

JPRS-TEN-93-009
9 April 1993



**FOREIGN
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JPRS Report

Environmental Issues

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NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA 22161

Environmental Issues

JPRS-TEN-93-009

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Netherlands, Poland Cooperate in Pollution Monitoring

BR3103124093 The Hague ECONOMISCHE ZAKEN in Dutch 4 Mar 93 p 2

[Text] On Friday, 19 February, Mr. C.W.M. Dessens, Director-General for Energy, handed over an environmental monitoring vehicle to Poland at the KEMA [Electrotechnical Materials Testing Organization] in Arnhem. Director Z. Rozewicz accepted the vehicle on behalf of the Polish organization Energopomair. The monitoring vehicle has been presented to Poland by the Netherlands Government within the framework of the Program for Cooperation with Eastern Europe. It will be used in the fight against Poland's air and soil pollution.

The environmental monitoring vehicle was built in Arnhem by KEMA, on the instructions of the Ministry of Economic Affairs. The mobile sampling and monitoring station is the property of Poland's Energopomair, which is Poland's equivalent to KEMA. The monitoring vehicle will be used in Poland's electric power stations and heavy industry, to determine the magnitude of the pollution and to evaluate the impact of environmental regulations.

Last year, Polish monitoring technicians stayed at KEMA in the Netherlands to learn to work with Western technology and methods. That was also carried out within the scope of the Program for Cooperation with Eastern Europe. One of the Netherlands Government's reasons for stimulating environmental control measures in Poland lies in the fact that pollution does not stop at the Polish border. Pollution from tall chimneys can, under certain weather conditions, travel as far as the Netherlands.

Belgium Insists Nuclear Trade Be Included in EC Trade Talks With Russia

BR0604120493 Antwerp DE FINANCIËLE-EKONOMISCHE TIJD in Dutch 6 Apr 93 p 5

[Article by "KV": "EC Opens Door For Free Trade With Russia—Belgium Wants No Brake on Imports of Nuclear Waste"]

[Text] Luxembourg (TIJD)—The EC Commission received a mandate from the Twelve yesterday to discuss an extensive cooperation agreement with Russia. The agreement could end, in the long-term, in free trade between the two sides. Belgium demanded that trade in nuclear material be included in the negotiations. The Twelve are asking the EC Commission to take account of that concern.

Two weeks ago, the European Commission asked for an extension of its mandate to negotiate with Russia. The EC is discussing a partnership agreement with the CIS.

According to Moscow, in the old mandate Russian companies were not treated on an equal footing with European firms. Therefore, the Commission decided to extend the mandate and yesterday received the blessing from EC foreign affairs ministers to do so. The extended mandate presents Russia with the prospects of free trade with the EC at a later stage.

The Russian republic first must be able to meet the obligations of the worldwide free trade organization GATT, however. Instead of being made automatically, the step to free trade will have to be approved by the Twelve. Experts believe that there will be no free trade with Russia before the end of the century.

The Twelve want to use the partnership agreement to enhance economic relations with Russia. The EC is applying its traditional political conditions to the agreement, insisting that Russia respect human rights, establish a market economy, and honor democratic principles. A separate clause provides for cancellation of the agreement if it appears that these conditions are not being met. The mandate to negotiate with other CIS republics, such as the Ukraine or Belarus, does not hold out the prospect of free trade.

According to Belgian Foreign Minister Willy Claes, this extended agreement with Russia should not be regarded as a precedent for negotiations with other countries. Consequently, Belgium urged that the trade in nuclear material be included in the negotiations.

The EC Commission had not included such trade in its proposals, because a separate Euratom agreement to that effect existed. Russia, however, had not signed that agreement. There are doubts in Belgian diplomatic circles about whether Russia will ever sign it, because it imposes rather strict rules.

Belgium claimed that nuclear material comprised part of the normal flow of trade and believed that this aspect had to be discussed within the talks on the economic partnership agreement with Russia. The Belgian industry that processes this nuclear material fears that, should this trade not be included in the negotiations, a legal vacuum would appear and result in the cessation of such imports to Belgium.

The final text of the Twelve took note of the Belgian concern. The EC Commission will have to take it into account during the negotiations.

Sir Leon Brittan, the EC commissioner responsible for foreign trade, also asked the Twelve to respond to the vigorous support offered to Russia by U.S. President Bill Clinton last weekend. However, the EC member states were not prepared to do so immediately. This only will happen when the EC Commission comes up with a substantial proposal.

NAMIBIA

Drought Task Force Says Country Still Needs Relief Aid

*MB2603143293 Johannesburg SAPA in English
1250 GMT 26 Mar 93*

[Text] Windhoek Mar 26 SAPA—Despite goods rains in some regions, Namibia will still need drought relief aid for another year, the National Drought Task Force [NDTF] said in Windhoek on Friday [26 March].

“The next few months will be critical for the drought relief programme.

“Although there have been good rains in some regions, in others, the rains have come late,” NDTF spokesman Isaac Kaulinge said in a statement.

The drought had badly affected draught animals causing problems with ploughing, while there were a limited number of tractors available for subsidised ploughing which had been introduced.

Mr. Kaulinge said only 50 to 60 per cent of available land had been planted in Ovambo and Kavango.

“Latest estimates indicate there will be crop shortages in all crop producing regions, with the exception of Caprivi,” he said, adding the extent of the shortfalls would depend on the rain pattern through March and April.

“Grazing has improved in some regions, but the problem remains severe in the Kunene Region and parts of the south.”

The drought relief programme, started in August, had distributed well over 12,000 tons of food to people in vulnerable groups.

“Over 300,000 people are registered as eligible for free food distribution, and the numbers continue to increase,” Mr. Kaulinge said.

Over 220 boreholes were drilled and 16,000 farmers have taken part in livestock subsidy schemes.

Mr. Kaulinge said a number of initiatives were being undertaken to improve the NDTF's performance.

The Cabinet has also decided the establishment of a permanent capacity to handle disasters should be a government priority.

“The current emergency has been an important learning experience for Namibia,” he said adding it had taken longer than anticipated to develop appropriate structures to manage the programme.

“However, mass starvation has been averted and with each month that passes, the drought relief programme management becomes more effective.”

SOUTH AFRICA

Experts Say Toxic, Alien Organisms In Ballast Water

*MB2403135593 Johannesburg Channel Africa Radio
in English 1100 GMT 24 Mar 93*

[Text] Experts fear that alien and sometimes toxic organisms are being brought into South African ports in the water of ballast tanks of ships.

Jocelyn Jackson told a national maritime conference in Durban that about 20 million tonnes of ballast water was being discharged annually in South African ports. This had already brought a foreign toxic organism into False Bay which was poisoning shellfish in the area. Dr. Jackson proposed that the conference call for the adoption in South Africa of a set of international guidelines for the control of ballast water discharge.

This would include the changing of ballast water wells out to sea.

Poisonous Red Tide Along Cape West Coast

*MB0104095893 Umtata Capital Radio in English
1500 GMT 31 Mar 93*

[Text] Poisonous red tide has once again surfaced along large parts of the Cape west coast. Sea fisheries experts say no mussels should be gathered north of Cape Town until further notice. The officials announced today that mussels found in the Ysterfontein area have tested positive for red tide.

Earlier this month the public was warned not to eat mussels gathered north of St. Helena Bay. Mussels found in Sea Point and Gordon's Bay have not been affected.

ZIMBABWE

Plans To Resume Selling 30 Tonnes of Ivory 'Soon'

*MB0404080393 Harare THE FINANCIAL GAZETTE
in English 25 Mar 93 p 3*

[Unattributed report: “Ivory sales to resume through regional body”]

[Text] Zimbabwe will soon resume selling 30 tonnes of ivory worth more than \$60 million currently stored in government warehouses.

In a measure to counter rising poaching of elephants and rhino, trade in ivory was banned about three years ago under the Convention for the International Trade in Endangered Species (Cites), which regulates world trade in animals and animal products.

Zimbabwe, which is a member of Cites, suspended trade in ivory at the height of poaching in 1989. It had a holding stock of \$45 million worth of ivory then, but this has since risen to \$60 million.

Ivory will be sold through the Southern African Centre for Ivory Trade (Sacim) which has Zimbabwe, Botswana, Namibia and Malawi as members.

With financial and expert assistance from the EC, Sacim is currently putting together strict controls to be observed by member states when disposing of their ivory which is abundant due to uncontrolled elephant population in the region.

Environment and Tourism minister, Dr. Herbert Murerwa, has said as soon as these controls are in place trade in ivory will resume.

The European Community is currently undertaking consultancy work to determine the number of elephants and the amount of ivory the four countries have.

"We are undertaking the marketing of ivory through Sacim and as soon as controls are put in place, we will then start trading," said Dr. Murerwa. He, however, said the four countries were in the process of putting together strict conditions that would make it difficult for poached ivory to find its way into the Sacim market.

At the 1991 CITES meeting in Kyoto, Japan, elephants were pushed from Appendix 2 to Appendix 1 as the animals were considered to be among some of the world's endangered species whose trade was not allowed.

Poaching of elephants, especially in Central, East and Southern Africa, had reached alarming proportions resulting in worldwide protests from environmentalists. They argued that the elephant family would go into extinction if the lucrative trade in ivory was not banned.

NPC Creates Environmental Protection Committee

*OW2603021993 Beijing XINHUA in English
0202 GMT 26 Mar 93*

[Text] Beijing, March 26 (XINHUA)—The Eighth National People's Congress (NPC) will have a new committee—Committee on Environmental Protection.

As its chief functions, the committee will draw up and raise draft laws and other relevant proposals on resources and environment, deliberate relevant motions, and assist the NPC Standing Committee in supervising matters concerning resources and environment.

Nomination of the committee's chairman, vice-chairmen and members, which was passed at the fourth meeting of the Presidium of the First Session of the Eighth NPC, will be submitted to the current NPC session for approval.

Thus far, there are seven NPC special committees in total, namely, the Nationalities Committee, Education, Science, Culture and Public Health Committee, Law Committee, Financial and Economic Committee, Committee for Internal and Judicial Affairs, Overseas Chinese Affairs Committee, and Foreign Affairs Committee.

World Bank Approves Loan for Environment Cleanup, Waste Disposal

*OW2603230693 Beijing XINHUA in English
1756 GMT 26 Mar 93*

[Text] Washington, March 26 (XINHUA)—The World Bank approved today three new loans totaling 780 million U.S. dollars to China, covering environment, urban service and railway update.

The announcement came just a week before the World Bank President Lewis Preston starts his first 10-day visit to the People's Republic.

Among the loans, 250 million U.S. dollars will help the environmental cleanup in eastern China's Jiangsu Province, a fast-growing, heavily industrialized area.

A 110 million U.S. dollars credit from the International Development Association, a World Bank concessional funding facility, will improve delivery of urban services in four coastal cities in the country's Zhejiang Province.

The medium-sized cities, Hangzhou, Ningbo, Shaoxing and Wenzhou, are undergoing rapid urbanization, but their problems of water supply and waste disposal need to be addressed, the bank said.

As to China's railways, which suffered from too few lines and too many passengers, the World Bank is to offer a loan of 420 million U.S. dollars to ease bottlenecks.

The railway loan is the sixth of its kind by the World Bank, agreeing with the Chinese Government that the country needs railway modernization and electrification, and modern container transport.

On Wednesday [24 March], the World Bank announced that its President Lewis Preston was to visit China starting from April 3. The bank described the visit as "to get familiarized" with the Chinese authority.

The World Bank loan to China set record last year at 2.5 billion U.S. dollars. Officials of the bank estimated that this year's loan is to remain at approximately the same level.

World Bank To Provide Loan for Forestry Development

*HK3003035093 Beijing CHINA DAILY in English
30 Mar 93 p 3*

[Report by staff reporter Wang Yonghong: "Big Loan Is Set For Forestation"]

[Text] A new loan will be granted to China for forestry development, officials of the World Bank announced yesterday.

Pieter P. Botterlier, newly-appointed chief of resident mission in China of the World Bank, said that his bank would loan \$200 million for the protection and development of forest resources in China.

The programme, starting next year, will cover the intensive farming of artificial forest, the building of multi-purpose shelter-belts, the improvement of management of natural reserves and other wide-ranging projects.

He said that China and the World Bank have enjoyed sound cooperations in the past decade. China has become one of the few countries in the world with forests increasing faster than decreasing following forest-building efforts.

He made the remarks during the tree-planting ceremony which was held yesterday in Beijing marking the friendly co-operation between China and the World Bank.

Meanwhile, Chinese Minister of Forestry Gao Dezhan attached great importance to the financial help from the World Bank.

"The increasing forests in China will benefit the environmental improvement not only in China but in the whole world," he said.

The new programme will become another great effort made by the World Bank to help boost forests in China following the World Bank-financed three-planting programme, the largest one ever in the world, two years ago, Gao said.

According to the official, the ongoing State tree-growing programme which was financed by the World Bank has seen a rapid growth since it was launched in 1990.

The six-year-long programme aims to plant some 985,000 hectares of trees in 240 counties of 16 provinces and autonomous regions with a \$300 million loan from the World Bank and some \$200 million of domestic investment.

INDONESIA

Ambassador Affirms US Support on Forest Preservation

BK3003154193 Jakarta ANTARA in English 1450 GMT 30 Mar 93

[Text] Samarinda, March 29 (ANTARA)—US ambassador to Indonesia Robert L. Barry told East Kalimantan governor H.M. Ardans here on Monday that US President Bill Clinton is paying attention to the existence of East Kalimantan's tropical forest and is ready to help overcome forest fires.

The ambassador broke the news during his courtesy call on the governor at the start of a working visit, from March 29 to April 4, to East Kalimantan.

An official from the World Wild Life Fund for Nature (WWF) accompanied the ambassador.

Barry said the US would assist the Government of Indonesia, particularly the East Kalimantan provincial administration, in overcoming the risk and menace of forest fires which often occurred in the province.

The assistance will be in the manner of sending US experts in forest fire fighting to Indonesia and dispatching Indonesian forest fire fighters to train and gain expertise in the US.

Barry referred to the role of tropical forests as lungs of the earth.

He and his party will visit the administrative town of Tarakan, the two-hectare Kayan Menterang Natural Preserve and Long Alango village.

Center for Forestry Research To Be Set Up in Bogor

BK3103130893 Jakarta ANTARA in English 1127 GMT 31 Mar 93

[Text] Jakarta, March 31 (OANA/ANTARA)—Australia's Minister of Overseas Development John Kerin recently signed an agreement with the Swedish ambassador and the Swiss ambassador to set up a centre for international forestry research (CIFOR) in Bogor, West Java, about 60 km from Jakarta.

According to the Australian Embassy's press release here on Tuesday, Kerin has said that Australia's support for the setting up of the new research centre is in line with the support the Australian Government has given to the international tropical forest agreement and agenda 21 of the Earth Summit.

In Kerin's opinion, this initiative will give room for better cooperation between Australia's Forestry Research Society and CIFOR and also for stronger relations between Australia and Indonesia.

CIFOR, an international scientific research organisation, concentrates on research to maintain and conserve tropical forests in developing countries in Asia, Latin America, Central America and Africa.

Founded in 1971, CIFOR has Australia as one of its founders.

JAPAN

Russian Official Admits Radioactive Waste Dumped in Sea of Japan

OW2403143193 Tokyo KYODO in English 1413 GMT 24 Mar 93

[Text] Moscow (KYODO)—The Russian Government admitted Wednesday [24 March] that it has been dumping radioactive waste materials in the Sea of Japan and the Sea of Okhotsk until last year.

The dumping was made public in a report submitted by the government environmental adviser to President Boris Yeltsin.

Report Says Russia Dumped Nuclear Waste in Sea for 30 Years

OW2403145793 Tokyo NHK General Television Network in Japanese 1000 GMT 24 Mar 93

[From "NHK News" program]

[Text] NHK's Vladivostok Bureau has reported that the Russian Navy and the former Soviet Navy have been dumping nuclear waste in the Sea of Japan for nearly 30 years. The bureau said that the dumping continued until December 1992, and that, for the past several years, dumping took place between four and seven times a year.

The bureau's report is based on testimony taken from several Russian citizens who used to be involved in Russia's disposal of nuclear waste into the sea.

According to the testimony, Russia's Pacific Fleet based in Vladivostok was dumping waste from nuclear submarines into the Sea of Japan about 200 kilometers south of Vladivostok. The Pacific Fleet dumped liquid waste directly into the sea. This included secondary cooling water from reactors installed in nuclear submarines.

Also, the fleet packed cloth, gloves, pieces of metal, and other solid nuclear waste into containers which were sunk deep in the sea at a depth of about 3,000 meters.

NHK Vladivostok Bureau said that the fleet dumped nuclear waste six times in 1990, seven times in 1991, and four times in 1992. In 1991, 3,000 tons of liquid waste were dumped which had about 925 billion becquerels of radioactivity. In addition, 373 cubic meters of solid waste contained about 5.92 trillion becquerels. The level of radioactivity believed to have been dumped in 1991 was seven times higher than that permitted by Japanese standards.

NHK found that the Pacific Fleet had been dumping nuclear waste in 10 locations in the sea off Siberia for nearly 30 years since the mid-1960's, and that the dumping into the Sea of Japan continued until December 1992. The Pacific Fleet is now asking the Russian Government for permission to continue disposing of nuclear waste in the sea.

Disposal of nuclear waste into the sea is regulated by the so-called London Treaty. In 1983, member countries adopted a resolution calling for restraint in marine disposal. If the NHK report is verified, the former Soviet Union and Russia, as a matter of national policy, dumped nuclear waste into the sea in the complete contravention of the treaty. The Pacific Fleet has never measured the levels of radioactivity in the water where it has dumped waste. It now, reportedly, has a plan to measure radioactivity levels at the bottom of the Japan Sea this summer for the first time.

As far as the impact of nuclear waste on the environment is concerned, Kiyoshi Nakamura, an official with the National Institute of Radiological Science under the Science and Technology Agency, said:

[Begin Nakamura recording] There is not enough data to make a conclusive statement on whether the dumping of radioactive materials in the Sea of Japan is having a significant impact on the environment. The Science and Technology Agency has been conducting regular tests of sea water samples nationwide, but they have not detected any significant changes in the data. The level of radioactivity in the samples from the Sea of Japan is still about the same as the samples from the Pacific Ocean. [end recording]

Mr. Nakamura added that, even if nuclear waste was dumped into the sea at a depth of 3,000 meters, as reported, it would take a long time before the effects of the waste were detected at the sea's surface because the flow of sea water is slow in the area.

The British newspaper the FINANCIAL TIMES reported in its 24 March edition that, according to a report compiled by the Russian Government, the former Soviet Navy had disposed of a massive volume of nuclear waste in the sea since 1959. The paper reported that the nuclear waste included 18 reactors from nuclear-powered submarines, and that seven of these were discarded still loaded with nuclear fuel. The reactors were reportedly discarded in the Barents Sea and the Sea of Japan.

Greenpeace, an environmentalist group, also reported on Tuesday [23 March] that the former Soviet Navy had disposed of about 13,000 containers filled with nuclear waste into the sea, in addition to nuclear reactors. The Greenpeace statement is also based on the Russian Government report. It is estimated that the total amount of radiation discarded by the navy is about one-tenth of that emitted from Chernobyl.

Government Mandates Double-Hull Structure on Tankers

OW2403115893 Tokyo KYODO in English 0959 GMT 24 Mar 93

[Text] Tokyo, March 24 (KYODO)—The Ministry of Transport will amend its ordinance on Monday [29 March] to require Japanese-flagged tankers to have a double-hull structure, effective from July 6, ministry officials said Wednesday.

The move is in line with a resolution last March by the International Maritime Organization (IMO) for the double-hull structures to prevent oil spills.

Under the resolution, all tankers contracted to be built from July 6 are to have such a structure.

For existing vessels, crude oil tankers with a loading capacity of 20,000 tons and over, and refined oil tankers with a capacity of 30,000 tons and more, will be allowed to operate for no longer than 25 years after being delivered to their owners.

But this will be extended to 30 years for those with sanctioned equipment for preventing oil spills.

According to ministry estimates, tankers subject to IMO regulations now total about 2,600 vessels, of which about 70 carry the Japanese flag. Of these, only two or three satisfy the double-hull standard.

With the new regulation, about 50 percent of global tankers will be double-hull types by the year 2000, and 100 percent by 2026, the ministry predicts.

SOUTH KOREA

ROK-Russia-Japan Joint Marine Pollution Study Possible

SK3003035893 Seoul YONHAP in English 0228 GMT 30 Mar 93

[Text] Seoul, March 30 (YONHAP)—Seoul hopes oceanographers from South Korea, Japan, and Russia will jointly investigate the possibility of radioactive pollution in the East Sea, where the Soviet Union dumped nuclear waste, a Foreign Ministry official said Tuesday.

The Foreign Ministry received material on the dumping of nuclear waste in the East Sea from the Japanese Embassy in Seoul on Monday.

Russians abandoned low-level liquid and solid radioactive waste in the East Sea between 1974 and 1992, according to the Japanese materials.

Seoul will join the London-based Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matters this year and revise its Marine Pollution Prevention Law to fully equip itself with the legal means to fight marine pollution, the official said.

"To confirm the question of East Sea radioactive pollution and the exact site of nuclear waste dumping, the government is seeking cooperation from private institutions at home and Russia's Pacific Oceanographic Institute," the official said, adding that Japan had also shown interest in the matter.

SINGAPORE

New Shipping Laws To Prevent Major Oil Spills

BK2803122793 Singapore BUSINESS TIMES in English 27 Mar 93 p 2

[Text] TANKERS and ships calling for registered here will soon have to meet stiffer requirements designed to prevent major oil spill disasters.

According to a Marine Department circular, Singapore has changed its law to reflect amendments to the International Convention for the Prevention of Pollution from Ships (Marpol) on oil spill response planning, the discharge of oily residues and tanker design.

From April 4, tankers over 150 gross tons and other ships over 400 gross tons must have shipboard oil spill contingency plans.

These emergency response plans must detail on-shore contact numbers of the shipowner or manager, the littoral state authorities, as well as the parties responsible for coordinating communication, containment and clean-up.

Shipowners must file the plan, in the form of a booklet, with the Marine Department or an approved ship classification society.

The masters of these vessels must also obtain a receipt from a reception facility to prove that they discharged any oil or oily waste legally.

This requirement is aimed at preventing illegal dumping. Earlier this month, an Iranian tanker, the Sanandaj 2, was accused of dumping 4,000 tonnes of sludge into the Malacca Straits.

Finally, from July 6, Singapore will require new tankers to be fitted with double hulls Mitsubishi-style mid-deck tanks, or other designs proven to reduce the danger of oil pollution in the event of a collision or grounding.

The Singapore announcement mirrors similar moves by coastal states around the world to adopt the Marpol requirements. Ship and tanker owners around the world face massive expenditure to meet these standards.

THAILAND

\$220 Million 'Environment Fund' Established

*BK3103021193 Bangkok THE NATION in English
31 Mar 93 p A4*

[Excerpts] Thailand is serious about cleaning up the environment and has established a US\$220 million (Bt5.5 billion) Environment Fund to tackle the challenge, Prime Minister Chuan Likphai said yesterday. [passage omitted]

He told the gathering of about 600 Thai and foreign businessmen that the Environmental Quality Act has been effective in tackling environmental problems since 1992.

Chuan said his government "has laid down comprehensive measures not only to repair the damage done by pollution but also to improve our overall environment".

"The government has also set up the Environment Fund, with initial start-up money of about US\$220 million," he said. "In addition, the government has encouraged the local level to identify its specific environmental problems and propose the corresponding plans of action." [passage omitted]

Conservationists Call For Further Consideration of Dam Project

*BK0104031993 Bangkok BANGKOK POST in English
1 Apr 93 p 5*

[Text] When a proposal was made to build a dam at Mae Wong National Park in Kampaeng Phet and Nakhon Sawan provinces, local conservationists were doubly worried. The project will not only cause 10,000 rai of forest to be inundated but it also poses a grave threat to Huay Khakaeng Wildlife Sanctuary, which is considered the world's heritage.

Mae Wong National Park which covers 550,000 rai of forest, serves as a buffer zone for the Huay Khakaeng Wildlife Sanctuary.

"In fact, it's in the same forest as Thungyai Naresuap-Huay Khakaeng Wildlife Sanctuary," said Mr. Chainarong Chanthonsarathun, chief of Mae Wong National Park. "It's the biggest forest on the western side of the country, totalling nine million rai. It should be preserved at all costs."

As the country is being hit by drought, state agencies tend to promote the idea that the problem can be solved by building more dams.

Mae Wong project is no exception. Villagers in the two provinces hope that it will relieve water shortage in the dry season and prevent floods in the rainy season.

But Mr. Chainarong disagrees. "There're other alternatives," he said.

Mae Wong, he said, was classified as national park in 1987 because it is a watershed area. "The first question we have to ask ourselves is what this area is best for. It must be made clear that it is a watershed area. It's certainly not for agricultural use."

Mae Wong is also a habitat for endangered wildlife.

Eighty percent of the area designated as the site of the dam is a lush teak forest while the remaining 20 percent is secondary forest which can develop into fertile forest if it is not disturbed by humans.

According to Mr. Wanchai Tanthiwitthayaphithak, secretary general of the Sueb Nakasathien Foundation, Mae Wong National Park is an excellent example of the forest that manages to recover itself through time. "Before the area was declared a national park, it had long been inhabited by hilltribe minorities. However, all of the inhabitants were evicted by Mr. Chainarong with an aim to conserve the watershed area."

But it is feared that the dam project, which is regarded as "legalised deforestation" by the conservationists, will permanently change Mae Wong National Park and Huay Khakaeng Wildlife Sanctuary.

Chatchawan Phitdamkham, chief of Huay Khakaeng Wildlife Sanctuary, said: "Thos who are pushing for the dam say 10,000 rai of forest that will be submerged is just 10 percent of the park. But practically we will lose more than 10,000 rai."

"Firstly, it's undeniable that the area surrounding the dam site and reservoirs, which is part of the national park, will later be encroached upon by villagers. Roads built during the dam construction will make the national park more vulnerable to human intrusion.

"When the project is completed, forestry officials who are poorly equipped will face a much tougher task protecting the remaining forest."

Moreover, Mr. Chatchawan does not believe in the so-called "environmental impact assessment documents" that include reforestation as a measure to compensate for the submerged area.

"Past experience tells us that such reforestation hardly works," he said. "Under the common process, some budget will be allocated to the Forestry Department to replant the trees that will be cut down or die when a dam is built. People are made to think that the problem can be solved this way and they will argue no more about the loss of forest. It should be examined how this measure works in reality."

"Even if you are able to replant the trees, it's next to impossible to restore the ecological system."

Mr. Chatchawan said the evacuation of wildlife won't work either. We may catch them and save them from drowning, but the animals never survive the new environment. That's what we learnt from the construction of Chiao Lan Dam in the South."

To solve water problems in Nakhon Sawan and Kamphaeng Phet Mr. Chainarong said more efforts should be made to develop water sources rather than building a dam.

"Small-scale reservoirs and irrigation canals should solve the problem. It will cost less than one billion baht—a lot cheaper than the proposed dam project," he said.

He hopes that his proposal will be seriously considered by the Irrigation Department.

To both Mr. Chatchawan and Mr. Chainarong, Mae Wong National Park must be protected to ensure the survival of Huay Khakaeng Wildlife Sanctuary.

The country is celebrating National Heritage Day this week.

ALBANIA

Seminar With Germany To Learn Methodology of Environment Protection

*AU3003164593 Tirana ATA in English 0817 GMT
30 Mar 93*

[Text] Tirana, March 30 (ATA)—The Albanian Committee for the Environmental Protection, in cooperation with the Federal Ministry of the Protection of Nature and Reactors' Maintenance in Bonn, with the Office of Environment in Berlin, and the Ministry on Environment and Territories' Planning in the land of Turingen, started in Tirana on March 29 the joint seminar on the construction of the public administrative structures for the environmental protection and the way of adopting decisions and the procedures in the structures of the market economy.

Mr. Sigmanne, minister of environmental protection and the territories' planning of the land of Turingen, who was invited, gave the idea on a possible adoption of the German experiences in the administration of the environment according to the needs and conditions of Albania.

The seminar is presided over by Lirim Selfo, chairman of the Albanian Committee of Environmental Protection, and Mrs. Haidy Pauls from Karl Duisberg Center. The seminar will last three days and German specialists of this field will read reports in it.

BULGARIA

Nuclear Safety Agreement Signed With Germany

*AU2603145093 Sofia BTA in English 1250 GMT
26 Mar 93*

[Text] Sofia, March 26 (BTA)—A Bulgarian-German agreement on nuclear safety and radiation protection was signed here today in compliance with the principles for cooperation within the International Atomic Energy Agency and the Vienna Convention for Operative Notification in Case of Nuclear Accidents.

Klaus Gast, chief of the Nuclear Safety Department with the Ministry of the Environment, signed for Germany. Yanko Yanev, chairman of the Committee for Peaceful Uses of Atomic Energy, signed for Bulgaria.

Mr. Yanev stressed this is the first bilateral agreement with an East European country to include a clause under which the German Ministry will provide technical assistance and information on nuclear safety matters.

Mr. Gast, who has visited the Kozloduy Nuclear Power Plant, said he was satisfied with its equipment, but declined to comment whether it still is the world's most dangerous nuclear power plant as it had been described by West European newspapers until recently.

Podkrepa Protests on Behalf of Cattle Breeders

*AU2903195793 Sofia BTA in English 1746 GMT
29 Mar 93*

[Text] Sofia, March 29 (BTA)—In a declaration addressed to the National Assembly, the president and the Council of Ministers the Podkrepa Labor Confederation states today that if the government and parliament do not take on their responsibility in solving the problems in stock-breeding by the end of this week, the confederation will take effective action in support of the just demands of the stock-breeders.

This document, adopted at a Confederative Council of one of Bulgaria's two major trade union amalgamations, points out that Bulgarian stock-breeding is agonizing, that poultry, pigs and cattle from elite herds are starving to death while land restitution is being purposefully delayed by the formerly communist Bulgarian Socialist Party in pursuance of political dividends.

The Podkrepa Labor Confederation insists on the immediate provision of all necessary funds for the spring campaign, for holding to account all who are responsible for the disastrous state of this branch and on the stopping of all export of grain and fodder and live animals.

The organizations of the "Informatics and Electronics" Trade Union Federation with the Podkrepa Labor Confederation came out with a protest declaration addressed to the National Assembly and to the president of the republic.

The declaration points to plummeting production and the emerging new wave of dismissals in Bulgaria's electronics and informatics industry and states that it is a crime to destroy an invaluable national capital of highly-qualified experts and sophisticated equipment worth billions of leva and U.S. dollars. This will lead to an escalation of social tensions of unpredictable consequences, the declaration reads.

The trade unionists insist that a clear strategy for the development of this branch be worked out within one month as well as on legislative securities, on paying the sums owed to the workers in this branch in 1991 and 1992 with the interests on them and on the elaboration of a programme for maximum employment. Otherwise we will be forced to resort to effective protest actions, it is pointed out in the declaration.

SLOVAKIA

National Council Responds to Hungary's Resolution on Gabcikovo

*AU2903194593 Bratislava NARODNA OBRODA
in Slovak 25 Mar 93 p 6*

["Resolution of the National Council of the Slovak Republic on the G-N Hydroelectric Project" adopted on 24 March]

[Text] On 24 February 1993, the Hungarian Parliament issued a resolution addressed to the legislative bodies of

UN-member states that expediently distorts the essence of the problems and wrongly accuses the Slovak Republic of violating the territorial integrity of the Republic of Hungary and numerous international treaties.

Since this resolution damages the international position of the Slovak Republic, the National Council of the Slovak Republic considers it its duty to acquaint the parliaments of the UN-member states and the world public with the following facts.

1. The primary cause for the emergence of all problems is that in 1989, three months after an agreement, on the suggestion of the Hungarian Government, had been signed to accelerate construction—not only at the Gabčíkovo stage but particularly on the Nagymaros stage—the Hungarian side first halted work on the project and soon thereafter unilaterally abrogated the legally concluded treaty of 16 September 1977 (registered and published in the UN Treaty Series, Vol. 1109, 1, 17134). Acceptance of the conduct of the Hungarian side thus far could create a precedent for unilateral abrogation of any international treaty.

2. The Gabčíkovo-Nagymaros hydroelectric system has been designed and implemented jointly with the Republic of Hungary particularly to prevent flooding of the land, improve navigation on the Danube, improve the water system in wetland-forest ecological systems, increase the dynamic underground drinking water reserves, and obtain water for field irrigation. The power generated was to pay for the construction and complete operation of the project. The headwater-canal version was chosen at the request of the Hungarian side to protect the region from flood disasters like those Szigetköz experienced in 1954 and Zitny Ostrov [Rye Island] in 1965, when large tracts of land, housing, communications, and crops were destroyed.

3. At the time Hungary halted the Nagymaros stage construction and started its relentless propaganda against the hydroelectric system, the Gabčíkovo stage was 85 percent finished, and restoration to the original state impossible. The only feasible solution—also from the point of view of preventing environmental damage to the region—was the implementation of a temporary substitute plan that was adopted by a decision of the CSFR Government and approved by the Federal Assembly. This solution is a consequence of the unilateral abrogation of the treaty, and the Czechoslovak side did not resort to it before exhausting all possibilities of an agreement on a joint approach.

4. The substitute solution, in accordance with Article 18 of the 1977 Treaty, moves only the navigation course to the headwater canal, and the unchanged state border remains in the old Danube bed as per Article 22 of the said treaty, i.e., according to the 1925 and 1948 documentation on demarcation of the border. Therefore, we refute the claims of the Hungarian Parliament that the border and the territorial integrity of the Republic of Hungary has been violated by the Slovak Republic.

5. The Slovak Republic is vitally interested in an effective protection of the joint wealth of the underground water. All international commissions, expert studies, and monitoring of the regime and quality of the underground water to date negate the 1989 claims of the danger of an environmental disaster that Hungary used to justify the abrogation of the treaty.

6. The current problems with the Danube bed are a direct consequence of the negative attitude of the Republic of Hungary to the joint implementation of the agreed-upon technical measures recommended, among others, by the EC expert commission in its report of November 1992. By assuming this stand, the Hungarian party consciously creates prerequisites for the emergence of environmental damage to the Danube branch system and the wetland forests, which is to provide public support for their point of view.

7. The power generated alone facilitates the financing of the technical measures for the environmental modifications and assurance of the navigation on the Rhine-Main-Danube waterway. Any limitation imposed on the electric power production without any compensation for the abrogation of the treaty by the Republic of Hungary damages the Slovak economy. Therefore, we greatly appreciate the recommendation made by the European Parliament to the European Commission that it investigate the possibilities of financial assistance to Slovakia to compensate for the reduced power production, which the government will use in the discussion of the Hungarian complaint.

8. It is in the interest of the Slovak Republic to seek a solution to this situation in the spirit of the EC recommendations asking both sides to be judicious in their approach. On the basis of both matter-of-fact environmental and technical arguments, it is willing to settle the Gabčíkovo-Nagymaros problem jointly with Hungarian specialists and foreign experts in a manner acceptable to both sides. We propose that the monitoring data be verified in the presence of independent experts on the territory of both the Slovak Republic and the Republic of Hungary, and that the conceivable additional measures are implemented jointly as necessary on the basis of the findings. 9. The National Council of the Slovak Republic expects similar steps also on the part of the Hungarian Parliament as the flexibility expected by the European Parliament from the Slovak side is being blocked by its unequivocally negative attitude toward the project. The National Council would welcome it if the Hungarian parliament withdrew its resolution of 16 April 1991, which authorizes the Republic of Hungary's government to discuss only the revocation of the treaty and the restoration to the original state, which is technically impossible.

10. The National Council of the Slovak Republic expresses its conviction that with mutual understanding and willingness to solve actual problems, the Gabčíkovo issue will cease to engage international institutions and cease to be a source of tension in this region. We began this project together with the Republic of Hungary and

we should finish it together. The National Council of the Slovak Republic established a special parliamentary commission for the coordination of its approach toward the Republic of Hungary as early as November 1992. It would welcome the organization of a similar commission in the Hungarian Parliament, and is ready to establish direct ties with such a commission.

Meciar Sets Conditions for Hungarian Relations

*AU0204162993 Budapest NEPSZABADSAG
in Hungarian 31 Mar 93 p 3*

[MTI report: "Bratislava Again Failed To Discuss Bos"]

[Text] The first condition for good Slovak-Hungarian relations would be the recognition of the unalterability of the borders, Slovak Prime Minister Vladimir Meciar declared.

In his interview to the 30 March issue of GENERAL ANZEIGER published in Bonn, Vladimir Meciar confirmed that the Slovak foreign minister proposed to his Hungarian colleague that Budapest and Bratislava sign an agreement about the inviolability of borders.

"Relations with Hungary are extremely important for us. Hungary is the country with which we have the longest common border. This border must not be changed. Recognizing this would be the first condition for good bilateral relations. We are waiting for a reply from Budapest, and we hope it will be a positive one," Vladimir Meciar declared.

Vladimir Meciar also said that, in his view, if the joint document on submitting the Bos issue to the International Court in The Hague is presented in its current form, then this affair would have a detrimental effect on Bratislava. Foreign Minister Moravcik "has already taken steps and we have been seeking ways that would lead to an agreement," Vladimir Meciar said.

HUNGARY

'Tragic' Environment Situation Discussed

*93CH0467F Budapest UJ MAGYARORSZAG
in Hungarian 9 Mar 93 p 4*

[Unattributed article: "300 Kilograms of Air Pollutants Per Resident"]

[Text] The press conference that the Budapest Society for the City's Environmental Protection held yesterday was entitled "A Systems Approach to Environmental Protection." Professor Dezso Rado, the society's vice president, called attention to the fact that environmental protection is no longer a fad or movement, but a professional activity that is a necessary concomitant of technical progress. Because of its complexity, that professional activity does not tolerate picking out and focusing on details. Instead, it employs a systems approach in dealing with the phenomena and their interactions.

Professor Rado pointed out that the traditional classification investigates the environment's elements: the air,

water, and soil, the flora and fauna, and the settlement's environment. Man and his activity are left out, although in most cases man's activity simultaneously affects the mentioned elements and man himself, in the form of disease and death.

For instance, public opinion barely takes notice of the more than tragic fact that, according to a comparison of mortality statistics, Hungary has the highest death rate in proportion to its population. Per 10 million of their respective populations, 94,000 Italians, 90,000 Frenchmen, 67,000 Japanese, but 141,000 Hungarians are dying annually. Our loss in comparison with the European average, or even with our own average 30 years ago, is the equivalent of two battles at Mohacs.

It is undeniable that, for instance, the 14-percent increase in smoking, the 57-percent rise in alcohol consumption, and a more sedentary way of life also play a role in this. But in addition to all this, our industrial production trebled (rose by 300 percent) during the past 30 years, and our transportation increased nearly 20-fold (by 1,900 percent). In other words, in our country—where the average of total air pollutants is at least 200 kilograms annually per citizen—it is not enough to investigate pollution in a breakdown by the environment's elements. More attention ought to be devoted to the phenomena, even if we know that the one to die will be our neighbor, Dezso Rado emphasized.

Analyzing "our most suicidal activities," the speaker pointed out, among other things, the responsibility of settlement policy and settlement planning—i.e., the fact that construction projects, which attract transportation, already determine the future state of the environment. The statistics in this area are at least as appalling as the population statistics. Only here the results are not corpses, but "undernourished" villages and "overfed" hydrocephalic cities, both going to ruin. Thirty years ago, barely 40 percent of the country's population lived in cities. Now the proportion of city dwellers is more than 60 percent.

The villages are emptying, while the cities are becoming less and less inhabitable. The sickest city is Budapest, within which the rise in Buda's horrible building density is a "nightmare." The average annual total of air pollutants per resident in the capital is 300 kilograms. Development of the sewer network is lagging dreadfully, public areas are neglected, and the piles of rubble are growing. The streams are becoming sewers. The green belts and forests are becoming the victims of fire sales and real-estate speculators. The capital is sinking into complete municipal-planning, traffic, and environmental anarchy.

It was emphasized at the press conference that this tragic situation cannot be changed overnight. In a sense of responsibility for the city's residents, however, immediate action is necessary to halt the deterioration, through administrative, economic and traffic-planning measures, through strict enforcement of environmental

regulations, by banning construction in the green belts, and by starting the rehabilitation of the network of settlements.

POLAND

Conference Says Measures To Save Baltic Sea Urgently Needed

AU2703155393 Warsaw PAP in English 1219 GMT 25 Mar 93

[Text] Gdansk, March 25—Urgent measures are needed if the natural environment of the Baltic Sea is to be protected, delegates meeting in the northern Polish port city of Gdansk for an international conference to discuss the Baltic protection programme, claimed on Thursday [25 March].

Opening the second day of the two-day conference, which brings together environment ministers from states bordering the Baltic and representatives of international financial institutions, Polish Environment Minister Zygmunt Hortmanowicz said that financial questions were of crucial significance in ensuring the ecological security of the Baltic region.

Danish Ecology Minister Sven Auken called for faster measures to be taken to defend the Baltic. "I am opposed to ten-year programmes. If we are going to wait that long, perhaps there will be nothing left to defend, and at the moment, we have done too little."

According to the conference material, Poland faces a great burden in cleaning up the Baltic. Of the 132 "hot spots" highlighted on the map of rivers flowing into the Baltic sea, 34 are to be found in Poland. In addition, Poland is the leading emitter of nitrogen and sulphur compounds, and of other harmful substances, in the Baltic region.

ROMANIA

Negritoiu, EBRD's Attali Discuss Environment Projects

AU2603142093 Bucharest ROMPRES in English 1201 GMT 26 Mar 93

[Text] Bucharest (ROMPRES) 26/3/1993—"I am very glad I have had the opportunity to meet President Iliescu yesterday and government representatives this morning in order to discuss the situation in Romania to which we are very engaged to invest and assist, so that your

country may accomplish its projects in infrastructure, in environment protection and in speeding up the process of industrial restructuring and privatization", said Jacques Attali, president of the European Bank for Reconstruction and Development [EBRD], now heading an EBRD delegation on a Bucharest visit, after his meeting with state ministers Misu Negritoiu, chairman of the Council for Economic Coordination, Strategy and Reform, and Florin Georgescu, minister of finance. "Industrial restructuring and privatization are the conditions for the development of the small and medium enterprises that should generate new jobs which Romania needs so much," said Attali, adding that "in this respect we discussed new projects that should allow for speeding up the restructuring processes."

In turn, Minister of State Misu Negritoiu said: "It was a very constructive meeting, during which we discussed the ever more important role the European Bank for Reconstruction and Development is to play, especially in restructuring the Romanian industry. We have discussed restructuring projects in which the European Bank will participate, pursuing especially the infrastructure and environmental protection. The very good news which President Jacques Attali has brought is that the interest rate on financing the projects in Romania will be cut down starting next week, which will encourage the investors both in public investments and in private ones. We will benefit the same treatment of all countries in central and Eastern Europe."

YUGOSLAVIA

Montenegro: Ecological Problems of Zeta River Valley Reported

LD3103160293 Belgrade TANJUG Domestic Service in Serbo-Croatian 1256 GMT 31 Mar 93

[Excerpts] Podgorica, 31 Mar (TANJUG)—Having examined the extent of water pollution in the area of the Zeta River Valley, the Montenegrin Health Institute established that a certain number of water samples taken in that area have a higher degree of pH value, a higher concentration of sodium, potassium, phenol, aromatic hydrocarbons, and mineral oils. Bacteriological pollution has also been recorded. [passage omitted]

The Health Institute also said that—in addition to the Aluminum Combine, which was singled out as the main culprit for the ecological disaster of the Zeta River—there is a series of other polluters, while the inadequate application of agro-technical measures is also contributing to this.

PARAGUAY

Expert Says Argentina Diverting Pilcomayo River in Violation of Accord

*PY2903203493 Asuncion ABC COLOR in Spanish
27 Mar 93 p 11*

[Text] Engineer Luis Alberto Meyer, president of the Commission for the Multiple Exploitation of the Pilcomayo River, yesterday confirmed during a news conference that Argentina had again violated the terms of an agreement with our country when transforming—by its own initiative—an experimental water inlet—which had to be built with similar characteristics on both margins—in an effective diversion channel by using a technical scheme that permanently changed the course of the river toward Argentine territory. The diversion hurts the river irrigation of our side which is essential for the region's ecological balance.

The issue is not new, since it began in October 1991. But the damaging effects against our country could only be correctly measured recently following a national commission member's visit to the lower and middle sections of the river.

The inlets or river bed works consist of the cleaning up and clearing of a river bed section 0.50 meters deep and 150 meters wide. "We expected similar work on both sides, but the Argentines opened another excavation—usually called a pilot channel—a little farther, measuring approximately 5 meters wide and 2 meters deep which did not begin at the center of the river bed and was not even seen from our side," Meyer said.

This channel was used to provide faster water flow, or to transform an inlet into a water diversion channel.

The Paraguayan delegation obviously protested the violation but the Argentines argued that there was not enough time to repair it because the flood season was nearing. However, national authorities and the commission have already taken the steps to see that the Argentine authorities correct the situation. We assure you that we will insist that repairs be carried out.

The channel, however, continues to take water to Argentine territory, including during low water periods or droughts while the tests done in El Canadon La Madrid, on the Paraguayan side, show that water no longer flows into Paraguayan territory. This proves that our country is fully complying with the agreement to divert excess waters only during flood seasons.

At some point in the delicate negotiations Argentina suggested that Paraguay build its own channel to take equal amounts of water. But engineer Meyer categorically opposed this. "We cannot accept the position that Paraguay open its own channel, because then we would be establishing the principle of partitioning water; we do not know where this precedent could take us," Meyer said.

Meyer said that Paraguay cannot accept the principle of water partitioning as long as it does not have a contour survey of the area and other studies so as to understand how the whole thing will work.

Meyer said that his Argentine counterparts must solve the problem created in the diversion channel this year before we can solve the problem of the filling up of the river bed and the disappearance of the Pilcomayo River.

REGIONAL AFFAIRS

Turkey Strives for Arab Understanding on Water

93WN0289A London AL-HAYAH in Arabic 14 Feb 93
p 4

[Article by Muhammad 'Allam]

[Text] Cairo—AL-HAYAH has learned that Turkey, in response to criticism of its water project in the Middle East known as the "Peace Pipeline," has asserted to the Arab League and a number of countries in the region that it has no intention of achieving a strategic gain in the Middle East and that the idea of supplying water to Israel or to any other place through a pipeline from the Euphrates and Tigris Rivers is absolutely out of the question.

Turkey denied that it is "endangering its relations with the Arab countries in the interest of Israel." It voiced its desire to maintain relations with the Arabs, but it expressed its dismay at the attitude of the Arab countries that "do not appreciate Turkey's stand and its sacrifices in order to solve the water problem in the Middle East. It stressed to "those who think that there is political pressure behind Turkey's proposed Peace Pipeline project that this is totally untrue. This is found only in their sick imagination. The project can be achieved only with the consent of the countries concerned.

AL-HAYAH learned that the Turkish attitude was conveyed in a message to some countries of the area. It said: "Turkey has no intention to exploit the question of water in order to achieve a strategic gain in the Middle East. But the objective behind this is Turkey's concern with the Middle East problem because it is involved in it and is equally affected by it as the other countries of the region. Turkey's hosting the conference on water and its submitting the water project are goodwill measures with the objective of alleviating the negative effect the water problem has on the area."

The Turkish message said that "there is no direct link between the water peace conference and the conference on Middle Eastern water." Turkey did not claim that the peace conference is the only way to solving the water problem in the region, as is being alleged. A fundamental fact that all those concerned with this subject should know is that transporting 6.5 million cubic meters of water daily to the Arabian peninsula through a pipeline will not be sufficient to solve the water problem in the region. In this context, the water that is projected to flow through this project should be used for drinking and not for agriculture. This project does not include Israel. Turkey has declared this several times. Also, the idea of transporting water from the Tigris and the Euphrates to Israel or to any other place through a pipeline is out of the question.

The message also said: "The average flow of water in Turkey was 150 cubic meters per second during the past summer, while the average flow of water per second across the borders was 550 cubic meters. This quantity

was provided by adding water from the Keban and Karakaya Dams, which clearly proves the benefits of dams on the Euphrates for the countries concerned."

The message added: "Those who think that there is a political pressure behind this project, which can be achieved only with consent of the countries concerned in the first place, should know that this is unfounded. It is found only in their sick imagination."

In a study on water problems it prepared, the Arab League called for refraining from taking part in the [Turkish] project, and accused Turkey of adversely affecting the rate of water reaching Syria and Iraq from the Tigris and Euphrates Rivers.

BANGLADESH

Delhi Notes Divergent Views at Water Sharing Talks

BK3003160293 Delhi All India Radio Network
in English 1530 GMT 30 Mar 93

[Text] In the first day's discussions at the two-day meeting of the Indo-Bangladesh joint committee of experts on sharing of common river waters in Dhaka, both sides expressed divergent views on the progress of the talks. While the leader of the Indian delegation, Dr. C.D. Thatte, said the talks were progressing and they are half way through, the head of the Bangladesh team, Mr. Asafuddaula, said he was not happy about the progress. Mr. Thatte told waiting newsmen that we have to sort out some important points before arriving at a long-term solution on the issue. Mr. Asafuddaula remarked that political goodwill was needed more than expert opinions to solve these vexed issues.

Talks With India on Water Resources Begin

BK3003131493 Hong Kong AFP in English 1301 GMT
30 Mar 93

[Text] Dhaka, March 30 (AFP)—Two days of talks between Bangladesh and India on use of their common rivers opened here Tuesday with the hosts reiterating their charge that India is swallowing too much water from the Ganges.

Water levels in the Ganges are now so low that parts of northern Bangladesh are turning into desert, Bangladesh officials said.

The meeting of the Joint Committee of Experts (JCE) will focus on the Ganges and other common rivers and was a follow-up to the last meeting in December in New Delhi.

Bangladesh Irrigation, Water Development and Flood Control Secretary Mohammad Asafuddaula and Indian counterpart C.D. Thatte were leading their respective sides at the talks.

Dhaka will continue to press for a permanent water-sharing agreement for the Ganges after the last short-term agreement expired in 1988, officials said.

Earlier this month, official sources here said they would build a 110 billion taka (2.82 billion dollar) barrage across the Pangsha river, a tributary of the Ganges, to counter desertification in northern Bangladesh blamed on India's Farakka barrage.

Officials said the water level of the Ganges registered a sharp fall at the start of the current dry season to an all-time low of 258 cubic metres (9,030 cubic feet) per second, hastening the process of desertification in the underdeveloped northern parts of Bangladesh.

India's Farraka barrage was put into operation in 1975 and officials said ever since then India's "unilateral withdrawal of water against all international norms and laws" had continued to have a negative environmental impact on Bangladesh, affecting river transportation and the environment.

Official sources said the withdrawal of water by India in the current season has forced the closure of a major Bangladesh's irrigation project supplying water to 120,000 acres (48,000 hectares) during the March-June dry season.

INDIA

Four Birla Officials Arrested for Gas Leak, Deaths

BK3103040993 Delhi INDIAN EXPRESS in English
19 Mar 93 p 9

[Text] Bombay—The executive president of Century Rayon Durgesh Chandra, Senior vice president L.F. Mehta, General manager operations V.K. Jain and senior manager for safety, health and environment H.G. Uttamchandani have been arrested on Thursday evening in Bombay for the sulphuric acid accident at their plant at Shahad village-near Kalyan, that killed 9 people on Wednesday.

All four top officials of the Birla plant were arrested by the Maharashtra Pollution Control Board [PCB] under the instructions of the Environment Ministry here under sections 304A of the IPC read with sections 337, 338, 427 and 429. Section 304A stands for causing death by negligence or culpable homicide not amounting to murder.

Under Section 5 of the Environment Protection Act, the factory has been closed. While 32 people have been injured and admitted to the hospital another 93 have been released after treatment.

The factory established in 1955, manufactures every month 1,100 tonnes of filament yarn, 380 tonnes of Rayon tyre yarn apart from hazardous chemicals like carbon di-sulphide (3,500 tonnes per month) and sodium sulphate.

On Wednesday, the Disco Rayon plant is said to have tripped thrice discharging 100 to 125 cubic metres of "spinbath solution". Despite all the safety drills that the ministry has been advocating, the plant was unable to contain the sulphuric acid inside the factory zone. The

acid drained into the adjoining Waldhuni nala [canal] and within half an hour 9 people were dead.

It is believed that the factory which had recently obtained its certificate for conforming to pollution parametres, did not even inform the state PCB immediately after the accident.

Chief Ministers Told To Fulfill Afforestation Targets

BK3103040593 Delhi INDIAN EXPRESS in English
19 Mar 93 p 9

[Text] New Delhi—In his characteristic carrot and stick policy, Environment and Forest Minister Kamal Nath has dashed off letters to 12 chief ministers that there will be no further diversion of forest lands for non-forestry uses till they fulfil their stipulated targets of compensatory afforestation.

While Bihar has done only four percent of the compensatory afforestation it has promised, 11 states are trailing way behind their goals. West Bengal has completed only 14 percent of its stipulated compensatory afforestation, Kerala—15 percent, Jammu and Kashmir—20 percent, Rajasthan—25 percent, Madhya Pradesh—28 percent, Arunachal Pradesh—34 percent, Andhra—36 percent, Tamil Nadu—39 percent, UP [Uttar Pradesh]—40 percent, Himachal—45 percent and Assam—46 percent.

Rajasthan's indifference to compensatory afforestation is particularly worrying since recently a Green Rajasthan programme is on. The ministry is willing to be lenient to Jammu and Kashmir since terrorist activity may have dampened the state's fervour for forestry. But there is no excuse for the extremely poor performance by Bihar. However, the silver lining is that other states have achieved their goals of compensatory afforestation and some have even exceeded it.

Due to the tremendous pressure on forest land for various development projects, the environment ministry had worked out a scheme by which the state has to afforest as much land as is diverted for a project. If revenue land is not available, the state has to do double the area diverted in degraded forest land. The money for compensatory afforestation is put in a separate kitty and used for that specific purpose. But, now it is feared that states may be misusing this money.

Mr Kamal Nath in his letters to chief ministers has asked them to complete their back log of compensatory afforestation by the end of this monsoon season failing which the ministry will not give forest land for non-forest uses.

The total forest area diverted in the last 13 years is about 2.25 lakh hectares. Between 1981-1991, compensatory afforestation was done on 50,000 hectares. With the pressures put by the environment ministry another 50,000 hectares was afforested in 1991-1992. The ministry was hoping that the remaining 1.25 lakh hectares would be covered by compensatory afforestation

between the monsoon of 1993 and that of 1994. But how can the ministry hope to achieve this when old targets have not been reached.

Delhi To Execute Sardar Sarovar Project Without World Bank Loan

*BK3003161493 Delhi All India Radio Network
in English 1530 GMT 30 Mar 93*

[Text] The government has decided to implement the Sardar Sarovar Project through its own resources instead of resorting to further borrowings from the World Bank. According to an official release in New Delhi, the stand taken by the government was outlined in a short statement on the Sardar Sarovar Project by Dr. Bimal Jalan, executive director of India, at the meeting of the World

Bank board of directors in Washington today. In his statement, Dr. Jalan said the Government of India and state governments will fully meet the rehabilitation, resettlement, and environmental standards during the further implementation of Sardar Sarovar Project and other similar important projects. He said his government has been closely monitoring the progress being made in the respective areas of responsibility in meeting the agreed benchmarks on rehabilitation, resettlement, and environment. He said the performance on the environmental benchmarks is better than expected. The official release said the Center will ensure that the project, which is vitally significant for the development of the people of Gujarat, Madhya Pradesh, and Maharashtra, is implemented on schedule.

REGIONAL AFFAIRS

Central Asian States, Russia Meet To Discuss Aral Sea

LD2703120693 Alma-Ata Kazakh Radio Network in Russian 0000 GMT 27 Mar 93

[Text] Yesterday in Kzyl-Orda, the conference of heads of states of Central Asia and Kazakhstan on the problems of the Aral Sea was held with the participation of the Russian Federation. Presidents Nursultan Nazarbayev of Kazakhstan, Askar Akayev of Kyrgyzstan, Islam Karimov of Uzbekistan, Tajik Supreme Soviet Chairman Imamali Rakhmanov, and Russian Deputy Prime Minister Georgiy Khizha attended. Turkmen President Saparmurad Niyazov, who is currently on a visit to the United States, could not participate in this meeting but expressed his approval of the documents that it will adopt.

The aim of the conference, which was opened by Nursultan Nazarbayev, is to outline joint efforts for tackling the problems of the Aral and the Aral Sea basin in order to prevent the expansion of a natural disaster, to take measures for normalizing the ecology, and ensuring socio-economic development of the most affected region. But this can be achieved only by the active joint efforts of all the CIS countries concerned alongside the support of the world community. The Aral ecological disaster has acquired a global scale. The agenda of the conference also includes setting up an international foundation for saving the Aral and an inter-state council on the Aral Sea basin problems, recruiting membership for these bodies, and an adoption of an appeal to the United Nations and heads of the Asian states.

International Fund Set Up To Save Aral Sea

PM3103084993 Moscow IZVESTIYA in Russian 30 Mar 93 First Edition p 2

[Vladimir Ardayev report: "Central Asian Heads of State Concerned by Aral Sea Problem"]

[Text] Kzyl-Orda—The first conference of the heads of Central Asian states and Kazakhstan on problems of the Aral Sea has taken place in Kzyl-Orda. As has already been reported, Presidents A. Akayev, I. Karimov, and N. Nazarbayev; Tajikistan's Supreme Soviet Chairman E. Rakhmonov; and Russian Vice Premier G. Khizha participated in it.

As N. Nazarbayev said, the conference participants dealt basically with organizational questions. In particular, with questions of the organization of the International Fund for Saving the Aral Sea, which was set up at the Tashkent meeting of heads of state. The basic documents summing up the conference were the Agreement on Joint Actions To Resolve Problems of the Aral Sea and the Area Adjoining It and on the Ecological Rehabilitation of the Aral Sea Region and Guaranteeing its Social and

Economic Development, and the Statute on the International Fund for Saving the Aral Sea. The fund's board has been elected. N. Nazarbayev became its first president.

Apart from this, the participating heads of states sent a letter to UN Secretary General Butrus Ghali asking him and all people of good will to "take the necessary measures to guarantee the ecological safety of people living in the Aral Sea area, and implement projects and programs to save the Aral Sea and rehabilitate the natural environment of its basin."

As far as the programs themselves are concerned, to all appearances, there is for the moment complete uncertainty about them, and the heads of state are also not of one mind on finding ways to resolve the Aral Sea's problems.

The fund's founding states will appropriate capital for saving the Aral Sea. A quota has been established: 1 percent of national income, which as a whole exceeds 10 billion rubles a year.

RUSSIA

Reports 'Contradictory' on Radiation Levels Near Tomsk-7

OW0704101593 Moscow INTERFAX in English 0953 GMT 7 Apr 93

[Following item transmitted via KYODO]

[Text] According to preliminary reports, the accident at the Siberian chemical plant in the closed city of Tomsk-7 on Tuesday [6 April] was caused by a thermal chemical explosion in a 28 cubic meter tank containing the solution of substances for processing used nuclear fuel, the press service of the Russian Federation's State Nuclear Inspection Committee told INTERFAX on April 7.

No traces of sustainable chain reaction, i.e. nuclear explosion, had been found, the committee's representative said. In the tank there were substances of medium activity. According to preliminary reports, the area outside the sanitary zone was not seriously contaminated.

To quote this official, the explosion destroyed part of the roof and partially damaged the chemical plant's production facilities. Reports about the radiation level received in the morning April 7 are contradictory.

Tomsk-7 is located 20 kilometers north of the regional center of Tomsk.

Discharge of Uranium Spray; Journalists Allowed Access

LD0704080293 Moscow Radio Rossii Network in Russian 0700 GMT 7 Apr 93

[Text] Our correspondent Andrey Murashev reports over the phone on the details of the accident at the Siberian Chemicals Combine in the town of Tomsk-7.

[Murashev] It all happened on 6 April during lunch break, at 1258 hours local time. For this reason, thankfully, there were no victims of the blast in the first shop of the radio-chemical works. The causes of the incident still have to be investigated by a state commission that has been specially set up. But it was recorded on instruments that for a period of six minutes some kind of chemical reaction occurred in the apparatus with a capacity of 34 cubic meters in which the waste from uranium production is prepared for purification, as a result of which there was a blast, the force of which destroyed the apparatus itself and the roof of the shop. There was a discharge of uranium spray into the atmosphere. The level of radioactive contamination on the grounds of the works exceeded the maximum permitted norm 20-fold. Traces of the discharge have been recorded at a 3-kilometer radius from the center. But let me note that this whole area lies inside the sanitary protection zone of the Siberian Chemicals Combine.

The oblast and town committees for ecology have taken urgent measures to monitor the ecological situation. Observations have been taken since the time of the blast in all directions from the center. And at 0620 hours local time on 7 April, employees of the mobile laboratory of the Sanitary and Epidemiological Supervision Center discovered a strip about one kilometer wide stretching to the north from the combine for a distance of approximately 15 kilometers. This is a forest on the opposite side from the town. Within this strip, the radiation level fluctuates between 50 and 400 microroentgens per hour. The intensive decontamination of this area is being carried out.

As for the situation in the towns of Tomsk and Tomsk-7 and also in villages around the Siberian Chemicals Combine, the background radiation level there is below the maximum norms.

At the works, repair work is under way on the destroyed shop. I was told by the works administration no extra manpower will be required for this. Reinforcements were only required by the team of radiation supervisors. Journalists have been granted unimpeded access to the facility.

Energy Minister Interviewed on Nuclear Accident at Tomsk

OW0704131593 Tokyo NHK General Television Network in Japanese 1000 GMT 7 Apr 93

[Report on "exclusive interview" with Russian Atomic Energy Minister Viktor Mikhaylov by an unidentified NHK reporter in Moscow; date not given; from the "NHK News" program—Mikhaylov speaks in Russian with Japanese subtitles; his remarks have been translated from the Russian]

[Excerpt] Regarding the accident that occurred at a nuclear facility in Tomsk-7 on 6 April, Russian Atomic Energy Minister Viktor Mikhaylov and the State Emergency Committee have disclosed that the explosion took place in a tank containing a uranium solution. In an

exclusive interview with NHK, the minister explained that the temperature of spent nuclear fuel, which was being stored six meters below the ground, increased rapidly after it mixed with nitric acid. He said that at the time of the accident, no workers were close by because of lunch hour, adding that the explosion could not be prevented. [video cuts to show Mikhaylov sitting at a table]

[Begin Mikhaylov recording] A discharge of steam or gas that was generated by this reaction escaped from the building after shattering windows and knocking down part of a light wall. A fire also started because there was kerosene in the area, and there was probably an electrical short circuit somewhere. The fire was extinguished virtually within minutes, within five minutes. [end recording] [video cuts to show 30 seconds of "file" footage of the Tomsk-7 facility, which, according to a caption, was filmed "last month"; video includes shots of workers entering facility, undergoing security checks by uniformed guards, and long shots of cooling towers]

Also, Mr. Mikhaylov said that 3-8 curies of radioactivity was released into the air. He said that the explosion occurred in a tank containing a uranium solution. The explosion blew off the roof and walls of the facility and radioactivity leaked outside. According to a spokesman for the Russian Atomic Energy Ministry, several fire fighters were exposed to the radioactive leak. A counter-measure headquarters has been established at Tomsk-7 and citizens are working to eliminate the radiation. So far, the 500,000 Tomsk citizens have not been evacuated. Meanwhile, in an interview with NHK, Mr. Vladimir [name as heard], vice chairman of the State Emergency Committee, said that the explosion took place at the stage where the radioactive isotope level had been lowered to one-in-10,000. He said radiation was spread over an area of 1,000 square meters, but he added that the level would not affect citizens. He also said that it would take several days to eliminate the radiation.

A leak of 3-8 curies of radioactivity, which the Russian side has announced, equals 50-20 percent of the leak that occurred at the Three-Mile Island nuclear power facility in the United States in 1979. [passage omitted on remarks by Tokai University lecturer Hiroaki Koyama, who visited the Tomsk-7 last November, and Japanese nuclear energy officials on functions of closed cities, the possible cause of the accident, and the effects of radiation]

Official: 'No Need To Evacuate' People From Tomsk Area

LD0704123293 Moscow Russian Television Network in Russian 1000 GMT 7 Apr 93

[Correspondent N. Pavlov report; from the "Vesti" newscast]

[Text] Georgiy Kaurov, head of the department for public relations and information, held a news conference today at the Ministry of Atomic Energy on the details of the explosion at the chemical combine in the closed town

of Tomsk-7. Tanks containing spent nuclear fuel to be reprocessed exploded. One of the plant's nuclear reactors is still working, supplying heat to the town of Tomsk. The incident has been assessed by experts as a three on the seven-point scale. A total of 1,000 meters of the territory has been contaminated as a result of the accident. Two more contaminated spots have been discovered at a distance of 10 km from the epicenter, where the background radiation level is 10 times above the norm. Asked by a "Vesti" correspondent about the level of danger, Georgiy Kaurov said:

[Begin recording] This accident is practically of no danger. [end recording]

In his words, there were no casualties at the moment of the explosion and the fire was put out by workers at the plant. As for residential areas around the combine, in the opinion of the Atomic Energy Ministry staff member, there is no need to evacuate people from the area. Work at the site of the accident is continuing to establish the causes of the accident. [video shows news conference in progress]

Official Says Tomsk Accident 'Most Serious' Since Chernobyl

LD0704103593 Moscow ITAR-TASS World Service in Russian 1008 GMT 7 Apr 93

[By ITAR-TASS correspondent Igor Ivantsov]

[Text] Moscow, 7 Apr—The accident at the Siberian Chemical Combine is the most serious incident in the country's atomic energy sector since Chernobyl, Georgiy Kaurov, chief of the Information Directorate of the Ministry of Atomic Energy of the Russian Federation, told journalists today. However, this gives no grounds whatsoever for comparing its scale with that of Chernobyl. In his words, on the seven-point international accident assessment scale, it reached level "three," which signifies "a serious incident without irradiation of staff, or a nondangerous [besopasnaya] accident."

Emergency Team Continues Work at Tomsk Accident Scene

LD0704120193 Moscow ITAR-TASS World Service in Russian 1056 GMT 7 Apr 93

[By ITAR-TASS correspondent Vadim Byrkin]

[Text] Moscow, 7 Apr—The work of the operational group of the Russian State Committee for Emergency Situations continues at the scene of the accident at the Tomsk radio-chemical works for the processing of nuclear fuel. As an ITAR-TASS correspondent learned from Marina Ryklina, head of the State Committee for Emergency Situations, it has by now been established that one of the devices exploded at the penultimate stage of waste processing and that a localized discharge occurred through a ventilation pipe. During the accident, fortunately, there was a wind which blew the radioactive spot [pyatno] in the direction of the woods. The population centers have not been affected.

A radioactive spot has been detected 6 km from the site, and the length of the trail is 900 meters. The contamination level of the spot does not exceed five milliroentgen an hour. The polluted area in the region totals 1,000 square meters. During the accident one of the workers received a dose of radiation under 0.6 rems. This is permissible for personnel at these sites. The radiation level at the scene of the accident ranges from 1 roentgen up to several milliroentgens an hour. At present the polluted areas are being decontaminated. Snow and soil at the scene of the accident are being collected and evacuated for burial. Experts are monitoring the state of the atmosphere. On 8 April a government commission is expected to arrive in Tomsk-7.

In reply to a question by an ITAR-TASS correspondent whether experts from the Military Academy for Chemical Defense have been invited to work on eliminating the consequences, one of his leaders said that neither the Defense Ministry leadership nor the government have issued any orders to that effect.

Village Affected by Radioaction; Radioactive Cloud Spreading

LD0704122293 Moscow Ostankino Television First Channel Network in Russian 1100 GMT 7 Apr 93

[From the "Novosti" newscast]

[Text] [Komarova] Journalists of the Tomsk TV studio have contacted the bureau to report the details of the accident at the Tomsk chemical works:

[Correspondent Raisa Alekseyeva, reporting by telephone] There was a chemical discharge at 0840 hours Moscow time from the Siberian Chemical Combine, which is in our closed town of Tomsk-7, as the result of an accident at Facility 15. The combine's specialists assert that the level of contamination has spread mainly at the facility's technological site.

However, it transpired today that some territory near the village of (?Samus) has also been affected by the contamination. There, the background radiation is about 400 micro-roentgen, which is 20 times the daily norm. Traffic to and from the village has been halted and snow is being gathered.

At a session of the civil defense headquarters held half an hour ago, it was stated that the population of the oblast center and also the town of Tomsk-7 have nothing to worry about. The background radiation is within the norm.

One further unpleasant detail. Anti-aircraft defense forces today discovered a cloud to the northeast of Tomsk. It is radioactive in nature, but its composition is as yet unknown. It is situated at a height of 2 kilometers and is moving at a speed of 36 kilometers per hour in the direction of Yeniseysk. [Video shows: unidentified grounds, sign reading Tomsk-7, radiation sign on door, street scenes, dosimeter, car being stopped, interior of unidentified premises, officials in white coats and hats, view of outside of unidentified premises]

Details on Explosion, Radiation Levels at Tomsk

LD0704131393 Moscow ITAR-TASS World Service in Russian 1153 GMT 7 Apr 93

[By ITAR-TASS correspondent Igor Ivantsov]

[Excerpt] Moscow, 7 Apr—[passage omitted] Georgiy Kaurov of the Ministry of Atomic Energy noted that a tank containing about 20 cubic meters of a solution which had been partially cleansed of plutonium and other fission products had ruptured at the Tomsk-7 radiochemical works during a purification operation. Specialists believe that this was caused by heat given off in a reaction which began after nitric acid used during the cleansing operation came into contact with organic compounds.

The ceiling of the shop and one of its walls were damaged as a result of the explosion. A short circuit in an electric cable caused the roof to catch fire. The fire was extinguished by fire fighters within a few minutes.

The discharge of the resultant gases and some of the solution caused the radioactive contamination of the roof and an area of about 1,000 square meters adjoining the building. The background radiation in this area now measures 0.4 milliroentgens per hour. The overall level of contamination in the safety zone around the enterprise is fluctuating between one and three curies, which is roughly five times the permitted level. Other installations at the combine and residential settlements have not been contaminated. Two small spots with a level of radiation 10 times higher than the permitted level have been detected roughly 10 km from the works. No other areas of contamination have been discovered, although a search is continuing.

There was no real danger to the public at the moment of the explosion or after it, Georgiy Kaurov stressed. He attributed this to the fact that only a small quantity of the gaseous solution in the tank was discharged into the atmosphere as a result of the explosion. Furthermore, it had already undergone preliminary cleansing from heavy metals. Specialists think that most of the solution remained in the tank. Its discharge into the atmosphere ceased immediately after the explosion.

Work is continuing at the plant today, Georgiy Kaurov said. This shows how localized the accident was. Since there is no danger, people living in the surrounding area have not been evacuated. Reinforcements have not been brought in to deal with the consequences of the accident. There is no restriction on the amount of time rescue workers can spend in the accident zone, and 25 fire fighters took a direct part in extinguishing the fire. The maximum radiation dose received by any one of them was 0.6 rems. International standards permit an annual dose of five rems.

According to Georgiy Kaurov, three years ago a start was made on shutting down the reactors at the Tomsk-7 radiochemical works, which produced plutonium for the

defense industry. At the time of the accident only one of the reactors was functioning, supplying heat to the city of Tomsk.

A special commission has been set up to investigate the reasons for the accident and to eliminate its consequences. It flew to Tomsk today, Georgiy Kaurov concluded.

Yablokov: Immediate Plans To Destroy Nuclear Waste In Ocean Recommended

93WN0324A Moscow FEDERATSIYA in Russian No 17, 13 Feb 93 p 2

[Interview with Aleksey Vladimirovich Yablokov, Advisor to the President of Russia on Problems of Ecology, by Yelena Afanasyeva; place and date not given: "And Once Again, Containers Are in the Sea..."]

[Text] **A regularly scheduled meeting of the Commission on Disposal of Radioactive Waste Material at Sea took place on 15 February, and a commission report will be sent to the president. Members of the Commission are now completely convinced that all data about disposal of radioactive waste at sea, applicable to both the Soviet Union and now to the Russian Federation, should be made a matter of public knowledge, all the more so because information about this subject is constantly leaked to the press, especially the Western press.**

We began our interview with Aleksey Vladimirovich Yablokov, presidential advisor on Problems of Ecology, with a question about "leaking of information."

[Yablokov] All the data published in the Western press came from our commission.

[Afanasyeva] Leaking of information?

[Yablokov] Deliberate leaking of information. I should say that there is very little classified information now. I receive edicts and decrees every day from the President, the government, and the Supreme Soviet. Out of the total, approximately every twentieth one is "for official use only" and every hundredth one is "secret." This is normal. A state has to have its secrets. The rest of the material is available to the public.

[Afanasyeva] In your area of responsibility—ecology—are there still secret data?

[Yablokov] We have a reverse problem in receiving information from ministries and departments. An example is the work of our Commission on Disposal of Radioactive Waste Materials at Sea. By order of the president, this Commission is supposed to receive all information, including secret. Ministries and departments gave us the necessary documents and a special archival group worked with "top secrets," with the so-called CPSU Central Committee "archival folder," which actually consists of thousands of volumes of documents. The disposal at sea of the reactors belonging to the "Lenin" nuclear icebreaker was accomplished in accordance with very secret instructions which we found in this "folder." It turned out that information needed

by us is being kept in the archives of the former KGB, now called the Russian Ministry of Security. But when we requested the material from the Ministry of Security, we received the answer that there is nothing "in the archival materials" about disposing of radioactive materials at sea. I got angry and telephoned Deputy Minister Timofeyev, who is a member of our Commission: "What do you mean, there isn't anything when DER SPIEGEL wrote about Kryuchkov's letter to Gorbachev on this subject!" The answer was: "Well, these are operational materials, not archival...."

[Afanasyeva] What "disclosures" has your Commission been able to make?

[Yablokov] I can tell you right away that there were no big sensational items. Everything we received confirms the unofficial point of view that the Soviet Union, having signed the London Convention and declaring a number of times that it had not disposed of, is not disposing of, and will not dispose of radioactive waste at sea, did in fact do exactly what it claimed it had not done. Finding out about this official practice of telling lies was, if you will, sensational information. The other sensational information is that this practice continued until just recently, well after the breakup of the Union. Russian armed forces were still continuing this practice of burying waste....

[Afanasyeva] When was the last time this was done?

[Yablokov] Last November. I want to tell you right off that these were liquid wastes that were not highly radioactive. Let's not exaggerate the danger. The real danger is from sunken reactors from nuclear submarines and from the icebreaker "Lenin." Some of these items still have fuel that was never taken out. A large site for waste disposal is in the Kara Sea adjacent to Novaya Zemlya.

[Afanasyeva] When was the waste first buried at sea?

[Yablokov] Most of the waste materials were disposed of in the 1960's. One other conclusion that the commission also reached was that these criminal acts were not merely committed, but were totally "forgotten," and no one monitored the development of the processes. Every attempt to organize official classified expeditions to check on the condition of the waste materials was always met with a categorical prohibitive ban.

[Afanasyeva] Can we determine today what motivated the people in the 1960's, and even as recently as last November, who gave the orders to discard radioactive substances into the sea?

[Yablokov] Well, why did the navy throw waste material overboard?! It was not because of the good life they were leading. At that time the dangers of the "Cold War" were so exaggerated that the most important thing was to keep our ships afloat, and waste material was a tenth priority. Who cares about waste material when there is a war going on—the Cold War! Incidentally, the Americans had the same problem. Science was focused on creating nuclear weapons and not on how to destroy them. And one other conclusion our commission made was that it is

necessary to immediately organize work to destroy the wastes of our nuclear submarines and nuclear fleet. It has to be a civilized destruction, the technology for which is known.

[Afanasyeva] Have you considered how much it will cost to act on your recommendations if the government approves them?

[Yablokov] That is not our commission's problem. We have charted out ways to resolve the problem. Questions about where the disposal facilities should be, whether on Novaya Zemlya or on the Kola Peninsula, or what types of disposal facilities should be built, are questions for other experts to decide.

[Afanasyeva] So, in short, how would you formulate the conclusions and recommendations of your commission?

[Yablokov] An immediate investigation, inventory, and monitoring of all waste materials that were disposed of at sea. Approval of a government decree on constructing special storage facilities. Declassification of all data on every incident having to do with radioactive disposal by the Soviet Union and Russia, and presentation of this information to the Secretariat of the London Convention on Protecting the Seas.

[Afanasyeva] Strange as it may seem, but the work of your commission and its conclusions are of greater interest to people in other countries than in Russia. Is there a real danger to people living in other countries from the waste materials that were disposed of in our seas?

[Yablokov] There is no danger, except perhaps from the submarine "Komsomolets," which is lying between the Barents and North Seas. Waste material was disposed of in areas far enough from the gulfs of Novaya Zemlya, where no one lives now, because everyone was resettled away from Novaya Zemlya. With regard to the Japanese, there are several disposal sites in their immediate vicinity: Not far from the shores of Sakhalin Island and not far from Vladivostok. The amount of material buried there is insignificant and does not pose any danger. In addition, it should not be forgotten that in the 1990's Japan itself was actively engaged in disposing of waste materials at sea, but stopped this disposal before we did, owed up to it, and began thinking about what to do next.

I think that today our main achievement is that the leadership of Russia has recognized this problem and that the Commission for the Study of Radioactive Disposal at Sea has been established. Public attention has been drawn to this problem, and it can no longer be silenced.

'Greenpeace' Protests Fourth Reactor at Balakovo AES

*93WN0326A Moscow NEZAVISIMAYA GAZETA
in Russian 13 Mar 93 p 6*

[Yekaterina Khoreva report: "Will There Be More Incidents? Greenpeace of Russia Condemns the Startup of a Balakovo Reactor"]

[Text] Preparations have begun for the startup of unit four at the Balakovo nuclear power plant in Saratov Oblast. At this time the fuel is being loaded and it proposed to start up the reactor in a week.

"This is yet another example of how, ignoring public opinion, and also the environmental and economic aspects, the Russian Ministry of the Nuclear Power Industry is doing everything possible to achieve its departmental goals." This was how Dmitriy Tolmatskiy, coordinator of antinuclear campaigns for Greenpeace of Russia, reacted to the news. "The Balakovo nuclear power plant accounts for one-fourth of all incidents occurring at Russian nuclear power plants. There is no doubt that after startup of the new unit there will be even more incidents."

Greenpeace of Russia offers the following information about incidents at the Balakovo nuclear power plant, whose construction was started in 1980.

On 27 June 1985 during a test of unit one without fuel (the "hot functional test") there was a rupture in the primary circuit (a 900-millimeter rupture in a steam pipe). Steam at 300 degrees started to enter the premises where people were working. A total of 14 people died.

In 1988 the steam generators in units one and three malfunctioned and were replaced. The steam generators are being stored right there on the territory of the nuclear power plant because the railroad is refusing to move them due to the high level of radioactivity and poor crating.

In 1989 there was an accident in unit one involving the release of five liters of radioactive water into the cooling pool (according to testimony from nuclear power plant workers).

In 1990 the heat exchanger in the primary circuit malfunctioned; because of its size it was not installed within the containment structure and is located in a service corridor of the special structure.

In 1991 there were three fires at the Balakovo nuclear power plant and three technological accidents with subsequent combustion (according to the Balakovo branch of the No. 3 militarized fire brigade).

On the night of 3-4 March 1992 at 0118 there was a fire in unit three at the Balakovo nuclear power plant. An electric cable to an electric generator in unit three, which was on line, caught fire.

Unit four, which has been built and is being prepared for startup, does not have a cooling pool. In response to the question of how the unit will operate without a pool, Pavel Ipatov, chairman of the Saratov Oblast Soviet Environmental Commission, said that the other units will be shut down in turn, and cooling for unit four will be accomplished using their pools.

According to the Ministry of the Nuclear Power Industry, in 1989 there were 30 scrams at the plant (14 of them manual), in 1990 the figure was 15 (four manual), and in 1991 there were 13 scrams (four manual).

According to the State Inspection for Nuclear Energy in Industry [Gosatomnadzor], in 1991 there were 50 scrams at the Balakovo nuclear power plant.

'Space Ecology Center' Monitors Environment Via Satellite

93WN0326B Moscow NEZAVISIMAYA GAZETA
in Russian 17 Mar 93 p 6

[Interview with Yulian Novikov, general director of the Scientific Research Center for Space Ecology, by Vladimir Gurvich; place and date not given: "The Dirtiest Place in Moscow"]

[Text] *[Gurvich] We here on the Earth clearly feel how bad the condition of the environment is. But what does the situation look like from space?*

[Novikov] In general the situation for Russia is quite serious. The density of pollution in particular places is so great that it is only with difficulty that the sun's rays reach the surface of the Earth. And so in these regions the view from space is like looking through dirty water. But it must be said that it is not only in our country that this situation exists. There are many other regions on the planet where the environmental situation is bad. This also applies to the most highly developed states. For example, at the request of the Italians we took photographs of the Milan area. The pollution there is as bad as what hangs over many Russian cities.

[Gurvich] But let us return to our own land. Your center is located in Moscow. Can we assume that Russia's capital is under especially intense scrutiny?

[Novikov] In fact for a long time we have been observing the development of the situation in Moscow, and so we are able to state that no positive changes have yet been seen. The view from space does have the advantage that, on the one hand it makes it possible to obtain a panorama of a very large territory immediately, while on the other hand it makes it possible to obtain extreme detail about any locality. For example, from a satellite it is possible to see very well that the main flow of emissions occurs around the Moskva River, in the direction of Kolomnya 100 kilometers distant. And do you know where the dirtiest place in Moscow is? It is in the area of the ZIL automotive plant. The measurements indicate that all permissible levels are being exceeded for concentrations of many metals there. Another region that is particularly bad is Vnukovo. Because of existing environmental conditions there the incidence of disease among the population has risen.

[Gurvich] What are the main advantages of studying the ecology of Earth from space?

[Novikov] I think that this will be understood if I tell you about a study we conducted in Rostov. The situation there was not simple; we studied who is putting what into the atmosphere and soil and we photographed green plantations. The maps that we compiled make it possible to determine the economic zone in which each house is located, and to reveal those who are specifically to blame

for pollution and illness. The information obtained made it possible to initiate talks at a new level with the urban developers and environmentalists: what to build and where, what steps should be taken to improve the situation. I would like to note that if a similar study had been conducted using ground facilities it would have cost much more and would have lasted much longer. The view from space, however, cannot provide a complete picture and it must be supplemented with studies on the ground. So a large collective of scientists works with us—medical personnel, chemists, and environmentalists, who according to the views from space conduct comprehensive studies of a territory. This system enables us to provide particular cities or localities with a subscription service to conduct constant environmental monitoring.

[Gurvich] And how unique is what you are doing?

[Novikov] All the developed countries have their own environmental satellites. As far as our achievements are concerned, the center has worked out its own methods for computer processing of the information obtained from the satellites. Our possibilities are now such that we are capable of covering all Russia. At the level of conducting comprehensive studies we retain world priority. We have good equipment, in particular the American Decstation supercomputer system. It was obtained with the permission of Cocom [Coordinating Committee for Multilateral Exports Controls] following prolonged correspondence. We pledged not to use the program controller for military purposes. Which we are not. The only thing I would like is that the Russian authorities at all levels would make use of our possibilities.

Udmurtians Protest Destruction of Weapons on Territory

LD2503163393 Moscow Radio Rossii Network in Russian 0315 GMT 25 Mar 93

[Text] For Udmurtia, which is experiencing great difficulties in the conversion of defense enterprises, the destruction of certain types of weapons on their territory becomes the next serious problem. Vadim Dynin, our correspondent in Izhevsk, reports.

[Dynin] Chemical weapons have never been produced in Udmurtia. Nevertheless, there are storage sites for them on the territory of the republic. And near the town of (Kambarka) there is a lewisite depot, and in the village of Kiznir there is an organic phosphorus ammunitions dump.

The Russian state program for chemical weapons destruction has still not been adopted. There is also no technology for treating lewisite. Meanwhile, a protest movement is growing in (Kambarka) in connection with the possibility that the poisonous material will be destroyed at the depot sites.

The Udmurtian parliament had only just examined the (Kambarka) problem at its recent session, when there was a report from the local information agency IZHINFORM. It tells of the expansion of the base for the

destruction of medium- and long-range missiles, which is situated in the north of Udmurtia. It was supposed earlier that two types of missiles would be destroyed in Latvia, Belarus, and Ukraine, but now Russian missiles will stay in Udmurtia.

Until now, up to EIGHT missiles were liquidated yearly at the (Tyubanshunskiy) arsenal in the course of periodic technical servicing, but from July of this year their number will rise to 100 units. To implement a project on this scale, it is necessary to expand the base, but the institute that deals with this problem turned out to be abroad, in Ukraine, and it is in no hurry to help the rocket forces.

Nevertheless, according to rocket forces Colonel Valentin Zakharov, chief of the headquarters of the Udmurtian civil defense, who is quoted by the IZHINFORM agency, the detoxification of the remains of rocket fuel with heightened toxicity is so perfect, that after treatment the rocket fuel tanks can be used for storing drinking water.

Radioactive Peat Bog Described as 'Harmful Anomaly'

PM3003124793 Moscow Ostankino Television First Channel Network in Russian 1800 GMT 27 Mar 93

[From the "Novosti" newscast: Video report by V. Morozova and Yu. Zavadskiy, identified by caption]

[Text] [Announcer] Information about the existence of a uranium field near Kirovo-Chepetsk, Kirov oblast, has been kept secret for more than half a century.

[Morozova over video of village scenes and snowy fields] Old people in the village of Karintorf had no idea that the nearby peat bogs, where people used to pick cranberries, contained radioactive uranium. The uranium was discovered back in the thirties, when the quantity of peat was assessed. Peat was needed more at that time. There was no interest in ore with 0.03 percent of uranium content. It became a well-guarded secret.

Even in the sixties, when the deposits were classed as commercially useful, the news was not released. It is only now, with the preparation of ecological and construction survey maps of Kirovo-Chepetsk and its surroundings, that specialists from St. Petersburg have unearthed evidence of this harmful anomaly. In the process they have accurately charted the site of the Kirov Chernobyl.

I am now standing in a field where the background radiation is five times greater than normal. Standing here for a few seconds is not a problem, but what about those who constantly live next to it? Peasants gather hay in the summer and graze their cattle on this 10 square km area.

[M. Kopytov, chairman of the Council of Social Self-Government—identified by caption] We have already been to Moscow. We went to the Supreme Soviet. They promised to help us. But we need no less than about 500

million rubles to relocate 196 people. [video shows village scenes, views of Kirovo-Chepetsk, snowy fields, interview]

Reports of 'Nuclear Mafia' Smuggling from CIS

LD2903193093 Moscow Ostankino Television First Channel Network in Russian 1800 GMT 26 Mar 93

[Video report by correspondent Vladimir Kondratyev; from the "Novosti" newscast]

[Text] Despite the soothing statements by those responsible in the CIS that a leak of nuclear material overseas is practically impossible, the Federal Republic of Germany is already speaking openly about the appearance of a new so-called nuclear mafia from the East. [video shows staged reconstruction of material handover]

One of the latest arrests of people trading in uranium and plutonium, useful for making nuclear weapons, took place in a car park. The authorities are so far not making the exact location and the full names of those arrested when a Polish citizen handed over highly dangerous contraband to a known female German citizen. The dosimeter went right off the clock when the contraband was confiscated.

According to federal criminal department information, more than 100 attempts to buy radioactive material in the FRG were uncovered in the past year alone. It is assumed that this is just the tip of the iceberg, because the police are not omnipotent. [video shows radioactivity symbols, train, signs in German saying Bundeskriminalamt and Security Zone]

Specialists have been shocked by the carelessness with which this cargo is being transported and stored. They can contaminate the water table, and cause fear and panic for whole towns, says Zachert, president of the department. [video now shows two persons in protective clothing and respirators approaching a left luggage locker; unidentified man in suit interviewed in German, fading into Russian report]

Fifteen kilos of cesium, which explodes on contact with air, have just been found on former Eastern bloc smugglers on the Swiss-German border. It was being kept in two milk churns. [video shows Swiss customs post, resumes interview with unidentified man in German, fading into Russian report]

It will probably not be possible to fight against the new business. As the chief of the department said in Wiesbaden, up to \$3,000 has been asked for a few grams of fissile material, so the risk is worth it. [video shows briefcase opened to reveal large quantity of German marks, metal container with radioactivity symbol and the word Caution! in Russian] The criminal agency now needs at least 500 extra employees to resist the nuclear mafia. But thus far, there have not been that many volunteers for this sort of work.

Uranium Pollution in Kirovsk Oblast Peat Bogs

LD2703214793

[Editorial report] Moscow Ostankino Television First Channel Network in Russian at 1800 GMT on 27 March carries in its "Novosti" newscast a 1-minute video report from Kirovsk oblast in which correspondent Vera Morozova says that those who have lived all their lives in the village of Karintorf never suspected that the nearby peat bogs where people used to gather cranberries are polluted with uranium. The correspondent recalls that uranium was discovered here as early as the 1930's, when experts tried to estimate the peat deposits. The discovery was kept secret until quite recently, when St. Petersburg cartographers re-discovered it. The correspondent goes on to say that in some places the radiation pollution is five times above the norm.

M. Kopytov, chairman of the Council of Public Self-government, tells the correspondent that oblast representatives have visited Moscow, where they received a promise of assistance. According to estimates, the oblast needs about 50 million rubles to re-settle 196 people from the area.

Tasks of Committee for Aiding Chernobyl Victims Summarized

LD2803204993 Moscow ITAR-TASS World Service in Russian 1320 GMT 28 Mar 93

[Text] Moscow, 28 March (ITAR-TASS)—On 25 March the Russian Council of Ministers adopted a resolution "On the establishment of a provision for a state committee of the Russian Federation for social defence of citizens and the rehabilitation of territories that had suffered as a result of the Chernobyl and other nuclear catastrophes."

The resolution states that the main tasks of the committee will be to design and implement a single scientific and technical policy and a global strategy to overcome the consequences of nuclear accidents and catastrophes and other instances of dangerous nuclear pollution on the territory of the Russian Federation; to participate in the preparation of international programs and organize international cooperation in eliminating the consequences of nuclear accidents and catastrophes; and to provide nuclear safety and socio-economic defense for the population in the areas that suffered nuclear pollution.

The committee has been instructed to monitor the transfer of the population from areas affected by nuclear pollution, and to provide the population living in those areas with ecologically clean foodstuffs and with necessary consumer goods.

Finland To Fund Safety Work at Nuclear Power Stations

PM0104150993 Moscow IZVESTIYA in Russian 30 Mar 93 First Edition p 3

[Marat Zubko report: "Finns Help Kola Nuclear Power Station"]

[Text] Helsinki—The Finnish authorities have adopted a decision to allocate a total of 9 million Finnish markkas (about \$1.5 million) for the modernization of the nuclear electric power stations at Polyarnyye Zori, a town on the Kola Peninsula, and at Sosnovyy Bor near St. Petersburg.

The reason is clear: The Finns are spending this money because the activity of these nuclear power stations situated not far from their border is causing the country's population considerable concern because of their relatively low level of reliability.

Finland's Ministry of Trade and Industry has announced that this money will be distributed in the following way: Some 3.9 million markkas will be used specifically to improve the safety system and the activity of the nuclear station at Polyarnyye Zori. The work will be directed by the firm IVO International, a subsidiary of the well known Finnish electrical engineering concern Imatran Voima.

Some 4 million markkas are being allocated for the nuclear station at Sosnovyy Bor. The main task there is to modernize the station's operating and servicing system.

Another 1 million markkas is set aside for possible shipments of materials and equipment.

It should also be recalled that last year the Finnish Ministry of Trade and Industry set aside 6.4 million markkas for inspection work at the stations at Sosnovyy Bor and Polyarnyye Zori and to draw up a plan and estimates for priority measures.

Finnish newspapers report in this connection that Norway is also setting aside money for the needs of modernizing the Polyarnyye Zori station. The figure cited is 20 million Norwegian kroner or approximately \$2.6 million.

Atomic Energy Minister Mikhaylov Interviewed

MK0204111693 Moscow ROSSIYA in Russian No. 14, 31 Mar-6 Apr 93 p 9

["Exclusive" interview with V.N. Mikhaylov, Russian Atomic Energy Minister, by Andrey Cherepanov; date, place not given: "Confession on an Atomic Subject"]

[Text] From ROSSIYA's file: Viktor Nikitovich Mikhaylov was born on 12 February 1934. He graduated from the Moscow Physical Engineering Institute (MIFI) in the specialty "theoretical nuclear physics;" he is a doctor of technical sciences and a professor. Under his guidance a scientific discipline on the physics of the explosive division of nuclei was formed, and a number of sets of unique diagnostic equipment were developed, intended for nuclear physics experiments including the testing and fine-tuning [otrabotka] of nuclear charges. On 2 March 1992, by an edict of the Russian Federation President, V.N. Mikhaylov was appointed Russian Federation atomic energy minister.

[Cherepanov] Viktor Nikitovich, the problem of conversion in the defense industry is probably one of the main ones for our society. Naturally, while preparing for this meeting with you, we too could not ignore it with respect to the atomic industry in general and the nuclear weapons field in particular. Is it realistic to use its military projects in the "civilian sector?" And if so, what has already been done and what is yet to be done along these lines?

[Mikhaylov] The easing of tension in the world and, as just one consequence of this global process, the signing of agreements on reducing the nuclear arms of Russia and the United States, have confronted our industry, primarily the two largest Russian federal centers—VNIIEF (Arzamas-16) and VNIITF (Chelyabinsk-40)—with a compelling need to shift the "center of gravity" of their scientific-technical capability to peaceful uses.

Is this feasible? No doubt. Thus, as of only the beginning of 1992 the proportion of "civilian" projects in Arzamas-16 alone constituted 30 percent of their overall volume. At present it is nearly 40 percent, and by 1995 it will reach 50 percent.

This, however, has been a difficult path. Between 1987 and 1988, while formulating our conversion programs, we sought to "flesh out" these programs with the kind of innovations that would subsequently ensure a full work load for the industry. We also sought civilian customers for them—after all, it was demand that ultimately determined the need for our peaceful production.

By 1990 the process of choosing ways of conversion had been virtually completed in the majority of our institutes and enterprises. Programs were drawn up and accepted for implementation on microelectronics, super-pure materials, fiber-optic communication systems, leading-edge materials, modern medical equipment, ecology, rehabilitation of territories, and so forth.

The next two years too did not pass in vain for us. We managed not only to create prototypes of new equipment and other products, but also to start their industrial production. In 1992 alone the value of goods produced for the national economy exceeded 10 billion rubles, and in 1993 we expect it to increase by nearly 50 percent....

[Cherepanov] Could you, in addition to the figures, elaborate a little more on some qualitative features?

[Mikhaylov] Certainly. Let us take for example Arzamas-16, whose facilities have been used to form a whole series of "conversion" fields. In particular, in such a specific field—in my opinion—as the use of conventional explosives to raise oil and gas output. The first version is the "perforator"—a small chemical explosive device that upon combustion creates a cumulative stream. It drives an opening of sufficient diameter to a sufficient depth in the ground to breathe "new life," as it were, into virtually depleted wells.

Or, consider, the mathematical simulation of turbine blades' streamlining with the aim of achieving their optimal geometry; or finally, the creation of various

types of radiotherapeutic and diagnostic apparatus complete with the requisite sources of ionizing radiation.

Much attention is also being given to using up chemical explosives, for which purpose a technology is at present being developed for the production of finely dispersed industrial diamonds by detonating the explosives in sealed cavities. In the future they can be successfully used in the tool-making industry, doubling or tripling the service life of end products.

And finally, our latest innovations include the creation, on the basis of "conventional" nuclei division, of "unconventional" "closed-type" fuel and energy cycles. First studies show that new generation reactors of this type will be more environmentally friendly: The amount of waste resulting from the "replacement" of fuel will fall by nearly 1,000 times, virtually eliminating the problems of its burial. These projects have somewhat stalled, however, owing to insufficient financing. Moreover, so far no customer has come forward for them yet....

[Cherepanov] Does this mean that the research process can really "halt," and for a long time?

[Mikhaylov] We are looking for nontraditional sources of funding. For instance, by marketing part—not more than 10 percent—of our weapons-grade uranium-235.... And this sort of precedent has already been set: An agreement has been reached whereby in Russia the United States will buy fuel for its nuclear power stations produced from some 500 tonnes of highly enriched uranium extracted from nuclear weapons.

[Cherepanov] Last December the Russian Government adopted Decree No. 1026, "On Constructing Nuclear Power Stations on the Territory of the Russian Federation," which represents a program for the broad development of nuclear power engineering in the country till the year 2010. Does this mean, in your opinion, first of all, that the overcoming of the Chernobyl syndrome has already begun? And second, what is the fundamental difference of this program from the previous ones, in particular in the field of enhancing the safety of nuclear power stations and creating equipment ensuring the greatest possible reduction of the accident risk in the future?

[Mikhaylov] As at today nuclear power stations produce slightly more than 20 gigawatts of electricity, which constitutes a mere 12 percent of Russia's overall generating capacities. This figure is not very high: Converted into "conventional energy units," it makes up approximately 35 million tonnes of coal or oil. And given that the situation in the power engineering sector is also changing because the traditional sources—coal and oil—are becoming increasingly less reliable, while the construction of hydroelectric power stations causes irreparable damage to the environment, the role of nuclear power stations in the country's overall energy balance will tend to increase. And by the year 2010 their aggregate capacity could reach 40 gigawatts.

With the regions' consent and with a positive state ecological expert appraisal, before the year 2000 another eight reactor units of the Balakovskaya, South-Urals, and Beloyarskaya nuclear electrical power stations and the Voronezh nuclear heat-supply station could be put into operation.

The program gives much attention to the development of new, more secure NP-500, VPBR-600, and MKR-type reactors. By the year 2010 virtually all first generation units, which cause our concern from the safety point of view, will be replaced by new vessel- and channel-type reactors that are being developed now.

It is encouraging that we are receiving more and more orders for so-called small-scale power engineering—the creation of 50- and 100-megawatt reactors, in particular for the country's out-of-the-way areas. At present, based on the territorial principle and specific weather and geographic conditions, a feasibility study is being made on new generation electric and thermal nuclear power construction projects in areas where it is often just impossible to get electrical energy by "traditional" methods, for example in the Far North and the Far East, in the Lower Volga Region and in Central Russia...

[Cherepanov] And what about international "orders," taking into account the very same Chernobyl syndrome?

[Mikhaylov] Contrary to the gloomy predictions, nuclear power engineering today is developing in the West and in Third World countries such as South Korea, China, Iran, India, and Pakistan. Therefore we have many "orders" for nuclear power station construction projects, which is certainly good, since it will enable the domestic nuclear power industry to be operated at full capacity. As for safety guarantees, the Hungarian Paks and the Finnish Loviza [as transliterated] stations, built with our assistance, according to a 1991 comparative analysis respectively ranked, in terms of all parameters starting with the safety level, second and third in the world (the first being a Canadian station).

Each year we will be able to export four or five of precisely this kind of station. Importantly, we are ready to make co-design arrangements jointly with a customer, which nobody else in the world does except us. And this is cheaper. Recently an international commission compared Russian new-generation nuclear power station projects with their Swedish, German, and Canadian counterparts, and favored ours. Foreign experts believe that Russia's new-generation reactor units are up to next century's standard. For example, they incorporate a failsafe principle whereby even in the event of extremely serious accidents there is no need for intervention by personnel. With regard to the medium-capacity new-generation reactor unit we are two years ahead of the French and three years ahead of the Americans.

[Cherepanov] Nonetheless, Russia still has its Achilles' heel related to nuclear power engineering—I mean the training of personnel to service nuclear power stations....

[Mikhaylov] You are right: Analysis of accidents at our stations confirms that one out of three was caused by the inadequate qualifications of their personnel. The reason, paradoxically, originates in history: At the dawn of the nuclear power station era there was an inexplicable belief that all operators working there are absolutely efficient and responsible people, capable of anticipating any eventuality. Experience, especially Chernobyl, regrettably, has shown something totally different.

To remedy this situation we are already taking certain steps. A large group of specialist-operators has taken an intensive training course in Japan. At present, in collaboration with Western centers, we are creating virtually from scratch—with the facilities of the Sosnovoborskaya nuclear power station—our own new simulator system providing for up to 1000 possible and... impossible accident-related situations. We are also counting here on the experience of defense facilities, in particular Arzamas-16, mentioned earlier.

[Cherepanov] *What would be your comment on the conflicting press reports that have appeared in various countries about Russia's selling technical documentation on a nuclear space engine to the United States and the participation of your scientists, jointly with American specialists, in upgrading it?*

[Mikhaylov] I shall get straight to the point. Thus far we have not sold any technology abroad. Prototypes are a different matter. Unfortunately, today we often have to do this not only in nuclear power engineering, but also in other fields. But why?

....I often remember the years of World War II, when my mother and I had to sell things to survive. We knew: If we survive we shall acquire other things, even better ones. Likewise today we also have to "survive," to stand on our own feet. There will be some spiteful critics from among the "patriots" ready to level accusations of "betrayal of state interests." Come on! What do you think we should be doing, when there are no funds in the country to pursue further research? Wait until everything dies a natural death? No, that is what would be a state crime. We must ourselves earn funds to engage in further research and development. Without, of course, damaging the country's interests and certainly not by price dumping....

Building Nuke Power Stations for Iran, India, China

LD3103133593 Moscow ITAR-TASS World Service in Russian 1135 GMT 31 Mar 93

[By ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow, 31 Mar—Despite a number of problems, Russian nuclear power engineering is developing, and foreign countries recognize its achievements. This is shown by contracts with the governments of several states, under which the Russian Federation will build atomic power stations abroad. For instance, following an

accord with Iran (August 1992) Russia has undertaken to build a nuclear power station in Iran on a turnkey basis, and now an appropriate construction site is being identified.

Eduard Akopyan, chief of the association charges with building nuclear plants abroad [Zarubezhatomenergostroy], told an ITAR-TASS correspondent that the Iranian station will consist of two units with water-cooled power [VVER] reactors (440 mega watt capacity each) incorporating all the latest technical improvements. Iran will have to choose among several sites for this nuclear power station. The station will be built in seven to eight years. Eduard Akopyan did not reveal the price of the project, saying that this is a commercial secret.

It is possible that Russia will also build nuclear power stations on a similar basis (two power sets with water-cooled [VVER] type reactors) "on a turnkey basis" in India. An agreement on this was signed as long ago as 1988 between the USSR and India, and talks are now under way on Russia fulfilling the obligations of this treaty as the legal successor of the USSR.

Russia is also preparing a tender (competition for a contract) for Russian firms to work alongside Western firms on construction of a new nuclear power station in Finland. Work is also being done on continuing construction of Russian nuclear power stations in the Czech Republic and Slovakia, the expert said.

In addition, there is an agreement with China under which Russia is providing technical assistance in building a nuclear station (a two set VVER-1000).

The ecological expertise of all these projects is a matter for the customer, Eduard Akopyan noted. "Our side is responsible for drawing up the project, which must meet international safety standards," he stressed.

Third-Generation CW Said Still Produced

93P50137A Moscow VEK in Russian No 12, 26 Mar-1 Apr 93 p 2

[Vladimir Gusar article: "Third-Generation Chemical Weapons Are Being Produced and Tested as Before"]

[Text] *In May 1993 an International Scientific-Practical Conference on Chemical Disarmament will be held in Moscow. A.D. Kuntsevich, a lieutenant general of the Chemical Troops and chairman of the Russian President's Committee on Convention Problems of Chemical and Biological Weapons, has been confirmed as the chairman of the preparatory committee.*

In its time the appointment of the "chemical" General Kuntsevich, who had been involved in the development of the newest types of chemical weapons [CW], to a post concerned with disarmament called forth skepticism from observers at home and abroad. His name is closely connected with the "Mirzayanov affair." There is no doubt that Russian scientists will be carefully hand-picked, and that disgraced chemists will hardly be allowed to attend.

In January 1993 the committee headed by Kuntsevich tried to push through the Supreme Soviet its own variant of a CW disarmament program. It envisaged transporting CW by rail from chemical bases scattered all over the country to the places where they had been produced and destroying them there by incineration. Then Kuntsevich's agency asked for half a billion dollars just for so-called inspection trips to the United States.

It has just come out that the program, which was rejected at the time in open hearings, was secretly approved all the same by the members of parliament. Evidence of this leaked out through the disagreements between Kuntsevich and another "chemical" general—Deputy Chemical Troops Commander Yestafyev. Today some of them are trying to promptly move all CW to the places where they were produced, while others are continuing to produce CW and their components—so-called "third-generation weapons"—in violation of a convention which has already been signed. The effectiveness of these weapons is 10 to 15 times higher than that of the nerve-paralytic weapons already in our arsenal—weapons like sarin, soman and yperite [Y-gaz].

As VEK was able to elucidate, the most important CW development and testing centers are located within the Moscow city limits (the State Scientific Research Institute for Organic and Chemical Technology—GNIIOKhT). In addition to this, development of and experiments with toxic substances for military use are conducted at the Military Chemical Defense Academy near the Bauman metro station, in the strictly secret Scientific Research Institute for Chemical Machinery, and at a CW test site. Quite recently it became known that since the 1920's a military-chemical test site had been functioning in Kuzminki, where various types of chemicals are tested. At the beginning of the 1960's this test site was closed off; nearby, without any decontamination measures, a park was set up and housing built. Quite recently it became known that the test site was continuing to function.

But until now, neither General Kuntsevich's agency, nor the General Staff, nor the command of the Chemical Troops has given the public any information about the locations of CW burial sites in and around Moscow, nor data about chemical test sites in that area. In its time the Soviet Army's main chemical warehouse—Warehouse No 136—was located in the Moscow area, and no fewer than four Moscow factories produced toxic substances for military use. According to unofficial information, live chemical munitions were dumped into the river at the point where the Setun River flows into the Moscow River! But there is no real chemical disarmament program; to this very day the production of toxic substances has not been completely stopped. What are they going to talk about at the International Conference?

Nuclear Waste Report To Be Published 2 Apr

*LD0104135093 Moscow NEZAVISIMAYA GAZETA
in Russian 1 Apr 93 p 1*

[Andrey Bayduzhiy report under the "In Brief" rubric: "One Secret Less"]

[Text] On 2 April a report on the dumping of radioactive wastes in the seas surrounding Russia will be made public. The work on the report began back in October 1992 when, by decision of Russian President Boris Yeltsin, a government commission on matters related to the disposal of radioactive wastes at sea was set up under Academician Yablokov. The text of the document shows that the first cases of nuclear substances being discharged were reported in the USSR in 1959—600 cubic meters of liquid radioactive wastes were discharged into the White Sea during the testing of a nuclear submarine.

Determining the precise quantity of radionuclides that entered the marine environment through nuclear wastes in USSR territory is no longer possible. According only to official information available to the report's authors, the total activity of wastes disposed of in Northern and Far Eastern seas is 325 kilocuries, but scientists believe that in reality it is many times greater.

Navy Goes On Dumping Radioactive Waste; USSR Program Facts

*LD0204172093 Moscow ITAR-TASS World Service
in Russian 1450 GMT 2 Apr 93*

[Report by ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow, 2 Apr—Seven reactors from which spent nuclear fuel have not been unloaded were dumped in the Kara Sea near the Novaya Zemlya archipelago, and it is these that pose the greatest environmental danger, Aleksey Poryadin, Russian Federation deputy minister of the environment, told a news conference today. He was presenting a "white paper" containing details (many of which were secret until recently) about the radioactive waste that the former USSR dumped into the seas washing its shores.

The "white paper" was compiled by a special government commission. Information about the burial at sea of liquid and other radioactive waste and details of accidents aboard submarines are published for the first time in it.

The Soviet Union always denied that it was dumping radioactive waste at sea, the expert stressed. Now Russia is making the first move to rectify this situation.

Radioactive waste was dumped for the first time during the sea trials of nuclear submarines and the atomic ice-breaker Lenin. In 1959 600 cubic meters of low-grade radioactive waste was tipped into the White Sea. Another 100 cubic meters of liquid radioactive waste from the atomic ice-breaker Lenin was deposited in the Gulf of Finland in 1960.

All in all, liquid radioactive waste measuring 20,600 curies and solid waste measuring about 2,300,000 curies was dumped into the northern seas between 1959 and 1992. The radioactivity of waste in the Kara Sea currently measures 324,000 curies, in the Barents Sea 12,593 curies, in the White Sea 100 curies, in the Baltic

Sea 0.2 curies, and in Russian coastal waters on the Pacific seaboard 18,565 curies.

Experts claim that the waste dumped by the Northern and Pacific fleets and the Murmansk shipping line poses no threat. Nevertheless, the dumping of radioactive waste at sea is now in the process of being terminated. The dumping of waste by the Murmansk shipping line has now ended completely, for example. The Navy's waste presents the biggest problem. For a variety of reasons, including financial ones, the dumping of this waste cannot be halted for the moment.

Academician Says Concerns Go Beyond Chernobyl
93WN0322A Moscow ROSSIYSKIYE VESTI
in Russian 19 Mar 93 p 3

[Interview with Viktor Knizhnikov, academician of the Russian Academy of Natural Sciences, conducted by Oksana Dul'skaya: "'It Is Not Only Chernobyl Which Is To Blame'"]

[Text] *[Dul'skaya] I remember how after Chernobyl people would not go to the market without a dosimeter (if they had one, of course). But how much should we fear radioactive "dirt" in food products today?*

[Knizhnikov] Of course there is no need for every person who sets off to make purchases to have a measuring instrument in his pocket. In the first months after the accident, the content of radionuclides in food products did in fact soar hundreds- and thousands-fold in the contaminated territories and 10-fold to 30-fold in other "clean" parts of the Soviet Union. But later, after special measures were taken, the radiation level in agricultural products fell to tenths and hundredths of what it was. And the situation overall is not alarming: It is already possible to get food products which meet international standards for radiation contamination on half the contaminated territories of Ukraine and Belarus.

[Dul'skaya] Isn't that too optimistic an assessment?

[Knizhnikov] Food products on territories which suffered from the accident at the Chernobyl AES are checked three times, so I have grounds for my conclusions. It is true that at one time there were people, some out of incompetence and some even out of a desire to further their political or scholarly careers, who painted much too dark a picture. Take a person who received his dose of radiation in the first year after the accident; he will never get rid of it. But then, instead of providing such a person with a balanced diet and the necessary monitoring by a doctor and improving his material status, a supplemental campaign began in the last 3-4 years to move people out of their accustomed places, even though most of them would not even have had to leave their homes. Let us add that those who are resettled at times end up on a territory which is worse in terms of chemical pollution and a shortage of microelements in the soil than their native localities. Moreover, according to some estimates, the stress endured by people as a result of the resettlement can be considered equivalent to

an additional radiation exposure of 200-400 rem. However, I repeat, at this time "harsh" measures to restrict the consumption of local food products are not needed on most of the territories which suffered from the Chernobyl AES, other than, of course, the part of the 30-kilometer zone and the so-called cesium spots.

[Dul'skaya] But what is the situation on the territory of Russia?

[Knizhnikov] It is not only the consequences of Chernobyl which affect it. Even now the results of the surface nuclear explosions in the 1950s and 1960s and the 1957 accident in the East Urals are appreciable. Last year we studied 28 regions of Russia. It can be concluded that about 47,000 square kilometers on Russian Federation territory today are contaminated with cesium-137 in an amount over 1 curie per square kilometer. This is a level which requires that monitoring be intensified in local areas and in some cases demands special safety measures: restrictions on catching fish, gathering mushrooms and berries, and so forth. In Bryansk, Vladimir, Kursk, and Tver oblasts relatively increased levels of cesium were found in milk. Among other contaminated products we must mention venison. Concentration of cesium in venison samples has been recorded in the Komi Republic, Krasnoyarsk Krai, Tyumen Oblast, and Murmansk Oblast. Increased levels of radionuclides are noted in those places in forest berries—red whortleberries, cranberries, and great bilberries. High levels of water contamination have been noted in the Iset and Tobol rivers into which flows the little river Techa of sad fame, a former site for discharge of radioactive wastes.

[Dul'skaya] How dangerous is this contamination to a person's health?

[Knizhnikov] Generally I favor the no-threshold concept, that is, I believe that any additional radiation involves an additional risk of oncological diseases. However, this heightened radioactivity does not have a fundamental effect on the general radiation background and increases it by only a few percentage points. Chemical pollution represents a much greater danger to people today. For comparison I will say that the discharges of a coal-fired plant are 1,000 times more dangerous to a person than the effect of being near an AES (assuming, of course, that it does not explode).

[Dul'skaya] But even so, are there zones of the greatest contamination danger on the republic's territory?

[Knizhnikov] The situation in Bryansk Oblast and to some degree in the oblasts adjacent to it requires greater monitoring. The situation on Lake Karachay is most serious. Liquid radioactive wastes were dumped there for a long time. Doing a complete job of burying them safely requires billions and billions of rubles, and of course we do not have them. The situation on the White Sea is alarming. A couple of years ago, you know, a great many starfish perished there. Even now the reasons have not been explained, although an accidental discharge of toxic chemicals by military installations is suspected.

As for general radiation monitoring beyond the republic's territory, the previous system which was once an orderly one has been destroyed and a new one has not been created. We do not receive regular information from local areas on the precise indicators of radioactive contamination, as we used to. We cannot trace trends up or down in radiation, and, consequently, we are unable to forecast the situation. We conducted the survey mentioned above, where incomplete but fresh data were received, at our initiative, to a significant degree using our own capital. I am alarmed to say that we were better prepared at the time of Chernobyl...

WESTERN REGION

Moldova: Crude Oil Exploration Costs Assessed at 30 Billion Rubles

*AU2603210093 Chisinau BASAPRESS in English
2000 GMT 25 Mar 93*

[Text] Chisinau (BASAPRESS) 25/3/1993—The drilling of 100 wells for the exploration of deposits of crude oil in the south of Moldova would cost over 30 billion rubles, states an article from "MOLDOVA SUVERANA." In connection to discussions during a meeting organised by the Ministry of Economy, concerning the perspectives for the utilisation of mineral resources in Moldova, the author states that only a third of the 380 types of minerals which are found in Moldova are used. Until now the complex for the extraction of those minerals remains under state monopoly. According to the data delivered by the State Department for Standards, Metrology and Technical Supervision, more than 100 organisations took out investments together with the right to extract resources. The article also states that in most cases, deposits are illegally explored, without authorisation from the Department of Ecology. In this way, they destroy cultivation soils that are more precious than subsoils. However, deposits of crude oil and natural gas from the Southern part of the republic were not estimated for quality. The methods of exploring the latter remain problematic.

Ukraine: Environment Clean-Up Begins at Strategic Air Base

*WS0604120993 Kiev KYIVSKA PRAVDA
in Ukrainian 12 Mar 93 p 1*

[Unattributed report from the "Ukraine and the World" column: "Strategy and Ecology"]

[Text] Work to clean up and eliminate the environmental pollution at a strategic air base has begun in the village of Uzin in Belotserkovskiy Rayon.

The use of fuel reservoirs has been discontinued. Four tankers carry water for the needs of the inhabitants. Minister of Defense Konstantyn Morozov has ordered to construct a new water main between Uzin and Belaya Tserkov.

Ukraine: Work Resumed on Controversial Hydroelectric Complex

*PM0104133393 Moscow Ostankino Television First
Channel Network in Russian 0500 GMT 30 March 93*

[From the "Novosti" newscast: Video report by Mikhail Kukin, identified by caption]

[Text] [050433] [Kukin over aerial view of river] About three years ago, the future of the southern Ukrainian power generation complex was virtually the most controversial subject to be discussed in the local mass media—primarily from the environmental viewpoint. Then passions seemed to die down. Far more acute problems arose. But on the other hand it would seem that problems in the actual complex diminished. At least the construction of the huge pumped-storage stations, on which so many lances were broken and which threatened, in the opinion of environmentalists, to destroy the Southern Bug river, was stopped by the USSR Council of Ministers. It turned out, however, that the defenders of nature were celebrating too soon.

[O. Galat, head of ecology department at Nikolayev Oblast and City Administration, identified by caption] In violation of all these acts, the leadership of the Southern Ukraine pumped-storage power generating complex renewed construction at the Aleksandrovskaya pumped-storage station, which is a component of the hydroelectric complex, although another moratorium has been imposed on the hydroelectric complex by the Cabinet of Ministers.

[Kukin] The renewed construction is being carried out on the basis of a revised project, but the environmentalists believe that this project is even more dangerous than the previous one. It is being financed by the power industry complex leadership from its own profits despite the disapproval of authorities at all levels—from village soviet to the Ukrainian Government. [Video shows aerial views of power station, river, project-related documents]

Ukraine: End of Nuclear Power Moratorium Being Considered

*PM0104103793 Moscow IZVESTIYA in Russian
1 Apr 93 First Edition p 2*

[Report by Sergey Tsikora: "Ukraine: Nuclear Power on the Agenda Again"]

[Text] Kiev—N. Popov, who recently headed the Ukrainian Supreme Soviet permanent commission on questions of the development of base sectors of the national economy, has announced a sensational piece of news.

The commission intends to submit for Parliament's examination the question of lifting the moratorium on the start-up of three power units at the Zaporozhye and Rovno nuclear electric power stations. N. Popov said that the only possibility right now of reducing the acuteness of the energy crisis in the republic is by

decreasing if only a little Ukraine's dependence on deliveries of energy carriers from Russia.

To journalists' question as to whether it will be possible to regard the lifting of the moratorium as the start of the reorientation of Ukraine's policy in the nuclear energy sphere, the commission leader said that in his opinion the future belongs to nuclear energy and he is a supporter of its broader use in the Ukrainian economy.

This statement generated many questions. The point is that uranium is mined in Ukraine but the republic does not have a full manufacturing cycle of work with it—there are no plants for uranium enrichment or neutralizing nuclear waste.

"The problem of enrichment and processing can now be resolved within the framework of the European division of labor," N. Popov said.

CAUCASUS/CENTRAL ASIA

Kazakhstan: Sources of Radioactive Contamination Examined

93WN0324B Alma-Ata AZIYA
(MEZHDUNARODNAYA GAZETA) in Russian No 1,
Jan 93 p 7

[Interview with Larisa Denisovna Ptitskaya, Chief, Laboratory for Monitoring Radioactive Contamination of the Environment, Main Directorate for Hydrometeorology of the Cabinet of Ministers of Kazakhstan (Kazgidromet), by Zoya Korneyeva of "AZIYA"; place and date not given: "The Wind From Lobnor is Frightening When It Blows Westward"]

[Text] *I am interviewing Larisa Denisovna Ptitskaya, Chief, Laboratory for Monitoring Radioactive Contamination of the Environment, Main Directorate for Hydrometeorology, Cabinet of Ministers of Kazakhstan (Kazgidromet).*

[Interviewer] **The "Nevada-Semipalatensk" anti-nuclear movement of the "green" party and other such organizations have focused public attention on our troubles. Gradually people are beginning to understand that you cannot chop down the branch on which you are sitting. This is, however, more of an emotional reaction. Larisa Denisovna, could you "enlighten" our readers about the radioactive situation in our republic?**

[Ptitskaya] The state system for monitoring radioactive contamination of the environment in Kazakhstan began in 1961. Samples of air were taken every 24 hours, and samples of water from reservoirs—every three months. These samples were analyzed for density of radioactive fallout and isotope composition. In addition, every five years the Institute for Applied Geophysics (IAG, Moscow) and the Institute for Experimental Meteorology ("Typhoon" NPO, Obninsk) took gamma photographs of the earth's surface from an aircraft.

Contamination of lower strata of the atmosphere is tied to fallout of matter from nuclear explosions and radionuclides from the much higher stratospheric layers where they were thrown during ground and air nuclear experiments. Cosmic radiation also contributes to radioactive contamination.

During the period of the moratorium on testing nuclear weapons in the atmosphere, from 1962-1993, the concentration of radionuclides decreased drastically. In 1980 an explosion with the power of one megaton took place in China, which influenced changes on a global scale. Its consequences are still being felt: Readings have shown that fallouts contain Cesium-137.

The accident at the Chernobyl Nuclear Power Plant occurred in 1986. By May 1st-2nd, the density of radioactive fallout in Western Kazakhstan had already increased by 100 times, and on May 8th in Alma-Ata—by 680 times. But this increase did not last long. After two months it decreased significantly, and by the end of 1986 the level was only twice as high as it had been before the accident.

At present, conflicting information often does not reflect the actual situation and causes social tension. The possibility cannot be excluded that due to this "information" every region of Kazakhstan may demand the status of an "ecological radiation disaster zone."

[Interviewer] **What is needed in order to gain this status?**

[Ptitskaya] Ecological disaster areas can be established only when there is radioactive contamination of the soil, shown by the presence of long-life radionuclides: Cesium-137, Strontium-90, and Plutonium-239. These products of nuclear blasts will still have a pernicious effect on man's health for over 200 years. These nuclides remain in the organism for around 30 years. Strontium settles in the bones. Cesium—in the soft tissues, also destroying the genitalia. Plutonium, the most "harmful" of all, remains in the organism longer than the others, and brings about the most devastating destruction. A person receives a basic dose of radiation, up to 80 percent, from an internal radiation chain: Soil-plants-animals-people. In other words, radioactive substances that enter the soil are sucked in by plants, which are eaten by animals, and man, who uses meat from animals for food, receives a share of this radiation.

Recently, sessions of district councils have passed decrees on appealing to the Supreme Soviet with requests to give the status of "ecological radiation disaster zones" to various areas. These appeals refer to the fact that the given districts were affected by tests conducted by the former Semipalatinsk test range. As a rule, directors do not have any factual data on radioactive contamination in their districts. In order to receive this status, however, research has to be conducted on radioactive contamination, consisting of testing soil

samples, water, sediment deposits, and laboratory analyses. The Kazakhstan Main Directorate for Hydrometeorology (Kazgidromet) is ready to cooperate in this matter. Our address is: 480072 Alma-Ata, Abay Prospect, 32.

Testing of soil in Karaganda, Semipalatinsk, Kokchetav, and Pavlodar Oblasts has shown that man-made radionuclides are present everywhere, but are not distributed uniformly. We now have preliminary information about radioactive contamination of the soil only in areas adjacent to the Semipalatinsk and Azgir (Atyrauskiy Oblast) test ranges. In order to create an ecological radiation map, therefore, it is necessary first of all to inspect the test ranges and adjacent areas and, second, to examine the entire territory of Kazakhstan.

In September 1992, Kazgidromet inspected the Azgir test range and settlements that were in close proximity to it, Azgir and Balkuduk. The results showed that amounts of Cesium-137 were significantly less in these settlements than in the area of the Tourist Hotel in Alma-Ata. Consequently, the blasts that occurred there did not leave any radionuclide contamination. Other forms of contamination, however, cannot be excluded, as for example, chemical. Not every radioactive contamination can be tied to nuclear blasts. For example, waste water from shafts in the Shantyubinskiy Uranium Mine contain natural uranium. Contamination also occurs when uranium ore is transported on open platforms.

[Interviewer] How do blasts from the Lobnor test range in China affect our situation with regard to radioactive contamination?

[Ptitskaya] As with any blast, nuclear blasts in China create damage to nature. One should not think, however, that experiments in China resulted in substantive contamination of the atmosphere in Kazakhstan. In an overwhelming majority of cases, radioactive clouds from Chinese blasts moved eastward from the Lobnor testing range. Going around Earth, they floated over our republic 10-12 days after the blast. And only after 3-4 months did products from a nuclear blast at Lobnor appear over Kazakhstan in a layer of air near the ground in very insignificant quantities. It is true, however, that there were two cases when the radioactive cloud moved westward. Then the concentration of short-lived radionuclides significantly increased in Kazakhstan.

[Interviewer] In addition to the Semipalatinsk test range, where else did nuclear testing take place?

[Ptitskaya] According to Kazgidromet data, there were 25 blasts from 1966 to 1987 in seven oblasts: Atyrauskiy, Uralskiy, Mangistauskiy, Shymkentskiy, Aktyubinskiy, Kustanayskiy, and Turgayskiy. In Atyrauskiy and Uralskiy Oblasts, for example, they "created" underground caves for storing radioactive wastes.

With regard to the Semipalatinsk test range, 16 meteorological stations in Semipalatinsk Oblast alone are monitoring this test range, not counting meteorological

stations in other oblasts adjacent to the range. Incidentally, they have never registered any increase in radioactive fallout during the times that underground blasts occurred. The area of the Semipalatinsk test range is 1,800,000 square hectares. Of the total, 900,000 square hectares have been contaminated by blasts and will not be returned to the Kazakhstan economy. Underground nuclear blasts at this test range do not, for all practical purposes, contaminate the soil, since no increases of radioactive substances have been registered in the atmosphere. There were short-term emissions of inert gases which quickly dissipated in the air.

I would like to say that in the period from 1962 to 1992 the most substantive addition to radioactive contamination of the Republic of Kazakhstan was caused by the accident at the Chernobyl Nuclear Power Station.

Full inspection of all test ranges and areas adjacent to them will begin in 1993. On the basis of results from these inspections, decontamination will be conducted, if necessary, in areas that were affected.

Kazakhstan: Nuclear Tests Linked to High Infant Mortality

93WN0327A Moscow ZELENYI MIR in Russian No 7, Mar 93 pp 4-5

[Article by I. Chasnikov, Republic of Kazakhstan AN corresponding member: "The Sick Earth: Nuclear Testing, Past and Future"]

[Text] (KAZAKHSTANSKAYA PRAVDA)—**Materials on radioactive medicine... Maps of the radiation and toxicity situation, which can be used to determine the area's degree of contamination, to develop and take preventive measures... All of this used to be an archival secret. All the years that nuclear ammunition was being exploded in the air, on the ground and under the ground. Only after the closure of the Semipalatinsk test ground did it become possible to look at some of these documents. Only some of them... Much remains forgotten. Kazakhstan's public demands that the military-industrial complex of the former Soviet Union make public everything connected with nuclear weapons testing on Kazakhstan's soil. This demand was not made to be a sensational news story. It was made to help people. Even if it is very late in coming.**

The materials published below contain an explanation, a warning, advice, hope...

It is difficult to find an ecologically clean zone on a map of Kazakhstan. We polluted our land for decades, in whatever way we could. We were suddenly struck by it, we started thinking about it... The Semipalatinsk test ground has been shut down. But even now, many of us do not know that nuclear explosions thundered not just in the east, but in the west, the south...

Recently, I visited the town of Kaldaybek, where one of the last nuclear explosions in Western Kazakhstan was carried out on October 3, 1987. It is in Aktyubinsk Oblast, Bayganinskiy Rayon, about 45 km from the

village of Zharkamys, which lies on the shores of the river Emba. On the way there, one comes across derricks—they are looking for oil. Evidently, the nuclear explosion was carried out for the purpose of finding useful minerals by registering seismic waves. They say that explosions like this are carried out for peaceful (national economy) purposes. About 115 of these "peaceful" blasts occurred in the former USSR, of which more than 30 were in Kazakhstan. Experience shows that there is no such thing as a safe nuclear explosion. Taking this into consideration, specialists planned them so as to decrease the harmful impact on the environment. But in some places, they were unsuccessful in avoiding the dumping of radioactive substances, contamination of the soil. In February, 1989, two explosions at the Semipalatinsk test ground that gave off radioactive gasses caused the indignation of people living all over Kazakhstan, and led to the creation of the Nevada-Semipalatinsk Anti-Nuclear Movement. In June, 1991, at an inter-republic conference held in Guryev on the problems of nuclear missile test grounds in the Caspian region, people spoke painfully of the contamination of the environment by radioactive substances at the Azgyr test ground, which is located in Guryev Oblast, where about 20 underground explosions occurred. The article "Azgyr," published in the newspaper KAZAKHSTANSKAYA PRAVDA September 28 and October 1, 1991, talks about the disastrous situation for the people living close to this test ground.

[Boxed material]

Recultivation to be conducted

A meeting between representatives of Russia and Kazakhstan interested in nuclear testing in the western regions of the republic took place March 11 at Alma-Ata.

Employees of the Atomic Energy Agency, the Ecology and Bio-Resources and Defense ministries, the national Academy of Sciences, the Kazakhstan Nuclear Center, came to the conclusion that the level of radioactivity in Kazakhstan is in compliance with the norms. However, in the mine shafts where underground nuclear explosions took place, it is definitely higher.

It was decided that the specialists should conduct a recultivation of the contaminated territories in order to eliminate factors that are harmful to people.

[end box]

Kapustin Yar, Ashuluk, Emba-5... These are test grounds in the Caspian region. On a large part of the territory of Western Kazakhstan, air, land and underground tests of various types of missiles and military technology were conducted over a long period of time. "Parts" often fall from the sky—the remains of missiles, and sometimes—entire missiles. As a result of these descents, two residential homes have been destroyed, and 14 people have been killed. In September, 1991, there was a similar incident, it is true, without human victims, in the vicinity of the settlement of Inderskiy. As we know, "gifts from the sky" also fall in other regions of Kazakhstan. And not just

metallic objects, littering the fields and making agricultural work difficult, but also products from the combustion of engine parts, and these are poisonous chemical substances that pollute the soil and water.

In the summer of 1991, various public movements held a meeting in the city of Aktyubinsk, demanding the closure of the military test ground in the Mugodzharskiy region. At that time, open information was given out for the first time. Unfortunately, we still don't know all the places where tests of nuclear, chemical, bacterial and other weapons were carried out, we don't know what ruinous effect they had on people's health and on the environment. At the All-Union Conference on Questions of Ecological Education for the Population that was conducted in Minsk in June, 1991, it was officially announced that the area occupied by military test grounds in Kazakhstan is comparable to the area occupied by arable land.

At a general meeting of the Kazakhstan Academy of Sciences held in the city of Guryev in 1989, I posed the question of the closure in Western Kazakhstan of military test grounds that harm the environment. There, an appeal by the republic's scientists to the heads of the nuclear powers was adopted on prohibiting nuclear testing and closing all nuclear test grounds on the planet. Finding myself in Western Kazakhstan again, by invitation of the Aktyubinsk chapter of the Znaniye Society, I had the opportunity to obtain additional information on the environmental situation in the oblast, especially in Bayganinskiy Rayon. In the oblast committee on ecology and health and epidemiology, I, as a member of the republic coordinating council on actions for the preservation of the environment, was familiarized with the commission's conclusions on measurements of the radiation level at the location of the nuclear explosion at Kaldaybek, which was carried out at a depth of over 1000 meters. I must say that the radiation situation at the location of the underground nuclear blast, according to the commission's data, seemed normal. According to my measurements at the location of the blast and in other places in Bayganinskiy Rayon and the city of Aktyubinsk, the radiation level seemed lower than in the city of Alma-Ata (averaging about 10-11 microrentgens per hour). Present during the measurement of the radiation level of background gamma-rays at the location of the blast were A. Aldabergenov, Zhalkomys Village Soviet chairman, K. Zhanelov, director of the Anzhar-skiy Sovkhoz, A. Yelyeusov, a doctor at the regional hospital, and heads of the oblast and rayon chapters of the Znaniye Society. The new measurements were taken half a year after the last ones. I can say that in this time, there were no changes at all in the radiation level in the vicinity of the blast. But this in no way signifies that radioactive substances will not appear in another location.

The radioactive substances formed as a result of the explosion remain underground for many years. The radiation level at the location of the last underground nuclear explosion at the Semipalatinsk test ground on

December 19, 1989 (mark 1365) is also normal. It was exploded at a depth of about 600 m. Why then are the residents of the rayon and the entire oblast concerned? There are reasons for this. In Bayganinskiy Rayon, average human life expectancy is about 47 years, and in the oblast—about 55, which is 10 years less than in the former Soviet Union, and 20 years less than in Japan. The rayon has the highest child mortality. The reason for this disastrous situation has been developing for decades, it didn't just begin with the October, 1987 explosion. The current radiation level in the rayon in no way means that its residents (like the population of other rayons in Western Kazakhstan) were not subjected to radioactive irradiation at an earlier time. During the period when nuclear tests were being carried out on the land and in the air at the Semipalatinsk test ground, residents received doses that exceeded the maximum by tens and hundreds of times. Radioactive irradiation can manifest itself decades later, in the generations that follow. According to data from the Children of the Test Ground association, which operates on the basis of the "On Children's Rights" convention and the World Declaration on the Protection of Children's Rights, in the Abayskiy Rayon of Semipalatinsk Oblast, among children aged one to sixteen years, 80 percent suffer from anemia, 30 percent are handicapped. These are children from the second and third generations born after nuclear testing was begun. Based on an integrated study of the population of the 14 rayons located near the Semipalatinsk test ground, Kazakhstan's medics have established that a rise in general mortality from oncological illnesses is noted 4-15 years and 23-27 years after the beginning of the radioactive effects.

In analyzing children's, or more exactly, infant mortality from the age of one year, I discovered a certain correlation between it and the nuclear explosions carried out on the ground, in children both of the first and second generations. Over the last 25 years, a significant rise in children's mortality in Kazakhstan was observed in the middle 70s (1976-1977), that is, 22-25 years after the most intensive above-ground nuclear blasts (1952-1954). The age of 22-25-year-old—is the most intensive child-bearing period. Evidently, high children's mortality in the mid-70s is a manifestation of the effects of radiation on the second generation of people whose grandfathers and grandmothers were irradiated in the 50s, while their children (the first generation), the parents of the second generation, received a fairly large dose of radiation due to internal irradiation in 1964-1965, when the content of radioactive substances in food products was at a maximum, due to global radionuclide fallout from nuclear explosions in the atmosphere. This effect (the maximum children's mortality in the mid-70s) is absent in republics and states located far away from nuclear test grounds.

The curtain of secrecy has not allowed an exact analysis of the cause of the worsening ecological situation in Western Kazakhstan, and has certainly not made prognoses possible. The information that was published at the conference in June in Guryev on the open nuclear testing in the 50s, and later on, of neutron arms testing in

Western Kazakhstan—confirms the thought expressed earlier that the residents of this region may have been exposed to radioactive irradiation. In familiarizing myself with the materials from the Guryev conference, I learned that over those years (1963-1964), the cesium-137 content in meat and milk produced in the Caspian region was about 17 bekkereles per kilogram. In grain products, the cesium-137 content was, as a rule, even higher. In this way, meat, milk, bread and flour-based products, the traditional basic food products for the Chabans and the inhabitants of many Kazakh villages and auls, were in fact sources of internal radioactive irradiation for humans and animals from 1964-1965. Those whose food ration included vegetables, fruits and other products that facilitate the breakdown of radionuclides suffered to a lesser degree.

Along with the factors listed above, water quality, which has declined over the years, also has had a negative effect on people's health. Medics note that 80 percent of the illnesses are connected with water. The inhabitants of the western region know these, and are raising the alarm.

In lectures aimed at the population in the city and oblast of Aktyubinsk, I not only spoke about the ecological situation that has developed in Kazakhstan, but about how to live in the disaster zone. According to my observations, in many rural homes there is practically no air ventilation. When I measured the radiation level inside buildings, it was approximately 1.5 times greater than outside. This occurs due to accumulation of the natural radioactive gas, radon, and the products of its disintegration. The radiation level did not exceed the permissible level in any of the homes. Regarding the water, I have this advice: do not drink fresh water. It contains many salts and harmful substances. Use home and industrial water fresheners. Water fresheners with a production rate of five to fifteen cubic meters per hour have been developed at the AN Kazakhstan Institute of Chemical Sciences under the leadership of Academic Ye. Ye. Yergozhin, and are manufactured at the Alma-Ata Electromechanics Plant. Academic Ye. Ye. Yergozhin has promised to give whatever help he can in providing water fresheners to Aktyubinsk Oblast.

The conclusion is self-evident: government organs should turn their greatest attention to Western Kazakhstan. Not all the test grounds that cause harm to people and the environment have been closed yet, and rehabilitation of the land has not yet begun. There is a need for a government commission to study the effects of all the testing of nuclear and other arms and military technology in the region. It is time to stop talking about improving the social situation for people (especially medical service) living in ecological disaster zones, about paying them compensation for the damage they have sustained, and do something.

Kyrgyzstan: Line Burst Results in Radioactive Pollution

LD3103120293 Moscow ITAR-TASS World Service in Russian 1027 GMT 31 Mar 93

[By ITAR-TASS correspondent]

[Text] Bishkek, 31 Mar—A waste line of the Ak-Tyuz ore-processing factory has burst, which is situated in the foothills of the Chuyskaya Valley in Kyrgyzstan. The republic's State Committee for the Protection of Nature said today that the accident resulted in radioactive thorium and toxic salts of heavy metals such as lead, zinc, cadmium, and molybdenum leaking into the waters of the Ak-Tyuz River. The ecological situation in the Kichi-Kemin Valley, where the mine is located is regarded as unfavorable.

BALTIC STATES

Environment and International Finance Ministers Confer

AU2703155293 Warsaw PAP in English 2155 GMT
24 Mar 93

[Text] Gdansk, March 24—Financial problems in countries undergoing market reforms and recession affecting Western countries limit the possibilities of financing the Baltic protection programme, this was stressed at the first session of the conference of the Baltic states which opened in Gdansk today.

The two-day conference, attended by the environment ministers of Baltic states and representatives of international financial institutions, is discussing the principles of the multi-discipline Baltic protection project, which covers investments, law, management and educational issues.

The programme, launched by the prime ministers of the Baltic states in Ronneby, Sweden, in 1990, was later ratified in Helsinki. According to Deputy Environment Minister Bernard Blaszczyk, the implementation of the project will cost some 18 billion ECU within the next 20 years.

The majority of the participants in the meeting were of the opinion that local means of individual countries should provide the main financial source for ecological investments. These means could come from fees charged from industry and especially from firms polluting waters running to the Baltic.

Walter Stottman of the World Bank stressed that the preparation of precise investment projects and the creation of credit instruments were indispensable for launching international credit lines.

Vast sources of finance would be available for the Baltic protection if Western countries of the region agreed to earmark part of Poland's debt for ecological aims, chairman of the Eco-Fund Maciej Nowicki said.

Estonia: Workers 'Unwell' After Removing Nuclear Fuel From Paldiski Base

OW2403202693 Moscow BALTFAX in English
2011 GMT 24 Mar 93

[Following item transmitted via KYODO]

[Text] Russian servicemen have started loading nitrogen acid, a component of nuclear fuel, into railroad tank-cars in Paldiski, Estonia, navy base.

The Estonian border guards who had supervised the loading later said they felt unwell. The measurements taken by Environment Protection Ministry experts showed abnormal contents of the acid vapors in the atmosphere. On Wednesday the Estonian authorities suggested to the Russian military command that ways should be found to prevent poisonous leaks.

Ministry officials told Baltfax that the loading of a still more poisonous component, triethylamine, will start next week.

Estonian experts say they are ready to cooperate with Russian military authorities in finding safe ways to remove the nuclear fuel.

Latvia: Russian Missile Unit Leaves Unguarded Poisonous Rocket Fuel

OW2603213893 Moscow BALTFAX in English
1802 GMT 26 Mar 93

[Following item transmitted via KYODO]

[Text] This week the last servicemen of a Russian missile unit have pulled out from a military camp near Ventspils, leaving tankfuls of highly toxic rocket fuel behind. The local government body refused to take over the camp.

This area is not guarded now and so lives and the environment are endangered.

Centa Karklina, chief ecologist of the district, says that 270 tons of the fuel were stored in the camp last year.

REGIONAL AFFAIRS

EC Environment Council Supports 'Ecological' Enterprises

*BR2503085793 Brussels LA LIBRE BELGIQUE
in French 24 Mar 93 p 6*

[Report by "J.-C.M.": "European 'Energy Tax' Rejected, 'Eco-Audit' Passed—Not Everyone Is Resigned To Paying the Price of Reducing CO₂ Emissions—A Blanket Ban on Waste Exports Will Have To Wait"]

[Text] What is the most tangible result of the EC Council of Environment Ministers meeting? It is the adoption of an eco-audit aimed at promoting "ecological" enterprises. The underlying principle is to have industrialists adopt production and management processes which are more environment-friendly. Companies will be entitled to make use of a special logo. Aid already has been earmarked by the Commission and the member states.

The other main issue discussed was CO₂ emissions, which are responsible partly for the greenhouse effect currently threatening the planet's climatic equilibrium. The EC is committed to stabilizing these emissions by the year 2000, and Belgium has gone even further by committing itself to reduce emissions by 5 percent. Before the Commission ratifies the UN convention on climatic changes, it must be made sure that the set goals can be achieved and that efficient monitoring instruments have been set up.

Ecotax

For the Commission and several delegations (including Belgium), achieving the set goal necessarily means implementing an "energy/CO₂ tax," i.e., an ecotax capable of modifying the behavior of producers and consumers in accordance with the decisions made in Rio de Janeiro. Not everyone—notably Great Britain—shares this opinion. The dispute also revolves around the need to implement a monitoring instrument for national programs. However, Great Britain feels that it is big enough to check up on itself. Unilateral statements have been made which run directly counter to each other, calling not only for Community monitoring but also giving each party the chance to look into its neighbor's affairs.

From a strictly Belgian point of view, the plan submitted by Mrs. Smet in her day was deemed insufficient. A new version will be ready in June. Working parties bringing together experts from various departments concerned (ranging from the environment and finances to communications and economic affairs) have been getting down to work. They also will take the opinion of nongovernmental organizations into account.

Waste

The second main issue is waste. Apart from the fact that joint ratification of the Basel Convention is running into legal obstacles—but joint ratification certainly will take place by 6 February 1994—the Danish proposal for an

amendment which would lead to a blanket ban on the exportation of hazardous waste was not adopted (the Basel Convention allows the exportation of "recyclable waste," a term which opens the door to many interpretations). The Twelve are not really hostile to it, but they have given the Commission the task of investigating the need for such an amendment.

Mrs. Onkelinx, minister of the environment, mentioned the possibility of perverse effects: "A situation must not arise in which the developing countries will no longer be able to export their waste to industrialized countries capable of treating it." She reiterated that Belgium, for example, imports two and a half times more waste than it exports.

As regards the incineration of hazardous waste, the EC is making increasingly serious plans to adopt distinct regulatory instruments concerning conventional incinerators, on the one hand, and mixed installations (cement works, blast furnaces, etc.), on the other.

As for CFC's [chlorofluorocarbons], they will be on the agenda of the next Council meeting in April. The Commission has not closed the file, but no harm should be seen in this.

AUSTRIA

Central European Ministers 'Skeptical' on Nuclear Power

*AU3003101293 Vienna WIENER ZEITUNG
in German 30 Mar 93 p 3*

[Unattributed report: "Environment Ministers Against Nuclear Power"]

[Text] Vienna—The environment ministers from Slovakia, Slovenia, and Croatia, Jozef Zlocha, Miha Jazbinssek, and Zdenko Karakas, as well as the Hungarian State Secretary Laszlone Tarjan stressed their skeptical attitude toward the use of nuclear energy in their home countries at a news conference in Vienna on Monday [29 March]. Austria's Environment Minister Rauch-Kallat pointed out that none of these countries is in a position to give up nuclear power in view of the current energy situation. On the occasion of the Vienna meeting of the Central European environment ministers, an "ecological Marshall plan" was presented.

The plan that was drafted by the Austrian Environment Ministry and Bank Austria provides for a "three-phase" procedure, as Bank Austria chief Rene Alfons Haiden pointed out. As a first immediate step, western technologies for saving energy and raw materials should be supplied to make use of the savings potential that exists in every country. Subsequently, environmental funds are to be set up at a national level that are to be fed with national and international means. This fund will be used to finance "environment-related projects and investments," Haiden said.

Regarding the Gabcikovo power plant, over which a controversy between Hungary and Slovakia has erupted,

no progress has apparently been achieved. The Hungarian State Secretary Tarjan only announced that her Slovak counterpart Zlocha has suggested a meeting of the environment ministers to discuss this topic.

DENMARK

Survey: Businesses Adopting Environment Policies
*93WN0323A Copenhagen BERLINGSKE TIDENDE
in Danish 23 Feb 93 p IV 2*

[Article by Henrik Tuchsén: "New Environment Policies Adopted by Danish Businesses"]

[Text] *Environment. Many businesses become certified that they have proper quality control, i.e., obtain the so-called ISO 9000 certificate. The next step is to become environmentally certified.*

Stricter environmental requirements, new environmental taxes, environmental accounting.

The green track is both nationally and internationally clear and unequivocal, and more and more Danish businesses choose to include environmental policies in their strategic planning.

Many even expect to profit from having a documented environmental control system, according to the first report in this area from the consulting firm Kvalitets Gruppen at Aarhus.

Experience and trends from abroad, from England among other places, show that the next step will be environmental certification, according to Knud Bottinger, a consultant from Kvalitets Gruppen. That is to say, an official blue stamp indicating that the business has adopted an environmental policy.

"Environmental controls will be adopted by Danish businesses little by little because international trends are breaking through here at home. There are clear signs of a forward-leaning attitude in which environmental control will be a supplement to quality control," he says.

Sixty-eight businesses, all of whom are ISO 9000 certified, have responded to a survey request from the consulting firm. Among the many conclusions to be found:

- 65 percent have environmental policies.
- 54 percent indicate that environmental control is a part of the company's strategic planning.
- 88 percent have carried out environmental improvements during the last year.
- 62 percent are interested in certification in this area.
- 46 percent expect to achieve economic or other advantages by having an environmental control system.

According to the survey, many ISO 9000-certified businesses can show an economic gain of 2,000-25,000 kroner per employee per year.

Three of four businesses expect more stringent environmental requirements within one to three years, and

Kvalitets Gruppen finds it remarkable that one can expect these demands to originate from customers/market pressures to the same extent as from the authorities.

[Box, p IV 2]

Quality Sixty-eight out of 240 businesses returned a survey about their environmental policies to the sender, Kvalitets Gruppen, a consulting firm, which makes quality control systems for businesses with a view to ISO 9000 certification.

FINLAND

Airborne Pollution From Russia Affecting North
*93WN0301A Helsinki HELSINGIN SANOMAT
in Finnish 13 Feb 93 p 12*

[Article by Tapio Mainio: "Concentrated Masses of Airborne Pollution Coming to Eastern Lapland from Kola. Shocking Results at the New Sevettijarvi Measuring Station"]

[Text] Winds blowing from the east bring highly concentrated surges of pollution from the industrial region of Kola to eastern Lapland. The air pollution measuring station of Sevettijarvi in Inari, which has been in operation for a year and is equipped with more sensitive instruments than before, has registered sulfur dioxide concentrations as high as 500 micrograms per cubic meter of air. The highest concentrations, for instance, in Helsinki are only about 200 micrograms.

"At their shortest the surges have lasted only for one hour. Older measuring instruments have not been capable of registering brief surges, which have been hidden behind the long-term concentration averages. Even brief periods of sulfur dioxide concentrations above 100 micrograms are thought to be harmful to plants," reports Risto Hillamo, special investigator, from the Meteorological Institute.

Easterly Winds Are Luckily Rare

Last year under a hundred bad, brief surges of pollution were detected at the Sevettijarvi measuring point. The pollution peaks rose more than 100 times higher than the annual averages.

"Luckily the prevailing winds in Lapland are from the south. During the southerly winds the sulfur dioxide levels were only 2-3 micrograms per cubic meter of air. The polluting easterly winds make up only about 10 percent of all the winds," Hillamo adds.

In the vicinity of the Kola industrial area there are severely damaged forests but less severe damage occurs at a distance of 50 km from the polluting source.

With sensitive methods of measurement the effects of the Kola pollutants can be seen also on the Finnish side.

"On the Finnish side one has to be able to predict the potential damages to the forests and to find ways to

prevent them on time," says Eero Tikkanen, director of the forest damage project in eastern Lapland, at the Forest Research Institute.

"Clearly, the condition of lichen cells is worse in the eastern parts of Inari and in East Salla than anywhere else in the province of Lapland. A new syndrome has been found in the lichens of eastern Lapland. It appears to be caused by heavy metals," adds Jari Oksanen, researcher of the forest damage project, at the University of Kuopio.

Under microscopic examination, heavy metals have been detected also in pine needles. According to Associate Prof. Satu Huttunen, the most severe cell damage to pine needles has been found in the same regions as the lichen damage.

Vegetation and soil samples have been taken along test lines that start at the Kola industrial plants and run across Lapland to the southwest, west, and northwest. About 50 scientists are participating in the research.

It is still an unanswered question, how heavy loads of pollution the arid forests can tolerate. Through experiment, it has been shown that even short surges over 100 micrograms in strength cause permanent cell damage in needles. A tree does not die of one surge of 500 micrograms. However, its condition weakens when the surges are coming continually.

"In addition, the harmful effects of sulfur are magnified by the high levels of ozone and heavy metals," scientist Sirkka Sutinen from the Forest Research Institute points out.

Last year, at the Sevettijarvi station, ozone levels of 120 micrograms per cubic meter, lasting for a short time, were measured in late May and early June. At the same time several kinds of metals such as nickel, copper, zinc, lead, arsenic, and cadmium were caught in the filters.

Trees become damaged if the average ozone concentrations on the ground during the growing season exceed 60 micrograms per cubic meter.

The forests of eastern Lapland, according to Huttunen, cannot stand continual pollution waves.

"In greenhouse gasification tests in which pines have been exposed to high levels of sulfur and ozone, obvious damage to needle cells has been detected already after 30-60 surges in concentration."

FRANCE

Puech Announces 'Tougher Line' on US Oilseed Agreement

AU0104141493 Paris AFP in English 1405 GMT
1 Apr 93

[Text] Paris, April 1 (AFP)—France is to take a tougher line on agricultural agreements under GATT negotiations and might seek changes, new French Agriculture and Fisheries Minister Jean Puech said on Thursday [1 April].

Meanwhile Danish Trade and Industry Minister Mimi Jakobsen said here that the Common Agricultural Policy (CAP) of the European Community (E.C.) would probably be "re-discussed".

But the common purpose of the E.C. remained conclusion of an overall agreement to liberalise trade under the General Agreement on Tariffs and Trade (GATT), said Jakobsen, whose government holds the presidency of the E.C. Council of Ministers.

"I think it will be re-discussed," she said, commenting that the problems of many Danish farmers facing the closure of their farms "are more or less the same".

Earlier, the new French minister said, "Agriculture fits into an international context(...) hence the need to work alongside my colleagues at foreign affairs and European affairs for this renegotiation, discussion(...) with a very active, very vigorous offensive approach," he told French radio.

This would be done "in such a way that the agricultural and sea-faring interests are defended in the context of the GATT as well as in Brussels."

He said: "On these essential issues, we must establish the state of current discussions, and it is quite clearly possible that we shall have to adjust our policy so that we can bring to bear the necessary corrections."

During the campaign which elected a new government on Sunday [28 March], the leader of the senior partner in the coalition, the RPR's Jacques Chirac, took a tough line, saying that an oilseed agreement between the E.C. and the United States should be rejected and questioning the basis of GATT arrangements because they did not deal with labour costs and practices.

Mrs. Jakobsen, in Paris to launch a campaign to attract French investment to Denmark, said application of the oilseed agreement reached between the E.C. and United States "will create problems for the Danish farmers as well".

But she declined explicitly to reject the agreement.

She also expressed confidence that a big majority of Danish voters would approve ratification of the Maastricht treaty on European monetary and political union in a second referendum on May 18.

Danish voters rejected the terms in a referendum on June 2, but since then special provisions have been agreed to satisfy Danish reticence on some points.

"I am quite convinced that Danes will vote 'yes' this time," she said. "It is absolutely vital for a small country like Denmark to be a full member of the E.C. A new 'no' would be a catastrophe... This time we would be obliged to reconsider our membership of the E.C."

Agriculture Minister To Defend Farm, Maritime Interests

*AU3103153593 Paris AFP in English 1452 GMT
31 Mar 93*

[Text] Paris, March 31 (AFP)—The new French agriculture and fisheries minister, Jean Puech, said Wednesday [31 March] that he planned a strong defence of French interests in his field of jurisdiction.

He said on the France-Infos radio program that he intended to see to an "active, continuous and vigorous defence" of French agricultural and maritime interests, both in Brussels and at the General Agreement on Tariffs and Trade (GATT).

He added that he would "think about new approaches to management in French agriculture, taking its diversification and the demand for quality into consideration".

The new minister, a member of the new government appointed following the centre-right's landslide victory in legislative elections that ended last Sunday [28 March], did not refer to recent incidents between French fishermen and Britain's Royal Navy.

CEA To Reorient Research Reactors

*93WS0290C Paris AFP SCIENCES in French 4 Feb 93
pp 27, 28*

[Text] Paris—Following the drop in French and European irradiation needs, the Atomic Energy Commission (CEA) has decided to adopt a new strategy in operating its two research nuclear reactors, Osiris in Saclay (Essone) and SILOE in Grenoble.

The decision aims to "better match resources" to the consequences of the "drop in medium- and long-term national needs, and the uncertainty affecting the supply and demand of irradiation services in Europe," says the CEA in a communique that was made public 29 January. The CEA has decided to maintain the two reactors, for a minimum of three years, and will reassess their operation in 18 months.

Osiris will run at maximum capacity (70 thermal MW) to provide technological irradiations needed for research and development in France's nuclear electrical power program. Work will be coordinated with Electricity of France and Framatome.

The operation of SILOE (35 thMW) will be cut back to match its workload; operating time will be limited to 130 days annually and its power will gradually be reduced by about 20 percent. The reactor will continue to be used for programs requiring production of neutrons on demand. The sectors concerned include basic research, industrial irradiations, and analytical studies for the development of fuels. SILOE operations teams and the teams in charge of engineering experiments will be reorganized.

The research laboratories were put into service in the sixties and are indispensable tools for developing current nuclear power plants. They are used to prepare the

reactors of tomorrow (material and fuel tests) and to produce radioisotopes. The laboratories also provide scientists with the means to study condensed matter, materials, and alloys.

GERMANY

Police Chief Asks Banks, Industry To Help Fight Nuclear, Waste Crime

*AU2903143193 Duesseldorf HANDELSBLATT
in German 29 Mar 93 p 9*

[Thomas Linke report: "Banks and Automobile Industry Should Make Theft More Difficult"]

[Excerpts] Bonn, 27-28 March—Hans-Ludwig Zachert, president of the Federal Office of Criminal Investigations (BKA), has called on the banks and the automobile industry to do more to help combat crime. The criminal prosecution authorities are no longer able to fulfill this task on their own, Zachert said in an interview with HANDELSBLATT.

Last year alone more than 130,000 cars were stolen, Zachert said. In 1991 90,000 cars were reported stolen, the year before that only 60,000. The claims paid out by insurance companies for car theft amount to 1.5 billion German marks [DM], credit card fraud amounts to DM100 million, and in addition, there are the losses caused by Eurocheque forgeries. [passage omitted]

Last year the sound barrier of 6 million crimes was broken, the BKA president says. The clear-up rate is 44 percent in the west and 30 percent in the east, and an overall rate for Germany of 42 percent. Zachert: "This is a dramatic deterioration compared with previous years." The final figures will be announced by the interior minister. However, focal points can be seen already now.

In addition to car theft and credit card fraud, the number of break-ins into apartments has also risen considerably. There are also double-digit growth rates for violent crimes involving very serious injuries. Zachert: "There are more shootings and more threats with weapons than ever before." "Great brutality" has also been registered in the area of xenophobic crimes, the BKA president complains. Drug-related crimes remain at a very high level with "sad consistency."

The Proportion of Foreign Suspects Rises

The proportion of foreign suspects is rising and is currently at 27 percent, after being adjusted to remove all distorting factors; according to Zachert, the proportion of criminals among asylum-seekers has tripled over the past five years. Drug-related crimes, car smuggling, and smuggling of persons have meanwhile been firmly taken over by organized crime, the BKA chief complains.

The smuggling of waste products has also become a field of organized crime. This has meanwhile turned to border-crossing crime, where individual law-breakers are completely unable to act, Zachert reports. The FRG is

one of those countries that produce a lot of hazardous waste and have a lot of it in the country. Waste disposal is extremely expensive. Illegal companies are taking advantage of that by pretending that they are disposing of the hazardous waste and then selling it off to developing countries as fertilizers, additives for construction material, or as fuel. Zachert: "This is a highly criminal type of activity."

The field of nuclear crime also became increasingly important last year. In total, there were 92 suspicious cases; 27 of them specifically referred to radioactive material. Plutonium and uranium was discovered, which, however, was not of weapon-grade quality, Zachert says. One criminal was arrested, who had seriously contaminated himself.

The BKA boss is worried about the skyrocketing fraud involving capital investments. Experts estimate the damage at about DM40 billion per year. [passage omitted]

Zachert welcomes Interior Minister Rudolf Seiters' proposal to permit foreigners to work as policemen. "I think the basic idea is very sensible, in particular since crime is becoming increasingly international," Zachert stated.

Doubts Cast Over Future Nuclear Power Production

93MI0345 Bonn *DIE WELT* in German 16 Feb 93 p 14

[Text] Europe's major power station builder, the Siemens power generating division (KWU) thinks that German expertise in the construction of nuclear power stations will be jeopardized unless plans are initiated in the middle of 1995 for the construction of a new reactor in the Federal Republic. At the annual press conference in Muelheim/Ruhr, KWU chief and Siemens board member Adolf Huettl said: "Without new nuclear power stations in our own country, we shall have no chance on the world market either."

Huettl also thinks that the "Nuclear Power International" (NPI) joint venture with the French company Framatome is at risk. NPI is currently developing the basic engineering for the EPR 1,500-megawatt safety reactor for the Franco-German electricity industry. The transfer to an actual construction project must be made by the middle of 1995. Huettl hopes to receive a building license for 1998.

He bluntly rejected the energy consensus mooted by the electricity companies RWE [Rhine-Westphalia Electricity Works] and Veba [United Electricity and Mining Works Corporation] according to which the construction of new nuclear power stations was only a "vague option." "Our cooperation with Framatome can go ahead only if there are real prospects for constructing nuclear power stations in Germany in both the medium and the long term," said Huettl.

He is also annoyed about the Land of Hesse's obstructionist licensing practice for the MOX [mixed oxide] fuel

element plant in Hanau: It had been idle for over 20 months resulting in a loss of half a million German marks [DM] per day.

A move away from nuclear power is already unlikely to be a fundamental issue for Siemens KWU. Out of sales worth DM6.6 billion (5 billion) in 1991-1992 (to 30 September), power stations fired by fossil fuels account for DM4.9 (3.1) billion. The remaining nuclear portion relates to servicing and fuel elements. There are only three reactors now in the order book, but 87 (75) stations fired by fossil fuels. This is the sector where KWU intends to promote vigorous growth in the first instance, with a sales target of more than DM7 billion in 1992-1993. Orders are expected to reach DM8.8 billion this year, as against DM8.6 billion in 1992. The 2.4-percent return on investment lies within the Siemens average, but is to be raised to 5 percent. KWU had made a positive contribution to the consolidated result, said Huettl, without mentioning precise figures.

Firm Develops Electrostatic Plastics Sorting System

93MI0361 Wuerzburg *UMWELTMAGAZIN* in German No 1/2, Jan/Feb 93 pp 50, 53

[Article by Dieter Mueller: "Separation by Friction"]

[Excerpt] [Passage omitted] Kali und Salz [Potash and Salt] Disposal GmbH (K&S), founded at the end of 1991, has developed a new way of separating assorted plastics that can be used for both industrial residues and household packaging waste. The electrostatic treatment process (EST), which has now been patented, makes use of the fact that substances acquire opposing electric charges from friction, thus making it possible to sort them in an electrical field in a second stage. The remarkable thing about the EST process is that plastics of the same density, like polyvinyl chloride (PVC) and polyethylene terephthalate (PET), or polyethylene (PE) and polypropylene (PP) can be sorted almost completely.

The methods used to sort mixed plastics in the past, such as hydrocyclone technology or the sink-float process, which take advantage of the material's specific gravity, are normally only capable of sorting very roughly into the polyolefin fractions (mainly PE and PP) and heavy plastics such as PVC, PET, and the like, K&S Disposal's sales manager, Kurt Harbodt, is certain that "electrostatic sorting is a major process step not, or only very inadequately, offered by other sorting techniques."

Practical Viability to Be Tested

In order to demonstrate the practical viability of the process, K&S is investing around 15 million German marks [DM] over the next two years in building a large pilot plant in Lehrte, near Hannover, that will have an initial working capacity of 10,000 tonnes a year mixed and dirty plastic waste. It will combine the EST process with density sorting techniques to sort mixed plastic waste, for example from the Dual System, automatically and cheaply into largely distinct categories.

So far, the EST process, which has for decades been the established method for the dry separation of raw potassic salt, has only been tried in a Potassium Research Institute pilot plant in Heringen with a throughput of 100 kg/h. Nevertheless, the results are obvious. For example, used disposable syringes from a hospital collection were processed. The syringe plunger was made of PE and the cylinder of PP. From an initial 50:50 mixture, 97.1 percent purity was achieved for PE and 98.9 percent for PP in the first stage. This can be improved still further in a second run, plastics sorting project leader Dr. Rainer Werthmann said in an interview. And, according to Kurt Harbodt, the investment and operating costs are comparable with conventional processing techniques, while output and added value are significantly better.

The EST process uses the plastics' different triboelectric (frictional electric) charges to sort them. The intensity of the opposing charges is heavily dependent on how the materials have been pretreated. "The parameters used are, for example, the relative humidity and the type of conditioners. These are surfactants that are added in parts per million," research and development chief Dr. Ingo Stahl explains. The particles (up to 8 mm) thus treated can then be deflected apart in a high-voltage (120,000 V) field in the free fall separator developed by K&S, and thus separated into fractions. The small, as yet unseparated, residual fraction goes through the process again. However, the process is made more difficult by dirt and various plastics additives such as softeners and the like. Here K&S drew on the technology and know-how acquired over 20 successful years of processing potassium salts.

In view of the 800,000 tonnes or so of plastic retail packaging from dual system collections that will have to be processed from 1995, it is a race against time for everyone involved with plastics processing. K&S's directors see their process as a complementary measure for use in addition to existing technologies and chemical recycling, which is still at the trial stage, if the quantity problem is to be overcome at all. But in this case, Kurt Harbodt adds, the EST process is an important component for removing PVC from existing bulk flows in all processing technologies. [passage omitted]

Bayer Builds Chemical Residue Incinerator

93MI0360 Wuerzburg *UMWELTMAGAZIN*
in German No 1/2, Jan/Feb 93 pp 42, 44

[Text] The laying of the foundation stone for Bayer AG's Dormagen residue incinerator (RVAD) in early October last year was described by North Rhine-Westphalia's Environment Minister Klaus Matthiesen as "another milestone on the road towards ecological waste management." This large industrial plant, costing 200 million German marks [DM] and the most modern of its kind, will come on stream in stages, starting in the fall of 1994.

According to Bayer AG board member Dr. Dieter Becher, the new hazardous waste incinerator will have a capacity of 45,000 tonnes a year. It uses proven rotary kiln technology and is able to incinerate 300 tonnes of

hospital waste a year, 40,000 m³/h polluted exhaust air, and around 5,000 tonnes highly polluted sewage a year from the Neuss district, Dr. Becher said.

Incineration will take place at temperatures in excess of 900°C. At these temperatures, combustion residues take the form of glassy inert slags (about 7,000 t/a), which will be placed on the Dormagen dump as road building material. Ash produced in the convection section will be extracted via wet ash removers and fed into effluent treatment system.

The flue gases given off by the rotary kiln will be completely burned off in a secondary combustion chamber at temperatures up to 1200°C. After the heat has been recovered in a waste heat boiler and the material cooled to 70°C, chlorinated hydrocarbons, hydrogen fluoride, sulfur dioxide, and dust are removed in a rotary scrubber. Fine dust is removed by electrostatic gas precipitation.

The requisite limit of 0.1 ng/m³ dioxin as the toxicity equivalent (TE) will be achieved in the planned Dormagen incinerator using the newly developed SCR process tested in a pilot plant in Leverkusen in recent years. SCR stands for "selective catalytic reduction," a dry flue glass cleaning process in which metered quantities of ammonia are added as a reduction agent and the gas mixture is then fed through catalyzers if, for instance, the TiO₂/V₂O₅-based type.

The new Dormagen plant will also satisfy all the other emission limits that the 17th Federal Anti-Pollution Order will in future require for incinerators: an average daily organic carbon dust and hydrochloric gas emission of less than 10 mg/m³ and an NO_x emission of less than 200 mg/m³, to mention only the most important.

Finally, effluent passes through precipitation and flocculation stages before reaching the biological clarification plant.

The new incinerator will probably employ 54 people. It will be operated jointly with Bayer AG's other works.

Relative Merits of Renewable Raw Materials Discussed

Government Favors Expansion

93MI0359A Wuerzburg *UMWELTMAGAZIN*
in German No 1/2, Jan/Feb 93 pp 36-37

[Article by Bonn Correspondent Jochen Wagner: "On the Up-and-Coming—Bonn Wants to Step Up Cultivation of Renewable Raw Materials"]

[Text] Bonn wishes to encourage opportunities for cultivating renewable raw materials and counter the thoughtless over-exploitation of the earth's limited resources. Federal Agriculture Minister Ignaz Kiechle believes that the ecological advantages present interesting prospects for renewable raw materials, particularly in the chemical industry. This applies to starch-based packagings (some 460,000 tonnes in the non-food sector in 1991) and to

energy, fuels, textiles, and biotechnology. The post office, railways, armed forces, and public administration are named as potential bulk customers.

On the basis of a list of measures for immediate action, various federal ministries have sent instructions down the line that priority consideration be given to rape oil-based environmental-comparable lubricants when purchasing nonreusable lubricants and hydraulic oils. The promotion of environmentally sound decentralized heat generation using solid biomass fuels will also be stepped up. The federal government wants to take on a pioneering role with this list, pointing the way for local authorities, industry, and the laender.

"Sponsoring pilot schemes and research and development projects will make renewable raw materials more competitive. The federal government wants to take on a pioneering role with this list, pointing the way for local authorities, industry, and the laender.

"Sponsoring pilot schemes and research and development projects will make renewable raw materials more competitive. The Federal Ministry of Agriculture alone will probably be making almost 55 million German marks [DM] available for this purpose," says Ignaz Kiechle. "Moreover, since 1986 the Bonn Research Ministry has spent some DM130 billion to fund renewable raw materials projects, and since 1990, budget appropriations have been increased from DM53 million to around DM100 million. With a total of DM90 million, the EC will also make a greater contribution to pilot renewable raw materials projects through its new agricultural research program."

The specialist "Renewable Raw Materials" agency will be set up under the auspices of the Agriculture Ministry in Bonn early in 1993 to accelerate the market launch of agricultural raw materials for industrial purposes. The plan is that the federal government, the laender, and industry will all be involved in the agency and coordinate their own funding measures with it. The agency's purpose will be to coordinate and oversee the various federal, land, and industrial research and development projects and pilot schemes so as to make individual measures more effective. The funding projects planned for 1993 will cost a total of DM55 million, plus DM2 million in private resources.

The new agency's main tasks include the design, testing and promotion of renewable raw materials product lines from production to application. It will also provide advice, manage projects, draw up technical information, and undertake publicity work.

Agency Will Boost Cultivation

Renewable raw materials already have an established place in German agriculture's crop range. Some 165,000 hectares, or 2.3 percent of arable land in western Germany (210,000 hectares in the country as a whole), are used for growing industrial raw materials. Industrial estimates put current German consumption of hydraulic

oil at 200,000 tonnes. To cover this requirement alone would require 200,000 hectares of rapeseed.

In the future, 4 million hectares of Germany's agricultural land will no longer be required to grow saleable foodstuffs. A Federal Research Ministry paper (based on a system analysis by the Karlsruhe Nuclear Center) states that increasing demand could lead to a further 200,000 to 750,000 ha agricultural land being turned over to industrial crop production by the year 2005. This means that within 10 years 410,000 to 960,000 ha could be growing raw materials for the chemical industry. About 90 percent of this area could be used to produce starch and vegetable oils and fats for the home market.

The area required by the energy sector (heating, electricity, and fuels) totals between 2 and 3 million hectares. Initially, by the year 2006, up to one million hectares are likely to be planted with energy crops. Biomass of grasses, reeds, straw, timber residues, etc. can be used primarily as a solid fuel for decentralized heat supplies in rural areas, being locally available and having low transport costs and a high material density. In rural communities it could be used to heat hospitals and swimming pools, for example. The Federal Research Ministry is funding 14 such pilot schemes in the new laender and six more in the original federal.

With an eye to the profitability and market readiness of products made from renewable raw materials, CSU [Christian Social Union] Bundestag deputy Albert Dess (Renewable Raw Materials Action Group) has called for greater account to be taken of environmental protection aspects and urged the government to issue directives for their use so that pollution can be reduced more quickly. Dess goes on to say: "The Bavarian Water Research Institute has examined the biodegradability and ecotoxicity of 13 lubricants and hydraulic fluids made from vegetable oil, three made from synthetic oil, and another three from mineral oil. With one exception, the vegetable oil products had broken down by, on average, as much as 81 percent and after three weeks by an average of 93 percent, within an 84 to 100 percent range. At 22 to 25 percent, the mineral oil products tested proved very hard to break down. The synthetic lubricants were even less biodegradable, at 13 to 19 percent."

The test assessed the ecotoxicity of the products by their toxic effect on fish, water fleas, luminescent bacteria, and fish cell cultures. Dess says: "Most of the vegetable oil-based lubricants tested did not prove highly toxic. They were classified as slightly to moderately toxic. But with two exceptions the synthetic and mineral oil products showed strong to very strong toxic effects."

"The ecotoxicity of the vegetable oils depends very much on the type of additives used. Products with low toxicity are already available and further improvements are in sight (Aachen College of Technology additives package)."

The agricultural expert sums up: "People who still accuse agriculture of pure self-interest in its commitment to renewable raw materials should finally accept that

impartial experimental findings showing clear environmental advantages cannot simply be ignored. In a few years' time, market realities will prove them wrong."

Support From Scientists

Addressing the Bundestag Environment Committee on the EC proposal to introduce tax concessions for "green" fuel, Professor Dambroth of the Federal Agricultural Research Institute in Braunschweig also said that, despite claims to the contrary, the environment would not suffer as a result of using vegetable oils as fuels. There were [he said] no problems in making a proportion of fuel from plants and using it rationally, e.g., in shipping; renewable raw materials could be cultivated for energy purposes in such a way as not to damage the ecosystems.

Dr. Klaus Scharmer of the Society for Development Technology explained to the environment policymakers in Bonn the positive carbon dioxide balance of "green" diesel. "Green diesel did not pollute water, and the emissions were within the prescribed limits in all cases." Even the phosphorus content of green diesel was low. Heidelberg scientist Dr. Reinhardt explained the advantages of rape oil as a source of energy. Prof. Dambroth pointed out that a rational crop rotation scheme could avoid yield losses and included gold of pleasure and sunflowers among the top-ranking oil seeds.

Bonn would like to cut the tax on green fuel far enough (to not more than 10 percent of the mineral oil tax rate) for the cost of producing green fuel to be competitive with gasoline and diesel on the market.

Research Minister Heinz Riesenhuber and Development Aid Minister Carl-Dieter Spranger are also making greater efforts to promote renewable energies. At a joint press conference in Bonn, the ministers stated: "The energy requirement in the developing countries will have grown 65 percent by the year 2000. About 2.8 billion people (55 percent of the world's population) have no central energy supply. They have to rely on the 'poor man's fuel'; biomass (wood and charcoal). The demand for wood is growing at the same rate as the population, and the ecological problems associated with felling and burning are growing at the same time."

Improving Living Conditions

They went on to say that the living conditions of poor populations could be improved at no cost to the environment by making wide use of locally available renewable energy sources such as the sun, wind, water, and biomass. Bonn's Development Aid Ministry had already provided a total of DM450 million for technical cooperation for these purposes. A further DM2.4 billion had gone to developing countries as financial aid for the use of renewable energies. There were currently 15,000 photovoltaic water pumps (2,000 being added every year), and 100,000 small wind units in Mongolia (China) alone providing renewable energy. Between 1974 and 1993 Bonn had allocated a total of about DM4 billion for renewable energy sources overall.

Conservationists' Reservations

93MI0359B Wuerzburg *UMWELTMAGAZIN*
in German No 1/2, Jan/Feb 93 p 37

[Text] According to the Nature Conservation Association (BN), the intensive cultivation of renewable raw materials does more harm than good. "Energy from the field is intended to give farmers a new source of income, cut farm surpluses, and reduce pollution. But energy balances show the opposite," said BN Chairman for northern Bavaria Hubert Weiger.

For example, three-quarters of a liter of mineral oil would be required and vast quantities of fertilizers used to produce one liter of rape oil. On the other hand, there were positive energy balances for biogas production and the burning of brushwood [Schwachholz]. The BN spokesman criticized the fact that hardly any support was being given to such projects at present, unlike the "insane cultivation of rapeseed."

Biogas, which can be obtained from organic waste and slurry, and brushwood, which was hardly exploited any more in the forests, did not have to be specially grown, unlike the "energy from the field." Consequently, the production process generated no pollutants, BN energy spokesman Peter Selsam said. While at least some local authorities were already converting the biological waste they collected into biogas, slurry was pointlessly being spread on the fields "to the detriment of the environment."

The reason was that Bavarian farmers received hardly any subsidy for the "fermentation towers" that were needed and which cost about DM120,000 for 40 head of cattle. Things were very different, Selsam said, for renewable raw materials: 44 percent of the DM14.2 million authorized by the Bavarian Agriculture Ministry for 1991 had been spent on energy crops.

GREECE

Mediterranean Environment Protection Congress Opens, EC Funds Welcomed

NC3103191993 Athens *Elliniki Radiofonia Radio*
Network in Greek 1130 GMT 31 Mar 93

[Text] The first international congress and technology exhibition for the protection of the environment in the Mediterranean countries opened today at Peace and Friendship stadium [in Athens]. The congress is being held at the initiative of OTE [Greek Telecommunications Organization] under the auspices of President Konstandinos Karamanlis.

In a message to the congress, President Karamanlis said that it is already a platitude to find, moreover on a worldwide scale, that the state of the environment is critical.

Akhilleas Karamanlis—minister of environment, town planning, and public works—pointed out that there are very good prospects for new investments in environmental protection projects in both the public and private

sectors, adding that our country looks forward to the new EC initiatives, that is to the financing from the Delors II Package and the EC's cohesion fund [tamion sinokhis].

ICELAND

EEA Agreement To Impact Environment Policies

93WN0302A Reykjavik NEWS FROM ICELAND
in English Feb 93 p 5

[Article by Audbjorg Halldorsdottir, freelance writer:
"Those-Who-Pollute-Pay Policy in Sight"]

[Text]

Stricter Laws for the Protection of Drinking Water, as Well as Measures Against the Pollution of Rivers and Lakes

Although Icelanders like to pride themselves on their clean and unspoiled environment, it is now clear that they are going to have to clean up their act to meet the set standards of the EEA [European Economic Area] agreement.

The areas in need of change concern issues such as treatment of sewage, protection of drinking water, air pollution and companies' anti-pollution measures, to name a few.

The EEA agreement brings along a fresh breeze to the stale air of the non-committal attitude on environmental issue. Co-operation between EFTA [European Free Trade Association] and EC countries on environmental issues has been rather limited in the past.

With ratification of the EEA agreement, member countries have agreed to standardise rules and regulations on the environment and its protection, although compromises and exceptions have had to be made in some cases.

According, the aims are to maintain, protect and better the environment, to make improvements on preserving the public's health, and to ensure that natural resources be used wisely and carefully.

The agreement calls for tighter watch against environmental damage, and emphasis will be put on fixing those problems which have appeared, with a those-who-pollute-pay policy in sight.

Increased co-operation regarding environmental policy making and the working out of solutions to important regional and international environmental problems are also put forth as goals in the signed agreement.

The EFTA countries will also become a part of the so-called Environmental Agency of Europe, which has been in the works since 1990. Once established, the agency is meant to provide member countries with objective and reliable information on environmental issues, and in general keep authorities and the public up to date.

The EEA agreement does not address specifically the issue of managing natural resources, nor are the EC's

rules on environmental protection a part of it, although the EFTA nations have agreed to work towards more co-operation in that area.

It is the subject of pollution and anti-pollution measures that affects Iceland the most. It is likely that the increased demands and the tightening of rules on pollution matters are going to up the expenditures of a number of Icelandic communities.

As mentioned earlier, these problem areas include the protection of drinking water, treatment of sewage, air pollution and anti-pollution measures in general.

Following the agreement, Iceland must enact stricter laws for the protection of drinking water, as well as take measures against the pollution of rivers and lakes. Furthermore, the agreement sets strict rules for the cleansing of sewage before it is released into the sea, which calls for a massive reorganisation of the Icelandic sewage system.

Air pollution is addressed specifically in the agreement, in which it is mandated that member countries try to diminish the release of polluting gases into the atmosphere by implementing serious anti-pollution regulations for various polluting industries.

In Iceland's case it is especially incineration that needs to be looked into; these matters are in bad shape all over the country. According to the agreement, Iceland has an adjustment period until 1995 to clean up its act.

However, when it comes to air pollution from cars, the EFTA countries have stricter rules on car exhaust and related measurements. The EC has until January 1, 1995 to revise its rules and to get them in line with the EEA agreement.

Iceland's biggest environmental concerns have to do with erosion and especially the pollution of the seas. Internationally, Icelandic authorities have pushed for the protection of the seas by encouraging tough anti-pollution measures and bans on ocean dumping of dangerous chemicals or refuse.

Following the EEA agreement and increased co-operation between EFTA and the EC, Icelandic authorities will have a chance to have an even greater influence on those matters.

So given the importance of the fishing industry to the Icelandic economy, this opportunity to shape an effective environmental policy should be welcomed by Icelanders in general.

NETHERLANDS

Netherlands Firm Uses CFC-Less Foam Production Process

BR3103132093 Rijswijk POLYTECHNISCH
WEEKBLAD in Dutch 19 Feb 93 p 1

[Article: "New Foam Production Process Operates Without CFC Frothing Agents"]

[Text] Kersteren—Last week, the polyurethane foam manufacturer Recticel Nederland began to use a new process which produces soft foam without requiring the usual CFC's (chlorofluorocarbons). It is the first installation of this kind in the world.

Recticel started work on the project in 1990, with support from the Ministry for Housing, Planning, and the Environment. The goal was to reduce the emissions of CFC's, a negative byproduct of conventional foam production processes. In all, the Kersteren artificial foam manufacturer invested 7.5 million Dutch guilders on the development of its Variable Pressure Foaming (VPF) process, which has resulted in an interesting, fully controlled foam production method which requires no CFC's.

Crucial Tricks

One of the most crucial tricks in the VPF process has been the decision to use low atmospheric pressure. Experience showed that the foaming process improved at a lower pressure, and Recticel made this the basis of the new process. The principle consists in creating a low-pressure environment, or partial vacuum, in which the foam develops naturally without needing a CFC frothing agent during the rising stage.

The implementation of this principle has not, however, been easy. It required a sort of airtight reactor shed, 100 meters long and with a capacity of 800 cubic meters. Here, 15,000 tons of soft foam can be produced annually in blocks measuring 2 by 1.8 by 30 meters in size. The installation is suitable for different types of soft foam.

Recticel thinks it will be capable of producing a completely new generation of high-value soft foam. Under (specific) low-pressure conditions, the foaming process apparently produces a foam with new, specific characteristics, such as complete openness of the cells, greater elasticity, and better longevity. The Recticel installation is completely gas-proof; it is operated automatically without using CFC's or CFC substitutes (such as dichloromethane or HCFC's) and is connected to an installation which collects and eliminates gasses emitted during the production process.

Frothing Agent

Recticel Nederland is also one of the participants in the "CFC-less" campaign which was initiated this year and is an initiative of the Netherlands Association of Polyurethane Rigid Foam Manufacturers (NVPU). The campaign requires all NVPU members to produce only CFC-less PUR [polyurethane] rigid foam. With this campaign, the NVPU claims to be ahead of the European directive, which will not require CFC-less production until the beginning of 1995. The four manufacturers within the NVPU (in addition to Recticel, these are Vapotherm BV, Sellink Isochemie BV, and Opstalan BV) intend to use pentane instead of CFC's as a frothing agent.

State, Chemical Sector Agree on Emission Levels

BR3103132793 Rijswijk POLYTECHNISCH
WEEKBLAD in Dutch 19 Feb 93 p 3

[Article: "Environmental Pact Between Government and Chemical Industry; Chemical Sector for the Time Being No Longer Has the Government Breathing Down Its Neck"]

[Text] The Hague—The Netherlands chemical industry last week concluded a major environmental pact with the government. The chemical sector has committed itself to rigorous emission reductions until the year 2000, which will require an investment of 10 billion Dutch guilders. The government for its part has agreed to adopt a consistent environmental policy.

The agreement is a direct follow-on of an intent that had already been expressed in the National Environmental Policy Plan in 1989. After about three years of discussion, it has led to an extensive agreement: "Statement of Intent on the Implementation of an Environmental Policy in the Chemical Industry." The idea is that if the chemical sector voluntarily improves its environmental behavior, it will not be bothered by the government breathing down its neck. The agreement does not only involve the Ministry of the Environment, but also the Ministries of Economic Affairs and Transport and Public Works. The other signatory to the agreement is the Netherlands Chemical Industry Association (VNCI).

Great Differences

The understanding which has now been reached includes, among other things, measures which by 2000 should lead to a 70-percent reduction in acid emissions by comparison with the 1985 level. In addition, commitment has been made to substantial reductions (ranging from 50 to 90 percent) in heavy metal discharges.

Deviations from the agreements made in the pact are permitted when specific European environmental agreements differ greatly from those included in the National Environmental Policy Plan.

The VNCI has expressed its satisfaction with the pact. In particular, the long term period which it covers is felt to be a good point. Over the last few years, the country's chemical industry has felt rather apprehensive about the arbitrary, inconsistent policy under which the government was always breathing down the industry's neck. It now hopes that things will be straightened out with the recent pact.

A spokesman for the VNCI expressed himself to be happy with the "integral approach to all aspects of the environment," as it is stated in the pact, and with the additional condition that the measures to be taken by industry must be able to stand the test of technical and economic feasibility.

Growth Expectation [subhead]

The promise of a consistent government policy has encouraged industry to commit itself to additional

investments over the next eight years. These joint investments by the companies must reflect the aims of the National Environmental Policy Plan.

The environmental investment requirement anticipated for the next 10 years is not based on a specific investment plan, but on a projection of the present environmental investment level increased by an expected growth factor. (In 1991, the chemical industry invested a total of 4 billion Dutch guilders, of which 900 million was directed toward the environment. For the coming years, however, environmental investments are expected to average 1.2 billion per year.)

NORWAY

Government Prepared To Leave IWC Over Whaling Moratorium

PM0104112693 Stockholm DAGENS NYHETER in Swedish 31 Mar 93 p A6

[Unattributed report: "Norway Asserts Its Right To Whale"]

[Text] Norway is threatening to leave the International Whaling Commission, IWC, if the IWC does not accept the Norwegian decision to resume the commercial hunting of lesser rorquals this summer. Today representatives from several of the IWC countries are holding an informal meeting in Stockholm. Norway is working flat out to win an understanding for its decision before the IWC's annual meeting in Japan in May.

"Norway wants to give the Whaling Commission another chance to demonstrate its credibility as an administrative body. But if at this year's meeting in Japan the majority of member countries continue to push the IWC in the direction of becoming an international body for the long-term protection of whales and of a ban on all commercial whaling, the government will be forced to review Norway's membership of the IWC. But we would ideally like to achieve a solution within the framework of the IWC," Fisheries Minister Jan Henry T. Olsen said.

Norway points out that the IWC's own scientific committee stated unanimously that lesser rorqual stocks in the northeastern Atlantic totalled 86,700 animals, as against 18,000 at the beginning of the 1980's. The committee therefore took the view that whaling was again ecologically defensible.

Nevertheless at its meeting in Glasgow last year the IWC decided to extend the 1982 moratorium on all whaling.

The Greenpeace environmental organization for its part claims that stocks are "so decimated that they have to be protected in order to recover." Greenpeace also claims that the IWC has still to approve the counting method which was used to estimate the size of stocks in the northeast Atlantic.

Environmental organizations fear that if Norway resumes whaling for lesser rorquals the result could be

that whaling for those species of whales which are under an even greater threat of extinction will also be resumed.

Fisheries Minister Olsen is upset that opponents of whaling, both inside and outside the IWC, resort to ethical arguments when scientific arguments are no longer sufficient to prevent Norway from resuming commercial whaling.

One of Norway's main arguments for again allowing commercial whaling is that the lesser rorquals represent a threat to the Norwegian fishing industry. The lesser rorqual chiefly feeds on herring, mackerel, capelin, and sand lance. However, there are as yet no reliable figures able to support this argument.

During Norway's scientific whaling program last year the method used to kill the whales was strongly criticized. As many as 10 percent of the shell harpoons used failed to explode. One of the 95 whales shot last year lived for half an hour after the harpoon entered its body. Eight percent lived for more than 10 minutes, 42 percent up to 10 minutes, and only 50 percent died instantaneously. The Norwegian company which manufactures the harpoons say that the flaw has now been dealt with.

This year will see the introduction of a series of new regulations which, the Norwegian authorities claim, will lead to shorter killing times. For example, all harpooners will have to take a test and there will be inspectors on board all of the approximately 40 boats which will take part in the hunt for whales.

On the subject of the quota for this year's hunt Lars Walloe, the Norwegian authorities' foremost expert on estimating stocks:

"Stocks will tolerate a cull of up to 800 animals, taking all precautionary measures into account."

The quota will be made public after the IWC's meeting in Kyoto, Japan, at the beginning of May.

SWEDEN

Study: Gap Too Great Between Regulations and Environment Tolerance

93WN0310A Stockholm DAGENS NYHETER in Swedish 25 Feb 93 p 6

[Article by Gosta Karlsson: "Environment Getting Worse; Swedes Exposed to 10 Times Too Much 'Bad Ozone'"]

[Text] *A large part of the population in Sweden is exposed to quantities of surface ozone 10 times higher than the amount believed to be dangerous to health. Heavy metals such as cadmium and mercury continue to poison the environment, despite a reduction in emissions.*

The risk incurred by the release of long-lived organic compounds is still largely unknown. The organic compounds researchers have thus far identified represent just the tip of the iceberg.

The state of the environment in Sweden, in fact, is far from good. That is the conclusion reached in the first three out of an eventual eight reports to be released in the Environmental Protection Board's largest-ever environmental inventory, called MIST: "The Environment in Sweden—Condition and Tendencies." The gap between current regulations governing emissions and what nature and health can tolerate, is very large.

One of the new reports deals with the ozone found near the earth's surface, also called the 'bad ozone,' to be distinguished from the 'good ozone' up in the stratosphere, which protects the ground from deadly doses of ultraviolet rays from the sun.

Soup in the Atmosphere

The ozone problem near the earth's surface begins with the release of volatile organic compounds from gasoline vapors, solvents, and incomplete burning in power and heating plants, among other things. Examples of such volatile compounds are benzene, toluene, benzopyrene, methane, and propane.

Together with nitric oxides and sunlight, these compounds form an atmospheric soup of which ozone forms a part.

Even when present in low quantities in the air, ozone is known to be highly irritating to the eyes and air passages. Other symptoms may be headaches and fatigue. In high concentrations, ozone can cause severe lung damage.

The Environmental Protection Board (SNV) has set up a criterion for how much ozone can be tolerated in our environment with reference to its effects on health: The ozone content of the air should not exceed 120 micrograms per cubic meters for more than 12 hours, at most, in any given year.

Substantially Higher

Recent measurements show that this critical number is exceeded 133 hours during the warm half of the year in southern Sweden. Even in the northern part of the country, the ozone content is substantially higher than what the board regards as acceptable.

Another criterion has been established for the protection of crops and other vegetation: at most 50 micrograms of ozone per cubic meter of air during the growing season. Researchers now know that this value is exceeded by between 50 and 70 percent in the south and between 20 and 40 percent in the north.

Ozone damage to agricultural products alone is estimated to cause economic losses of a billion kronor annually in Sweden.

Few Substances Studied

Surface ozone is a problem common to the whole of Europe. In order to reduce ozone levels to Swedish standards, the emission levels of nitric oxides and volatile organic substances would need to be reduced by 75 to 80 percent.

Stable, "long-lived" organic substances present another threat to the environment. Of the magnitude of this threat, now and for the future, researchers as yet know little. Some 10 million of these compounds have been described, but only a fraction have been studied for their effects upon health and the environment. The SNV reports state that the known compounds represent only the "tip of the iceberg."

To the group of stable organic environmental poisons belong the notorious DDT and PCB's [polychlorobenzene]. The chlorobenzenes, chlorophenols, and dioxins are examples of other compounds of the same group. Many of these substances are formed in various burning processes.

One problem with these chemicals is that once they have been released, they remain in the environment for a very long time without breaking down and they accumulate in the food chain. They are carried in the air over long distances, and much time elapses before the curtailment of emissions yields positive results.

Long-lived organic compounds can cause acute and chronic damage to the nervous system. They also affect metabolism, growth, and the ability to reproduce. New research findings in the United States show that children who are exposed to large quantities of PCB's run a greater risk than other children of suffering from behavioral disturbances and learning disabilities.

New compounds in this chemical group are discovered and manufactured almost daily. To set restrictions on all of them is not thought to be possible, and is perhaps not even desirable.

"Deceptive Certainty"

"There is a risk that establishing 'definite' levels or quantities leads to a deceptive feeling of certainty," said SNV in its report. What the board can recommend at this time is:

- Industrial emissions should be detected and restricted to a minimum.
- Chemicals and products representing a danger to the environment must be reported, to the extent this is feasible.
- The environment must be effectively monitored in order that new poisonous substances can be captured.

A third SNV report deals with heavy metals. The report shows, among other things, that mercury in fish and cadmium in wheat remain at the same levels, despite the fact that pollution from metals has been greatly reduced since the end of the 1970's.

Blacklisted Lakes

In the case of cadmium, it is chiefly its increase in Swedish agricultural land that is worrisome. The cadmium content in wheat has doubled in the 20th century. In southern Sweden, twice as much cadmium is deposited in the soil than is removed by harvesting or leaching.

Some 10,000 lakes in the country are blacklisted because of the high mercury content of the fish. And in approximately 40,000 lakes, the pike, with .5 milligrams of mercury per kilogram of fish, is half way to being blacklisted.

SNV will put out a catalogue this summer detailing the measures which must be taken in order to improve the state of the nation's environment.

TURKEY

International Agreement on Chemical Security Signed

TA2603120093 Ankara TRT Television Network in Turkish 1100 GMT 26 Mar 93

[Text] Turkey has become party to the international agreement on chemical security. The agreement was signed by Health Minister Yildirim Aktuna in Geneva. According to ANATOLIA, the agreement aims to prevent the harmful effects of chemicals on human health and the environment. The agreement stipulates that

member countries train experts to fight diseases that may be caused by unavoidable accidents and to develop methods to this end.

Minister To Request German Finance Aid for Environment Projects

TA2903162293 Ankara ANATOLIA in English 1510 GMT 29 Mar 93

[Text] Istanbul, March 29 (AA)—Environment Minister Dogancan Akyurek left for Germany on Monday for an official visit as the guest of his German counterpart, Klaus Toepfer.

He told reporters before his departure from Istanbul's Ataturk Airport that Turkey would seek financial aid of 3.5 million dollars from Germany for projects and research on controlling exhaust fumes, an area in which Germany is well advanced.

Akyurek said he would also go to a number of German cities to visit garbage recycling plants.

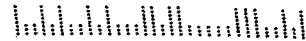
After Germany, he will go to Odessa, Ukraine to attend a meeting of environment ministers from member states of the Black Sea Economic Cooperation Organization scheduled between April 5 and 7.

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