issue, nor will there be any in the future, because there is no way we will deliver weapon-grade plutonium to Germany." Although the German Social Democrat and Green coalition opposes the utilization of Hanau for MOX processing, it proposes employing Hanau as a plutonium vitrification plant.

Mark Hibbs, *NuclearFuel*, 7/31/95, p. 18 (13718). *NuclearNews*, 7/95, pp. 35-36 (13718). *Der Spiegel* (Hamburg), 7/10/95, pp. 71-72; in FBIS-TEN-95-011, 7/10/95 (13718).

7/6/95

German diplomatic sources report that Siemens will spend \$7 million a month for up to six months to maintain the MOX facility in Hanau until Russia and Germany reach an agreement to process weapons-grade plutonium derived from dismantled Russian nuclear weapons at the facility. If Russia and Germany fail to reach an agreement, the Hanau facility will be dismantled. In early 7/95, a German federal interagency working group reports that processing Russian plutonium would not be economically feasible, unless Russia supplies the material for free. However, Russian Minister of Atomic Energy Viktor Mikhailov says Russia does not intend to supply plutonium free of charge. Other Russian Ministry of Atomic Energy (Minatom) officials say Russia will not export any plutonium as long as the U.S. has access to its own stored plutonium stocks.

Mark Hibbs, *Nucleonics Week*, 7/6/95, pp. 1-2 (13287).

7/7/95

Germany's Siemens announces the closing of the nearly complete MOX fuel element plant at Hanau. Siemens says mounting environmental and political pressures prompted domestic German utilities to withdraw financial support for the plant, forcing its closure. With \$790 million already invested in the Hanau facility, Siemens has begun pursuing a deal, to be confirmed by the Russian and German governments, to process Russian weapons-grade plutonium at the plant. Siemens is reducing its staff from 2,000 to 430, and will keep the plant in a state of interim readiness until further details about the deal are known. Uranium fabrication at the Hanau plant will stop by 9/30/95.

Nuclear News, 8/95, p. 74 (13536).

7/10/95

A Minatom official vehemently denies charges that 360 g of plutonium and a small amount of highly-enriched uranium (HEU) confiscated in Germany last summer were of Russian origin. The Minatom official says that "every gram" of plutonium in Russia is registered. Investigations conclude that the German authorities fabricated plutonium demand by offering the smugglers \$276 million to make a shipment of plutonium. Prior to the offer, no cache of plutonium had been located on German soil.

Mark Hibbs, *NuclearFuel*, 7/17/95, pp. 7-8 (13509). *Arms Control Today*, 9/95, p. 36 (13716).

7/13/95*

In an effort to enter the international nuclear fuel market, the Machinery Production Plant (MPP) near Moscow enters into an agreement with Siemens of Germany to produce dozens of nuclear fuel rods. From these fuel rods, Siemens will construct two fuel assemblies that will be tested in German and Swiss nuclear reactors in 7/95. If Siemens is satisfied with the test results, MPP will start production of complete nuclear fuel assemblies for Siemens in early 1996.

Veronika Romanenkova, *Segodnya* (Moscow), 7/13/95, p. 9 (13630).

7/17/95*

Euratom Safeguards Agency Director Wilhelm Gmelin requests that Germany provide data on 360 g of plutonium and a small

amount of HEU confiscated in Germany in 8/94. Euratom officials claim they are "absolutely sure" the smuggled materials "could not have been produced in a facility in the E.U." A senior official at a U.S. national laboratory notes that Gmelin can not rule out the possibility that the plutonium and HEU found in Germany could be of European origin, despite indications that the materials are of Russian origin. Although E.U. civilian facilities provide Euratom with their chemical and isotopic information for fissile materials, Britain and France refuse to divulge any data on the production of nuclear weapons at their defense plants. Bernd Schmidbauer, German Chancellor Helmut Kohl's intelligence coordinator, notes that the Russian intelligence network under the Ministry of Interior (FSK) acknowledged the smuggled material could have originated in Russia.

Mark Hibbs, *NuclearFuel*, 7/17/95, pp. 7-8 (13509).

7/17/95

The Munich District Court sentences Colombian Justiniano Torres Benitez and Spaniards Javier Bengoechea and Julio Oroz to prison terms of between three and five years for their roles in the 8/94 smuggling of 360 g of plutonium from Russia into Germany. According to Chief District Judge Heinz Alert, the men received "light sentences" because officials from the German Bundesnachrichtendienst (BND) and Bavarian state Landeskriminalamt (LKA) lured the men into committing the crime by offering a \$276 million bank draft from Bayerische Hypotheken und Wechselbank AG to "pay for the plutonium." According to Alert, BND and LKA officials pressured Benitez into obtaining the plutonium and bringing it to Germany.

Mark Hibbs, *Nucleonics Week*, 7/20/95, pp. 2-3 (13417). *New York Times*, 7/19/95, p. A1 (13417). Itar-Tass, 7/3/95; in FBIS-SOV-95-128, 7/3/95 (13417). Mark Hibbs, *Nucleonics Week*, 8/24/95, pp. 10-11 (13592).

8/95*

German Christian Democrat politicians back MOX fuel processing at Hanau, as well as a suggestion to dismantle the plant, export it, and reconstruct it in Russia. Siemens already initiated talks to jointly complete a MOX facility at the Mayak complex near

Chelyabinsk, Russia.

Nuclear News, 8/95, p. 74 (13536).

8/10/95*

Minatom says it is seeking funding to complete the RT-2 reprocessing plant in Krasnoyarsk and that German firms have indicated an interest in finishing the plant.

Mark Hibbs, *Nucleonics Week*, 8/10/95, p. 10 (13539).

9/4/95

Minatom decides not to send any part of Russia's 100 MT of weapons-grade plutonium to the Hanau nuclear facility in Germany for processing into MOX fuel. Calling the Russian plutonium feedstock a "natural resource," Minatom representative Yevgeniy Mikherin states, "We will not provide Germany the plutonium."

Mark Hibbs, *Nucleonics Week*, 9/7/95, pp. 1, 9-10 (13713).

9/7/95*

German officials propose that Russia receive no money for the sale of Russian weapons-grade plutonium to be blended down into MOX fuel at Hanau until the fuel is purchased by a third party. A German negotiator close to Minatom says, "Minatom made clear to us it wants to use the plutonium for its own VVERs and breeder program." Talks to realize the German plan reach an impasse due to German insistence that all equipment transfers be subject to IAEA safeguards.

Mark Hibbs, *Nucleonics Week*, 9/7/95, p. 10 (13537).

9/8/95

Minatom official Yevgeniy Mikherin says Minatom would require about \$10 billion before considering a proposal to blend Russian weapons-grade plutonium into MOX fuel at Hanau.

Mark Hibbs, *Nucleonics Week*, 9/14/95, pp. 11-12 (13541).

9/14/95*

Given lackluster domestic support, German Chancellor Helmut Kohl rejects a proposal to process Russian weapons-grade plutonium into MOX fuel at Hanau. The chancellor's top aide and agenda-setter, Minister of State Anton Pfeifer, twice prevents the Hanau Option from being dis-

cussed at cabinet-level meetings, explaining that such a topic is too sensitive. Kohl tells Free Democratic Party head Hermann-Otto Solms, a proponent of the Hanau Option, to stop pushing the issue.

Mark Hibbs, *Nucleonics Week*, 9/14/95, pp. 11-12 (13541).

RUSSIA WITH GERMANY AND UNITED STATES

8/3/95*

The organized crime directorate for the Russian Ministry of Internal Affairs (MVD) reveals that one German firm, Hertel AG, and two U.S. firms, Teledyne Inc. of Huntsville, Alabama, and Calport Resources Inc. of Los Angeles, illegally shipped 192 MT of highly-radioactive waste to Russia. In early 6/95, the MVD discovered 72 MT of high-level radioactive waste, believed to be part of the shipment, near the Skopin-Gidromet metal processing plant in the Ryazan Region. The Russian Prosecutor General received the case in 7/95, and questioned Yuri Manelyuk, Hertel AG's Moscow representative, Yuri Butakov, commercial director of the Russian company Metallurg, and other Russians with ties to the alleged deal; however, formal charges have yet to be filed. Police thwarted a second attempt to bury the waste in Podolsk, near Moscow. Authorities are searching for the remaining 120 MT of waste.

Russian Television Network (Moscow), 8/3/95; in FBIS-SOV-95-150, 8/3/95 (13265).

RUSSIA WITH:

Finland, Germany, and PRC, 133

RUSSIA WITH IAEA

Early 7/95

IAEA Director General Hans Blix meets with Russian Minister of Atomic Energy Viktor Mikhailov and discusses the possibility of the IAEA using Russian equipment and employees to monitor "the security of nuclear installations and nuclear weapons nonproliferation." An IAEA delegation visits the Russian Federal Nuclear Center in Snezhinsk to discuss joint research in the areas of nuclear nonproliferation and physical security of nuclear materials. On 7/4/

95, Russian Foreign Minister Andrei Kozyrev says that Russia welcomes IAEA supervision of Russian programs to construct nuclear reactors in Iran, India, and elsewhere. Blix says that his organization is prepared to oversee implementation of Russian plans to complete the Bushehr nuclear power station in Iran.

Yuri Kozlov, *Itar-Tass* (Moscow), 7/4/95; in FBIS-SOV-95-128, 7/4/95 (13276). Veronika Romanenkova, *Itar-Tass* (Moscow), 7/3/95; in FBIS-SOV-95-128, 7/3/95 (13276). Radio Rossii Network (Moscow), 7/8/95; in FBIS-SOV-95-131, 7/8/95 (13241). Aleksei Chukurov, *Komsomolskaya Pravda* (Moscow), 7/11/95, p. 2; in FBIS-SOV-95-133, 7/11/95 (13429).

RUSSIA WITH:

- India, 107**
- India, Israel, Pakistan, PRC, and U.S., 106**
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- Marshall Islands, PRC, and Taiwan, 152**

RUSSIA WITH MONGOLIA AND UNITED STATES

8/14/95*

Russia's Priargunsky Mining and Chemical Kombinat and the newly incorporated, U.S.-based WM Mining are jointly developing an open-pit uranium mining operation to exploit underground uranium reserves in Mongolia. The joint venture, called Dornad Uran, intends to employ a "heap leaching capability" to eliminate the need for Russian processing.

Michael Knapik, Mark Hibbs, and Ariane Sains, *NuclearFuel*, 8/14/95, pp. 1-2, 16-17 (13377).

RUSSIA WITH MULTI-COUNTRY GROUP

7/13/95*

Valeri Mezhuurov, director of the Elektrostal machine-building plant near Moscow, announces that the facility will export samples of uranium fuel assemblies to Germany and Switzerland. Currently, Russian nuclear fuel can only be used in Soviet-designed reactors. However, Elektrostal is implementing a low-cost plan to modify the fuel so that it can be burned in other reactors. Elektrostal supplies nuclear fuel to seven power stations in Russia, and a total of nine power stations in Bulgaria, the Czech Republic, Finland, Hungary, Lithuania, Slovakia, and Ukraine.

Veronika Romanenkova, *Segodnya* (Moscow), 7/13/95, p. 9 (13630). Veronika Romanenkova, *Itar-Tass* (Moscow), 7/5/95; in FBIS-TAC-95-014-L, 7/5/95 (13286).

7/13/95*

Scientists from the U.S., Russia, France, Germany, Canada, Norway, Sweden, Denmark, and Estonia attend an international conference in Moscow on decommissioning and dismantling of nuclear submarines, and reach agreement on "mutual aid." U.S. representative Leo Duffy states that the U.S. will give technical equipment to Russian shipbuilding facilities and will earmark \$130 million to help salvage nuclear submarines. Nikolai Shumkov, representative of the Russian State Committee for the Defense Sectors of Industry, says Russia should solve the problem itself and should expect no Western aid. The 1995 Russian budget allocates 450 billion rubles to "salvaging nuclear waste." According to Shumkov, if half of this money is received, progress can be made in resolving Russia's spent fuel problem. An additional 100 nuclear-powered vessels are to be removed from the fleet after the year 2000.

Dmitriy Litovkin, *Krasnaya Zvezda* (Moscow), 7/13/95, p. 1 (13428).

RUSSIA WITH NETHERLANDS, UNITED KINGDOM, AND UNITED STATES

9/11/95*

The U.S. Nuclear Regulatory Commission issues an export license to Urenco, allowing 500,000 kg of Russian-origin UF₆ to be shipped to the Netherlands or the U.K.

for enrichment.

NuclearFuel, 9/11/95, pp. 2, 16 (13526).

RUSSIA WITH NORWAY AND UNITED STATES

7/6/95*

Russian, Norwegian, and U.S. negotiators sign a contract to finance and expand a project for water purification of radioactive waste at the Atomflot technological-repair facility in Murmansk. The parties also agree to consider the problem of solid nuclear waste and spent nuclear fuel at a later date.

V. Blinov, *Murmanski Vestnik* (Moscow), 7/6/95, p. 2; in *WPS*, 9/20/95, pp. 24-25 (13629).

RUSSIA WITH: PRC, 133

RUSSIA WITH ROMANIA AND UKRAINE

8/15/95*

On several occasions, Romania confiscates uranium smuggled from either Russia or Ukraine. A recently reported seizure of "red mercury" is discovered to be a hoax.

Reuter, 8/15/95; in *Executive News Service*, 8/15/95 (13547).

RUSSIA WITH SLOVAKIA

10/23/95

Slovak Prime Minister Vladimir Meciar says Russian participation in the completion of Slovakia's Mochovce nuclear power plant, which includes "providing documentation" and supplying and reprocessing nuclear fuel, is "irreplaceable." Meciar notes that, because the Mochovce plant is Russian-designed, Russia is the only country that will accept Mochovce spent fuel for reprocessing. Meciar says "if the project succeeds, there is a chance that we can similarly reconstruct and update 44 [as published] nuclear power plants." Meciar adds that construction on Mochovce-1 should begin in 1996 and last until 1997, after which work on Mochovce-2 will start.

Rozhlasova Stanica Slovensko Network (Bratislava), 10/23/95; in FBIS-EEU-95-205, 10/23/95 (13677).

10/26/95

Russian Deputy Prime Minister Yarov af-

firms that in 1996, Russia will supply nuclear fuel valued at \$70 million to Slovakia. Russian and Slovak specialists also agree to consider future collaboration in the field of nuclear science at Russia's Dubna scientific research facility.

Maria Mikusova, *Hospodarske Noviny*, 10/30/95, pp. 1, 6; in FBIS-EEU-95-213, 10/30/95 (13704).

RUSSIA WITH SOUTH KOREA

8/10/95*

The Russian Ministry of Atomic Energy (Minatom) says it is seeking funding from businesses in South Korea to complete the RT-2 reprocessing plant in Krasnoyarsk, Russia.

Mark Hibbs, *Nucleonics Week*, 8/10/95, p. 10 (13539).

9/28/95

South Korean Prime Minister Yi Hong-ku and Russian Prime Minister Viktor Chernomyrdin meet in Seoul and pledge to strengthen bilateral cooperation in the field of atomic energy.

Yonhap (Seoul), 9/28/95; in FBIS-EAS-95-188, 9/28/95 (13380).

10/8/95

A South Korean Foreign Ministry official announces that, in response to a Russian request for aid, South Korea will provide Russia with a \$1 million receptacle for the disposal of low-level nuclear waste (LLW). The container will be delivered following a bilateral meeting in Seoul in early 1996.

Kang Song-po, *Kyonghyang Sinmun* (Seoul), 10/9/95, p. 2; in FBIS-EAS-95-197, 10/9/95 (13562).

10/17/95

The Russian and South Korean Ministers of Science and Technology, Boris Saltykov and Chung Kun-mo, agree that the two countries will work together on projects involving controlled thermonuclear reaction.

Son Yong-kyu, *Hanguk Ilbo* (Seoul), 10/18/95, p. 2; in FBIS-EAS-95-201, 10/18/95 (13880).

RUSSIA WITH SWITZERLAND

8/10/95*

The Russian Ministry of Atomic Energy (Minatom) says it is seeking funding from businesses in Switzerland to complete the

RT-2 reprocessing plant in Krasnoyarsk, Russia.

Mark Hibbs, *Nucleonics Week*, 8/10/95, p. 10 (13539).

RUSSIA WITH UKRAINE

7/8/95

Ukraine ships 144 spent fuel assemblies from Zaporozhe and South Ukraine nuclear power stations to Russia, the first such shipment in two years. Ukraine was facing the possible closure of its nuclear power stations due to limited storage capacity for spent fuel. The resumption of spent fuel shipments is attributed to a 1/95 "special decision" by Russian President Boris Yeltsin. The spent fuel is shipped via rail to the RT-2 VVER-1,000 reprocessing facility in Krasnoyarsk, where it will be stored until the construction of RT-2 is completed. Waste products created from reprocessing will eventually be returned to Ukraine, and Ukraine may have the option of receiving mixed-oxide fuel. Additional rail shipments of spent fuel from South Ukraine, Rovno, and Zaporozhe nuclear power stations are expected in the near future.

Unian (Kiev), 7/8/95; in FBIS-SOV-95-131, 7/8/95 (13258). Radio Ukraine World Service (Kiev), 7/15/95; in FBIS-SOV-95-011, 7/15/95 (13258). *NucNet News*, 7/17/95 (13236).

8/95

Ukrainian Deputy Foreign Minister Kostyantyn Hryshchenko says Russia is not sending nuclear fuel rods to Ukraine, as required under the 1994 trilateral agreement. The agreement obliges Russia to provide \$1 billion in fuel rods in exchange for nuclear warheads located in Ukraine. The Ukrainian National Nuclear Committee reports that all Ukrainian nuclear power plants are experiencing serious fuel shortages.

Post-Soviet Nuclear & Defense Monitor, 8/7/95, p. 15 (13239). Interfax (Moscow), 7/13/95; in FBIS-TAC-95-004, 7/13/95 (13244).

8/21/95*

The Russian Emergency Situations Ministry requests information from the Kiev-based firm, Izotop, on past transfers to Chechnya of industrial and medical technology containing radioactive material. The request is presumably linked to Chechen rebel com-

mander Shamil Basayev's 7/6/95 threat to use radioactive substances in terrorist attacks against Moscow and other strategic targets if peace talks with Russia fail. Izotop is unable to provide the Emergency Situations Ministry with complete information for the years prior to 1991 because most records were lost after the collapse of the Soviet Union.

Vladimir Kolinko, *Rossiya* (Moscow), 8/23/95-8/29/95, pp. 1-2 (13522).

9/14/95*

Valery Menshikov, a member of the Russian Interdepartmental Commission for Environmental Safety, says Russia would be justified in refusing to accept further imports of Ukrainian nuclear warheads on the basis of the critical condition of Russia's excessive radioactive waste stockpiles. Russia has accumulated 22,000 containers of radioactive waste at Krasnoyarsk.

Ihor Osypchuk, *Vseukrainskiye Vedemosti* (Kiev), 9/14/95, p. 1; in FBIS-TAC-95-005, 9/14/95 (13525).

9/30/95*

According to the Russian Intelligence Service, nearly 600 nuclear warheads have been transferred to Russia from Ukraine.

Marina Eratova, *Pravda* (Moscow), 9/30/95, pp. 1, 3 (13624).

10/14/95*

Vladimir Mukhin, head of the Ukrainian Parliamentary Defense and State Security Commission, states that Ukrainian shipments of nuclear warheads to Russia are on schedule, despite the fact that Ukraine has received only \$60 million of the \$350 million in financial assistance that the U.S. has promised to deliver.

Jane's Defence Weekly, 10/14/95, p. 11 (13611).

10/18/95*

Ukraine and Russia are sending nuclear ammunition to the Avangard facility at Arzamas-16 for dismantlement. Nuclear ammunition is transported to Avangard via special trains that are guarded by special forces units.

Aleksandr Khokhlov, *Komsomolskaya Pravda* (Moscow), 10/18/95, pp. 1-2 (13627).

10/30/95

The Ukrainian Ministry of Defense announces that Ukraine has dismantled 90 percent of its Soviet-built nuclear warheads, including all of the newer SS-24 missiles. According to Colonel Aleksandr Serdyuk, head of the Ministry of Defense's Strategic Forces Administration, the remaining warheads are under the operational control of the Russian Federation, but remain stationed on Ukrainian territory.

AFP (Paris), 10/30/95; in FBIS-SOV-95-210, 10/30/95 (13605).

RUSSIA WITH UNITED KINGDOM

7/95

Russian atomic industry sources say that Russia is considering exporting mixed-oxide (MOX) fuel to countries such as the U.K., targeting civilian power stations as potential customers.

Gennadiy Aleksandrov, *Segodnya*, 7/26/95, p. 7 (13457).

RUSSIA WITH UNITED STATES

6/12/95*

Yevgeniy Mikerin, head of the Fuel Cycle and Nuclear Weapons Production Facilities Directorate at Minatom, says that, due to the fact that the U.S. has not provided financial assistance for the construction of a storage facility at Krasnoyarsk, conditions for the storage of nuclear materials derived from dismantled nuclear weapons have failed to improve in Russia. Although Russia has already initiated the project at its own expense, without U.S. assistance the project will not be finished until the year 2000. Mikerin says that construction of a second storage facility at Tomsk has been postponed due to Russia's current economic situation.

Gregori Polyanichko, *Post-Soviet Nuclear & Defense Monitor*, 6/12/95, pp. 12-15 (13406).

6/29/95-6/30/95

At the fifth meeting of the Gore-Chernomyrdin Commission, Russian Prime Minister Viktor Chernomyrdin and U.S. Vice President Al Gore approve an eight-year project in which the U.S. Department of Energy (DOE) will assist the Russian government in developing a computerized in-

ventory of Russian weapons-grade nuclear material. According to Ken Luongo, office director of arms control and nonproliferation at DOE, the Russian Nuclear and Radiation Safety Supervision Committee (Gosatomnadzor) will use U.S. technical assistance, computers, and communications technology to determine the size and location of fissile material stockpiles scattered among 80 to 100 civilian sites throughout Russia. At the meeting, Gore pledges \$24 million in Cooperative Threat Reduction (CTR) aid to Russia for nuclear weapons dismantlement and fissile materials security. The U.S. also commits \$75 million in CTR funds to help Russia construct a storage facility for plutonium and other dismantled nuclear weapons components at the Mayak nuclear complex (formerly Chelyabinsk-65).

During the meeting, U.S. Secretary of Energy Hazel O'Leary and Russian Minister of Atomic Energy Viktor Mikhailov sign a "statement of intent" to advance a study to find alternative sources of electric and thermal power that could replace three plutonium-producing reactors at Tomsk-7 and Krasnoyarsk-26. O'Leary and Mikhailov also release a joint statement that furthers "existing cooperation on nuclear material protection, control, and accounting (MPC&A)" at the Obninsk Physics and Power Engineering Institute, the Elektrostal Machine Building Plant, the Mayak Chemical Plant, the Dmitrovgrad Scientific Research Institute for Nuclear Reactors, and the Podolsk Scientific Production Association Luch. The statement also calls for the "installation and demonstration" of material control and protection equipment supplied to the Mayak plutonium storage site by the U.S. O'Leary and Mikhailov also agree to a six-month extension of the 1972 Peaceful Uses of Atomic Energy agreement, which has served as the foundation for DOE memoranda of cooperation with Russia on nuclear energy issues.

At the meeting, Gore and Chernomyrdin agree to a protocol, which O'Leary and Mikhailov sign, reaffirming each party's commitment to the U.S.-Russian highly-enriched uranium (HEU) deal and to "ensure the full and timely implementation of the agreement by providing prompt payment." The protocol calls for the Russian

export firm Tekhsnabexport to be paid in full for both components of HEU [including SWU and natural uranium (feed) components] upon delivery. The protocol also invites the U.S. to create legislation that will permit President Clinton to waive barriers on low-enriched uranium (LEU) imports, thereby allowing payment for natural uranium to take place. The two sides agree to implement additional transparency measures that will allow the U.S. to ensure that Russia is utilizing its HEU from dismantled weapons to produce LEU, not delivering LEU from its civilian stockpile. In addition, Russia agrees to provide the U.S. with documentation of material accountancy and control throughout the blending process. However, the U.S. and Russia are not able to agree on a verification mechanism. Mikhailov and O'Leary agree that the protocol should be implemented by 11/1/95. Under a second protocol, the U.S. is to provide Russia with a \$100 million as pre-payment for Russia's dismantlement of Ukrainian nuclear warheads. Russia will use fissile material obtained from the warheads as feedstock for low-enriched uranium, which, within three years, will be sent to U.S. nuclear power plants at a price of \$780/kg in repayment of the advance.

Reuter (Moscow), 9/5/95; in Executive News Service, 9/5/95 (13292). Ria Novosti (Moscow), 7/4/95; in FBIS-TAC-95-014-L, 7/4/95 (13414). Evan S. Medeiros, *Arms Control Today*, 9/95, p. 26 (13893). *Post-Soviet Nuclear & Defense Monitor*, 7/12/95, p. 2 (13889). *Post-Soviet Nuclear & Defense Monitor*, 7/18/95, pp. 1-2 (13889). Vincent Kiernan, *New Scientist*, 8/12/95 (13266). *Arms Control Today*, 7/95-8/95, p. 27 (13607). William J. Broad, *New York Times*, 7/9/95 (13914). *Core Issues*, No. 4, 1995, p. 5 (13914). *Nuclear Reveiw*, 8/95, pp. 11-12 (13914).

Early 7/95

Russia delivers the first two shipments of LEU to the U.S. Enrichment Corporation facility in Portsmouth, Ohio, in accordance with the U.S.-Russian HEU deal. Igor Kupriyanov, deputy director of Russia's Tekhsnabexport, says that HEU obtained from nuclear warheads is blended down to a concentration of 4.5 to 4.9 percent U-235. Kupriyanov says that the shipment brings Russia in line with the delivery timetable for the HEU agreement.

Uranium Institute News Briefing, 7/5/95-7/11/95,

p. 1 (13234). Veronika Romanenkova, Itar-Tass (Moscow), 9/5/95; in FBIS-SOV-95-172, 9/5/95 (13234).

7/18/95*

U.S. Secretary of Energy Hazel O'Leary and Russian Gosatomnadzor Chairman Yuri Vishnevski sign a cooperation agreement to create programs for inspections, nuclear material protection, control, and accountability (MPC&A), and license reviews. Progress is reported in the completion of a program to improve MPC&A systems for weapons-grade fissile materials at the Kurchatov Institute. The U.S. will furnish the plutonium storage facility at the Mayak Chemical Combine with access control equipment.

Post-Soviet Nuclear & Defense Monitor, 7/18/95, p. 3 (13249).

7/25/95

Aleksandr Kostin, the Leningrad nuclear power station deputy director for access procedures, reports that security at the Sosnovy Bor facility has been strengthened to preclude terrorist acts.

Lev Romyantsev, Itar-Tass (Moscow), 7/25/95; in FBIS-SOV-95-142, 7/25/95 (13250).

Late 7/95

Minatom and General Atomic of the U.S. are in the final stages of concluding an agreement to create a joint venture that will explore the possible use of General Atomic's gas turbine modular helium reactor (GT-MHR) in Russia. Russia is considering using GT-MHRs to replace plutonium-producing reactors at Tomsk and Krasnoyarsk. GT-MHR fuel has a higher plutonium content than mixed-oxide fuel, which is burned in light water reactors. Hence, the GT-MHR is considered a more effective means to dispose of excess Russian plutonium stores.

Nuclear News, 10/95, p. 44 (13523).

8/9/95*

Head of the Russian Ministry of Defense's 12th Main Directorate Colonel General Yevgeniy Maslin and U.S. Secretary of Defense William Perry sign an agreement that allocates \$20 million in CTR financial assistance to Russia for the purchase of containers that will enhance the security of nuclear warheads during transit. Russia will

also use the assistance to purchase software that monitors the physical security of nuclear materials and special equipment used in managing "emergency situations that may arise when working with these kinds of materials." The U.S. and Russia also sign a treaty that obligates the U.S. to provide Russia with an additional \$12 million to "ensure nuclear security" at Russian military facilities.

Viktor Litovkin, *Izvestiya* (Moscow), 8/9/95, p. 2 (13894).

8/22/95-8/23/95

During U.S. Senate hearings, U.S. experts say that "loose nukes" in the former Soviet Union pose a "valid and paramount threat" to U.S. national security. The experts agree that Russia's military no longer has the ability to secure its nuclear materials and weapons adequately. The experts want the U.S. to place top priority on improving protection, control, and accounting of materials in Russia; creating "reciprocity agreements" between the U.S. and Russia's nuclear defense complexes; improving transport and storage of nuclear weapons and components; dealing with "nuclear employment needs"; and being ready to respond to evidence or information of "lost weapons" or weapons-grade nuclear material. Tom Cochran of the Natural Resources Defense Council (NRDC) says that approximately 3 kg of plutonium has been smuggled out of Russia.

Post-Soviet Nuclear & Defense Monitor, 9/1/95, pp. 5-7 (13744).

8/23/95*

David Osias, national intelligence officer for strategic programs at the U.S. Central Intelligence Agency, testifies before the Senate Foreign Relations Committee that the chief concern of the U.S. intelligence community remains a possible loss of Russian weapons-grade nuclear materials to an "insider military threat." According to Osias, Russian security procedures were not developed to address organized internal threats. Also of concern is the fact that the Russians may not know who maintains control over nuclear materials or where such materials are being held. Osias says that the Russian Ministry of Defense and General Staff have "effective control" over Russia's nuclear ar-

senal, although their controls do not meet U.S. standards. Osias says that although there have been more than 100 reports of the smuggling of nuclear warheads and their components over the last two years, so far these reports have not been verifiable or reliable.

Krasnaya Zvezda (Moscow), 8/24/95, p. 3 (13742). Barbara Starr, *Jane's Defence Weekly*, 9/2/95, p. 4 (13492).

8/24/95*

An expert panel of the American Nuclear Society approves a National Academy of Sciences recommendation to dispose of U.S. and Russian weapons-grade plutonium from dismantled nuclear warheads by blending the material into mixed-oxide (MOX) fuel for use in existing reactors. The panel recommends the timetable for initiating this program be accelerated. The panel favors burning plutonium in existing reactors in the U.S., Russia, or a third country over the vitrification option. The panel endorses the U.K., Japan, and France as suitable third-country candidates.

Nucleonics Week, 8/24/95, p. 16 (13520).

8/28/95*

A recent report by the U.S. President's Council of Advisers on Science & Technology (PCAST) says that Russian nuclear smuggling and theft is one of the most serious threats to U.S. national security in the next 10 years. PCAST Chairman John Holdren says that, according to early 1995 reports from the Russian Ministry of Internal Affairs, 80 percent of all nuclear plants in Russia do not have "electronic monitors" and therefore cannot detect the removal of plutonium or highly-enriched uranium from the facility. According to Tom Cochran of NRDC, Russia has 80 to 100 facilities "supporting nuclear weapons production, naval fuel production, and civil nuclear fuel research and development that store or use significant quantities of weapons-usable fissile material." Cochran says the Russian Ministry of Defense also oversees approximately 100 nuclear weapons storage facilities.

Kathleen Hart, *NuclearFuel*, 8/28/95, pp. 9-10 (13743).

8/28/95-9/1/95

A working group of U.S. and Russian officials, meeting under the auspices of the Gore-Chernomyrdin Commission, discusses a plan to cooperate in securing the material protection, control, and accounting (MPC&A) of important Russian nuclear facilities. Five facilities are chosen as "priority cases": the Elektrostal Machine-Building Plant; the Obninsk Institute of Physics and Power Engineering; the Mayak Production Facility at Chelyabinsk; the Luch research and manufacturing Facility at Podolsk; and the Dimitrovgrad Nuclear Reactors Research Institute. A DOE official says securing MPC&A at the five sites will result in improved security for "several tons" of weapons-grade nuclear material.

Nuclear Proliferation News, 10/12/95, p. 14 (13740).

9/11/95

U.S. President Bill Clinton will offer Russia \$100 million in aid at the G-7 nuclear safety summit, which will be held in Moscow in 4/96. The aid, a substantial increase from the \$10 million provided in 1995, is aimed at helping Russia safeguard its weapons-grade material stockpiles.

Reuter (Moscow), 9/18/95; in Executive News Service, 9/18/95 (13267).

9/12/95

A U.S. Senate Appropriations Subcommittee approves a foreign assistance budget that allocates \$16.5 million to the U.S. Federal Bureau of Investigation to "counter" nuclear smuggling in the former Soviet Union.

David Rogers, *Wall Street Journal*, 9/13/95, p. A5 (13548).

9/21/95

Specialists from DOE and Minatom complete a year-long project to install nuclear material protection, control, and accounting (MPC&A) equipment at the Institute of Physics and Power Engineering in Obninsk, Russia. The new security system will serve as a model for MPC&A at other facilities and laboratories in Russia. According to U.S. officials who took part in the project, it was especially important to create a security system at Obninsk because the facility houses approximately 8 MT of radioactive material, including 7 MT of highly-enriched

uranium and weapons-grade plutonium. The Obninsk project is part of a series of initiatives sponsored by the U.S.-Russian Lab-to-Lab Nuclear Material Protection, Control and Accounting Program.

Post-Soviet Nuclear & Defense Monitor, 10/13/95, p. 1 (13518). *Yaderniy Kontrol* (Moscow), 10/95, p. 20 (13911). Anatoli Shapovalov, *Rossiiskaya Gazeta* (Moscow), 10/18/95, p. 7 (13616).

9/28/95

U.S. President Bill Clinton issues a directive calling on U.S. federal agencies to expand cooperation with Russia and other former Soviet republics in strengthening the security of fissile material and nuclear weapons. The presidential directive is aimed at further reducing the risk of nuclear weapons or fissile material falling into the hands of terrorists or rogue states. The directive unifies previous nuclear security efforts and establishes a plan for future cooperation. Clinton directs that four specific actions be taken. First, DOE, U.S. national laboratories, and other U.S. entities will increase cooperation with the republics of the former Soviet Union to improve security and accounting systems for nuclear weapons and materials. Second, the Department of Defense will step up its cooperation with the Russian Ministries of Defense and Atomic Energy on nuclear security measures, including construction of a secure fissile material storage facility. Third, U.S. law enforcement agencies will increase cooperation with law enforcement authorities in the former Soviet republics, as well as in other states, in areas such as the provision of security equipment, liaison on specific cases, and joint training of personnel to combat nuclear smuggling. Fourth, the U.S. Nuclear Regulatory Commission and DOE, working in conjunction with Gosatomnadzor, will expand cooperation in developing and implementing a national structure for nuclear material accounting and control in Russia.

White House Fact Sheet, Office of the Press Secretary, 9/28/95, pp. 19-20 (13912).

10/95*

A 1995 National Academy of Science (NAS) report entitled "Management and Disposition of Excess Weapons Plutonium: Reactor-Related Options" reaches the same basic

conclusions as the NAS overview report of the same title issued in 1994. The 1994 and the 1995 reports overlap significantly, with both determining that there is an "urgent security need" to secure plutonium stockpiles in the U.S. and Russia against the potential for reuse in weapons. The report recommends that DOE initiate joint U.S.-Russian work in the area.

Marvin Miller, *INESAP Information Bulletin*, 10/95, p. 18 (13739).

10/13/95*

According to Steve Younger, head of the Center for International Security Affairs at DOE's Los Alamos National Laboratory (LANL), LANL has a productive "lab-to-lab" relationship with Russian facilities, such as Sverdlovsk-44 and Sverdlovsk-45, both of which manage large quantities of "special nuclear materials."

Post-Soviet Nuclear & Defense Monitor, 10/13/95, pp. 8-12 (13741).

10/23/95*

U.S. President Bill Clinton and Russian President Boris Yeltsin agree to work together in seeking a zero-yield comprehensive nuclear test ban in 1996.

Itar-Tass (Moscow), 10/23/95; in FBIS-SOV-95-205, 10/23/95 (13610).

10/26/95*

A Russian parliament internal report recommends significant amendments to the START II Treaty that would enable Russia to keep missiles with multiple nuclear warheads. According to a U.S. Embassy cable, the report favors the ratification of START II in principle, but proposes changes that "would substantially alter its character in ways that appear unacceptable from the standpoint of U.S. policy."

Bill Gertz, *Washington Times*, 10/26/95, p. A1 (13900).

10/31/95*

A U.S.-Russian steering committee on plutonium disposition establishes a deadline, at the request of President Yeltsin, for work on joint studies to be completed by the 3/96 G-7 nuclear material safety meeting. On 12/12/95-12/14/95, a technical workshop will convene in Washington, D.C. to consider one of the four disposition options

under review.

Post-Soviet Nuclear & Defense Monitor, 10/31/95, p. 8 (13745).

SAUDI ARABIA

INTERNAL DEVELOPMENTS

9/18/95-9/22/95

The head of the Saudi Arabian delegation to the IAEA General Conference in Vienna, Isa Abdallah Nuwaysir, suggests the creation of a nuclear-weapon-free zone (NWFZ) in the Middle East. Nuwaysir's plan calls for all states in the region to accede to the NPT and to be subject to full-scope IAEA safeguards.

Saudi Arabian Kingdom Network (Riyadh), 9/20/95; in FBIS-NES-95-183, 9/20/95 (13374).

SAUDI ARABIA WITH:

North Korea (KEDO), 124

SOUTH AFRICA

INTERNAL DEVELOPMENTS

7/95*

South Africa's uranium enrichment facility ("Z plant"), which utilizes a stationary walled centrifuge process, will be closed. In the future, the more cost-effective, technologically advanced Molecular Laser Isotope Separation (MLIS) process is expected to be used instead.

Nuclear Europe Worldscan, 7/95-8/95, p. 72 (13396).

10/23/95

The South African opposition party Pan Africanist Congress (PAC) says there may be truth to the allegations that South Africa did not destroy all of its nuclear weapons. In its statement, PAC points out that the dismantlement of six nuclear weapons under F.W. de Klerk was not directly supervised by the IAEA. The statement is made in

response to Peter Hounam and Steve McQuillan's book "The Mini-Nuke Conspiracy" which suggests that South Africa manufactured over 1,000 small tactical nuclear warheads that could be in the hands of an anti-Mandela, right-wing faction. Right-wing leader and former military intelligence head Tienie Groenewald dismisses the authors' speculation as "ridiculous," saying South Africa never acquired the capability to manufacture nuclear warheads small enough to be launched from long-range artillery. President Nelson Mandela says he has no basis for questioning the completion of nuclear dismantlement under de Klerk and will not investigate "wild and unsubstantiated allegations."

Anton Ferreira, Reuter, 10/23/95; in Executive News Service, 10/23/95 (14019).

10/23/95

Part of a confidential Afrikaner Weerstandsbeweging (Afrikaner Resistance Unit, AWB) report prepared by its intelligence unit is disclosed, indicating "that enough raw materials and equipment might have been removed from the nuclear project site (at Pelindaba near Pretoria) during the winding-down phase [in 1993] to enable such a device to be assembled elsewhere." The report notes the high level of support among personnel in the nuclear sector for the right-wing cause and states that "at the very least the raw materials, parts and expertise are available to the right to build such a device at short notice."

SAPA (Johannesburg), 10/23/95; in FBIS-TAC-95-006, 10/23/95 (14008).

SOUTH AFRICA WITH:

Iran, 113

Iran and Iraq, 109

SOUTH AFRICA WITH UNITED STATES

8/18/95

The U.S. Department of Energy (DOE) removes South Africa from a list of countries of proliferation concern, noting South Africa's NPT membership. Accordingly, DOE relaxes restrictions on U.S. companies wishing to sell nuclear-related goods and services to South Africa, permitting U.S. firms to export civilian nuclear mate-

rials to South Africa without first obtaining DOE authorization.

George Lobsenz, *Energy Daily*, 9/19/95, p. 3 (14030).

8/23/95

South African Mineral and Energy Affairs Minister Pik Botha states that South African Energy Corporation Executive Waldo Stumpf plans to talk about bilateral nuclear cooperation with U.S. Energy Secretary Hazel O'Leary.

SAPA (Johannesburg), 8/23/95; in FBIS-TAC-95-005, 8/23/95 (13693).

9/95*

DOE announces that the U.S. and South Africa penned an Agreement for Cooperation for Peaceful Uses of Nuclear Energy, which paves the way for South Africa to join international nuclear energy development programs and facilitates nuclear-related information exchanges. The initial step of the agreement's implementation will involve South Africa's participation in the Reduced Enrichment in Research and Test Reactors (RERTR) program. The agreement, which requires U.S. Congressional approval, reflects U.S. acknowledgment that South Africa has recently been taking "many positive and significant steps" toward nonproliferation.

SpentFuel 9/4/95, p. 1; in *Uranium Institute News Briefing*, 8/30/95-9/5/95 (13465). *Nuclear Review*, 9/95, p. 11 (13692).

9/29/95

U.S. President Bill Clinton submits to Congress a nuclear cooperation accord with South Africa and an Arms Control and Disarmament Agency (ACDA) nonproliferation assessment praising South Africa's recent nonproliferation record. The draft agreement allows for transfers of nuclear technology, materials, equipment (including nuclear reactors), and components for use in nuclear research and energy production, although the export of some equipment and technology will remain restricted.

Kathleen Hart, *NuclearFuel*, 10/23/95, pp. 4-5 (13679). *Enerpresse*, 10/3/95 (13679).

SOUTH KOREA

INTERNAL DEVELOPMENTS

7/23/95

While speaking in the U.S. with Korean scientists, President Kim Yong-sam reveals South Korea's intention to invest 120 billion won in nuclear fusion technology by 2001. The South Korean Ministry of Science and Technology (MOST) foresees the construction of a "superconductivity Tocamak [Tokamak] nuclear fusion research facility."

Son Yon-kyun, *Hanguk Ilbo* (Seoul), 8/16/95, p. 20; in FBIS-EAS-95-159, 8/16/95 (13344).

8/28/95

The South Korean Ministry of Trade, Industry and Energy discloses that on 10/1/95 it will begin closely monitoring materials, production facilities, and technology used to manufacture nuclear, biological, and chemical weapons, as well as missile systems. Permission to export these items, including complex semi-conductors, optical cable, electronic telephone switching equipment, machine tools, and new materials will be given in the form of general rather than individual licenses. Export authorization will only be valid for two years.

Korea Times (Seoul), 8/29/95, p. 8; in FBIS-TAC-95-005, 8/29/95 (13878).

10/9/95*

Kurop-Do, the island chosen as the site for a planned permanent disposal facility for low- and medium-level waste on 10/6/95, may be unsuitable due to possible active faults in the nearby seabed, according to the Korean Atomic Industrial Forum (KAIF). A final decision regarding the location of the disposal site will be made public in 11/95, after further examination. The proposed disposal site will consist of rock cavern storage facilities capable of containing 250,000 drums. The site will also be used for the temporary storage of spent fuel rods.

NucNet, 10/9/95 (13806).

**SOUTH KOREA WITH:
Argentina, 99**

SOUTH KOREA WITH CANADA

10/19/95

Canada declares its intention to sell more CANDU reactors to South Korea. South Korea currently has three CANDUs being built and one in operation.

Reuter (Ottawa), 10/19/95; in Executive News Service, 10/19/95 (13838).

**SOUTH KOREA WITH:
Canada, Japan, PRC, and United States, 118**

SOUTH KOREA WITH FRANCE AND UNITED STATES

10/5/95

During a National Assembly inspection of South Korea's Agency of Defense Development (ADD), Kang Chang Sung—former military intelligence commander and currently an opposition member of the parliamentary defense committee—says former President Park Chung Hee told him in 9/78 that ADD had completed 95 percent of a nuclear weapon. Kang says that when Park was assassinated in 1979, South Korea had nearly completed its nuclear weapons program with the aid of French technology. Kang says about 20 scientists were sent overseas to obtain knowledge about nuclear weapons. The nuclear bomb was scheduled to be completed in 1981, but pressures from the United States led to the cancellation of the program following Park's death.

Times (London), 10/6/95 (13800). *International Herald Tribune*, 10/7/95 (13800). Sergei Agafonov, *Izvestia* (Moscow), 10/7/95, p. 3 (13879).

10/6/95

The ROK Agency for Defense Development (ADD), a Defense Ministry think-tank, contradicts reports that South Korea had almost developed a nuclear bomb in the 1970s. An agency official states, "We had heard nothing about a nuclear bomb. Yesterday [10/5/95] was the first time that we heard that we were involved in a nuclear project. It is just not true."

Washington Times, 10/7/95, p. A7 (13877). *International Herald Tribune*, 10/7/95 (13800).

SOUTH KOREA WITH GERMANY

9/11/95*

Although German industry officials say that South Korea might be interested in purchasing mixed-oxide (MOX) fuel manufactured from Russian weapons plutonium at Siemens' Hanau plant, the German government is not considering the possibility due to proliferation concerns.

Mark Hibbs, *NuclearFuel*, 9/11/95, p. 8 (13540).

**SOUTH KOREA WITH:
IAEA and North Korea, 124
Japan, 120
Japan, Marshall Islands, and Taiwan, 119**

SOUTH KOREA WITH MULTI-COUNTRY GROUP

8/3/95

At an ASEAN conference in Brunei, Russian Deputy Foreign Minister Aleksandr Panov announces that Russia will be an observer in a joint international effort to reshape South Korea's nuclear program, which some Western experts suspect has military implications. A conference to form the consortium will be held in New York at the end of 8/95.

Andrei Bychkov and Stanislav Bychkov, *Itar-Tass* (Moscow), 8/3/95; in FBIS-SOV-95-150, 8/3/95 (13390).

**SOUTH KOREA WITH:
North Korea (KEDO), 124
North Korea (not KEDO), 130
Pakistan, 131
PRC, 134
Russia, 146**

SOUTH KOREA WITH NUCLEAR SUPPLIERS GROUP (NSG)

10/16/95

South Korea joins the Nuclear Suppliers Group and becomes its 32nd member. South Korea will have observer status in the NSG.

Yonhap (Seoul), 10/17/95; FBIS-EAS-95-202, 10/17/95 (13851).

SOUTH KOREA WITH ROMANIA

10/4/95

The technical manager of Romag SA's heavy water production facility at Halinga, Dumitru Sirbu, says Romania could start selling heavy water to other countries, including South Korea and China, by 1997. Sirbu says "eventually all surpluses of heavy water produced here would be available for export." Sirbu adds that all four heavy water production units at Halinga, each with an annual capacity of 90 MT, will be running by mid-1996.

Adrian Dascalu, Reuter, 10/4/95; in Executive News Service, 10/4/95 (13639).

**SOUTH KOREA WITH:
Russia, 146**

SOUTH KOREA WITH UNITED STATES

8/23/95

A South Korean Ministry of Science and Technology (MOST) officer says the U.S. will work with South Korea to boost nuclear safety controls as part of an initiative adopted in 9/94 by MOST and the U.S. Department of Energy (DOE). DOE is reviewing a Korean proposal to train experts on nuclear control, which, following ratification by the Permanent Coordinating Group, should take effect in early 1996. Future projects will focus on promoting transparency with an emphasis on accountability, inspection, and protection of nuclear material, as well as containment and surveillance technology.

Korea Herald (Seoul), 8/24/95, p. 3; in FBIS-EAS-95-164, 8/24/95 (13389).

**SOUTH KOREA WITH ZANGGER
COMMITTEE**

10/18/95

South Korea is admitted to the Zangger Committee, which now has 31 members.

Yonhap (Seoul), 10/19/95; in FBIS-EAS-95-203, 10/19/95 (13840).

**SOUTH PACIFIC
NUCLEAR-FREE ZONE**

8/30/95

Vanuatu declares that it will become the twelfth signatory to the South Pacific Nuclear Free-Zone Treaty (SPNFZ).

AFP (Hong Kong), 8/30/95; FBIS-EAS-95-169, 8/30/95 (13566).

9/17/95

The U.S. declares that it is approaching a decision on whether to sign the 1985 SPNFZ Treaty following talks with members of the Pacific Forum. U.S. Assistant Secretary of State for East Asian and Pacific Affairs Winston Lord explains that current developments, including negotiations for a comprehensive test ban treaty (CTBT), are encouraging the U.S. to reach a decision quickly.

Belinda Goldsmith, Reuter, 9/17/95; in Executive News Service, 9/17/95 (13567). *Washington Times*, 9/18/95, p. A13 (13567).

10/19/95

Japan says it would support a move by the U.S., France, and the U.K. to join the SPNFZ, but has not yet seen such an initiative. According to an unidentified U.S. official in New York, the U.S., France, and the U.K. will sign protocols to the SPNFZ Treaty "committing themselves not to deploy nuclear weapons or use or threaten to use them following the conclusion of French nuclear testing."

Reuter (Tokyo), 10/19/95; in Executive News Service, 10/19/95 (13563).

SYRIA

SYRIA WITH:

**Argentina, 99
Japan, 120**

TAIWAN

INTERNAL DEVELOPMENTS

9/14/95*

An official from the Taiwanese Atomic Energy Council's Department of Nuclear Regulation, Huang Tsing, says Taiwan's only nuclear waste storage facility will reach maximum storage capacity by the end of 1995. The temporary storage facility, which is located on Orchid Island, 65 km off of Taiwan's southeastern coast, has 23 concrete trenches capable of holding 98,112 barrels, with room for only 1,500 more barrels.

Emily Thornton, *Far Eastern Economic Review*, 9/14/95, p. 70 (13815).

TAIWAN WITH:

**Japan, Marshall Islands, and
South Korea, 119**

**TAIWAN WITH MARSHALL ISLANDS,
PRC AND RUSSIA**

9/14/95*

Taipower is interested in storing nuclear waste in other countries, possibly including China, Russia, or the Marshall Islands.

Emily Thornton, *Far Eastern Economic Review*, 9/14/95, p. 70 (13815).

TAIWAN WITH:

PRC, 134

THAILAND

THAILAND WITH CANADA

9/8/95

Thai Deputy Prime Minister Samak Sunthorawet meets with Canadian Deputy Prime Minister and Environmental Minister Sheila Copps to discuss bilateral cooperation in the field of nuclear technology.

Radio Thailand Network (Bangkok), 9/10/95; in

FBIS-EAS-95-176, 9/10/95 (13378).

THAILAND WITH CAMBODIA AND VIETNAM

9/12/95

Phnom Penh police confiscate 13 kg of uranium and apprehend four people, three of whom are military officials. The alleged smugglers are brought to court on 9/13/95. It is suspected that the uranium was smuggled from Vietnam to Cambodia with the intention of sending it to Thailand.

Thmar Da, *Reaskmei Kampuchea* (Phnom Penh), 9/15/95, p. 5; in FBIS-EAS-95-179, 9/15/95 (13339).

THAILAND WITH:

North Korea (KEDO), 124

THAILAND WITH SWITZERLAND

6/7/95

Switzerland's Electrowatt Engineering Services (EWI) signs an agreement with Thailand's Office of Atomic Energy for Peace (OAEP) on Swiss assistance with a new 5-10 MWt research reactor to be built at the nascent Ongkharak Nuclear Research Center. EWI will furnish engineering services during all phases of the project. The Ongkharak center will consist of the reactor, a repository for waste treatment and storage, and a radioisotope research laboratory.

Nuclear Engineering International, 8/95, p. 6 (13383).

UKRAINE

INTERNAL DEVELOPMENTS

6/30/95

The Rada passes a "Radioactive Waste Management Law" that delineates the powers of state agencies involved in nuclear matters; sets guidelines for government policy with regard to the management, registration, processing, and storage of radioactive waste; and establishes methods to attain the authorization to site, design, construct, operate,

and decommission regional and national radwaste storage facilities. The "Radioactive Waste Management Law" empowers the Chernobyl affairs ministry (MinChernobyl) to license waste storage. Facilities that produce radioactive waste will be responsible for reprocessing and storage. According to Mikhailo Pavlovskiy, chairman of the Ukrainian parliament's nuclear policy & safety committee, additional laws covering other nuclear sectors are currently being drafted.

Alex Brall, *Nucleonics Week*, 7/20/95, pp. 14-15 (13257).

6/30/95*

Nuclear power stations in Ukraine have produced over 60 million cubic meters of radioactive waste, while the uranium industry has generated an additional 50 million cubic meters of waste. Over 4,000 spent fuel assemblies have accumulated at Ukraine's nuclear power stations. Data on waste produced by Ukraine's military-industrial complex has not been disclosed. As Ukraine has lacked a regime to oversee radioactive waste management, it is reported to be "possible that some radwaste has never been registered and was disposed of in industrial dump sites."

Alex Brall, *Nucleonics Week*, 7/20/95, pp. 14-15 (13257). Unian (Kiev), 7/8/95; in FBIS-SOV-95-131, 7/8/95 (13258).

Early 7/95

Mikhail Umanets, chairman of the Ukrainian State Committee for the Use of Atomic Energy (Goskomatom), says that the Ukrainian nuclear sector will collapse by 2020 unless steps are taken to develop the industry. According to Umanets, the loss of qualified personnel is the Ukrainian nuclear industry's largest problem. In 1993-94, 8,500 workers, half of which were "high-skilled specialists," left the Ukrainian nuclear sector.

Volodymyr Klyuyko, *Intelnews* (Kiev), 7/5/95; in FBIS-SOV-95-129, 7/5/95 (13437).

7/4/95*

Goskomatom announces that Ukraine will call an international tender on 7/31/95 to select a partner for the creation of a nuclear fuel production plant in Zholtiv Vodi. By the year 2000, the plant is expected to annually produce about 350 MT of enriched

uranium for VVER-1000 nuclear reactors.

Andrei Vaganov, *Ogonyek* (Moscow), 6/26/95, pp. 76-77; in *WPS*, 7/4/95, pp. 6-8 (13619).

8/3/95

According to Ukrainian Deputy Prime Minister Anatoly Kinakh, the Ukrainian Cabinet of Ministers will permit the Eastern mining-concentrating mill to export yellowcake privately in an effort to lessen regional economic strife.

Infobank (Lvov), 8/4/95; in FBIS-SOV-95-150, 8/4/95 (13283).

8/5/95

Mikhailo Dmitriovitch Bondarkov, deputy director of the Ukrainian National Academy of Sciences (UNAS) Nuclear Studies Institute, says UNAS and the Goskomatom have established a center for joint research at the institute in an effort to assist Ukrainian nuclear scientists in preserving their skills and to utilize the nuclear-related equipment at the institute fully.

Uryadovyy Kuryer (Kiev), 8/5/95, p. 7; in FBIS-SOV-95-153, 8/5/95 (13232).

9/8/95*

Ukraine may construct a nuclear waste storage facility that will store 1 kg of waste at a cost of \$40, well below the \$250 per kg Ukraine pays Russia for storing Ukrainian nuclear waste.

Tetyana Kravchenko, *Molod Ukrayiny* (Kiev), 9/8/95, p. 1; in FBIS-SOV-95-177, 9/8/95 (13282).

9/95

Nur Nigmatullin, first deputy chairman of Goskomatom, announces a six-month restructuring plan for the nuclear energy sector that includes the development of a "nuclear generating company." Although the plan is designed to make the Ukrainian energy sector more responsive to market forces, the government will retain full control over the energy sector. Long-term plans involve the creation of a single Ministry of Energy that will have oversight authority for nuclear power production. The new ministry will oversee Goskomatom upon the latter's reorganization into a joint-stock company. The State Committee for Nuclear Materials Oversight will continue to operate under the auspices of the Ministry of the Environment.

Nuclear Engineering International, 9/95, p. 6 (13240).

10/13/95

Goskomatom Chairman Mikhail Umanets says that the Ukrainian government will soon discuss a Goskomatom proposal to construct a nuclear waste repository. The Ukrainian Academy of Sciences, Goskomatom, and the State Geological Committee have already selected 12 potential storage sites for intermediate- and high-level nuclear waste; four of the sites are located in rock formations in the "Ukrainian shield" in the north; the remaining sites are located in salt formations in the central Dnepr River basin. According to Dmitri Khrushchov, head of the Institute of Geological Science at the Ukrainian Academy of Sciences, Ukraine plans to build a 100,000 cubic meter repository capable of holding "all nuclear plant waste" and waste derived from the decommissioning and remediation of the Chernobyl site.

Interfax (Moscow), 10/13/95; in FBIS-SOV-95-199, 10/13/95 (13409). *Nuclear Engineering International*, 10/95, p. 12 (13601).

10/31/95*

Ukraine still possesses about 10 operational nuclear-tipped missiles from its original arsenal of 176 ICBMs; however, the weapons are not "directed at specific targets" as they used to be. According to senior Ukrainian Ministry of Defense official Colonel Alexander Serdyuk, nuclear disarmament in Ukraine may be slowed because Ukraine lacks the foreign currency it needs to pay for the process. The U.S. has provided Ukraine with \$100 million.

Washington Times, 10/31/95, p. A14 (13752).

UKRAINE WITH:

Belarus and Estonia, 101

UKRAINE WITH BELGIUM, FRANCE, AND FINLAND

9/1/95

Electricite de France (EdF), IVO of Finland, and Belgatom of Belgium begin preliminary work on Ukraine's Rovno-4 and Khmel'nitsky-2 VVER-1,000 nuclear reactors under the aegis of the European

Commission's Tacis program. An August 1995 EdF-funded "prefeasibility study" estimates that the completion of Ukraine's Rovno-4 and Khmel'nitsky-2 VVER-1,000 nuclear reactors will require 30 months. The report recommends that the project be completed by 1999. Robert Pays of EdF's Engineering and Construction Division says construction on the reactors will begin after mid-1997.

Ann MacLachlan, *Nucleonics Week*, 10/19/95, pp. 10-11 (14013).

UKRAINE WITH:

Bulgaria and Russia, 141

UKRAINE WITH CANADA

10/2/95

Ukraine Prime Minister Yevhen Marchuk meets in Kiev with Saskatchewan Province Premier Roy Romanov and expresses interest in attracting Canadian investment for the construction of a Ukrainian plant to produce nuclear fuel.

Interfax (Moscow), 10/3/95; in FBIS-SOV-95-192, 10/3/95 (13368).

UKRAINE WITH CZECH REPUBLIC

8/95*

Ukraine's Rovno nuclear power station purchases special equipment for interim nuclear waste storage from the Czech firm Skoda. Although Rovno currently lacks a waste storage facility, station designers have developed a project to store nuclear waste at Rovno for a period of 50 years.

A. Panov, *Zelenyi Svit*, 8/95, p. 4 (13632).

UKRAINE WITH FRANCE

7/28/95*

Ukraine and Cogema of France discuss potential cooperation in developing Ukrainian uranium deposits as part of Ukraine's plan to boost domestic uranium output and develop a nuclear fuel production facility.

Unian (Kiev), 7/28/95; in FBIS-SOV-95-146, 7/28/95 (13438).

UKRAINE WITH FRANCE, GERMANY, RUSSIA, AND UNITED STATES

7/28/95*

Siemens of Germany, Framatome of France, ABB and Westinghouse of the U.S., and the Russian Ministry of Atomic Energy have submitted bids to the Ukrainian government to construct a nuclear fuel production plant in Ukraine. A feasibility study shows that the Ukrainian plant will turn a profit in four to five years. Mikhail Umanets, chairman of Goskomatom, plans to announce the successful bidder in 10/95, although no details on financial arrangements have been finalized.

Kathleen Hart, *NuclearFuel*, 9/11/95, p. 4 (13748). Unian (Kiev), 7/28/95; in FBIS-SOV-95-146, 7/28/95 (13438).

UKRAINE WITH FRANCE, GERMANY, ITALY, SPAIN, AND UNITED KINGDOM

10/31/95*

Germany is currently funding a project to dismantle Ukrainian missile silos, but the U.K., France, Italy, and Spain have yet to follow through on their pledges of disarmament aid.

Washington Times, 10/31/95, p. A14 (13752).

UKRAINE WITH IAEA

2/95

An IAEA inspection at Sevastopol reveals a previously undisclosed research reactor at the Navy Academy of the Ukrainian Ministry of Defense.

William C. Potter, *Arms Control Today*, 10/95, pp. 9-16 (14042).

9/21/95

Ukrainian Environment and Nuclear Safety Minister Yuri Kostenko and IAEA Director Hans Blix sign an agreement "on the application of Nonproliferation Treaty safeguards" during a ceremony marking the IAEA's 39th General Conference session in Vienna.

Radio Ukraine World Service (Kiev), 9/21/95; in FBIS-TAC-95-005, 9/21/95 (13609).

UKRAINE WITH:

Iran, 113

Kazakhstan, 122

UKRAINE WITH MULTI-COUNTRY GROUP

7/4/95

IAEA experts and approximately 300 scientists and nuclear experts representing 20 countries attend the sixth International Cooperation in Nuclear Development Conference, an event sponsored by the Ukrainian Nuclear Association and the Moscow-based International Nuclear Association. The experts discuss the potential for international cooperation in the fields of nuclear development, nuclear safety technologies, and waste management, and address the potential for cooperation between Asian, European, and CIS countries. Nur Nigmatullin, first deputy chairman of the Ukrainian State Nuclear Committee, underscores the importance of international cooperation as a vehicle to help Ukraine develop a domestic nuclear fuel cycle.

Volodymr Klyuyko, *Intelnews* (Kiev), 7/5/95; in FBIS-SOV-95-129, 7/5/95 (13437). *Holos Ukrayiny* (Kiev), 7/11/95, p. 1; in FBIS-SOV-95-139, 7/11/95 (13437).

UKRAINE WITH:

Romania and Russia, 145

Russia, 146

UKRAINE WITH UNITED STATES

7/8/95*

The Ukrainian Ministry of Ecology and Nuclear Safety is examining a proposal by Duke Engineering of the U.S. to construct a storage site at the Zaporozhe nuclear power plant. Construction could begin in 1995. Failure to acquire spent fuel storage space by 1996 would force the closure of "two generating sets" per year. Duke Engineering and Zaporozhe are also working together to free up storage space by re-racking on-site storage pools at the Zaporozhe plant.

Unian (Kiev), 7/8/95; in FBIS-SOV-95-131, 7/8/95 (13258). *NucNet News*, 7/17/95 (13236).

UZBEKISTAN

UZBEKISTAN WITH UNITED STATES

10/13/95

Nikolay Kuchersky of Uzbekistan and Paul Joffe, deputy assistant secretary for import administration at the U.S. Department of Commerce (DOC), sign an amendment that will extend the U.S.-Uzbekistan suspension agreement to the year 2004. The amendment authorizes deliveries for two years of up to 940,000 lbs per year of Uzbekistani natural uranium to the U.S., provided it is sold at or above the DOC reference price level. The amendment also closes the "bypass option" by specifying that uranium ore from Uzbekistan will always be regarded as being of Uzbekistani origin, regardless of where it is milled, converted, or enriched.

Uranium Institute News Briefing, 10/18/95-10/24/95 (13730).