JPRS-TND-90-005
2 MARCH 1990

JPRS Report

Nuclear Developments

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Exports of Nuclear Products Reported

HK1302094390 Beijing CEI Data Base in English 13 Feb 90

[Text] Beijing (CEI)—A mini-reactor made by China National Nuclear Industry Corporation, the first such reactor exported by China, has been put into operation in Pakistan recently. At least another China-made mini-reactor is under construction in a Third World country and a number of contracts for the purchase of nuclear products from China are under negotiation. The nuclear products exported by China are mainly uranium products for nuclear power stations. China's uranium product export has been increasing over the past few years at the rate of 10 percent per year. In 1989, China and Pakistan agreed to jointly build a 300,000 kw nuclear power station in Pakistan.

State Develops Missile Service System

HK1002063790 Hong Kong ZHONGGUO TONGXUN SHE in Chinese 1130 GMT 31 Jan 90

[Text] Beijing, 31 Jan (ZHONGGUO TONGXUN SHE)—China's strategic missile force has built up its own equipment service system and a contingent of technical service personnel to meet the needs of future nuclear counterattack operations. Late last year another batch of equipment which had undergone large- and medium-scale overhauls was shipped out of the repair and spare parts works of the strategic missile force.

Technical maintenance is of crucial importance to a strategic missile force. In the past, however, China's strategic missile force, with an unsound equipment service system, fully relied on local workshops for equipment repair and maintenance. As a result, the missile force had to spend several million yuan a year on equipment service but failed to ensure timely completion of training and launching missions. In 1980, a group of equipment repair works and electronics equipment plants were set up, with a nearly 2,000-strong staff. In the last three years alone, these repair works and plants successfully completed more than 300 major scientific and technological research projects. The special equipment management department [te zhuang guan li bu 3676 5944 4619 3810 6752] and a certain repair works subordinate to the strategic missile force have succeeded in developing a special equipment mobile repairing unit after three years of painstaking efforts and thus resolved a major problem regarding frontline repairs and quantitative testing missions. The instant intelligence power charger [zhi neng kuai su chong dian ji 2535 5174 1816 6643 0339 7193 2623], the microcomputer stoppage detector for missile-launching sighting devices [fa miao she bei gu zhang wei ji zhen duan 4099 4178 6080 0271 2399 7140 1792 2623 6085 2451], and other devices developed by these two units have now become part of the essential repair equipment of the strategic missile force.

Nuclear Power Component Installed in Qinshan

OW1202115590 Shanghai City Service in Mandarin 2300 GMT 8 Feb 90

[Report by station reporter Yuan Hui from the "Morning News" program]

[Text] This reporter learned from the Shanghai Nuclear Engineering Design Institute on 8 February that following the completion of the earthwork at the end of last year, the installation of five key equipment components—the reactor pressure shell, the steam generator, the voltage stabilizer, the main pump, and the main pipeline—and the central control room have been completed for the Qinshan Nuclear Power Station, the first nuclear power station to be designed and constructed by China. The equipment will begin operation before the end of this year.

According to the schedule, the Qinshan Nuclear Power Station will undergo equipment adjustment, simulated tests, filling of nuclear fuel, and [words indistinct] generating electricity before the end of this year. The station has a designed capacity for generating 300,000 kw electricity beginning next year.

The Qinshan Nuclear Power Station project is designed by the Shanghai Nuclear Engineering Design Institute. More than 70 percent of the project's equipment is made in China. The main components of the domestically made equipment are produced by relevant plants in Shanghai Municipality.

Phase 2 of Qinshan Nuclear Plant Project Begins

HK2302065190 Beijing ZHONGGUO XINWEN SHE in Chinese 0551 GMT 15 Feb 90

[Report: "Preliminary Design Work and Basic Construction for the Second-Phase Qinshan Nuclear Power Project Begin"—ZHONGGUO XINWEN SHE headline]

[Text] Beijing, 15 Feb (ZHONGGUO XINWEN SHE)—According to news from the China National Nuclear Industry Corporation, the preliminary design work and basic construction for the second-phase Qinshan nuclear power project, known as Qinshan's "Second Nuclear Power Plant," has started this year.

The first-phase Qinshan nuclear power project, involving the construction of a set of 300,000-kilowatt generators, will be completed and commissioned this year. In the second-phase project, a set of 300,000-kilowatt nuclear power generators and a set of 600,000-kilowatts nuclear power generators, will be built.

The construction of the Guangdong's Daya Bay Nuclear Power Plant has reached a high tide, with some equipment being installed. In terms of quality, investment, and rate of progress, all are working as scheduled.

According to its plan, the nuclear industry corporation will focus on making arrangements for nuclear power, nuclear fuel circulation, and other projects this year. The construction of some large chemical fertilizer and titanium white powder projects catering to civilian needs is also being intensified.

NORTH KOREA

Japan Anxious Over DPRK Nuclear Site Report

OW0902034490 Tokyo KYODO in English 0302 GMT 9 Feb 90

[Text] Tokyo, Feb 9 KYODO—Japan is concerned about reports of a North Korean nuclear facility that experts say may give Pyongyang nuclear-weapon capabilities, a government spokesman said Friday.

Asked whether the facility poses a threat to Japan, Deputy Chief Cabinet Secretary Nobuo Ishihara said, "We are very concerned. But at the present stage we have no confirmed information." It is impossible to determine whether the facility is for military purposes or peaceful purposes, Ishihara told a regular news conference.

Researchers at Tokai University said Thursday that satellite photographs show that the facility, located in Nyongbong some 90 kilometers north of Pyongyang, has been expanded over the past four years.

According to the British magazine JANE'S DEFENSE WEEKLY, North Korea could possess nuclear weapons within five years.

DPRK Urged To Allow Nuclear Inspections

OW1002053890 Tokyo KYODO in English 1408 GMT 9 Feb 90

[By Tim Johnson]

[Text] Tokyo, Feb. 9 KYODO—Japan on Friday, prompted by reports North Korea may be building a nuclear weapons facility, urged Pyongyang to fulfill its international treaty obligations by allowing outside inspections of its nuclear facilities.

The call by a Foreign Ministry spokesman comes in the wake of concern by government officials over recurring reports of covert North Korean nuclear facilities in the northern part of the country.

Spokesman Taizo Watanabe, in a meeting with foreign correspondents, urged Pyongyang to conclude an agreement as soon as possible with the International Atomic Energy Association (IAEA) to allow for outside inspection of the reported facilities.

Watanabe said North Korea must agree to outside inspection as specified by the Nuclear Nonproliferation Treaty. North Korea became a signatory to that treaty in 1985.

Similar sentiment was reportedly expressed by U.S. Secretary of State James Baker during recent talks with Soviet counterpart Eduard Shevardnadze in Moscow.

Watanabe's remarks came in response to French satellite photographs published by Japanese newspapers Friday that allegedly show the construction of new nuclear facilities near a city some 90 kilometers north of Pyongyang.

Deputy Chief Cabinet Secretary Nobuo Ishihara told reporters that Japan is "very concerned" about the alleged expansion, but has been unable to confirm the reports. The photographs reportedly were taken last [word indistinct].

Watanabe said Japan is trying to verify reports that the facilities have been constructed "with a view to developing a nuclear weapon."

"North Korea is one of those countries and areas about which we have [word indistinct] from a viewpoint of nonproliferation of nuclear weapons as well as facilities," Watanabe said.

Japan has traditionally considered instability on the Korean peninsula to be a security threat.

The nonproliferation treaty obliges signatories to conclude a separate safeguard agreement with the International Atomic Energy Agency within 18 months.

While North Korea acceded to the treaty, subsequent talks with them failed to produce agreement on safeguard inspections, despite pressure from its ally in Moscow and from the United States.

The Soviet Union was reported by South Korean sources last Monday to be helping North Korea build a nuclear power plant with four reactors in the northern part of the country.

North Korea acknowledges possessing only one nuclear reactor for research purposes in North Pyongan Province. It became operational in February 1987.

One government source said Friday, however, that Pyongyang's unwillingness to agree to on-the-spot inspections "has raised suspicions among many countries about the intentions of the North Korean regime."

The London-based defense magazine, JANE'S DEFENSE WEEKLY, reported last September that North Korea will likely achieve nuclear weapons capability within five years.

Washington officials have since warned that such capability would represent a serious threat in view of the country's "terrorist record."

U.S. Ambassador to Japan Michael Armacost told KYODO NEWS SERVICE last November that [words indistinct] were to make significant progress toward nuclear capability, "it is a major concern for everybody in this region."

U.S. and Japanese officials reviewed classified satellite photographs during a two-day working-level security meeting last October and agreed to carefully monitor North Korea, according to Defense Agency sources.

DPRK Conditionally Accepts Nuclear Inspection

SK1502012090 Seoul Domestic Service in Korean 2300 GMT 14 Feb 90

[Text] North Korea, which has long been known to be developing nuclear weapons, is now attracting attention by saying that it will accept the inspections of nuclear facilities by the International Atomic Energy Agency [IAEA] on condition that U.S. nuclear weapons reportedly deployed in the ROK are removed.

Correspondent Yi Chun-pal in Tokyo reports:

[Begin Yi recording] According to news reports in YOMIURI SHIMBUN today, which quoted a U.S. source, North Korea has recently demanded that U.S. nuclear weapons reportedly deployed in the ROK be removed if it is to accept the IAEA's inspections of nuclear facilities in its territory. Thus, North Korea has taken the United States to a new task.

North Korea has formally made such a request in the 11th IAEA negotiations for signing a treaty allowing inspections of nuclear facilities. To date, in its negotiation with the IAEA, North Korea has asserted that it is entitled to nuclear development for peaceful purpose and that it is a different matter from the U.S. imperialists' nuclear weapons deployed in the ROK, making the removal of U.S. nuclear weapons a condition for accepting inspections of nuclear facilities.

Concerning this, a U.S. expert on Korean peninsula affairs said that the North Korean side's assertions indicate that nuclear weapons on the Korean peninsula will become a very important issue in the future.

Although North Korea signed the international treaty on the nonproliferation of nuclear weapons in 1985, it has refused to sign the treaty allowing inspections of nuclear facilities which the signatories to the former should sign within 1 year's time. That fact has been brought to world attention through various data and the U.S.-Soviet foreign ministers' talks.

The source added that the negotiations between North Korea and the IAEA are slated for next month and that it is worth watching to see how the United States and the Soviet Union react to them.

Meanwhile, a Tokyo source well informed on North Korea said today that, based on unconfirmed intelligence, there was a demonstration in Pyongyang toward the end of last month to call for democratization, the first of its kind. SANKEI SHIMBUN quoted the source as noting the possibility that even in North Korea a movement for democratic reform can surface.

North Korea is reported to have become edgy about the democratization in the Soviet Union and East Europe and has intensified its crackdown, including an imposition of strict controls on the entries and exits of foreigners and its own citizens in and out of Pyongyang since mid-January. [end recording]

State Said To Be Expanding Nuclear Facility

OW0802163590 Tokyo KYODO in English 1503 GMT 8 Feb 90

[Text] Tokyo, Feb 8 KYODO—Satellite photo analysis shows a major expansion of what is believed to be a nuclear facility in North Korea, said researchers at Tokai University in Tokyo on Wednesday.

This was revealed in a comparative analysis of photos which a French satellite took separately in July 1986 and in September 1989, the researchers said.

The facility is located in Nyongbyong some 90 kilometers north of Pyongyang. A large structure, which was not spotted in the 1986 photo, is shown in the 1989 one, they said.

North Korea, backed by the Soviet Union, established a research reactor with an output capacity of 2,000-4,000 kilowatts around Nyongbyong in the middle of the 1970's, according to Western nuclear experts.

The experts say that North Korea began to build a larger reactor with an output of 300,000 kilowatts in 1980.

Britain's specialized defense magazine, JANE'S DEFENSE WEEKLY, published last September, said that North Korea will possess a nuclear weapon capability within five years.

Reports of Nuclear Ability Called 'Sheer Lie'

SK2602042690 Pyongyang KCNA in English 0403 GMT 26 Feb 90

["Act Inconsistent With Mission of Press"—KCNA headline]

[Text] Pyongyang February 26 (KCNA)—Publications of Japan and some Western countries are setting afloat the rumour that the Democratic People's Republic of Korea is pursuing the development of nuclear weapons, alleging that it "is expanding nuclear setups capable of producing nuclear weapons."

Bringing this rumour into bolder relief, the Japanese authorities are trying to render credibility to it.

The gossip spread by the press of Japan and some Western countries is a sheer lie and fabrication.

This rumour may be beneficial to those who seek to decry the non-nuclear peace policy of the Workers' Party of Korea and the DPRK Government, find a pretext to refuse the withdrawal of the U.S. troops and nuclear weapons from south Korea, and justify such nuclear attack exercises as the "Team Spirit."

The circulation of such rumour is inconsistent with the mission of the press which should be fair and just.

We put forward a proposal for the conversion of the Korean peninsula into a nuclear-free, peace zone and are making patient and sincere efforts for its realisation.

We are conducting researches into the utilisation of atomic energies for peaceful purposes under the safeguard system of the International Atomic Energy Agency and promoting the construction of a nuclear power station to fully meet the growing demand for electric power.

Anyone who does not have another axe to grind would not need to be "suspicious" of these efforts of ours or "worried" over them.

The Japanese authorities and pressmen should not engage themselves in distorting our researches into the peaceful use of atomic energies, but should take an affirmative attitude to our non-nuclear, peace policy in keeping with the trend of the times towards detente and confidence building.

At this most sensitive and crucial moment when more than 1,000 pieces of U.S. nuclear weapons are deployed in South Korea and an extremely dangerous situation has been created in which they might be used in a nuclear war, they are turning a blind eye to this and trying to divert the attention elsewhere. This is an act rejecting virtues and helping evils.

Fair world public, true to its mission, should pay due attention to the removal of the nuclear threat of the United States to our country and withdrawal of the U.S. nuclear weapons from South Korea, Japan and other parts of the Asian region.

SOUTH KOREA

Uranium Sources Should Be Diversified for Stability

SK0702091690 Seoul YONHAP in English
0839 GMT 7 Feb 90

[Text] Seoul, Feb. 7 (OANA-YONHAP)—South Korea ought to diversify its sources of uranium to China, the Soviet Union and other regions instead of relying solely on France and the United States to secure a stable supply of cheap fuel for its reactors, the Korea Economics Institute [KEI] said in a report Wednesday [7 February].

"It is a matter of some urgency for the nation to secure dependable supplies of uranium at lower prices by taking advantage of the newly created buyer-oriented market, where spot prices are recently falling," said the report, titled "Research on Stable and Economic Fuel Supply of Nuclear Power Plants."

Nuclear power stations supplied 50.1 percent of Korea's electricity last year and the share is likely to go up, but sourcing nuclear fuel at better conditions has long been neglected, said the report, commissioned by the Korea Electric Power Corp.

For strategic short-term needs, about 60 tons of enriched uranium, enough for a one-time refill of three atomic power stations, should be stockpiled and sources should be diversified for mid-term needs, it said. Enriched uranium is used by 10 of Korea's 11 reactors.

Cogema [General Company of Nuclear Materials] of France supplies 100 percent of the fuel needed for the two Ulchin reactors and 30 percent for the four Kori and the four Yongkwang nuclear power stations (two of which are under construction). The U.S. Department of Energy supplies the remainder. The final reactor is in Wolsong but uses normal uranium. The United States and France provide 55 percent and 45 percent, respectively, of Korea's uranium.

Current fuel supply contracts leave much room for improvement because they are disadvantageous to the buyer and protective of the seller. "For example, the price is fixed at the minimum price in the contract, and is about three times higher than the spot price," Sin Chong-sik, director of KEI's electricity policy research division, said.

As the contract with Cogema for the two Ulchin reactors expires in 1995 and that for the reactors in Kori and Yongkwang in 1996, Korea should turn to the Soviet Union and China to lower its dependence on the two big suppliers, the report recommended. The government must find a way to improve the present unequal seller-oriented contracts with the two giants, and should set up a specialized body to oversee purchasing, it said.

By the end of the decade, five more nuclear power plants, four of them using enriched uranium instead of natural uranium, will have gone into operation despite growing opposition from the nation's students, environmentalists and dissidents.

South To Use Locally Produced Fuel in Reactor

SK1502064090 Seoul YONHAP in English
0535 GMT 15 Feb 90

[Text] Seoul, Feb. 15 (YONHAP)—The first nuclear fuel for use in pressurized water reactors to be produced in South Korea is to be loaded into an atomic power plant on Saturday, ushering in an era of self-reliance on the fuel in the country.

The 52 fuel rod assemblies to be fed into the Kori Power Plant's second reactor on the southeast coast were made by the state-run Korea Nuclear Fuel Co. (KNFC) last July and delivered to Korea Electric Power Corp. for quality and suitability tests, KNFC officials said Thursday.

One fuel rod assembly consists of some 3,700 parts and burns in the reactor for three or four years at a temperature of 320 degrees celsius under atmospheric pressure.

The technology is regarded as the key for safe operation of reactors and has a far-reaching influence on other atomic energy technologies.

Only 10 countries besides Korea out of the 26 nations that operate nuclear power plants have the technology to produce fuel rods, the officials said.

KNFC will produce some 140 tons of nuclear fuel for use in pressurized water reactors at its fabrication plant, which has an annual production capacity of 200 tons, or enough to supply all of Korea's nuclear plants, they said.

BULGARIA

Safety Omissions at Nuclear Plant Noted

AU1502131090 Sofia RABOTNICHESKO DELO in Bulgarian 10 Feb 90 p 1

[Polikseniya Sarkisyan article: "Is Everything Well at the First Nuclear Power Plant?"]

[Text] The problem of the safe operation of nuclear reactors is now crucial for the development of the nuclear energy industry. Are our specialists ready to operate the existing and planned generating capacities of the nuclear plants with the necessary reliability?

The No. 5 generating unit, equipped with a type VVER-1000 reactor, has been in operation now for almost one and a half years. The same type of reactors are specified for the No. 6 generating unit at the Kozloduy Nuclear Power Plant and the second nuclear power plant at Belene. By Order RD 23-220 of the chairman of the Committee for Peaceful Uses of Atomic Energy, dated 14 November 1989, a commission was appointed to carry out a comprehensive inspection of the operational safety of the No. 5 generating unit at Kozloduy. Here are a few extracts from the commission's conclusions concerning omissions in the operation of the No. 5 generating unit:

—Not all measures have been finally completed to ensure the safety of the installation and to increase the reliability of the equipment being monitored.

—In the logbook of defects and failures in the safety systems, the proper comments have not been entered in the column headed "Reasons for Failure," but merely the note "defect eliminated" is entered. Because of this, it is impossible to make an analysis, on the basis of which measures may be taken to increase the reliability of these systems.

—Of the 163 containers loaded with nuclear fuel and operating in the active zone of the reactor at the time of the inspection, 42 had exceeded their "use-by" date, while the service lives of a further 42 containers, according to the manufacturer's guarantees, are due to expire in October 1990.

—In the No. 5 generating unit, there is no documentation available for defining the procedure for switching off and on the interlocks and protection devices, with a clear instruction specifying who may authorize this, the persons who are entitled to carry out this work, and which interlocks and protective devices should be switched off and for how long.

—During the first nine months of 1989, 30 operational incidents took place. Of these, 16 (over 50 percent!) occurred because of mistakes by personnel, and 5 for reasons not established.

—Up to the time of the inspection, no system exists that covers all the aspects of training the cadres—from their recruitment to a report on the conduct of personnel at their workplaces. In addition, no appropriate document exists that provides regulations for this activity. The construction of the technical training center (training block) began 10 years ago and is still not complete. No modern teaching aids are available.

—The available specialists are fewer than the number required. From the start of 1989 to the time of the inspection, in certain sections of the plant up to 22 percent of the specialists left their jobs, while only three properly qualified inspector physicists are employed on the No. 5 generating unit; breaches are permitted in the technical conditions for storage of fresh fuel.

—Problems exist with organizing the group for controlling and accounting for nuclear materials. The computer system for keeping track of these materials has no system for protecting the data on which it works.

—The penalties and bonuses in relation to the indicator "insufficient production of electric energy" exert a strong influence upon the staff's real income from their labor, therefore their efforts are mainly directed toward ensuring electric power production, while questions of safety remain secondary considerations.

Apart from the problems with the 1,000-megawatt unit already commissioned, one should also draw attention to certain economic parameters of the nuclear power plants. According to information from the Economics Institute of the Bulgarian Academy of Sciences, the export of spent fuel to the USSR is paid for in dollars. According to International Atomic Energy Agency estimates, the measures for preserving the reactors take 15-17 years, while the complete dismantling of the installations can take up to 50 years under extremely noxious conditions. The cost of shutting down and conserving one reactor (depending on its size) ranges from $400 million to $800 million. We lack any places for storing even slightly radioactive waste, and so far no one has thought about regulations and norms for storing spent fuel.

Strike in Svishtov Against Nuclear Plant

Halt to Construction Requested

AU1502110490 Sofia Domestic Service in Bulgarian 1000 GMT 15 Feb 90

[Text] Our correspondent Katya Chorova reports:

This morning working people from all spheres in Svishtov municipality started a real strike of indefinite duration. A human chain prevented the departure of trains and buses for the nuclear plant. Enterprises with uninterrupted production, kindergartens, health-protection enterprises, food industry plants, and the city transportation and trade systems are also symbolically participating in the strike.

The strike was announced in protest against the construction of the Belene Nuclear Power Plant. It was prompted by the decision of the National Assembly that the financing and constructing of the plant will continue during the period in which the issue is undergoing study on the part of the commission appointed by the National Assembly.

The strike will end only if the government adopts a decision, which must be published in the media, to halt the financing and construction of the industrial section of the nuclear plant. This does not apply to the construction of the social services buildings.

At 1030 [0830 GMT] a meeting began between representatives of all political and social organizations and movements in Svishtov with Professor Ivan Popov, leader of the parliamentary commission on clarifying the construction of the Belene Nuclear Power Plant. The commission begins its work on 16 February.

At the meeting, it was announced that in the afternoon the Council of Ministers will review the demands of the Svishtov public. It was announced that Andrey Lukanov, chairman of the Council of Ministers, has telephoned and assumed responsibility for halting the construction of the industrial section for as long as the parliamentary commission is working. The construction workers will be transferred to the social services building construction sites.

Representatives of the public demanded to receive this statement in writing, so that it could be read at the public meeting in Svishtov that will begin at 1300 [1100 GMT].

The population of Svishtov is prepared to work to make up the time lost by the strike, but at the same time demands that a comprehensive and independent commission of experts, with international participation, be set up to review all aspects of the construction of the nuclear plant. This includes the economic, electric power, technological, radiation, ecological, medical, and seismographic aspects, as well as subjective factors, and their influence over the construction and utilization of the nuclear reactors.

Ecoglasnost Member Comments

AU0802141590 Sofia BTA in English
1312 GMT 8 Feb 90

['Objections to Belene N-Plant Project'—BTA headline]

[Text] Sofia, February 8 (BTA)—"The financing and the construction of the Belene Nuclear Power Plant is immoral," says Mr. Ivan Kharalambiev, M.P., member of Ecoglasnost, in an interview for TRUD.

He recalls that no one has so far refuted the findings of Bulgarian Academy of Sciences experts that Belene is the least suitable site for the construction of a nuclear power plant. In addition, the construction blueprint is not up to nuclear and radiological safety standards and cannot secure the required performance specifications.

Mr. Kharalambiev blames the National Assembly and the government for the waste of the 9,000 million leva invested in the project. He quotes the opinions of prominent scientists who say that there is no safe nuclear power generation at this stage.

"And yet, Japan is building nuclear power plants," his interviewer challenges him. "Belene, however, is not a Japanese project and is not being built by Japanese experts. The foreign workers there come from Vietnam and Cuba," Mr. Kharalambiev says. In his view seismicity is only one side of the problem. The other is radioactive waste. Ecoglasnost has a tape recording in which one of the construction site managers asserts that the waste will be stored near Velingrad, a town in southern Bulgaria.

Some experts claim that there is no alternative to nuclear power plants in Bulgaria's economy. Mr. Kharalambiev, for his part, says that "as long as the economy is not placed in conditions to fit into the existing electricity generating capacities, no one will ever try seriously to develop energy-saving technologies and no one will ever seriously think about energy efficiency." He suggests as a way out that Bulgaria convert its power generation to natural gas, the ecologically safest energy source.

Antinuclear Plant Rally Held in Pleven

Belene Plant Contested

AU1502144790 Sofia Domestic Service in Bulgarian
1400 GMT 15 Feb 90

[Text] Today about 100 representatives of the Union of Democratic Forces [UDF] marched through the central streets of Pleven. The march was in protest against the continuing construction of the Belene Nuclear Electric Plant. Some of the participants carried placards expressing their disagreement with the construction of this national project.

The UDF appeal states as follows: If we all wish to live under a clear sky, breath unpolluted air, drink clear, pure water, and eat fruit and vegetables that have not been irradiated by isotopes, if we wish to enjoy the sun and life, we must all express our protest against the nuclear electric plant at Belene.

Lukanov Suspends Construction

AU1502201790 Sofia BTA in English
1908 GMT 15 Feb 90

[Text] Sofia, February 15 (BTA)—The head of the Bulgarian Government Mr. Andrey Lukanov has ordered the construction of Bulgaria's second nuclear power plant at Belene on the River Danube to be stopped.

The prime minister's decision came in the wake of a general strike today in the town of Svishtov near Belene over last week's National Assembly resolution to go ahead with the construction of the facility.

Protests against the project have been going on for several months now. The plant is being built in an earthquake-prone area under a decision taken by the Todor Zhivkov regime several years ago.

Mr. Lukanov ordered a suspension of construction work until a special government commission reports its findings back to the National Assembly.

CZECHOSLOVAKIA

Unpublished Nuclear Accident Investigated

90WP0038A Frankfurt/Main FRANKFURTER ALLGEMEINE in German 27 Jan 90 p 7

[Article by Jacqueline Henard: "Nuclear Accident at Ceske Budejovice Disclosed After 28 Years"]

[Text] Vienna, 26 Jan—After 28 years of systematic suppression of news, more and more details have been surfacing in the last few days in Czechoslovakia about radioactive contamination which has been damaging the health of humans, animals, and plants in southern Bohemia. This reveals the cynicism of the communist regime, which in the past did not inform the population of any danger. The circumstances under which the accident became known also throw an unfavorable light on various Austrian authorities, who were the first to find out about it and did not do anything.

First, the history. At the end of 1962 there was an incident at the southern Bohemian uranium ore processing facility of Mape near Ceske Budejovice in Bohemia. As early as 1963 veterinarians in the region began to notice strange illnesses. When up to 80 percent of the cows suffered from leukemia, the local slaughterhouse commissioned a study by the Ceske Budejovice health authorities. Scarcely had the true problem became known when the Czechoslovak Ministry of the Interior intervened and confiscated the documents. From that moment on, only police doctors were involved in the study. Neither the population nor the health authorities were informed.

Subsequently, an additional 47 "medium-sized and minor" abnormalities occurred at the facility. This has meanwhile been determined by an investigating commission of the Czechoslovak Environmental Ministry. During an incident in 1964, as confirmed by engineer Jaroslav Ruzicka of Czechoslovak television, radioactive water and contaminated sludge sloshed over a dam into the Vltava. Normally, water was "only" allowed to flow into ponds next to the processing facility, from where it seeped into the groundwater. Between 1965 and 1985 the waste water flowed directly into the Vltava, as reported by the factory workers. Since then, the waste has been distributed between abandoned coal mines in the surrounding region. The facility is located in the vicinity of the world-famous Budweiser brewery.

It is still being debated whether Mape releases excessive amounts of radioactive materials even during normal operation. The health damage which has occurred over time can be measured, at least. In the vicinity of the uranium processing plant the number of cancer cases are three times higher than in the rest of Czechoslovakia, which has Europe's highest cancer rate anyway. In 1987, 156 new cases of cancer were recorded per 100,000 inhabitants. In 1983 and 1984 the numbers were still 106 and 111. In Slovakia the national average is below 50. According to Greenpeace, this unusually high cancer rate is also confirmed by the doctors and inhabitants of the region.

The Greenpeace environmental organization has been active in Czechoslovakia since late 1989. Previously, it had already publicized through its Vienna office studies by Czechoslovak researchers concerning the dubious safety of existing nuclear power plants and of those under construction. The Temelin power plant (with four Soviet reactor blocks of type WWER, 1,000 MW each) at Ceske Budejovice, only 50 km from the Austrian border, was most severely criticized. After negotiations by Austrian Environmental Minister Marilies Flemming in Prague, the construction of blocks three and four was suspended a few days ago; the safety measures at blocks one and two must first be discussed once more with the Soviet development engineers, reported the official news agency, CTK. The reactor technology for all nuclear power plants in Eastern Europe (with the exception of Romania's) comes from the Soviet Union.

Czechoslovak scientists undertook a critical study of Temelin as early as in December 1983. A copy, together with a letter, came into the hands of the Austrian embassy in Prague in May 1989. The letter expressly described the radioactive contamination around the Mape processing facility. The Divicice Agricultural Association reported an increased rate of leukemia and mutations for their livestock breeding, the letter says. The documents are secret and can be found in the possession of a Mr. Jachym of the Ceske Budejovice local government, according to the letter. No action was taken in Austria based on this concrete information, which also reached the Federal Chancellor's Office via the Ministry for Foreign Affairs.

The defective Mape processing plant continues to operate. Of the 650 employees, 55 are in production and 200 are occupied with current repairs. The others work in administration, reports the Austrian news magazine PROFIL. Besides domestic uranium, according to information from Czechoslovakia, not long ago uranium from the FRG also began to be processed at Mape; it comes from the uranium mines at Menzenschwanz which until the summer of 1989 was being processed by the now closed Ellweiler processing facility.

The discussions about Temelin and Mape mark the first time that there has been open debate in Czechoslovakia on the pros and cons of nuclear energy. Critical voices can now be heard from the Energy Ministry as well,

which until now did not allow a single critical word about the risks of nuclear reactors in its own country. In view of the catastrophic environmental pollution of thermal power plants, the longing for "clean energy" in the Czechoslovak population is particularly strong. However, it has already become clear during the debate that nuclear energy also produces waste which does not simply disappear.

At the existing nuclear power plants of Dukovany and Jaslovske Bohunice a few fuel rods have already been replaced which are being kept in interim storage there. As provided by an agreement between the Soviet Union and Czechoslovakia, they should actually have been shipped to the Soviet Union for permanent storage. But this is not technically feasible, as is confirmed by the state energy authority Energoprojekt: The rods are too long to ship abroad in the standard containers on railroad cars. A search for a place that is suitable as permanent storage for radioactive waste is now under way all over Czechoslovakia.

Oil Leak Causes Fire at Nuclear Power Station

Consequences Said Minimal

LD1002235390 Prague Domestic Service in Slovak 2100 GMT 10 Feb 90

[Text] A breakdown in turbo-generator number 12 took place this morning at the Jaslovske Bohunice nuclear power station, at the V1 plant. The resulting fire was put out by the plant's fire fighting unit. Investigations have so far shown that, during operation, as a result of increased vibration, the oil distribution pipe system was damaged, causing an oil leak that led to the fire. No one was injured, there were no other consequences affecting lives or health, and there was no ecological damage to the environment. The breakdown had no effect on nuclear and radiation safety.

The initial damage estimates has been set at 70,000 korunas, and output will be reduced to 50 percent at the breakdown sector until the general repairs scheduled for 25 February take place.

Official Describes Fire

LD1202163990 Prague Domestic Service in Slovak 1600 GMT 12 Feb 90

[Text] (Vaclav Urbanek), chief of the Administration for Nuclear Power Station Operation of the Federal Ministry of Fuel and Power, spoke today about details of Saturday's accident at the Jaslovske Bohunice nuclear power station. The oil from a cracked pipeline splashed over neighboring equipment in the engine room and smoke appeared due to the temperature. The engine room operator switched off the turbogenerator. The plant's firefighting unit took preventive action and nobody was injured. There was no oil spillage into the adjacent environment. The accident had nothing in common with a radioactive leak because similar accidents occur on this generator even in conventional power stations.

GERMAN DEMOCRATIC REPUBLIC

Agreement With FRG Company on Nuclear Plants

LD0802161790 East Berlin ADN International Service in German 1957 GMT 7 Feb 90

[Text] Berlin (ADN)—The GDR's Nuclear Power Station Construction Combine and the FRG's Lentjes/Lurgi group, which is part of the Metallgesellschaft concern, today signed a cooperation agreement. One of the aims is the joint introduction of the circulating fluid column, an environmentally friendly, high-tech product, to the GDR'S energy sector.

The partners agreed to coordinate their scientific and technical capacities and intensify cooperation between their manufacturing locations as a prerequisite for capital participation by the FRG group in nuclear power station construction in the GDR. Apart from this, their joint position in the remarks of the EEC and beyond is to be strengthened by the agreement.

Nuclear Safety Office on Alleged Leaks

Radiation Leaks Denied

AU0102124990 East Berlin NEUES DEUTSCHLAND in German 29 Jan 90 p 3

[ADN report: "Reactor of Greifswald Nuclear Power Plant Still Out of Operation"]

[Text] East Berlin (ADN)—The reactor of block five of the Greifswald nuclear power plant is still out of operation. This was stated by the State Office for Nuclear Safety and Radiation Protection (SAAS) in Berlin on 26 January upon inquiry.

In this connection, it was explained that during the planned test of the regulation installations to limit the reactor's output on 24 November 1989, three main circulating pumps were taken out of operation at 55 percent nominal output. As a result of an error in the display of the water level in one steam generator, another main circulating pump was automatically switched off via the lock at 2143. As a result, an emergency shutdown of the reactor should have been carried out automatically. However, as a result of defects in the release contacts of the relays of the emergency shutdown system, this did not happen. Subsequently, the emergency shutdown was released manually by the operator after 40 seconds.

The limit of the cassette outlet temperature was not reached. Even though brief local boiling had to be expected, the heating current density did not become critical.

After repairing the defects, the reactor was restarted on the evening of 26 November 1989 in order to continue test operations.

An investigation commission was established by the constructor of the plant, with the participation of the future operator and representatives of the Soviet expert group. Independently, the assessment of the event by the SAAS lead to the decision to have the reactor taken out of operation until the matter has been cleared up completely. This was done on 29 November 1989. The reactor will remain out of operation to revise and repair further defects of the project.

The SAAS stated that there was no impermissible radiation and no release of radioactive substances into the environment during the "extraordinary events and accidents" that have so far occurred in the GDR nuclear power plants. In each case, measures to prevent a recurrence were set down. The events were defects or malfunctions of operations, which were discovered by monitoring such operational parameters as pressure, temperature, radioactivity, and other things, as well as by the regularly recurring checks of the facilities and materials or by checks in evaluating malfunctions in other countries' nuclear power plants.

As part of the cooperation in safety checks of the blocks in use at the Greifswald nuclear power plant agreed upon during the visit by FRG Environment Minister Toepfer, which have already been introduced, all past events are being reinvestigated. The competent authorities of the GDR are in the process of preparing for the publication a scientific-technological compilation of the safety aspects of relevant events.

Explosion Ruled Out

AU0102130690 East Berlin NEUES DEUTSCHLAND in German 30 Jan 90 p 1

[Interview with Dr. Brune, director of Griefswald Nuclear Power Plant, by Joerg Staude: "Nuclear Explosion Is Impossible...."; date and place not given]

[Text] Staude: In its latest edition, the FRG magazine DER SPIEGEL writes that in Greifswald there is a nuclear facility with an explosive charge in operation that might blow up at any moment. What do you say about this accusation?

Brune: Since 1973 we operated the nuclear power plant in such a way that the environment has not been polluted—beyond natural radioactivity—and our own staff has not been exposed to impermissible amounts of radiation. The projects for the first four blocks, which date back to the 1960's, have been continually checked for their safety and have been reequipped correspondingly. This has facilitated safe work up to now. On the other hand, new analyses are necessary for future safe operations. Therefore, during the visit of the FRG environment minister we agreed on joint safety maintenance of the blocks.

In addition, it must be clearly said that our blocks are basically different from the type in Chernobyl. We have pressure water reactors, in which a nuclear explosion—and thus any related radioactive contamination of the environment, too—is impossible for reasons of physics.

Staude: The Hamburg magazine claims to know about the strangely frequent standstills of the blocks.

Brune: We also have safety mechanisms to prevent a meltdown of the core, but they are not as comprehensive and do not have as many reserves as today's projects. As a result, we switch the blocks off earlier in order to ensure the necessary safety in case of any irregularities. Therefore, our blocks are out of operation more frequently than those in other power plants. It is, however, completely wrong and also completely incomprehensible for our workers that the report claims that we are constantly on the brink of a disaster. Over the past years the facilities were available for energy production for 71-75 percent of the time. This would have been impossible if there had been constant malfunctions.

On the same topic, Reiner Lehmann, director general of the Nuclear Power Plant Combine told ND: "The management of the combine will work out a standpoint on the safety of the blocks and on the accusations by DER SPIEGEL and will present it to the roundtable on 5 February. The Greifswald blocks have permits for permanent operation by the State Office for Nuclear Safety and Radiation Protection."

Continued Operation Supported

LD0502184190 East Berlin ADN International Service in German 1802 GMT 5 Feb 90

[Excerpt] Berlin (ADN)—The management of the nuclear power station combine takes the view that blocks one to four of the Greifswald nuclear power station can remain in operation. Speaking to the roundtable in Berlin on 5 February, its representative, Dr. Lehmann, suggested at the same time that the situation should be reviewed after completion of the present safety study, on which experts from both German states are working.

Thus Dr. Lehmann met the demand of the roundtable for an experts' report on the nuclear safety of the plant. The assessment to be undertaken will determine whether and if so under what conditions and for what period the further operation of the blocks can be secured. The management of the plant bases its views on reports from experts from the GDR and the USSR. [passage omitted]

Dresden-Area Nuclear Reactor Begins Trials

LD0802145190 East Berlin ADN International Service in German 1950 GMT 7 Feb 90

[Excerpt] Dresden (ADN)—After several years of being reequipped, the research reactor of the Rossendorf Central Institute for Nuclear Research (Dresden Area) started a trial run today. The reactor guarantees maximum safety internally and for the surrounding area, Dr.

Werner Rossbander, the chief radiation protection representative at Rossendorf, said today. He said the level of radiation is far below that of legally prescribed rulings. [passage omitted]

Lubmin Nuclear Reactor Block Closed Down

LD1502160790 Hamburg DPA in German 1529 GMT 15 Feb 90

[Excerpt] Bonn (DPA)—GDR authorities have closed down reactor block two in the controversial Lubmin nuclear power station, near Greifswald. The responsible authority announced this to the Federal Environment Ministry, a ministry spokesman confirmed today. The GDR side had earlier referred to a temporary closure. [passage omitted]

YUGOSLAVIA

Slovenia Nuclear Power Plant Not To Be Closed

AU2501163090 Vienna ORF Teletext in German 1550 GMT 25 Jan 90

[Text] Ljubljana—At present, the Slovene government is not considering closing down the Krsko nuclear power plant near the Austrian border.

Minister Selsek, who is responsible for foreign affairs, said after a meeting of the Carinthian-Slovenian contact committee in Eisenkappel today that its closure would only be considered if a possible catastrophe were foreseeable.

When questioned about the frequent earthquakes in this region, the minister said that minor earthquakes cannot damage the plant. Only with an earthquake with an intensity of at least 9 [on the Richter scale], would its closure be considered, Selsek said.

INTER-AMERICAN AFFAIRS

First Radioisotopes To Be Sent in Next Few Days

PY1302204590 Buenos Aires DYN in Spanish 1708 GMT 10 Feb 90

[Text] Lima, 10 Feb (AFP)—Official sources in Lima today confirmed that Peru will send the first lot of radioisotopes to Argentina for medical use in the next few days in compliance with the agreement signed with Argentina, which gave Peru financial support to build the Peruvian National Nuclear Center.

Frigate Captain Jose Pereyra Lopez, director of the Huarangal Nuclear Center, also called "Oscar Miro Quesada de la Guerra," reported that the radioisotopes, which are destined for the Argentine Atomic Energy Commission, consist of 200 millicuries of Iodine-131. The agreement established that Peru will supply Iodine-131 to Argentina.

He said that the radioisotopes produced at the Peruvian nuclear center can only be compared to those produced in Canada, which is one of the world's main producers of this substance.

He added that, after the quality of the first lot is checked, a second lot will be sent to Argentina on 1 March. Because this substance has a limited life span outside the reactor, other shipments will be sent regularly in accordance with Argentine needs. The Peruvian nuclear center, which is built on a 125-hectare area in the Lima Caravayllo District, 42 km northeast of this capital, is composed of 100 laboratories and highly specialized facilities.

Pereyra Lopez noted that the center's nuclear reactor has a 10,000-kw capacity and produces several types of radioisotopes, such as Mercury-197, Potassium-42, Sodium-24, Rubidium-87, and Zinc-65, among many others that do not require complex chemical processes.

The radioisotopes, which are chemical elements that throw out radiation once they are introduced into a nuclear reactor, have several uses. Among many other uses, the radioisotopes are used in medicine in the production of radio medicines. They are also used in agriculture to control plagues, sterilize insects, improve the quality of seeds, and control the ripening of fruits, Pereyra Lopez said.

ARGENTINA

FRG Grants Loan for Nuclear Plant Construction

PY1302160690 Buenos Aires TELAM in Spanish 1002 GMT 13 Feb 90

[Text] Buenos Aires, 13 Feb (TELAM)—President Carlos Menem has signed a decree approving a loan for the continued financing of the construction of the Atucha-2 nuclear plant being built by the National Atomic Energy Commission (CNEA) in Zarate County, Buenos Aires Province.

This was reported by the CNEA press office, which also indicated that "these 200 million Deutsche marks will allow us to continue the construction of the nuclear plant and will contribute toward the hiring of more local labor." The CNEA also indicated that "the decree establishes that our country will contribute matching funds equivalent to the amount of the loan."

The CNEA finally highlights "the confidence that has been shown by the German credit institutions, which will thus support the productive revolution that has been announced by the president."

Menem Interviewed on Nuclear Policy, Other Issues

51002001A Buenos Aires ARGENTINA NUCLEAR in Spanish/English No 19-20 1989 pp 6-8

[Interview with President Carlos Menem; date and place not given]

[Text] [ARGENTINA NUCLEAR] Which is the policy to be followed by your administration concerning nuclear exports?

[Menem] Within the context of our government decision to support as a whole all kinds of exports and, especially, nonconventional ones, an aggressive policy of nuclear exports will be promoted, under the financial modalities defined on the basis of the country's situation. Special attention must be paid to the role played by nuclear technology in the countries' development, as well as its multiplying effect upon economy and the fact that industrialized countries' new trends view nuclear technology as the alternative source of energy that brings along lesser contaminating effects upon the environment. Additionally, its transcendental place in the field of international politics cannot be denied.

Within such framework, we will go out to the world with an open-minded attitude concerning technology transfer to other southern nations, without discriminations and with the responsibility of guaranteeing the peaceful use of what is supplied.

[ARGENTINA NUCLEAR] Which are the prospects concerning nuclear cooperation between our country and Brazil?

[Menem] I think they are excellent, in spite of the present economical difficulties affecting both countries. We have undersigned an Annex to Protocol 17 on Nuclear Cooperation allowing for the reciprocal exchange of components for the nuclear power plants in both countries, with taxing benefits and under symmetrical and balanced conditions. It is assumed that the overall amount of the first exchange, with participation of public and private enterprises, will be worth about $30 million. Technicians

from both countries, under the priorities and development programmes in each country, will continue to work together in areas of common interest. Also, both chancellorships will go ahead with the consultation process already started, as well as with the coordination of positions before the international fora that take care of this important issue.

[ARGENTINA NUCLEAR] How will cooperation in the nuclear field be promoted and continued?

[Menem] Presently, Argentina has an important number of bilateral treaties in force related to cooperation in the peaceful uses of nuclear energy. Those treaties constitute the bridge through which cooperation in this area is performed. It is the National Government's intention to continue and progress in the cooperation process already started through projects that, in a realistic form, take into account the needs an priorities of our peoples.

Simultaneously, support will be given to other agreements with countries sharing the same peaceful vocation in this field. Within this framework, priority will be given to the relations with other Latin American countries and with other developing countries. Finally, we will try to take the necessary measures for the definite enforcement of those agreements that have already been undersigned but whose legislative approval is still pending.

[ARGENTINA NUCLEAR] Within this context, which is the Government's position concerning the implications of the Non-Proliferation Treaty on Nuclear Weapons and the Tlatelolco Treaty on the national nuclear development?

[Menem] Although we are conscious of the differences between the NPT and the Tlatelolco Treaty, we understand that both—each one its way—introduce elements that are harmful toward our own nuclear development, which we have attained after years of efforts. I think those elements are sufficiently well known and need no repetition in this occasion. Consequently, while emphasizing the political vocation that has featured in nuclear activities in Argentina from the very beginning, when it was supported by Gral. Peron, the national government will sustain, in accordance with the party's platform, the traditional position held by Argentina regarding the nonvinculation of the country to any of those international instruments until the circumstances that led to adopting such position are not changed.

[ARGENTINA NUCLEAR] What are the actions foreseen for the promotion of our nuclear development image abroad?

[Menem] A country's image is the logical consequence of the actions performed within such country. As from such viewpoint, the peaceful orientation of our nuclear activities should be enough. However, we have felt that it is necessary to emphasize this attitude before the world by carrying out two types of actions: some involving thorough policies and other involving diffusion. This is where we must note that worries about nonproliferation are not the exclusive patrimony of a group of countries. Attempting to prevent the increase in nuclear weapons exclusively by means of restrictions, which critically affect peaceful nuclear development, is just remaining in the symptoms of the disease and not attacking the key question. We are convinced that the best way to avoid mistrust and suspicion, which may lead to any type of arms race, is applying a cooperative and open policy. This is definitely what we are doing with Brazil.

At the same time, we are working toward diffusing our position and the transparent and responsible policy in nuclear cooperation that we are applying with several countries. These actions are performed by means of bilateral consultation processes and by a transparent and constructive attitude among our delegations in every fora where the nuclear issue is discussed.

[ARGENTINA NUCLEAR] What are the concrete actions to be taken abroad in order to finish the Industrial Heavy-Water Plant and Atucha II?

[Menem] It is too soon to speak about concrete actions. We are conscious of the importance of these works with regard to the energetic capabilities of a country willing to wake its productive structure up. We also know of the economical limitations imposed by the present situation. Within this context, we are maintaining fluent relations with enterprises in Switzerland and Germany connected with these works, aimed at using imagination in leading these undertakings to a happy ending. Results will soon be viewed as concrete undertakings.

[ARGENTINA NUCLEAR] Are there any prospects for the participation of the private sector in nuclear exports?

[Menem] The CNEA [National Commission for Atomic Energy] has involved the private sector in nuclear activities and, as it is publicly known, we have summoned this sector to play a leading role in the process we started on July 8th. Exports in the nuclear field are not an exception.

The National Government has decided to promote and support the presence of our private sector in the international market in the field so important as nuclear technology.

In this approach and taking into account the special features of this technology, the CNEA, in connection with the chancellorship, elaborates guidelines and criteria for promoting our export possibilities and supporting actions by Argentine enterprises abroad.

Now, then, the State cannot and must not play the role of the private sector. Of course, business must be made by enterprises. They will do with the adequate support of the State. If we are willing to guarantee efficiency in our efforts, the coordination of tasks performed by each one of his own sphere is a must. The decision to go ahead has

been made and the doors of the CNEA and the chancellorship are open to listen to opinions and proposals from the private sector.

CNEA Chairman Mondino on Role, Goals

51002001B Buenos Aires ARGENTINA NUCLEAR in Spanish/English No 19-20 1989 pp 13-15

[Interview with Manuel Mondino, chairman of the National Commission for Atomic Energy (CNEA); date and place not given]

[Text] [ARGENTINA NUCLEAR] Which will be the prioritary lines in your management?

[Mondino] Considering the present situation, we feel that our primary objective is the termination of Atucha II. it is a primary need for the CNEA and also for the country.

On the other hand, it is important to continue with the Heavy Water Project, in which we have had many barriers, especially due to the economical situation. Meanwhile, we shall go ahead with research and development in the various centers. We shall reactivate uranium exploration; something that was discontinued a long time ago and that has to do with our facilities that are presently out of operation. However, I insist: our priority is Atucha II.

[ARGENTINA NUCLEAR] Will there be any through changes in the internal structure of the CNEA?

[Mondino] We have respected everybody; there have been only a few punctual changes related to people who had already accomplished a cycle or who has been transferred to a more important role than the previous one. None of these modifications has created any reaction among the personnel composing the great family of the CNEA.

[ARGENTINA NUCLEAR] Which will be the steps taken toward solving the economical problems affecting the CNEA as a whole and the Atucha II Project in particular?

[Mondino] Our idea is attaining that, after some time, each task in the cycle be self-financed. We have a great responsibility with society. In the past, we have been large tax consumers without reverting such consumption back to society. I am willing to open the CNEA and to profit from technology by performing exports in the nuclear field trying to find the least possible number of obstacles in their ways to other countries.

Concerning Atucha II, we have started conversation with Argentine entrepreneurs in this sector. Our idea is starting a consortium, so as to attain consensus on and make an efficient use of the credits granted for this activity. Our first approaches were not negative at all. Besides, this subject was not discussed with the entrepreneurial committee in this sector, but is being negotiated individually. Those dealings are being performed by Eng. Grasso, who has a broad experience in this field and an excellent international prestige. We think that restarting the works will mean a small but significant contribution to the nuclear issues, as well as to the social issue, since our intention is mobilizing the nuclear industry, making it dynamic. This is something we want entrepreneurs to understand: although the State is not in a condition to invest a single dollar, we want to defend and reactive this activity. I want to add that I have found the best disposition at the Ministry of Economy in trying to find solutions to the multiple inconveniences. This good disposition was noticed, for instance, in connection with the shutdown of the Embalse NPP. WE had a U.S.$20 million debt and we could not go ahead with shutdown because we lacked spare parts and technical assistance. We posed the problem at the Ministry, they found the solution in four days and Embalse went back to operation.

[ARGENTINA NUCLEAR] Which will be the role of the enterprises in this new stage?

[Mondino] The Commission and the nuclear activity are fully inserted in the country and share all of its problems. I think that the nuclear area must contribute, within its possibilities, to the solution of the crisis. Therefore, I understand that the participation of the nuclear industry in the Argentine market is, although small, fundamental. We need the contribution from all entrepreneurs; especially from the big ones, but also from the medium-sized ones. This corresponds with our position, as may be seen, for instance, regarding the shutdown at Embalse, where an important number of medium-sized enterprises performed many tasks.

[ARGENTINA NUCLEAR] We have listened to the comments on concrete privatization plans in several areas of this activity. What can you tell us on this respect?

[Mondino] It is not privatization in the most-used sense of the term. What we are thinking about is the need to assemble productive entrepreneurial nuclei, giving the Commission an entrepreneurial structure. We have to avoid whatever means bureaucratization, within the inflexible framework imposed by the National Accounting Law.

[ARGENTINA NUCLEAR] Which will be the nuclear policy leading your management?

[Mondino] I think that, during the previous presidential term, the nuclear sector was absolutely unprotected. I do not mean to demerit Emma's work (editor's note: the former president of the CNEA), but Dr. Alfonsin's government did not give any support to our Institution. However, presently, the governmental intention is changing that. There are clear signs on this respect. For instance, the president of Argentina was present for the first time in history during the appointment of the

CNEA's new authorities. There have [been] some statements by Dr. Menem on the nuclear activity and, finally, the support I am receiving from several sectors in the government.

[ARGENTINA NUCLEAR] Which are the objectives concerning foreign affairs?

[Mondino] I will personally take care of international relations and of whatever is related with the rest of the world in the nuclear field. I am working jointly with Ambassador Mario Campora, who has already publicly stated which have been and which will be the official positions concerning international treaties in this area. Our intention is continuing to sell Argentine technology abroad. Besides, we want to maintain an excellent relation with the international agencies dealing with nuclear energy, in order to keep in touch with the latest technical information and as a window opened to the world in connection with commercial matters.

[ARGENTINA NUCLEAR] Do you feel you will have difficulties in dealing with legislators, politicians and operators, since you are a technician rather than a politician?

[Mondino] I have been a CNEA man for 33 years and I just refer to my predecessors. I am the eighth president since the CNEA was founded and most of them were CNEA men. If the development of history and the achievements attained by the Commission are analyzed, the conclusions will be obvious. When the CNEA was in the hands of people with a greater political experience, the results were not very encouraging.

[ARGENTINA NUCLEAR] Finally, which are, in your judgement, the primary goals of the Commission?

[Mondino] The CNEA is responsible for keeping the nuclear power plants in optimum operating conditions, for promoting research and development in other fields—especially in the nuclear field—for supplying high-ranking human resources, for the provision of radioisotopes, and for developing the programme of activities established by the national authorities.

BRAZIL

Programs of Brazil, Argentina Concern Scientists

Parallel Programs Discussed

90WP0045A Rio de Janeiro O GLOBO in Portuguese 23 Jan 90 p 16

[Article by Eduardo Pinheiro]

[Text] Since yesterday morning, Brazilian, Argentine, and American scientists have been holding their first meeting to discuss the parallel nuclear programs in Brazil and Argentina. Meeting at the COPPE-UFRJ [Coordination Board of Postgraduate Programs in Engineering-Federal University of Rio de Janeiro] on Fundao Island, the representatives of the Brazilian Physics Association (SBF), the Association of Argentine Physicists (AFA), and the Federation of American Scientists (FAS) intend to exchange information on plans by the two Latin American countries to produce enriched uranium, which can be used for nonpeaceful purposes.

According to physicist Luis Pinguelli Rosa of the SBF, the organizations are concerned about the degree of secrecy surrounding the Brazilian Navy's plan to build nuclear-powered submarines in Aramar in the interior of Sao Paulo and the Argentine enriched uranium program based in Pilcanyeu. In both cases, plans call for producing uranium enriched to 20 percent—a rather high level (the fuel used in Angra is enriched to only 3 percent) and one reflecting advanced mastery of the process.

Pinguelli points out that Brazil and Argentina have not signed the Treaty on the Nonproliferation of Nuclear Weapons, thus keeping their parallel programs free of outside inspection. And that the Brazilian Constitution stipulates that besides being intended only for peaceful purposes, Brazil's nuclear energy policy is the responsibility of Congress, but that that provision has not yet been implemented.

"The SBF is proposing the establishment of an advisory body consisting of experts to work with the congressmen. The idea is to monitor the production of plutonium and enriched uranium, which are the raw materials used in the manufacture of nuclear weapons," he said.

And Prof Luis Masperi, a representative of the AFA, points out that there was no public announcement of Argentina's parallel nuclear program until 1983, right after Raul Alfonsin was elected, when it was also announced that enriched uranium had been obtained. According to him, Sarney's visit to Pilcanyeu and Alfonsin's visit to Aramar were positive steps, "but they need to be followed up," possibly with inspections of a technical nature.

"I do not believe that Brazil and Argentina are currently interested in producing atom bombs. But it is a touchy issue, since the countries are accumulating materials such as plutonium. There is a latent danger," says Masperi.

American Speaker

American scientists came here for the meeting with Brazilian and Argentine physicists because of the long experience the Federation of American Scientists (FAS) has had in struggling to institute control of the arms race both in the United States and abroad. The FAS, the first in the world to engage in such activities, includes several "fathers of the atom bomb" in its membership, among them William A. Higinbotham, one of the participants in the Manhattan Project, which culminated in the bombs dropped on Hiroshima and Nagasaki.

Higinbotham, who is nearly 80 years old, is currently one of a group of American scientists committed to supporting the establishment of mechanisms for inspecting nuclear programs and even reducing the number of nuclear weapons already in existence. In recent years, he

has been involved in cooperation projects with Russian scientists and has participated in academic events. His presence in Rio de Janeiro gives Brazilian scientists an opportunity to become familiar with the supervision procedures currently used in the United States.

"We are concerned about projects that are not under civilian control, and we are prepared to provide all possible technical information so as to prevent the proliferation of nuclear weapons and also to try to show the public that nuclear energy must be used only for peaceful purposes. In my opinion, that follows naturally from the various contacts we have made over the past few years," he explained.

Higinbotham remembers the impression made on him when he witnessed the explosion of an experimental nuclear bomb in the New Mexico desert while he was still working on the development of electronic systems for the Manhattan Project. According to him, it was at that moment that he became aware of the need to establish control over those weapons, which could result in irreparable harm being done to human society.

"When I saw how much energy was released, I was frightened because we had not believed that the bomb could be that efficient. We scientists began discussing the matter among ourselves, and we concluded that the secret of how to produce such bombs could not be kept and that in case of nuclear war, there would be no way of protecting oneself from them. After the war, we began telling people that the only possible guarantee would be lasting peace among nations."

The most significent recent events in connection with disarmament came about in connection with Gorbachev's opening up in the Soviet Union. According to Higinbotham, contacts between scientists from the two powers actually began during the Cold War period, but they recently culminated in an unprecedented level of cooperation despite the opposition that still exists in both countries to the agreements that have been signed.

"We submitted important projects to our governments and they were approved. One of them provides for external verification of underground nuclear explosions, which previously could easily be mistaken by observers for natural earthquakes. It is much to Gorbachev's credit that he realized that nuclear war was not feasible and that something more responsible had to be done. It was a long time before anyone would agree to having the tests monitored on Russian soil," he recalls.

Mutual Inspections Advocated

90WP0045B Rio de Janeiro O GLOBO in Portuguese 24 Jan 90 p 15

[Article by Eduardo Pinheiro]

[Text] In connection with the inauguration of President-elect Fernando Collor de Mello, the Brazilian Physics Association (SBF) and the Association of Argentine Physicists (AFA) may present the Brazilian and Argentine Governments with a proposal that they sign a pledge to allow mutual inspections of their nuclear facilities so as to allay fears that they might be going to produce nuclear weapons.

That proposal was discussed yesterday at the meeting being held by Brazilian, Argentine, and U.S. scientists at the COPPE-UFRJ [Coordination Board of Postgraduate Programs in Engineering—Federal University of Rio de Janeiro] on Fundao Island, where the topic is nuclear programs not under civilian control in Brazil and Argentina. Brazil and Argentina have not yet signed the Treaty on the Nonproliferation of Nuclear Weapons, a fact that is a matter of concern to the countries in the so-called nuclear club.

According to physicist Luis Pinguelli Rosa of the SBF, the main purpose of the inspections would be to verify, on a preventive basis, that there is no buildup of radioactive material that could be used to manufacture bombs.

The other proposals by the Brazilian and Argentine scientists call for intensifying their lobbying with the Congresses of those countries—unlike the situation in Brazil, Argentina's Constitution provides no guarantee that nuclear energy will be used for peaceful purposes—and for having the physicists' organizations in both countries join a network of scientific organizations for the exchange of international information.

Yesterday, U.S. scientists David Albright and William A. Higinbotham explained the methodology involved in inspecting nuclear facilities. They covered everything from the equipment needed to the technical features of the verifications.

While emphasizing that the proposals must be submitted to the governing bodies of the scientific organizations, physicist Odair Goncalves said that an inspection of that type would have to pay particular attention to the possibility of theft of the materials in question, since instances of such theft had already occurred in both the United States and Europe—possibly involving even terrorist organizations.

Physicist Fernando Souza Barros said that the meeting was making it possible to obtain information which might be helpful to the SBF in drawing up a more detailed technical document to be sent to Congress on this subject with a view to instituting effective monitoring of the secret nuclear programs.

Aramar Project Worries Scientists

In the opinion of U.S. mathematician David Albright of the Federation of American Scientists (FAS), the existence of the Brazilian Navy's secret nuclear program means that the automatic renewal of the Brazil-FRG Nuclear Agreement in November of this year is not being viewed calmly. In his personal opinion, it is not out of

the question that technicians trained under the terms of the agreement—which is for peaceful purposes and is subject to international safeguards—will wind up transferring their know-how to parallel projects.

According to him, some of the techniques taught to the Brazilian scientists can be used by the Navy in its project for building nuclear-powered submarines (Aramar). Actually, the technologies are different, since the agreement provides for the production of uranium enriched to 3 percent using the jet nozzle process—the efficiency of which has not been proved—whereas the Aramar project calls for using the process known as ultracentrifugation. Albright says, however, that they have points in common:

"It is possible that some computer codes, as well as techniques such as that for handling uranium hexafluoride, which is a highly corrosive material, could also be used to develop the program without safeguards," he explained.

Information System Established

90WP0045C Rio de Janeiro O GLOBO in Portuguese 25 Jan 90 p 19

[Article by Eduardo Pinheiro]

[Text] The Brazilian, Argentine, and American scientists meeting at the COPPE-UFRJ [Coordination Board of Postgraduate Programs in Engineering-Federal University of Rio de Janeiro] admit that it is very unlikely that the governments of Brazil and Argentina will sign or implement the current nuclear arms control treaties involving Latin America. But they believe that the apparent end of the Cold War provides an incentive for continuing bilateral negotiations. Today they are to draw up a document confirming their intention to continue cooperating with each other through an international information network.

Yesterday, Luis Pinguelli Rosa of the Brazilian Physics Association (SBF) criticized the agreement between Brazil and Argentina to develop a fast breeder reactor, which theoretically will be able to safeguard reserves of radioactive minerals through the reuse of fuel made available by the breeding of plutonium during the uranium fission process. He says that although that type of reactor has no connection with the production of nuclear weapons, it creates safety problems because the material used is highly flammable when it comes in contact with air, thus increasing the risks that already exist in a conventional reactor.

"It would be much more promising to invest in second-generation thermal reactors known as "intrinsically safe reactors," which is what all the developed countries except France are currently doing.

Pinguelli said, too, that the Brazilian Navy's project for building nuclear-powered submarines (Aramar) was also an "inappropriate path" to take because in a sense, it involves the use of nuclear energy for nonpeaceful purposes. Luis Masperi of the Association of Argentine Physicists (AFA) emphasized that so far in Argentina, there have been no official indications that the government intends to build nuclear submarines.

"This matter came up as a result of statements by Argentine military men during the Falklands War. Since those statements were not confirmed—but neither were they denied—they may have brought about an arms buildup in Brazil that lasted even after the rivalry between the two countries lost its meaning with the restoration of democracy," said Masperi.

More on Brazilian-Made Electron Accelerator

PY0902023690 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 8 Feb 90 p 24

[Text] Sao Jose dos Campos—The Aerospace Technology Center (CTA) yesterday dedicated the first Brazilian-made linear electron accelerator for the production of high-energy neutrons. This project allows the construction of large nuclear plants, another step toward mastering nuclear technology.

The inauguration ceremony was attended by, among others, President Jose Sarney and the president of the National Commission for Nuclear Energy, Rex Nazare. President Sarney believes: "Nuclear energy is Brazil's only alternative for preventing a collapse in the energy supply and it is also the source of energy least harmful to the environment, in comparison with hydroelectric and thermoelectric plants."

The accelerator, developed by a group of 14 scientists, operates with an energy of 30 million electrovolts (30 MeV). The portion dedicated yesterday is the first module of a group of four that will comprise the accelerator. It will be ready to operate in 1994.

According to Nazare, Brazil today has 54 accelerators operating with an energy of six to 18 MeV that are used to treat cancer patients and to prevent various illnesses. He asserted "The ideal would be to have another 100 of this kind."

President Dedicates Alcantara Launch Center

PY2202011990 Rio de Janeiro Rede Globo Television in Portuguese 2300 GMT 21 Feb 90

[Text] President Sarney today dedicated Brazil's first satellite launch center in Alcantara, Maranhao State. Alcantara's only attraction before today was the ruins of a 17th-century architectural structure, but President Sarney has transformed this small city of 3,000 inhabitants, located 22 km from Sao Luis, into Brazil's most important rocket launch center.

A Sonda-2 rocket, a Brazilian-made experimental rocket, was launched to dedicate the center. The Sonda-2 rocket

is 4.1 meters long and 30 cm in diameter; it weighs 600 kg. The rocket climbed 110 km and then fell into the sea—all in three minutes.

With this launch of the Sonda-2 rocket, President Sarney has consolidated the Brazilian space mission. Brazil is now in a position to launch its own rockets and satellites, and all of them will be launched from here, the Alcantara launch center.

[Begin Sarney recording] Because of its location, Alcantara will be one of the world's main centers. As I have said in the past, we have an exceptional advantage here because, as a result of the earth's rotation, a launch will consume about 20 percent less fuel than anywhere else in the world. This will allow us to compete on that closed world market, the space industry market, at a great advantage. [end recording]

Navy Official on Nuclear Submarine Program

PY2102143590 Brasilia Radio Nacional da Amazonia Network in Portuguese 1000 GMT 21 Feb 90

[Report by Alana Gandra from Rio de Janeiro]

[Text] The Navy is developing a program that foresees the construction of the first Brazilian nuclear submarine before the year 2000. Rear Admiral Ernani Goulart Fortuna, the commander of the First Naval District, explained that the program depends on a political decision.

[Begin Fortuna recording] This program depends on a political decision. The Navy operates strictly within the budget assigned to it by Congressional vote and approval. Within this budget, we certainly do not [word indistinct] our naval construction program. The speed with which this program develops depends on the budget. [end recording]

For this year, the program foresees the construction of four Inhauma-class corvettes, one Navy tanker, one polar ship to ensure the Brazilian presence in the Antarctic—the contract for the construction of which has yet to be signed, two patrol boats, and four patrol launches.

Four U.S. destroyers to replace the old World War II torpedo boats, one Ceara combat vehicle landing craft, and the KL-class Tupi submarine, which has arrived from Germany [not further identified] will be added to this fleet.

The Navy will commission the second powered floating dock in December, which will give the Marine Corps special mobility.

Enriched Uranium Production Goals Previewed

PY2602140090 Rio de Janeiro O GLOBO in Portuguese 25 Feb 90 p 20

[Report by Nerli Peres]

[Text] Sorocaba—Nearly two years after its inauguration, the Aramar Experimental Center in Ipero (Sao Paulo) is anxiously awaiting the change of government. The Ipero center is where the uranium enrichment process is being developed. Last year its budget was substantially reduced, to the point where its projects are being delayed.

Despite all the uncertainties, like the indecision over the first nuclear submarine development, one of the Navy Special Projects Coordinating Office's (COPESP) principal goals for this year is to produce four tons of 5-percent enriched uranium. The COPESP should soon be able to supply all the fuel for the Angra dos Reis nuclear plants.

If the program receives the necessary funds, the construction of a PWR [Pressurized Water Reactor] will begin in 1991. This reactor uses pressurized water to cool its core and it should go into operation in 1995. The Aramar Experimental Center will then provide the capability and the technology to build larger reactors like those of the Angra nuclear plants.

According to a COPESP source in Aramar, the whole program is running behind schedule because its 1989 budget was only $16 million. COPESP President Admiral Othon Pinheiro da Silva used to say that "COPESP is a Formula One race car running at 20 KPH" because although it has the technology to enrich uranium at 20 percent, the Aramar Experimental Center only produced 400 kilograms of 5-percent enriched uranium last year.

By June this year, the centrifuge units at Aramar should produce enough fuel for the IPEN [Nuclear and Energy Research Institute] nuclear reactor in Sao Paulo, the only one in the country that produces radioisotopes for use in medicine, agriculture, and industry. This reactor is not working at full capacity because there is not enough 20-percent enriched uranium, which developed countries, mainly the United States, refuse to sell to Brazil.

In spite of the uncertainties, the Navy Ministry has already decided to create in Ipero a high-technology complex. On 8 March an agreement will be signed between the Navy, the Science and Technology Ministry, and the Ipero municipality to create a foundation for the development, among other things, of new nuclear techniques applied to medicine, industry, and agriculture.

Under that agreement, and through technological cooperation contracts, academic institutions and high-technology industries will have access to the Navy's laboratory in Aramar. The transfer of technologies to commercial enterprise is also foreseen.

INDIA

Concern Voiced to France Over Nuclear Plant Sale

BK2302145390 Delhi Domestic Service in English 1430 GMT 23 Feb 90

[Text] India has conveyed to France its concern over the sale of a French nuclear plant to Pakistan.

This was stated by a spokesman of the External Affairs Ministry in New Delhi this evening while commenting on a report from Islamabad that France has cleared the sale of the plant. He said that India's concern with regard to the sale of the nuclear power plant has been brought to the attention of France.

Anything which had the effect of strengthening or expanding the weapon-oriented and clandestine nature of Pakistan's nuclear program is a matter of concern to India, he said.

V.P. Singh on Pakistani Nuclear Weapons, Options

BK2002133790 Delhi Domestic Service in English 1230 GMT 20 Feb 90

[Text] The prime minister, Mr. Vishwanath Pratap Singh, has declared that India will have to review its peaceful nuclear policy if Pakistan manufactures nuclear weapons. He was speaking to newsmen at Rajkot today. Mr. Singh said if Pakistan uses its nuclear power for military purposes it will have a radical effect on the environment in the region, necessitating India to think over its options.

In an apparent reference to Pakistan's machination in Kashmir, the prime minister said no country should underestimate India's strength, and if it does, it would be at its own peril.

Later, addressing a public meeting, Mr. Singh reiterated government's commitment to waive farmer's loan and ensure remunerative price for farm produce. He said special attention will be given to unemployment in the eighth plan. A special commission will also be set up for promoting welfare of women.

BJP Chief Calls for Review of Nuclear Options

Pakistan Nuclear Program of Concern

BK2102041590 Delhi Domestic Service in English 0240 GMT 21 Feb 90

[Text] The Bharatiya Janata Party leader, Mr. Atal Behari Vajpayee, has urged the National Front government to review its nuclear options in view of the reports of Pakistan acquiring six atom bombs. Addressing a public meeting in Bombay yesterday, Mr. Vajpayee asked the union government to put pressure on Pakistan to give up going nuclear.

Accusing Pakistan of creating disturbances in Punjab and Jammu and Kashmir, he said that by this Mrs. Benazir Bhutto was diverting her people's attention from the acute internal problems.

Welcomes Premier's Assertion

BK2102085890 Delhi Domestic Service in English 0830 GMT 21 Feb 90

[Text] The Bharatiya Janata Party [BJP] leader, Mr. Atal Behari Vajpayee, has welcomed the assertion of the prime minister, Mr. V.P. Singh, to review India's nuclear policy in view of the reports of Pakistan acquiring the atom bomb.

Addressing a news conference in Ahmedabad this morning, he asked the government to take up this issue with the United States and impress upon it the need to stop economic and military assistance to Pakistan.

Mr Vajpayee strongly criticized the Congress-I for its alleged attempts to sow the seeds of distrust between the BJP and the Janata Dal.

IRAN

Karrubi Opens Nuclear Technology Laboratory

LD0702181490 Tehran Domestic Service in Persian 1030 GMT 7 Feb 90

[Text] Karrubi, speaker of the Majles, inspected various departments of the Atomic Energy Organization this morning and opened the Jabir Ibn-al-Hayyan laboratory unit of that organization. The Jabir Ibn-al-Hayyan laboratory will be a center for the teaching of nuclear technology and will provide basic instruction to students of nuclear technology courses.

PAKISTAN

Bhutto Views Nuclear Cooperation With France

BK1402154790 Hong Kong AFP in English 0250 GMT 14 Feb 90

[By Sami Zubeiri]

[Text] Islamabad, Feb 14 (AFP)—Prime Minister Benazir Bhutto believes Franco-Pakistan cooperation in the nuclear field, suspended for more than a decade, might resume after President Francois Mitterrand's visit here next week.

Reiterating that Pakistan's nuclear programme was geared towards peaceful purposes, she also invited neighbouring India to join Pakistan in renouncing nuclear proliferation "as a debt to mankind."

"We are prepared for any international safeguards for our nuclear power plant, should we be able to get it," Ms. Bhutto said in an interview with AGENCE FRANCE-PRESSE Tuesday [13 February].

But in an obvious reference to the country's main rival India, which detonated an atomic device in May 1974, Ms. Bhutto warned that "if there is an attempt to have nuclear testing by any other country, it would put tremendous pressures" on Pakistan.

Pakistan has acquired nuclear enrichment capability, but it has not carried out any nuclear tests, though some Western experts believe Islamabad has the ability to produce a nuclear bomb.

In 1978, two years after signing a deal, France unilaterally cancelled the supply of a reprocessing plant to Pakistan under U.S. pressure following reports that Islamabad intended to manufacture an atomic bomb.

Pakistan denied the reports and insisted France honour its deal. Pakistan also demanded compensation worth millions of dollars including interest on some 200 million U.S. dollars it paid as a down payment on the reprocessing plant.

The issue brought the two countries to the verge of a rupture in diplomatic relations. Islamabad's case was considered favourably at the International Court of Justice, but Paris has now called for an out of court settlement.

"We had been discussing this issue earlier and, of course, the discussions will continue" during Mr. Mitterrand's three-day visit starting Monday, Ms. Bhutto said, adding "we hope that they will bear fruit."

Describing the visit, the first by a French president to Pakistan, as "historic", Ms. Bhutto said "there are boundless opportunities" for cooperation between the two countries in the field of investment, industrial cooperation and transfer of technology.

"France is one of the leading countries in the world in terms of transfer of energy-producing technology," she said, adding that in her previous two meetings, "I found that Mr. Mitterrand has a deep understanding of the Third World."

"We have a tremendous shortfall of energy. Our whole economic performance is affected and also the quality of life," she said.

For Pakistan "energy is a key problem and France could assist us in making available environmentally clean and good energy," she stressed.

Asked to comment on a report in the magazine U.S. NEWS AND WORLD REPORT last week that Pakistan was in possession of six atomic bombs, she said "all sorts of reports are published" about her country's nuclear programme.

But she said her government wanted "to contribute to a lasting settlement seeking to make at least this region free of nuclear proliferation."

She said Pakistan had asked India to discuss the non-proliferation issue "because, we feel that globally speaking, and as a debt to mankind, one should work for non-proliferation."

Pakistan, she said, was in the process of drawing up an agreement with China for a 300 megawatt power plant which would be "under full safeguards."

"There has not been really any objection" to the Sino-Pakistan deal, she added.

Replying to reports that India, which wants two 1,000 megawatt nuclear power plants from France, was opposing Pakistani efforts to acquire similar technology, she said "as far as nuclear energy is for peaceful purposes, I don't think there is any ground for objection by any country."

India and Pakistan "ought to decide on confidence building measures on a question as delicate and as sensitive and as far reaching as the nuclear issue," Ms. Bhutto said.

Talks on Nuclear Technology Held

BK2002131490 Hong Kong AFP in English 1255 GMT 20 Feb 90

[By Sami Zubeiri]

[Text] Islamabad, Feb 20 (AFP)—The French and Pakistani Governments are locked in "serious" discussion over whether Paris should allow the transfer of nuclear technology to Islamabad, officials said here Tuesday [20 February].

"It's a serious question which must be discussed seriously. That's what we're doing now," said Hubert Vedrine, spokesman for French President Francois Mitterrand.

Talks center on whether France should provide Islamabad with the nuclear power plant it so badly needs to deal with a severe energy crisis. Pakistani Prime Minister Benazir Bhutto, whose democratically-elected government is only 15 months old, has staked her political prestige on the issue.

Mr. Vedrine, who pointed out that nuclear technology was the central but not the only issue to be discussed, said Mr. Mitterrand sought to give a new boost to cooperation between the two countries.

The two meanwhile have reportedly still not reconciled differences that emerged in 1978 when France interrupted work on a nuclear waste reprocessing plant here.

Washington, fearing the technology could be used for military ends, pressured France into making the unilateral decision, Pakistani sources here said.

Informed sources said the two sides are poles apart on settling the issue, which had serious financial implications.

It has been referred to French Foreign Minister Roland Dumas and his Pakistani counterpart Sahabzada Yaqub Khan so that they can clear the way for discussions on the nuclear power plant, they said.

A settlement on the transfer of nuclear technology to Pakistan would decide the future course of relations between Paris and Islamabad, newspapers here said.

Prime Minister Benazir Bhutto has already assured that Pakistan was ready to offer international safeguards for the nuclear power plant and sources here believe construction of a plant is a financial rather than a military problem.

Pakistan meanwhile insists on payment of a "huge sum" as compensation for France's failure to honour the contract on the reprocessing plant. It also expects France to supply a power plant in its place, sources said.

But France, apparently ready for a fresh deal, wants to keep the issues separate, the sources said.

President Mitterrand, who flew in here late Monday to a warm welcome, had an exclusive 45-minute meeting with Ms. Bhutto. After the first informal session, the two foreign ministers and their aides also joined.

The two sides did not reveal the contents of the talks and Ms. Bhutto told waiting journalists that "everything will be told at a press conference" the two leaders are to address late Wednesday.

Besides bilateral relations, the two sides exchanged views on developments in Eastern Europe, trouble in the Indian-held Kashmir claimed by Pakistan and the situation in Afghanistan, informed sources said.

On Kashmir, France has expressed the desire that the two subcontinent neighbours should resolve the issue peacefully through negotiations.

Pakistan wants the West to press India into granting the Kashmiris' right to self-determination under the aegis of the United Nations. But France, having trade and industrial relations with India, has not taken a stand on the issue.

On Afghanistan, France explained its decision to reactivate its dormant mission in Kabul following the withdrawal of the Soviet troops in February 1989.

Pakistan opposed the move on grounds that it would affect the Pakistan-backed resistance's efforts "to remove the remnants of the intervention."

But informed sources said France has delayed dispatching its skeleton staff to Kabul to avoid embarrassing Pakistan.

The French president, who also addressed the National Assembly (lower house of parliament), assured his country's support for Pakistan's economic development.

"You can count on France's support in the efforts to modernize Pakistan," he told the deputies.

In a 20-minute address punctuated by the thumping of desks, he traced the country's history and quoted the national poet Mohammad Iqbal.

He welcomed the democratic evolution in Pakistan but also implicitly warned against political instability in Pakistan.

Mr. Mitterrand said "no one is ever safe" from "ambitions hostile to liberty."

He praised Pakistan's "democratic evolution" but said democracy did not come easily and added that the "struggle for democracy and development" demanded constant "vigilance" from the representatives of the people.

France To Supply Nuclear Plant

BK2102161590 Islamabad Domestic Service in Urdu 1500 GMT 21 Feb 90

[Text] France has agreed to supply Pakistan with a nuclear power plant and to assist it in economic, technical, trade, industrial, and educational fields. This was announced by French President Mitterrand at a crowded news conference that was jointly addressed by him and Prime Minister Benazir Bhutto in Islamabad this evening.

Announcing a five-point understanding in the nuclear field, the French president said his country promises to authorize French industrial establishments to make offers from technical and commercial aspects as soon as possible for selling a nuclear power plant to Pakistan. The task can be accomplished either by one organization or in cooperation with other organizations. He said France is aware of the considerable difficulty being faced by Pakistan in the field of energy and that it is interested in utilizing nuclear energy along with other energy sources. The nuclear power plant will be supplied in accordance with international regulations that are applied to export of nuclear power plants and other related materials.

France and Pakistan have also expressed their willingness to amicably resolve the issue of the reprocessing plant, which also includes the issue of payment of compensation through mutual agreement.

The French president said France wants to assist Pakistan in its economic development. It will therefore propose in the next few weeks that an agreement on peaceful uses of nuclear energy be finalized so that it can be used for meeting requirements in the agriculture, medicine, health, and energy sectors.

President Mitterrand said: We discussed important issues relating to future relations between France and Pakistan, which led to several agreements. Under these

agreements, French companies will participate in expansion of cement factories, installation of 8,000 telephone lines, production of food and energy, and supply of (polychloride). An economic agreement was signed as part of last year's protocol providing for 172 million francs. A convention was agreed for teaching the French language at the Institute of Modern Languages in Islamabad. A science and technology institute will also be set up in Pakistan.

On Afghanistan, President Mitterrand stressed the need for conducting free and impartial elections in that country to secure the complete sovereignty and nonaligned status of the Afghan people.

On the Kashmir issue, the French president supported the Simla Agreement and the UN resolutions to ensure that the people of the region are granted the right to self-determination. He recalled that the decision was made by Prime Minister Nehru, who also promised. [sentence as heard] He said that his country is ready to support the rights of the people of Kashmir, and that Pakistani authorities have never considered it as an issue of Pakistan. The French president said that the issue of Kashmir had been raised earlier and his country would like to see the problem resolved legally, as armed confrontation cannot be a solution to any problem.

The prime minister termed the French decision to sell a nuclear power plant to Pakistan as historic and said that Pakistan thanks President Mitterrand and the French Government that the issue of the nuclear plant has been resolved and the difficulties that emerged in the past due to cancellation of the reprocessing plant agreement are now over. She said that the talks and the various agreements reached between them will have deep and far-reaching impacts on the relations between the two countries. The prime minister said that the acquisition of a new nuclear power plant by Pakistan will not create further tension, as complete safeguards will be provided in this regard. She said that Pakistan is not in favor of a nuclear arms race. She also referred to the signing of a nuclear nonattack agreement with India in 1988 in this regard.

Formal talks between Pakistan and France were held in Islamabad today during which French President Francois Mitterrand was assisted by his foreign minister and senior officials, while Prime Minister Benazir Bhutto was assisted by Foreign Minister Sahabzada Yaqub Khan and senior officials.

Mitterrand on Nuclear Plant Sale

LD2102184190 Paris Domestic Service in French 1700 GMT 21 Feb 90

[Text] Mitterrand and Bhutto are the couple of the day. In Islamabad we have the end of Francois Mitterrand's Pakistan trip and a joint news conference with the charming Prime Minister Benazir Bhutto. It was an opportunity for the two countries to strengthen their economic, financial, and cultural cooperation and most of all for Francois Mitterrand to give the green light to the sale of a nuclear power station to Pakistan. Thus ends an old quarrel and a long period of waiting. Here is Francois Mitterrand, recorded by our special correspondent, Ralph Pinto:

[Begin recording] France is authorizing French industrialists—this authorization is essential for everything concerning nuclear energy in France—in possible association with one or more foreign partners, to soon present a technical-commercial offer for the sale of a nuclear power station to Pakistan. It is not for the government to decide in behalf of companies on the commercial and financial conditions to be debated because the political decision has been made. And this political decision contains its own logic, that is, that the French Government will closely follow the technical-commercial negotiations to ensure they are successful. We have, in fact, decided to trust Pakistan.

Mitterrand, Bhutto on Kashmir

BK2202033890 Delhi Domestic Service in English 0240 GMT 22 Feb 90

[Excerpt] [Passage omitted] Mr. Mitterrand announced that France is to provide a nuclear power plant to Pakistan. He said the offer will be in accordance with the international regulations and for undertaking peaceful uses of atomic energy in agriculture, medicine, industry, and other areas. Ms. Bhutto said the 900-megawatt plant will be fully open to international inspection and monitoring. She expressed the hope that the proposed nuclear plant will not result in any tension between India and Pakistan.

France and Pakistan also agreed to seek an amicable settlement on the long pending reprocessing plant issue. Our Islamabad correspondent, Suresh Chopra, reports that it may be recalled that in 1978 France had unilaterally backed out of an agreement with Pakistan for the setting up of a nuclear reprocessing plant despite Pakistan having made a down payment of $200 million.

U.S. Concern Over Nuclear Power Plant 'Baseless'

BK2202161090 Islamabad Domestic Service in Urdu 1500 GMT 22 Feb 90

[Text] Pakistan has described the fears expressed by the United States on the proposed sale of an nuclear power plant by France as baseless and has also expressed determination to implement a peaceful nuclear program. A Foreign Office spokesman in Islamabad today described the U.S. reaction as unjustifiable. A U.S. State Department spokesman had commented on the proposed deal.

The Foreign Office spokesman said Pakistan is fully aware of the the U.S. concern over the proliferation of nuclear weapons, and it has made assurances at global level that its nuclear program is entirely for peaceful

purposes. The nuclear power plant that will be provided by France will be acquired according to international norms, including the guarantees for importing nuclear materials.

The spokesman said that at a joint press conference with the French President Mitterrand yesterday, Prime Minister Benazir Bhutto reiterated Pakistan's determination for realizing the goals of the nuclear program and said if India agrees to sign the nuclear Nonproliferation Treaty, Pakistan will also sign it.

Stressing the need for a policy free from discrimination, the spokesman said Pakistan has made several proposals for bilateral, regional, or international agreements for a guarantee to keep South Asia a nuclear-free zone. At the news conference, President Mitterrand had expressed satisfaction with Pakistan's peaceful nuclear program. The spokesman said that based on the announcements made by the Pakistani prime minister and the French president, every country should be satisfied over the peaceful nature of Pakistan's nuclear program.

When asked whether the United States or any other country will bring pressure on France to abrogate the proposed agreement, the spokesman said France will adhere to it.

When asked how the United States reacted when the PRC announced it would provide a 300-mw nuclear power plant to Pakistan, the spokesman said the same reaction was expressed at that time as has been done in connection with the proposed agreement with France. There is no reason that Pakistan will yield to such pressure from any country. In reply to a question, the spokesman said: India does not want Pakistan to acquire anything; we are not worried about the Indian reaction. If there are any steps against the purchase of the French plant by Pakistan, we will respond to it. He said India is also purchasing two 900-mw nuclear power plants from France.

Mitterrand Rejects U.S. Protest on Nuclear Plant

BK2302023090 Islamabad Domestic Service in Urdu 0200 GMT 23 Feb 90

[Text] French President Francois Mitterrand has rejected the American protest regarding the supply of a nuclear power plant to Pakistan. He told newsmen in Dhaka yesterday that if they wanted to protest, let them. When asked if he expected a protest from India as well, the French president said that India definitely would not be happy either. He added that Pakistan was unhappy when France supplied a nuclear power plant to India in 1982.

Paper Says U.S. To Object to Nuclear Plant Deal

BK2602131190 Lahore THE NATION in English 26 Feb 90 p 1

[By Nusrat Javeed]

[Text] Islamabad—Some of the Ambassadors, attending a briefing held by the French envoy on Saturday afternoon [24 February] for the EC diplomats regarding President Mitterrand's visit, expressed apprehensions that USA might launch a hectic campaign against the France-Pakistan deal on the nuclear power plant.

One senior diplomat, present at the briefing, rather confided to THE NATION that "some of his very intelligent colleagues were not ruling out manoeuvring of the events Benazir's father was to face in '77 for stubbornly sticking to his nuclear ambitions".

Another West European Ambassador claimed that "Bob Oakley (the US Ambassador) is sending angry vibes already." According to "my information", "Bob did not turn up at the dinner hosted by Mitterrand on Wednesday." The same source insisted that Oakley was also missing at the Islamabad International Airport when VIPs lined up to send Mitterrand off on Thursday morning. Our source felt that "Oakley is offended because he did not seem to have been told in advance about the deal".

But, sources from Pakistan's Foreign Office insisted that "none of us was hopeful that Mitterrand would clear the deal even hours before its maturing". US State Department had already reacted negatively and many hostile lobbies are being activated in Washington and other European countries against the proposed deal.

The intensity of apprehensions could be realised from the fact that on Friday rumours were rife in various Western capitals that Pakistan's Prime Minister, Benazir Bhutto, was "shot dead by some officers wanting to take over".

The Paris Bureau Chief of US wire agency made incessant phone calls to Islamabad. He pressurised high information officials to contact Secretary Shahjehan S. Karim in Karachi to "confirm the news". "It is nonsense," Secretary of Information is reported to have said, "I have come back only minutes ago from the place Prime Minister is meeting people since morning."

Diplomatic sources believed that "Bush might delay signing of the document immunising Pakistan from the law barring USA to provide aid to country suspected to be indulging in a clandestine nuclear programme. Since 1981, American President have to commit in writing that Pakistan was not making a nuclear bomb to facilitate the annual release of funds from the US aid package to Islamabad.

Our sources apprehend that "some powerful European countries could join the US in wanting to block the deal". It was generally assessed by them that a crucial donor like "West Germany, where Greens are quite a force to reconcile with, may side with the Americans". The Germans are already having some suppressed disagreements with France since falling off the Berlin Wall.

The German diplomats and political commentators are not very discreet to claim that to preempt the emergence of a unified Germany as the most powerful European

power, "the French President was playing games". In Europe, he is suspected, by Germans, to be sponsoring Poland, Czechoslovakia and Hungary to resist the resurrection of Germany in a collective manner.

"Similarly, he (Mitterrand) took cunning initiatives to establish himself as the nicest guy for the Third World for the purpose of sustaining an exclusive and godfatherly image for France in the post-World War period."

But, most of our sources were also of the opinion that being a strong leader, "Mitterrand could not be persuaded by Americans to back out". At the same time, some of our diplomatic friends were of the opinion that "French have to have markets for their nuclear manufacturers surplus".

USSR Considering Request for Nuclear Plant

BK2702075790 Karachi DAWN in English 27 Feb 90 p 1

[DAWN Islamabad Bureau]

[Text] Islamabad, Feb 26—The Soviet Union is considering Pakistan's request for supply of a nuclear power plant, Soviet Ambassador to Pakistan, Mr V.P. Yakunin, said on Monday.

He told journalists, after presenting an award to Maulana Abdus Sattar Edhi at the Soviet Embassy, Pakistan needed nuclear energy for its power needs and once the required guarantees were provided, there was no harm in supplying power plants.

The Soviet Ambassador also disclosed that Pakistan's Foreign Secretary, Dr Tanvir Ahmed Khan, would be leaving for Moscow on March 11 and, among other things, would discuss a visit by Prime Minister Benazir Bhutto to Moscow.

He said the Pakistan Foreign Secretary would be "having consultations" with Soviet officials, specially on the Afghan problem.

Foreign Minister Sahabzada Yaqub Khan will visit Moscow shortly after Dr Tanvir's visit, the Ambassador said.

In answer to a question about the Afghan issue, Mr Yakunin said Pakistan had told the Soviet Union that it was considering the 10-point Soviet plan for bringing peace to Afghanistan.

"We take this as an important sign," the Ambassador said. "The plan can be amended but the main purpose is to stop bloodshed, set up a negative symmetry and allow all the groups in Afghanistan to negotiate and decide their future," he added.

Mr Yakunin said Pakistan had not officially informed the Soviet Union about its readiness to let Afghan President Dr Najibullah continue in power during the transition period.

"We have heard about it and read it in the Press, but Mr Iqbal Akhund did not say this to Soviet officials during his recent visit to Moscow," the Ambassador said.

Mr Akhund reportedly said in Washington that Pakistan was prepared to allow Najibullah to continue.

Asked about Kashmir, the Soviet envoy said his country wanted a peaceful political solution on the basis of a dialogue between Pakistan and India based on international agreements, such as the Simla accord.

When pressed whether his country would again use the right of veto if Pakistan raised the matter at the United Nations, Mr Yakunin said: "This question is premature. You have not as yet decided whether to take the issue to the U.N. But let me tell you, the Soviet Union abstained when the Kashmir issue was voted upon in the U.N. in 1948."

Asked to comment on the French decision to sell a nuclear power plant, the Ambassador said Pakistan needed energy and it had provided the guarantees to France.

Jamiyat-i Islami Chief on Need for 'Nuclear Device'

BK2202140090 Lahore THE NATION in English 22 Feb 90 p 8

[Text] Multan—The Amir of Jama'at-i-Islami, Senator Qazi Hussain Ahmad has stressed the need for fabricating nuclear device to meet Indian threat. He contended that the building of nuclear device is imperative to neutralise Indian nuclear threat.

Addressing a big public meeting at Chowk Vehari Road, Multan on Wednesday, Qazi Hussain Ahmad urged the Government to declare Jehad for the freedom of Occupied Kashmir. He said, the prosperity of Pakistan was mainly based on Kashmir because all major rivers stemmed from there. He announced that India had no right on Kashmir because it comprised majority of the Muslims who wanted its accession to Pakistan.

He maintained that India had pledged at UN to hold plebiscite in Kashmir and Pakistan was a direct party to the dispute. He urged the government to follow clear-cut policy on Kashmir and relinquish its dubious stand.

Health Consequences of Chernobyl Reported

90UN0736C Kiev PRAVDA UKRAINY in Russian 31 Dec 89 p 3

[Ukrainian News Agency report: "The Medical Consequences of Chernobyl: Three Years Later"]

[Text] One can say, without exaggeration, that the consequences of the accident at the Chernobyl Nuclear Power Station today worries every inhabitant of the republic. And althoug the levels of radiation in the regions that were subjected to radioactive contamination continue to diminish, the emotional reaction of the population, as is not paradoxical, on the contrary, is growing. This is the result of many factors, but insufficient information does not play the last role.

Now, according to the results of hundreds of thousands of measurements of the dose load in people living in the polluted territories, as well as analyses of the radioactivity of the soil, air, food products, and water, it has been established that after 3 years the total dose of irradiation of the population proved to be 2-3 times lower than had been supposed. True, not included here are the doses of irradiation of the thyroid gland with radio-iodine.

These data were cited at the press conference that took place in Kiev—at the All-Union Scientific Center of Radiation Medicine of the USSR Academy of Medical Sciences. It was noted that the complex of measures implemented to guarantee the radiation safety of the population lowered the average doses of irration in terms of the iodine factor threefold to fourfold, in terms of the caesium factor (internal radiation)—tenfold to twentyfold, and in terms of the external factor—up to twofold. This is the consequence of preventive measures being carried out in the republic. At the same time, the does of the overall irration of some workers in forestry and agriculture exceed by approximately a factor of two the magnitude for people living in the given locality.

The results of clinical observations and epidemiological research have shown that certain changes are being noted in the state of health of the child and adult population of the regions of the republic being controlled—changes which are connected not only with the improvement of the revelation of diseases, but also with the consequences of the events at the Chernobyl Nuclear Power Plant. It has been established that, under the influence of the ionizing radiations, the overall resistive capacity of an organism changes. This may be promote the growth of somatic diseases.

The improvement of the social protection of the people, who took part in the liquidation of the accident at the Chernobyl Nuclear Power Station, the conception of the magnitude of the irradiation in the course of the life of a person, equal to 35 rem, the influence of small doses of radiation on health, the economic activity in the polluted regions, the individual radiation monitors and the radiometers for the population, and the provision of the regions of Kiev and Zhitomir oblasts that suffered with medicine and food products—here is a far from complete list of questions that interested the participants of the meeting. A sharpdiscussion ensued in regard to a whole series of problems that were discussed.

The questions of journalists were answered by the Ukrainian SSR minister of health, Yu. P. Spizhenko, the director of the All-Union Scientific Center of Radiation Medicine of the USSR Academy of Medical Sciences, A. Ye. Romanenko, the director of the Institute of Endocrinology and Metabolism of the Ukrainian SSR Ministry of Health, N. D. Tronko, the director of the Institute of Clinical Radiology of the All-Union Scientific Center of Radiation Medicine, V. G. Bebeshko, and the directors of a number of subdivisions of the center of radiation medicine.

The journalists taking part in the press conference visited the laboratories of the center and familiarized themselves with the domestic and foreign apparatus operating here.

Chernobyl Radiation Exposure Data Bank Created

90UN0819A Moscow IZVESTIYA (Morning Edition) in Russian 31 Jan 90 p 6

[Interview with A.F. Tsyb, director of the Scientific Research Institute of Medical Radiology of the USSR Academy of Medical Sciences, by S. Turanov, TASS correspondent (special for IZVESTIYA): "People of Chernobyl—Respond!"; date and place not given]

[Text] From 29-31 January at the Scientific Research Institute of Medical Radiology of the USSR Academy of Medical Sciences (in the city of Obninsk), the All-Union Conference on Matters Dealing with the All-Union Distributive Register is taking place. Its data bank will contain radiation monitoring information on people subject to the effects of radiation as a result of the Chernobyl Nuclear Power Plant accident. Our TASS correspondent discusses the organization of this register and its basic functions with A.F. Tsyb, institute director and corresponding member of the USSR Academy of Medical Sciences.

[TASS] Anatoliy Fedorovich, practically speaking, what will the inclusion of radiation exposure and medical examination information in the register's data bank give people?

[Tsyb] Of and by itself, of course, this will cure no one. But it is impossible to have an objective concept of the nature and dynamics of the incidence of sickness cases, to conduct necessary medical-therapeutic measures, without an individual accounting of persons who have been exposed to the effects of the radiation. We must note that the All-Union Distributive Register (VRR) was established by the USSR Ministry of Health immediately after the accident—after all, clinical examination work and the information it would provide had to be initiated as soon as possible. This is a long-term register—

designed to operate over decades. It will be used to constantly evaluate the health condition, not only of those whose names are registered, but also of their children and succeeding generations.

[TASS] This is the first time a register of this size has been created here. It is significantly greater in volume than its famous Japanese counterpart....

[Tsyb] Yes, and this predetermined the complicated structure of the VRR. It is an automated system which encompasses practically all regions of the country and includes four levels of observation and registration: rayon, oblast, republic, and union. Clinical data traverses a multi-stage path: completion of initial documents in the central rayon hospitals (in city hospitals for the cities), transferring the information to magnetic tape, logic data control at republic-level computer and data-processing centers and, finally, at union level in our institute.

[TASS] What volume of data is presently stored in the register?

[Tsyb] Currently we have received medical radiation-dose data for 531,000 people, of which 198,000 participated in the clean-up following the accident and 330,000 comprise those evacuated and living in territories under observation. With respect to distribution by union republic, information from the health ministries of the Russian Soviet Federated Socialist Republic, the Belorussian Soviet Socialist Republic, and the Ukrainian Soviet Socialist Republic shows data for 100,000, 150,000, and 250,000 individuals, respectively. But this is still not complete information—that can be obtained only through the coordinated efforts of various departments, primarily the USSR Ministry of Health, the USSR Ministry of Defense, and the USSR Ministry of Internal Affairs. We are referring primarily to people who participated in eliminating the aftereffects of the disaster, many of whom have dispersed to far-off corners of our country. Let me take this opportunity to appeal to them to verify their inclusion in the register of their local health institutions.

[TASS] Is everything flowing smoothly, in your opinion, with respect to what must be done for more effective work on the register?

[Tsyb] This is being held back by an inadequate material-technical supply, primarily the lack of personal computers in the central rayon hospitals. A state program for eliminating the aftereffects of the Chernobyl disaster is currently being examined. I believe work concerning the register must be included in this, since the register is based on functioning over a many-year period and requires appropriate financing.

Plan To Eliminate Chernobyl Effects Drafted

LD1302231790 Moscow TASS International Service in Russian 1320 GMT 13 Feb 90

[Text] Kiev, 13 Feb (TASS)—The aim of the draft integrated program to eliminate the consequences of the accident at Chernobyl nuclear electric power station [AES] is to create conditions for the population to live and work in safety in all the monitored regions which were subjected to radioactive contamination. The program was elaborated by Ukrainian scientists and should be implemented in the 10-year period from 1990-2000. The draft is published today in the republican press.

The situation in the zone affected by radiation remains complicated, the publication notes. Government concern is caused primarily by people's state of health. According to the results of prophylactic medical examinations, among those living on polluted territories there was observed to be an increase in 1987-89 in illnesses of the upper respiratory tracts, the gastrointestinal tract, an increase in the number of iron-deficiency anemias, incompleted pregnancies, manifestations of hyperplasia of the thyroid gland. At the present time there are 309,800 people undergoing prophylactic medical examination in the republic including 67,400 children.

The program envisages the resettlement of people from the zone adjacent to Chernobyl AES and locating them in other regions, scientific backup for finding solutions to problems connected with the normal life and work of people in the polluted regions, and a radical improvement in medical services. The draft pays great attenton to creating guaranteed conditions for safe work and proper leisure, providing the population with uncontaminated food products, the elaboration and introduction of technologies for conducting agricultural production and the processing industry in accordance with the demands which are dictated by the conditions of radioactive pollution.

The draft's authors consider it essential to provide full and systematic information to the population about the real state of the radioecological situation.

The draft program is being put forward for discussion by the public and the Ukrainian Supreme Soviet session which opens on 15 February, after which it will be confirmed by the republic's government.

FEDERAL REPUBLIC OF GERMANY

Environment Minister Considers GDR Power Linkup

LD0702162590 Hamburg DPA in German 0929 GMT Feb 90

[Excerpts] Bonn (DPA)—The Federal Republic will make a preliminary decision within the next two weeks on whether they will recommend that the GDR should close down one or more of the reactor blocks at the Griefswald nuclear power station. This was announced by Environment Minister Klaus Toepfer (Christian Democratic Union), who today has been giving a further interim report to the Bundestag Environment Committee on the safety analysis of the power station.

By then it should be clarified to what extent symptoms of material fatigue in the reactor blocks and other weaknesses noted can be eliminated and to what extent technical reequipping of the plants is possible, meaning that only a temporary shutdown will be necessary. In connection with the security analysis, which later will include the remaining reactor blocks at the station and the Stendal nuclear power station, which is still under construction, Toepfer is paying short visits to Vienna and Moscow this week. In Vienna he will meet Hans Blix, director general of the International Atomic Energy Agency. The next day he will hold talks with Soviet Government departments in Moscow. [passage omitted]

To solve the energy supply problems in the GDR, the minister regards it as essential in the medium term to integrate the electricity network there into the Western European electricity network. If Greifswald has to be shut down, there will be a shortfall of about 2,000 megawatts. In the short term, half of this could be made up by a direct link with the Federal German Buschhaus and Offleben C (Lower Saxony) power stations. [passage omitted]

Toepfer says cooperation with the GDR should also include radiation protection. The first meeting of experts is planned for 19-20 February. Bonn is also aiming to take up the subject of radiation pollution in the uranium ore mining region of Aue in the south of the Republic. [passage omitted]

Engineers in 'Secret' Saudi Missile Projects

AU1202151490 Hamburg DER SPIEGEL in German 12 Feb 90 p 14

[Text] FRG engineers are currently developing secret missile projects in Saudi Arabia. According to an alarm warning from the Pullach Federal Intelligence Service to the Chancellor's Office in Bonn, an FRG citizen is the head of the development center near Jeddah, which is disguised as "Field Agency of Riyadh University." Reportedly, German experts paid by the Saudis have lately tried to procure "material" for the construction of missiles in the FRG. According to the confidential Federal Intelligence Service report, the Saudis also recruited experts from the arms industry in other West European countries with "lucrative" offers. A cover firm, which purports to deal with environmental data and statistics ("Saud Consultants for Environmental Data and Statistics"—C.E.D.), acts as the official contracting party. A surface-to-surface missile with an unknown range and a variant of the German-French "Hot" antitank missile are being developed. In addition to an attractive salary, the Saudis provide furnished rooms free of charge. The holiday pay for married missile technicians alone amounts to almost 7,000 West German marks, and DM8,000 are provided as "educational allowance" for every child.

Nuclear Cooperation Deals With Brazil Resumed

AU2602161390 Hamburg DER SPIEGEL in German 26 Feb 90 p 14

[Text] The nuclear deals with Brazil, which were temporarily suspended by the FRG Government last year because of heated protests, have been resumed. Economics Minister Helmut Haussmann became active last week, after Bonn let the date for canceling the contract on nuclear cooperation with Brazil pass. He extended the export permits of the companies Steag (Essen) and Interatom (Bergisch Gladbach) for a uranium enrichment facility working along the nozzle process—a technology that can be used for the construction of a nuclear bomb.

In Haussmann's view, reservations that Brazil might use the nuclear know-how from the FRG for military purposes have meanwhile been abolished. The minister and his officials are satisfied with Brazil's assurance that joint nuclear facilities are being monitored by the IAEA in Vienna.

In addition, Haussmann believes, Brazil's own nuclear energy research is subject to "comprehensive control by the legislative and executive branches." These bodies, the arguments say, are, after all, "pledged to the exclusively peaceful use of nuclear energy," which is rooted in the Brazilian Constitution. Furthermore, the uranium enrichment facility of Steag and Interatom is also monitored by a German technical director.

Nevertheless, there are doubts about the exclusively peaceful intentions of the Brazilians. Thus, high-ranking Brazilian military officers demanded that their country must be able to build the nuclear bomb. In addition, there are indications that the Brazilians are currently working on the construction of a nuclear-powered submarine.

Haussmann does not fear that Brazilian experts might later use their knowledge, which they have gained in joint projects, for military purposes in an uncontrolled, autonomous nuclear program, in particular since there were good reasons for extending the export permits.

This, a note says, "eliminates the danger of having to pay damages from the federal guarantees to the German partners."

FINLAND

Industry Group Urges Adding Nuclear Plants

90WP0034C Helsinki HELSINGIN SANOMAT in Finnish 12 Jan 90 p 12

[Article: "Industry Again Demands Increase in Nuclear Power"]

[Text] Industry on Thursday pressed for political consideration in favor of nuclear power. Industrialist Juhani Ahava, the chairman of the board of industry's Electrical Energy Association, said that industry is disappointed in the government's attitude toward the energy policy.

"It simply doesn't want to seriously tackle basic solutions to the power problem, as it should," Ahava said. Industry, which uses about half of the electric power consumed in Finland, is continuing with its own preparations to build a fifth, approximately 1,000-watt nuclear plant.

On Thursday the Electrical Energy Association reiterated predictions that current power plant capacity and that of the plants it has been decided are to be built will be insufficient by the middle of the present decade.

In industry's opinion, nuclear power is the best alternative to meet our presumed additional needs.

Helsinki Board Approves 5th Nuclear Plant

90WP0034B Helsinki HELSINGIN SANOMAT in Finnish 13 Jan 90 p 13

[Article: "Only Helsinki Greens Opposed Nuclear Plant; Health Board Watchdog Committee Voted Six to One"]

[Text] As anticipated, the Watchdog Committee of the Helsinki Health Board decided at its meeting on Friday to back a nuclear power plant. Only Green representative Pekka Sauri voted against the public statement, asserting that coal-burning power plants should be replaced with a nuclear plant.

Committee chairman Inkeri Helin (People's Democrat) and committee members Aulis Hamalainen (Conservative), Mikko Paunio (Social Democrat), Sinikka Lepomaki (Social Democrat), Lauri Sarkka (Conservative), and Nina-Lis Maki-Petays (Swedish People's Party) voted for nuclear power.

The issue of nuclear power was raised in the Watchdog Committee while an Energy Committee report that had been made public was being discussed. Dr. (M.D.) Antti Ponka, the health supervision director who raised the issue, submitted a dissenting opinion. In his opinion, the original motion to make the report public would have sufficed.

The Watchdog Committee decided to inform the Energy Board of its decision.

"The stretch of time involved has up to now offered us no possibility but to resort to the utilization of nuclear energy," the Watchdog Committee asserted. Binding international agreements that may soon force us to reduce the volume of sulphur dioxide discharges, which are deleterious to people's health, are accelerating action on the matter.

The Watchdog Committee urges citizens to engage in broad political discussion of changes in the structuring of our energy production. "The pressures for creating this kind of counterpressure system that operates with nonfossil fuels will, in any case, be very strong within a few years' time."

In their statement of position, they say that nuclear power would also solve the problem of acid rain produced by sulphur dioxide, which puts a strain on the natural environment.

"In this way, we will also be able to create a framework in keeping with the program for the reduction of nitrogen oxides made obligatory in Sofia in 1988, a program to which Finland is committed. At the present time, we do not appear to be capable of doing this. From the health standpoint, too, the considerable volume of finely suspended particles in the community air of the capital district will thus be substantially reduced," they say in the statement.

Soviet-Made Reactor To Get New Cooling System

90WP0034A Helsinki HELSINGIN SANOMAT in Finnish 13 Jan 90 p 10

[Article by Jaakko Kuparinen: "Cooling System To Be Built Above Loviisa Nuclear Plants"]

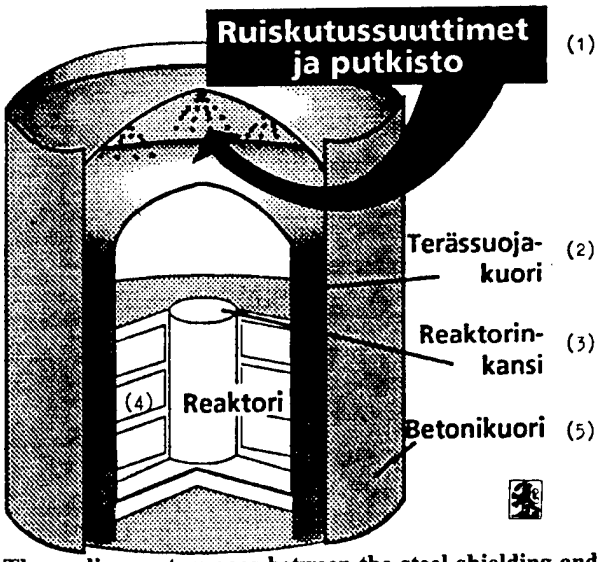
[Text] Loviisa (HS)—A cooling system to provide protection against a meltdown of the reactor core is to be built above the steel shielding of the reactors in Loviisa's two nuclear power plant units. The Imatra Power Company (IVO) will start installing the systems next fall. The sprinkler system, which will cost about 50 million markkas, will be completed in 1991.

Jussi Helske, the manager of the Loviisa power plants, believes that the nuclear plants would, with the aid of the sprinkler system, better withstand the worst possible disaster—a reactor core meltdown. The system would release cooling water on top of the overheating reactor shielding.

The cooling system will be installed in the space between the steel shielding and the concrete shell of the reactor.

"The new cooling system will cool down the steam generated in any serious accident, reduce the pressure, and prevent excessive pressure from being created in the reactor structure," Helske said.

The cooling system for the Loviisa units can be installed in the reactor room even if the plant is in operation.



The cooling system goes between the steel shielding and the concrete shell.

Key:
1. Sprinkler jets and conduits
2. Steel shielding
3. Reactor cover
4. Reactor
5. Concrete shell

Shielding Remains Intact Even if Core Melts

According to Helske, the purpose of the sprinkler system is to preserve the reactor shielding intact and keep the radioactive substances inside the shielding, even if the core melts.

If a nuclear plant accident should cause a power outage, a safety system would be set in motion, producing emergency power with separate diesel generators.

IVO has tested the operability of the cooling system at the Nuclear Research Institute in Karlsruhe, West Germany. According to Helske, the results were good. "We kept the heat within bounds in the test situation with the aid of the sprinkler system."

According to Helske, the cooling systems to be installed above the shielding of the Loviisa plant units are unique in the world. "This is due to the special construction of the Loviisa nuclear power plants. There are no power plants like these anywhere else in the world. The cooling system can be installed even if the plant is in operation.

The Industrial Power Company has taken precautions against reactor core meltdowns in its two nuclear plant units in Olkiluoto through a system that blows any radioactive steam that may form under the shielding out through a filter. The same technique is used in Sweden, West Germany, and France, among other countries. No cooling systems employing shielding of any sort are in operation in the United States or the Soviet Union.

FRANCE

Mitterrand Visits Pakistan, Discusses Nuclear Plant

LD2102130490 Paris Domestic Service in French 0700 GMT 21 Feb 90

[Excerpts] Regarding President Mitterrand's visit to Pakistan; the thorny question of the nuclear power station which Islamabad wants to buy from France is still not settled. Our special correspondent in Paksitan, Ralph Pinto, reports:

[Begin Pinto recording] [passage omitted] This afternoon he returns to Benazir Bhutto, to talk again about what? Doubtless this nuclear project which is so dear to Pakistan: a 900 megawatt power station, officially to generate electricity. However, cooperation with France in this field has been at a standstill for 12 years. The Pakistanis have been suspected of wanting to manufacture their own bomb. But it seems that for France two guarantees are still necessary: signing the nonproliferation treaty, and also an acceptance by Pakistan of monitoring by the International Atomic Energy Agency. Then it will still be necessary to go on to study the financing. At a time of tension between Indians and Pakistanis in Kashmir, and given the very good atmosphere between Islamabad and Tehran, the moment is perhaps not ideal to conclude the affair. [end recording]

SPAIN

Official Version of Vandellos I Accident Questioned

90WP0035A Madrid EL INDEPENDIENTE in Spanish 6 Jan 90 p 28

[Text] Madrid—The World Information Service on Energy (WISE) yesterday demanded in a communique that it be determined whether the fire at the Vandellos I nuclear power was started by the hydrogen explosion or by the shaking of the turbine.

The Nuclear Safety Council (CSN) maintains in this regard that the accident was caused by the breakage of a turbine transmission shaft that blocked a bearing and cracked the container of hydrogen, which exploded upon contact with the air. Independent nuclear experts assert, however, that the hydrogen leak started before, which would suggest a maintenance failure.

WISE also spoke out against "the offensive undertaken by pronuclear sectors to force the Vandellos I plant in Tarragona to reopen." The accident there took place this past 19 October.

WISE emphasizes that the CSN lacks legitimacy, inasmuch as "most of its members have worked for the nuclear-power industry before taking up their current posts." Eduardo Gonzalez, the CSN deputy chairman,

and council members Luis Echarri and Rafael Caro have spent most of their professional lives in companies that build and run nuclear power plants. Another council member, Fabio Sarmiento, has been linked professionally to electric-power companies that own this kind of plant. Only Donato Fuejo, the council chairman, has not had any ties to the nuclear industry.

Risk Compensation

In its communique WISE says that the pronuclear offensive is responsible for leaking the conclusions of the final CSN report on Vandellos I to the mass media. It cites the news items noting that electricity rates will rise if the power plant remains shut down or that Catalonia will need to import energy if Vandellos I is closed.

In WISE's view, granting 2 billion pesetas in government compensation to the municipalities near nuclear power plants "is obviously designed to calm the antinuclear feelings of certain mayors, especially in the towns near the most trouble-ridden zone today: Vandellos." The worldwide organization also spoke out against the activities of the political coalition Initiative for Catalonia. According to the press release, "while the affected citizens denounce the CSN, this coalition is asking the council to set up an office in Catalonia and decentralize."

In the judgment of WISE spokesmen, the CSN has sought to place all of the blame on the company that owns Vandellos I, Hifrensa, and in particular on its manager, Fernandez Palomero, "so that it can have a scapegoat." In the conclusions to its report the WISE demands that the file on the fire at Vandellos I not be closed until the responsibilities of all parties involved are determined: Hifrensa, the CSN, the Ministry of Industry and Energy, the General Directorate of Civil Protection, and the Department of Industry and Energy. As far as the WISE is concerned, the leads that ought to be followed in determining once and for all the causes of the 19 October accident, the worst in the history of Spain's nuclear industry, are the investigations into the leaks of hydrogen from the generator that shut down the power plant on 3 August and 8 October, as well as the aforementioned initial cause of the fire.

Public Pressure To Prevent Vandellos I Reopening

90WP0036A Madrid DIARIO 16 in Spanish
7 Jan 90 p 9

[Report by Elias Pujol: "Threat To Prevent Vandellos I Reopening"]

[Text] Tarragona—The residents of L'Ametlla de Mar will do everything they can to prevent the Vandellos I nuclear power plant from starting up again. The Antinuclear Committee of this town on the Tarragona coast, which feels that it has the backing of city hall and all of the municipality's institutions, announced yesterday that "the town of L'Ametlla de Mar feels that it is under a death threat, and we are prepared to defend our right to life tooth and nail."

The group's spokesman, Eloy Nolla, indicated that the town of L'Ametlla is prepared to stage a whole series of rallies to prevent the startup of the reactor.

In this regard, Eloy Nolla said, the group is not ruling out a continuous, day-and-night sit-in outside the gates to the plant to prevent trucks with materials for reoutfitting it from entering. "We will fight with all our strength to prevent the plant from starting up again," Nolla added.

The Antinuclear Committee and the mayor of the town himself, Pere Margalef of Convergence and Union (CiU), have expressed concern over a possible radicalization of the conflict after news leaked out in the press that the Nuclear Safety Council did not want to shut the atomic power plant down.

"We will try to channel the concerns of the population along peaceful and democratic avenues," Eloy Nolla asserted. He added, however, that such a mission would be difficult because tensions are running high in the town, which feels that the various levels of government are slighting it.

Yesterday the fishing, tourist, and sailing town of L'Ametlla de Mar was full of graffiti alluding to the Nuclear Safety Council and the managers of Hifrensa. "Cabello, you're going to lose your hair," "Palomero, you'll be the first," and "You're a bunch of terrorists," were some of the graffiti.

The Antinuclear Committee has emphasized that it has not encouraged such actions, "and they trouble us because they faithfully reflect the concern that exists," the committee's spokesman stated.

Mayor Margalef has also let it be known that "he is afraid" that he will not be able to control the populace and that people "will get out of hand on me." The mayor has pledged to all local groups that he will not accept the 61 million pesetas that the town is due of the 2 billion that the Industry and Energy Ministry has earmarked for Spanish towns with nuclear facilities "so as to quiet the voices of protest there."

Yesterday morning a large group representing the town headed towards the gates of the nuclear power plant, accompanying a procession of some very special Wise Men through whom the town of L'Ametlla de Mar presented a whole series of gifts to Hifrensa executives.

"These are very special gifts that we want to send to the individuals who threatened us and endangered our lives on 19 October."

The boxes, tied with black bows, had inscriptions referring to the nuclear issue and contained a variety of items, including the heads of dead animals.

Thousands Demonstrate To Close Lemoniz Nuclear Plant

90WP0036B Madrid DIARIO in Spanish
15 Jan 90 p 13

[Report by Joseba Bengoetxea: "Thousands Yesterday Called for the Closure of the Lemoniz Nuclear Power Plant"]

[Text] Bilbao—Thousands of people took part yesterday in a march against the Lemoniz nuclear power plant, during which they repeatedly called for its permanent shutdown. The march, which had government and court authorization, was the largest of the ones staged in recent years, the grassroots organizing groups asserted.

Prior to the start of the protest march, several dozen persons gathered in the square of the Vizcaya town of Plencia near Lemoniz. There they paid homage to ETA [Basque Fatherland and Liberty Group] militant David Alvarez, who died exactly 12 years ago yesterday in an assault on the power plant facilities.

The proamnesty committee had organized this tribute, which was not legally authorized. Relatives of ETA prisoners and members of Herri Batasuna took part in it.

The march was called by the environmental groups EKI, EGUSKI [expansions not given], the Vizcaya Environmental Coordinating Board, and the Commission for a Nuclear-Free Basque Coast. In a press release they demanded a halt to construction, the dismantling of the power plant, and the reinstatement of the land as an open space.

Julen Rekondo from the EKI emphasized that "the shutdown of the eight nuclear power plants in Spain would not affect energy demand, inasmuch as there is an excess of electric-power production capacity of some 6,500 megawatts."

SWEDEN

New Orders for Nuclear Energy Plant

51002438 Stockholm DAGENS NYHETER in Swedish
15 Jan 90 p 8

[Text] Some 50 workers are going to be recalled at ABB Atom's fuel plant in Vasteras over the next year. The firm has recently received several new orders, which will ensure jobs until at least 1996. Among other contracts, ABB has obtained an order for nuclear fuel worth a little over 300 million kronor from West Germany.