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JPRS Report

Environmental Issues

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New Ozone Hole Findings Reported at London Conference

LD2006165190 London Press Association in English 1558 GMT 20 Jun 90

[Text] Startling new evidence on the damage being caused to the ozone layer was disclosed at key international talks in London today. Australian and New Zealand delegations attending the second meeting of the Montreal Protocol said their scientists had discovered a 15 percent drop in ozone during the last three years over Macquarie Island, 800 miles south east of Tasmania—and well outside Antarctica. The findings, made public during the opening session of the crucial talks, back up the latest UK scientific report into the problem, which confirms the fragile ozone layer is now in long-term decline in mid-latitudes over North America and Europe.

Ozone protects the Earth from the sun's cancer-causing ultra violet rays. But it is being eaten away by chlorofluorocarbons (CFCs) - gases used mainly in refrigerators, air conditioning and aerosols.

Sources at the talks say the Australians decided to release their results in order to "inject a sense of urgency back into the proceedings." The research published today by the UK Stratospheric Ozone Review group confirmed the fear that ozone destruction is gathering speed and major cutbacks in CFC use will be needed to halt the crisis. The UK report stated: "Stratospheric chlorine is expected to continue to increase to levels higher than previously experienced. There is a risk that these might trigger disproportionately larger ozone losses."

Ms. Fiona Weir, atmosphere campaigner for Friends of the Earth, said: "We don't understand how UK scientists can produce such an excellent report on what needs to be done and how the UK government can walk away from it without taking tougher steps."

Dr. Mostafa Tolba, executive director of the United Nations Environment Programme, told more than 300 officials attending today's meeting it was vital that talks aimed at halting the destruction succeed.

"Failure is not an option, success is imperative," he said. "North, South, East and West must cooperate. It is a must. We cannot afford to fail in London, the stakes are very high."

Dr. Tolba called on officials to "send a very strong signal to industry that it is a duty to start looking for substitutes that have no ozone-depleting potential". But he also announced there had been a "welcome change in the position of the United States to join hands with everybody in the idea of having an international fund specifically devoted to assisting the developing countries to meet the requirements of the protocol".

Environment Secretary Mr. Chris Patten, who officially opened the talks, later said he was delighted that America no longer had problems over funding. "I think that removes what many people regard as a major obstacle to progress this week. We are obviously enormously grateful for that shift," he said.

Mr Patten called on India and China to sign the agreement next week. "India and China are crucial to our success in London in achieving the environmental goals we all require, not only in relation to CFCs and the ozone layer but more generally."

There is a feeling that the UN-hosted negotiations, which aim to win the backing of at least 56 countries to phasing out CFCs by 2000, are in danger of becoming bogged down.

The Australian and New Zealand research is certain to fuel a growing support for a speedier timetable to phase out chlorofluorocarbons (CFCs) than the turn-of-the-century target currently on the table. Officials representing over 50 countries are locked in negotiations aimed at winning final agreement to the protocol next week. Ministers begin the final sessions next Wednesday, leading up to the final signing ceremony on Jun 29. But the Australian and New Zealand results will back up European calls for a phase out date of 1997.

Ms. Karla Bell, a spokesperson for Australian Greenpeace, said: "If these sorts of findings were being recorded in the northern hemisphere, there would be near panic." It says to reduce chlorine in the stratosphere to levels that prevailed before the appearance of the Antarctic "hole" means a rapid phase out of all the long-life halocarbons.

She said the UK backing for phase out by 2000 was not enough. "This report underlines incredibly strongly what environmentalists have been saying for a number of years," she added.

Green pressure groups predict an alarming increase in skin cancers and cataracts and possible damage to the immune system through ultra violet B rays from the sun without protection from ozone. Industry is trying to find safe substitutes for CFCs but in the mean time hydrofluorocarbons (HFCSs) are being used which are only slightly less harmful to the ozone layer.

Japanese Government Survey Notes Global Warming During Past Century

OW2306035890 Tokyo KYODO in English 0305 GMT 23 Jun 90

[Text] Tokyo, June 23 KYODO—The earth's average temperature has risen by 0.5 C. over the last 100 years, according to a temperature survey of 2,000 global locations released Saturday by Meteorological Agency officials.

The agency computed yearly average world temperatures from 1880 to 1988 based on data compiled by 2,000 weather observatories throughout the world, the officials said.

Officials used data from an institution in the United States and separately calculated the impact of increasing carbon dioxide with a computer.

The officials said the greenhouse effect and excessive levels of carbon dioxide in the atmosphere may be the cause of the temperature rise.

An agency sub-panel on the geenhouse effect will release the results of the survey in a report to be published in July.

Some U.S. researchers recently claimed there has been no proof of global warming during the past 70 years. Agency officials, however, said their survey provides evidence to the contrary.

The survey said the average world temperature was rising from 1880 to 1940, though decreasing from 1940 to 1970. It said the average temperature has been rising again since around 1970.

Labor Leaders Review Baltic Pollution Issues at Helsinki Conference

90WN0083A Moscow TRUD in Russian 12 May 90 p 3

[Article by P. Volpyanskiy, TRUD correspondent: "The 'World's Sea' Requires Protection; It Is Not Visible to the Eye but the Baltic Is Slowly Dying"]

[Text] Helsinki—"The prospects of a slow death from 'suffocation' threatens the Baltic Sea"—this diagnosis of ecologists regarding the condition of this body of water remains in effect despite a number of steps that have already been taken.

The participants in an international conference of GDR, Danish, Norwegian, USSR, Swedish, Finnish, and FRG metal-worker trade unions, which was held in Helsinki on questions regarding the environment of the Baltic region, arrived at this conclusion. It was the first meeting of this type in trade union movement practices since it was held at the branch level. The presentations of the trade union speakers alternated with explanations by scientists who were also included in the composition of the delegations.

Their comments were extremely indispensable since they were talking about a unique maritime basin of 386,000 square kilometers which is practically enclosed and which has a completely special nature. Once completely unpolluted, the Baltic is on the verge of "oxygen starvation" both because of man's activities and because of its poor exchange with the world's oceans.

True, the shortage of oxygen connected with this poor exchange would hardly entail serious consequences if man had not "nudged on" nature and aggravated the imbalance existing in it. Up to 15,000 tons of metal and 50,000 tons of petroleum products annually get into the Baltic Sea. Rain and rivers wash down into it approximately a million tons of nitrogen- and 77,000 tons of phosphorus-containing substances. This does not consider the 400,000 tons of nitrogen and 6,000 tons of phosphorus that arrive here along with atmospheric precipitation. The main pollution source has been the waste water from enterprises in the approximately 100 cities and industrial centers in the coastal zone that has a population of tens of millions of people. The paper-making industry is among the "leading" branches.

The poisoning of the basin's deep waters occurs with the settling of the enormous quantity of organic substances to the bottom. Bacteria, which do not need oxygen, begin the "burial" of the wastes. When doing this, hydrogen sulfide is released in a large amount—a poison for all more highly organized sea creatures. The death of everything alive threatens individual areas of the Baltic. The shallow bays—the Gulf of Bothnia, the Gulf of Finland and the Gulf of Riga—which cut deeply inland are in an especially critical condition. Lithuania alone pours up to 100 million tons of slop a year into the sea.

In the vicinity of the Kattegat Strait, Swedish fisherman haul in full nets of fish. However, there is nothing to be happy about: The reason for the large catches is the dying of the bottom water layers which forces herring, salmon and other species to leave the Baltic. Several years ago, the Swedish and Danish authorities imposed a ban on importing liver from Baltic cod—the fish contained too many poisons. Sea birds are ceasing to build nests. The teeth of seals have begun to fall out. Their number has been reduced from 100,000 to 9,000.

N. I. Zinovyev, chairman of the heavy machine building workers' trade union Central Committee, evaluated the meeting's results as follows: "I must say that there are still more questions than answers. Our combined delegation had representatives from four branch organizations on the union scale; representatives from trade unions in a number of enterprises in Vilnius, Riga, Klaypeda, and Sestroretsk; and scientists from Leningrad. The discussions were energetic; however, they were not simple ones but complicated like the situation itself in which the sea, which is calling for help, finds itself. Alas, the trade unions still cannot boast that they have been in the vanguard of the environmental protection movement...."

Yes, others were actually the first to sound the alarm. As a result, the Baltic region states concluded in 1974 the Helsinki convention which required them to reduce the pollution of the sea "as far as possible" and "using all available resources." They have managed to reduce the content of such chemicals as, for example, DDT, which is banned everywhere, in the water. The melting down and burning of waste has been banned in the Baltic. Biologists are inclined to consider metal impurities in the open seas and not near the shore as "not dangerous." A decision has been made to reduce twofold by 1995 the discharge of nutrient salts, heavy metals and poisonous organic compounds. However, this draft is far from practical implementation. The substances, which they are talking about, have not been detailed in it and the

amounts of harmful impurities, which have been accumulated at the present time, have not been determined even approximately.

N. I. Zinovyev continued: "Trade unions should take an uncompromising position regarding departmental approaches and participate without fail in the ecological examinations of important projects and economic decisions. Our task on the spot is to direct the activity of labor's technical inspectors toward the ecology. It is necessary to establish branches for the production of environmental protection equipment which in point of fact we do not have. Who should design it if not metal workers? Practically all workers in the metal industry can participate within their abilities in correcting the state of affairs in the Baltic. There are two ways. As producers, we can, using our qualifications and at our own positions, demand that ecological factors be considered when selecting materials. As consumers, we can refuse to use an industrial product that has a harmful effect on the environment. This is a question of our relationship to life—our own and our children's...."

In the resolution that was adopted during the conference, its participants demanded that the governments of the region's countries achieve an actual and not a formal twofold reduction in the pollution intensity of the "world's sea"—the Baltic—by 1995. They welcomed the establishment of the so-called Northern Environment Fund, which had been announced previously. They also called upon state agencies to provide financial help in designing environmental protection technologies.

Soviet, U.S. Nuclear Specialists Meet in Chelyabinsk

LD2206052790 Moscow TASS International Service in Russian 1255 GMT 21 Jun 90

[Report by TASS Correspondent Yevgeniy Tkachenko]

[Text] Chelyabinsk, 21 Jun (TASS)—One can make the world safer while applying nuclear power engineering by pooling the efforts and experience of the Soviet and American sides. This was the conclusion reached today by those attending a meeting of specialists from the two countries, which has ended in Chelyabinsk Oblast (southern Urals).

The American delegation toured a defense-industry complex producing weapons-grade plutonium. The visitors were particularly interested in the methods and effectiveness of the burial of radioactive waste. They also visited Lake Karachay, into which some 120 million curies of radionuclides had been discharged.

"We saw all that interested us, and heard precise answers to all questions," said Leo Duffy, U.S. deputy energy secretary [title as received]. "This will speed up the compiling of programs for further joint action. We are following parallel policies, and the technology of both sides is quite reliable. But we have to work together to see that it becomes safer still."

After inspecting the work of staff at a research station of the USSR Ministry of the Atomic Power Industry, and visiting plantations in a local reserve, Frank Parker, a member of the U.S. National Academy, noted that it was one of the best sites that he had seen. He had been favorably impressed by the relatively fast recovery of local land from the consequences of the 1957 accident, as a result of which considerable areas had been polluted by radioactive waste.

Canada, USSR Discuss Arctic Issues

LD2106075190 Moscow TASS in English 0736 GMT 21 Jun 90

[Text] Ottawa June 21 TASS—Soviet and Canadian foreign ministry experts met in Ottawa from June 18 to 20 to discuss cooperation in the Arctic.

The decision to hold regular exchanges on the issue was agreed by President Mikhail Gorbachev and Canadian Prime Minister Brian Mulroney during their summit.

Experts discussed a wide range of issues of interaction between the Soviet Union and Canada in the sphere of multilateral cooperation in addition to military-political and international legal problems.

Special attention was paid to discussing measures to protect the fragile arctic environment and forge mutually-beneficial contacts in scientific, technical, economic, social and cultural spheres.

Both sides acknowledged that the consultations were constructive and useful.

The sides agreed to continue exchanges. The next round of consultations will be held in Moscow in 1991.

EC Environment Ministers Discuss Aid for Eastern Europe

54002535A Brussels EUROPE AGENCE INTERNATIONAL D'INFORMATION POUR LA PRESSE in English 23-24 Apr 90 p 1

[Article: "Informal Environment Council: The Twelve are Ready To Financially Assist Central and Eastern Europe, Where EEC Companies Will Have To Abide by a Code of Good Conduct"]

[Text] Ashford Castle/Ireland (EU) Monday 23 April 1990—The Environment Ministers of the Twelve and Commissioner Carlo Ripa di Meana, meeting at the invitation of Council President Mr. Padraig Flynn, Ireland's Environment Minister, at Ashford Castle (Galway), agreed on the principle of financial assistance to the countries of Central and Eastern Europe to help them safeguard their environment. They confirmed the technical meeting on environmental protection with the countries of that part of Europe which will be held in Dublin on 16 June (see EUROPE of 21 April, p. 8). The Ministers also held a thorough debate on the environmental consequences of the establishment of the single

market. As regards relations with the EFTA countries, the Ministers concluded that a wider cooperation in the area of environmental protection was required, in particular in the light of the current discussions aimed at the establishment of the European Economic Space (EES).

At the end of the meeting, Mr. Ripa di Meana declared that the debates and the conclusions reached were, as far as he is concerned, a "good surprise". EUROPE recalls that, since this was an informal meeting, no formal or legally binding decisions could be taken.

Two Member States notably, Italy and the FRG, insisted on the urgent nature of Western technical assistance to renovate the 22 nuclear power plants of Soviet design operating in Central and Eastern Europe. Mr. Ripa di Meana answered that "action (by the European Commission) would be announced shortly. Some of the technologies used in these plants area of the Chernobyl type and the degree of safety if not sufficient".

Furthermore, aware of the need for the EEC and its Member States to financially assist that part of Europe, the Ministers identified a certain number of actions which will be on the agenda of the meeting scheduled for 16 June: a) the provision of pertinent computer data and information on the state of the environment; b) the development of environmental policies and programmes; c) technology transfers when conditions are right to enable the use of 'cleaner' industrial processes; d) assistance through information and experience exchange programmes; e) improvement of standards applicable to toxic waste and measures governing their transport; f) measures to cope with the serious problems caused by water and air pollution.

The Ministers also agreed that it would be appropriate for EEC companies, when they set up in a country of Central or Eastern Europe, to abide by a code of good conduct.

EC Environment Ministers View Consequences of Single Market

Brussels EUROPE AGENCE INTERNATIONALE D'INFORMATION POUR LA PRESSE in English 23-24 Apr 90 p 1

[Article: "The Environmental Consequences of the Large Market"]

[Text] The debate on the consequences of the implementation of the large market focused on five topics: i) border controls and environmental standards; ii) the integration of the environmental dimension into the various common policies; iii) the problems arising in peripheral regions; iv) the procedures to be followed for the adoption of Community legislation in this area (the Council normally adopts unanimous decisions in environmental matters - Ed.); v) the use of economic and fiscal instruments in favour of environmental protection. The main conclusions were the following:

—the Ministers declared that the real challenge in the establishment of the internal market is to develop environmental policies which will turn the expected growth into a "green" growth;

—the Ministers insisted on the fact that the EEC's environmental policy should be based on the highest protection standards available, thus avoiding the need for individual Member States to adopt their own standards, which in turn would create new obstacles. The Ministers also recognised the need for greater approximation of the standards appalied in the EEC as a whole both as regards products and manufacturing processes;

—the Ministers assessed the implementation, at Community level, of mechanisms aimed at improving cooperation between the people in charge of sectorial policies in order to better integrate the environmental aspect into the other policies, mainly in the areas of transport and energy.

—Certain Ministers insisted on the success, in the case of lead-free petrol, of tax incentives aimed at changing human behaviour in favour of the environment. Others insisted that tax incentives should also be used to combat the effect of CFCs on climate. The following question remains unresolved: Should the EEC's policy in that field be based on a constraining legislation or on voluntary guidelines?

Polish Labor Minister Addresses Ecology Issues at ILO Conference

LD1206230790 Warsaw PAP in English 2134 GMT 12 Jun 90

[Text] Geneva, June 12—Poland's Minister of Labour Jacek Kuron, taking the floor during today's sitting of the 77th International Labour Conference here, said that the world faced an enormous chance to build a democratic order.

"But there is a danger that this chance will be wasted unless all understand that ecological threats are of a global character and only through acting on a global scale can these problems be solved," Minister Kuron said.

"The rich West thinks that it is obliged to assist the poorer states because of moral reasons. Meanwhile, the West should know that by helping the states which cannot afford an efficient environmental protection, it helps iteslf," Kuron went on.

"I trust the ILO [International Labor Organization] and I believe that it may be a pioneer in leading the world community onto a road of solutions having a universal character," he concluded.

Suriname's Labor Minister Addresses ILO Environment Meeting

FL1306195090 Paramaribo International Service in English 1730 GMT 13 Jun 90

[Text] The protection of the environment is part of the struggle against poverty, backwardness, and underdevelopment. The rich countries are also responsible for this and have to make a significant contribution. The Surinamese position was put forward during the 77th sitting of the International Labor Organization, ILO, by Labor Minister Romeo Van Russel. The meeting opened last week in the Swiss capital, Geneva, and the main agenda for it is the relation between environment and development.

Minister Van Russel, who addressed the meeting on Monday last, said without protection of the environment there can be no development. He pointed to the negative effects of economic development in the industrialized countries and noted that these effects are felt mostly by the poor. During the ILO meeting, the minister declared that Suriname has already taken several measures aimed at protecting the environment. Minister Van Russel will return to Suriname next week.

USSR, Finland Plan Environmental Protection Coordination

LD1206171390 Helsinki Domestic Service in Finnish 1300 GMT 12 Jun 90

[Text] The environment ministers of the Soviet Union and Finland have decided to design a large joint water protection program. The program will aim to improve the state of the Baltic Sea especially. The practical plan for action will be ready next year. The ministers also urge a quick reduction in the emissions of the Kola Peninsula nickel smelters. Clean-up solutions will be made during this year. Although in principle the joint Finnish- Soviet commission on environment has gone a long way in improving the state of the environment, the biggest program is still money, according to Environment Minister [as published] Nikolay Vorontsov. The Finnish and Soviet environment ministers also decided to implement a direct 24-hour-a-day telephone line between the countries. This telephone connection will be used to immediately inform the neighboring country about environmental accidents. The telephone connection, which has been named the Green Line, will be set up immediately.

Soviet-Finnish Environmental Protection Protocol Prepared

LD1306124190 Moscow TASS International Service in Russian 1713 GMT 12 Jun 90

[Text] Helsinki, 12 June (TASS)—TASS correspondent Voytto Leskinen reports: Measures to protect the air and water on USSR and Finnish territory adjacent to the Soviet-Finnish border as well as prospects for developing ecological cooperation between the two countries were discussed at a meeting held today between the cochairmen of the Soviet-Finnish joint commission for cooperation in environmental protection.

A protocol on the meeting between K. Barlund, Finnish minister of environment, and N. N. Vorontsov, chairman of the USSR State Environmental Protection Committee, stresses that the issue of reconstructing the Severonikel and Pechenganikel combines in Murmansk Oblast will be examined before the end of this year. This will make it possible to formulate a plan of action to reduce the release of pollutants into the atmosphere.

The cochairmen of the joint commission decided to develop a Soviet-Finnish program to protect water resources and to envisage in this program measures aimed at cleansing the waters of the Gulf of Finland and other parts of the Baltic Sea. It is expected that this document will be signed at a forthcoming meeting of the commission in 1991.

In accordance with the protocol a permanent line of communication will be set up to provide for urgent exchange of information between the relevant organizations in the USSR and Finland in the event of an ecological catastrophe, as well as to prevent such catastrophes.

Soviet Kola Radiation Checks Rebut Scandinavian 'Cloud' Story

PM1306113590 Moscow PRAVDA in Russian 13 Jun 90 First Edition p 2

[Occasional (vneshtatnyy) correspondent A. Khramtsov dispatch: "But There Was No Cloud..."]

[Text] Murmansk, 12 Jun—In the West, a report has been circulated to the effect that a radioactive cloud has appeared above the Kola Peninsula and the Scandinavian countries, apparently formed as a result of a recent leak of rocket fuel in the waters of the White Sea.

In this connection, the USSR State Committee for Hydrometeorology gave instructions to the Murmansk Territorial Administration for Hydrometeorology to carry out frequent measurements of radiation. All 35 radiometric supervision centers on the Kola Peninsula started taking measurements every three hours. However, they did not detect any increases in the level of radiation either in the atmosphere or on the surface of the ground.

As A. Semenov, deputy chief of the Murmansk Territorial Administration for Hydrometeorology, reported, the radiation level has stayed within normal limits during these days—between 10 and 20 microroentgens an hour.

Analogous measurements have been carried out by specialists at the Kola Nuclear Power Plant and the "Atomflot" service and supply enterprise supervision services, which did not detect an increased radiation level either.

Poland, Denmark Sign Environmental Protection Agreement

LD1306210690 Warsaw PAP in English 1810 GMT 13 Jun 90

[Text] Warsaw, June 13—Polish Minister for the Protection of Natural Environment, Natural Resources and Forestry Bronislaw Kaminski and Danish Minister of Environment Lone Dybkjaer signed an agreement on Polish-Danish cooperation in the protection of natural environment here today.

In tune with the document, Poland and Denmark are to expand bilateral environment protection cooperation based on equal terms and for mutual benefit.

Arctic Peoples Meetings in Copenhagen, Moscow Stress Ecological Issues

90WN0081A Copenhagen INFORMATION in Danish 3 Apr 90 p 1

[Article by RB]

[Text] The aboriginal races of the arctic area are ready to form a common front to stop environmental pollution and preserve their languages, history, and culture.

At a meeting in Copenhagen Monday, representatives of the ICC—Inuit Circumpolar Conference—which includes Inuits in Alaska, Canada, and Greenland, announced that they will seek to work together with the indigenous arctic races of the Soviet Union.

The 26 arctic population groups in the Soviet Union, which are among the most suppressed groups in Soviet society, have recently formed their own organization in Moscow. Vladimir Sanqui was elected as the organization's first president.

These peoples, who number some 180,000, are under severe pressure from industrialization and the exploitation of raw materials, and the consequences are alcoholism, a high suicide rate, and poor health conditions.

"We share many problems and hope that cooperation on a global level will focus greater attention on the living conditions of the arctic races," said the president of the ICC, Canadian Mary Simon, who was in Copenhagen along with Vice President Aqqaluk Lynge of Greenland and Edna Mclean, who is the vice president of the ICC in Alaska.

All three took part in the meeting in Moscow, which was also attended by President Mikhail Gorbachev, and Aqqaluk Lynge called it one of the most important meetings in the history of the indigenous arctic peoples.

"It was a great surprise to experience the verbal force in these people. Their political consciousness is great, and I am convinced that radical changes will occur in the years to come. The time for patience is over, people no longer want to put up with the destruction of the environment," says Aqqaluk Lynge.

Mary Simon reported that there are plans for an international conference of the arctic peoples. It will take place in Copenhagen at the end of 1991, and will probably consider such topics as peace and the environment.

The ICC alone represents approximately 100,000 Inuits around the North Pole and is working to preserve the Inuit culture, but other key issues include protection of the environment and disarmament in the Arctic.

The meeting in Copenhagen was also attended by Ernesto Tchremp, an Indian leader from the Equadorian Amazon. Tchremp is in Europe to tell about the threat to his people and to the rain forest, and he plans a campaign to influence decisions which, though they are made in Europe, often have destructive consequences in the Amazon region.

The purpose of his visit to Denmark was to establish cooperation with the ICC with respect to international standards for intolerable ecological destruction.

Gerasimov on Ecological Problems in CSFR Troop Withdrawals

LD2006164190 Moscow TASS in English 1548 GMT 20 Jun 90

[by TASS correspondent Aleksandr Kanishchev]

[Text] Moscow June 20 TASS—Problems related to the ecological situation around Soviet military bases in Czechoslovakia have emerged, Soviet Foreign Ministry spokesman Gennadiy Gerasimov told a briefing here today.

He recalled that the Soviet troop withdrawal from Czechoslovakia "is proceeding ahead of the schedule elaborated by the two sides".

The Soviet side, he said, was taking measures to clean up areas around garrisons vacated by the Soviet troops.

"As far as we know, Soviet and Czechoslovak experts do not agree on methods of assessing the ecological damage," Gerasimov said.

The Command of the Central Group of Troops suggested establishing a joint Soviet-Czechoslovak commission to work out methods and criteria to evaluate the ecological damage in the areas around Soviet bases, he said.

Hungarian Environmental Protection Committee Views Danube Project

LD2006144290 Budapest MTI in English 1323 GMT 20 Jun 90

[Text] Budapest, June 20 (MTI)—A decision was reached at the Wednesday session of parliament's Environmental Protection Committee over the supervision of construction work on the Gabcikovo-Nagymaros water barrage.

Accordingly public supervision of the project is to replace the earlier social committee (also independent from parliament)—in line with the prime minister's request. At the same time, parliament maintains its earlier proposal to set up a parliamentary ad hoc committee for the project. This body would comprise representatives of the parliamentary committees of environmental protection, foreign affairs, economic, budgetary and constitutional law.

An agreement was also reached for the committee to hold regular consultations with various movements and experts dealing with environmental protection.

Sandor Papp (Hungarian Democratic Forum), president of the committee, who attended the international environmental conference held in Dublin, said: The Hungarian delegation reminded participants of the conference that the Danube River is an asset of pan-European magnitude, and the Gabcikovo-Nagymaros project may not therefore be just a matter of Hungary and Czechoslovakia. An agreement was reached in Dublin between the Czechoslovak and the Hungarian delegation that disputed issues are to be settled according to the findings of an independent expert committee of the EC.

EC Asked to Mediate Hungary-Czechoslovakia Power Plant Dispute

LD1706092990 Budapest Domestic Service in Hungarian 0800 GMT 17 Jun 90

[Excerpt] At the all-European environmental protection meeting being held in the Irish capital, Hungary and Czechoslovakia have called on the European Community's commission to mediate in the dispute surrounding the construction of the Gabcikovo-Nagymaros Hydroelectric Plant. Prague and Budapest would also like the community to prepare a study on the ecological problems of the entire Danube region. [passage omitted]

MOZAMBIQUE

Minister Urges Greater Environmental Protection

MB2106124290 Maputo Domestic Service in Portuguese 1030 GMT 21 Jun 90

[Text] Natural Resources Minister John Kachamila has called for greater efforts at the national level to preserve the environment.

Speaking in his capacity as environmental coordinator, John Kachamila said that there was a need to institutionalize an environmental body. He was the main speaker at a conference at the FACIM [Mozambican International Trade Fair] grounds in Maputo. The conference was held within the framework of the Frelimo [Mozambique Liberation Front] Festival.

The natural resources minister stressed that the government is concerned with environmental issues and pointed out that pollution and urban overpopulation demand serious attention.

NAMIBIA

Namibian Officials Discuss Possibility of Toxic Waste Storage

MB1306135990 Johannesburg THE STAR in English 13 Jun 90 p 5

[By Dale Lautenbach]

[Text] Windhoek—Namibian government officials have held informal discussions about the possibility of accepting toxic waste for storage in the country, according to Windhoek businessman Hans Boedecker.

A question seeking clarity on this has been tabled in the National Assembly and Andimba Toivo ya Toivo is expected to reveal the government's position tomorrow.

The Namibian Constitution lays down that it shall provide measures against the dumping or recycling of nuclear or toxic waste in the country.

During a television panel discussion on the subject last night, Mr Boedecker said that in informal discussion with government officials, the idea of receiving toxic waste had been neither accepted nor rejected.

He had received an offer of 5 million metric tons of waste for Namibia with a possible 45 million tons in the future.

Jan de Wet of the Ation Christian National Party, which has one seat in the Assembly, rejected the idea of accepting toxic waste, but said Namibia should look at nuclear waste.

He said accepting nuclear waste under "safe" and "strictly monitored" conditions could provide the government with three times its national budget in revenue.

This should be considered particularly if the Donor Conference seeking development aid, to be held in New York on June 21 and 22, did not meet Namibia's expectations.

Social workers and wildlife representatives on the panel rejected the dumping of toxic and nuclear waste as irresponsible.

Prime Minister Denies Toxic Waste Dump Reports

MB1306202290 Windhoek Domestic Service in Afrikaans 1900 GMT 13 Jun 90

[Text] Prime Minister Hage Geingob says it is the government's policy not to approve requests for the dumping of toxic waste in Namibia.

Geingob in a statement reacted to newspaper reports that the government had secretly granted permission for the dumping of toxic waste in Namibia. Geingob says there is no truth in these rumors. He also denied that he had met with a toxic waste dealer on the matter.

NIGERIA

Industrial Wastes Said Poisoning River in Kano

34000748A Lagos THE GUARDIAN in English 20 May 90 pp 1-2

[Article by Tunde Akingbade: "Industrial Wastes Poison River in Kano"]

[Text] Industrial effluents from over 327 industries have rendered River Challawa, a major source of drinking water in Kano, unfit for human consumption.

Marine life is also being threatened, as dangerous chemicals are believed to be responsible for the death of fish, micro-organisms and water plants in the River.

THE GUARDIAN gathered last week that the industries polluting the river dispose toxic and rust coloured effluents, in utter disregard of warnings by the World Health Organisation (WHO) on the issue.

At least 12 of the companies alleged to be involved are tannery concerns where a toxic chemical known as chromium and other acids are used in the treatment of hides and skin.

These chemicals, experts say, were responsible for the increasing rates and outbreak of intestinal diseases such as cholera. Besides, a publication of the Center for Disease Control, Atlanta, Georgia had earlier reported that chromium causes abdominal pains when ingested by human beings.

Apart from the tannery companies, experts hinted that the other companies involved in the hideous acts include textile factories and vegetable oil companies.

The director of Federal Environmental Protection agency, Dr Olu Aina, confirmed in Kano during a visit to some of the industries that the effluents discharged into River Challawa were injurious to health.

At the Protein Derivatives Nigeria Limited, a processor of vegetable oil, Aina called on the management of the company to install an effluent treatment plant in order to abate the pollution of the environment. The FEPA director also frowned at the quality of effluent discharged by Deras Nigeria Limited, Challawa, a hides and skin processing company and requested the company's management to embark upon secondary and tertiary treatment of their wastes.

According to Aina, the discharge of untreated wastes by some companies into the river has made the treatment of potable water cumbersome, and expensive. He warned that the agency would invoke provisions of Decree 58 of 1988 on industries which continue to pollute the river if they fail to comply with the guidelines of pollution control.

Mr Nicholas Bahanatos, Production Manager of Deras Nigeria Limited, Challawa, Kano, had earlier told the FEPA's director that the company would take steps to ensure that effluents generated by the company were treated before disposal.

Bahanatos said his company would comply with the guidelines and standards set by the Federal Government on preservation of the environment, adding that his company would soon begin to re-cycle its wastes.

There were also confirmations last week that River Kaduna which is also a major source of water to the residents of Kaduna has been "killed with dangerous effluents" discharged by the many textile industries in the southern part of the town.

Experts recalled that Lake Washington in Seattle, United States faced a similar problem until that country's government enacted laws for the control and disposal of industrial wastes.

Government To Issue Regulations on Pollution

34000748B Lagos THE GUARDIAN in English
22 May 90 p 16

[Article by Tony Okhamera, Ben Ukwoma and Tony Ndiulor: "Government To Introduce Regulations Against Pollution"]

[Text] Within the next four months, the government will come out with the first set of regulations against environmental pollution and degradation.

Works and Housing Minister Major-General Mamman Kontagora, who is also responsible for the nation's environmental matters, gave this hint at the first national environmental seminar on—"Industries and the Nigerian Environment", which opened in Lagos yesterday. He said the regulations, which would be "homegrown", would not only meet acceptable international standards but strictly avoid the pitfalls into which industries in developing countries have found themselves—a situation in which they make little or no provision for pollution control facilities.

The regulations, expected to be based on the outcome and recommendations of the three-day seminar, according to Gen. Kontagora, would be practicable and enforceable and would emphasise in "letter and spirit" the principle of sustainable development.

He urged participants comprising policy makers, industrialists, scientists and the academia to be firm, realistic and practical in their recommendations, which, he said, should aim at the protection of the Nigerian environment from the adverse effects of industrialisation.

Gen. Kontagora, who said the seminar was "tailor-designed, relevantly-targetted and carefully organised" to achieve the key specific purpose of protecting the nation's fragile environment", blamed the industries for the land and general environmental degradation for their production of untreated and harmful effluents.

In his key-note address titled: "Halting industrial pollution in Nigeria—which way FEPA?" Dr Evans Olu Aina, director and chief executive of the nation's environment watchers—the Federal Environmental Protection Agency, listed the major evils facing the nation's environmental and various strategies intended by FEPA for effective policing of the Nigerian environment.

Aina noted that waste treatment facilities were virtually non-existent in the nation's industries and that even the few industries, which have managed to install the simplest pollution control equipment, did not take into account the adequacy of such facilities and the volume and type of waste they generate.

Besides, most Nigerian industries, according to Aina, are guilty of discharging their untreated wastes through drains or canal into the nearest body of water, relying on dispersal by dillution.

This he noted, had gone further to compound the pollution problem especially when they contain solid inorganic matter, organic matter,toxic substances, mineral nutrients, acids and alkali.

Such discharges, apart from polluting water sources, channel and atmospheric air, also create aesthetically unsightly surrounding, (as the case of cement factories) and water bodies unattractive for human recreation (in the case of stream/rivers polluted with floating oil from crankcase oil discharges).

Aina also spoke on land pollution, which he attributed largely to the direct discharge and disposal of solid wastes in lands and the careless disposal of industrial products and product containers by consumers especially where the discharges contain chemicals such as polychlorinated biphenyls (PCBS) which are toxic heavy metals.

The president of the Manufacturers Association of Nigeria (MAN), Alhaji Hassan Adamu, who praised FEPA for organising the seminar suggested a two-way approach to the effluent control problem.

He urged the government to provide every industrial estate with a "central waste treatment plant" for the "secondary treatment" of wastes, while every industry would have to undertake the "primary treatment" of its waste within its factory.

SOUTH AFRICA

Government Under Fire for Toxic Waste Import

34000636 Johannesburg THE STAR in English 18 Apr 90 p 5

[Text] The South African Government is under fire from the American-based Greenpeace Waste Trade Project for having allowed the importation of about 10 tons of toxic mercury waste each year, for reprocessing at the Thor Chemicals plant near Cato Ridge, Natal.

And effluent from the plant may be poisoning the drinking water of thousands of Natal residents, according to levels measured by Greenpeace International and the US newspaper ST LOUIS POST-DISPATCH.

The plant was instructed last week by the Department of Water Affairs to suspend all operations producing mercury effluent until problems with the plant's disposal were under control.

Thor imported an estimated 75,000 pounds (about 35 metric tons) of toxic mercury waste from the US between 1986 and 1989, and it has been learnt the company receives waste from several other countries.

Greenpeace says:

The South African government gave its approval to the shipments in a cable dated October 3, 1989, which means Cyanamid is allowed to ship wastes to South Africa before October 2, 1990.

The government has made no attempt to halt the shipments of Cyanamid's mercury wastes, which US mercury smelters do not handle "because the environmental consequences of burning mercury heavily contaminated with organic chemicals can be severe," the organisation says.

The waste is loaded on to container ships at the Global Marine Terminal in Jersey City, New Jersey, and shipped to Durban by the Mediterranean Shipping Company. The wastes are then trucked to Thor Chemicals' mercury smelter on Cato Ridge.

Thousands of pounds of mercury wastes from the United States and Europe have been burnt at Thor.

The natural background level of mercury in soil is less than 0.1 parts per million. The US criteria for freshwater aquatic life protection is 0.000012 milligrams per litre of mercury, on average, in a body of water.

Greenpeace adds: "Results from numerous tests for mercury in the sediment and water of Natal's Mngeweni River far exceed these limits."

The Department of National Health and Population Development says:

The Regional Director's office has not been notified of any excessive levels of mercury in the Umgeni River.

Thor Chemicals SA (Pty) Ltd has been legally licensed, in accordance with the provisions of the Hazardous Substances Act, to carry on business as a supplier and manufacturer of Group I hazardous substances with special application to mercury-based products.

They also have a contract with American Cyanamid to supply them with catalyst, with the provision that the spent catalyst, mercury containing solvents and floor washings will be returned by American Cyanamid to Thor Chemicals for reclamation of the mercury. This contract has been in operation since 1986.

The spent catalyst, solvent and floor washings containing mercury are imported, not as hazardous waste for disposal, but as profitable raw materials for the production of mercury which is to be utilised in the manufacture of mercury-based products, a statement from the department said.

"The importation takes place under strict governmental control as envisaged by The Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal."

In a statement yesterday, SA Cyanamid (Pty) expressed concern about the partial shut-down of Thor and made a veiled threat to take its business elsewhere in the world.

"Cyanamid has a task force that is examining mercury waste alternatives including another worldwide search for any other plant to recover and recycle this material and is re-investigating modifications to the manufacturing process that would eliminate the use of mercury."

The statement directed further inquiries to the American Cyanamid Company in New Jersey.

Nuclear Group Views Environmental Issues

34000647 Johannesburg FINANCIAL MAIL (Energy Supplement) in English 13 Apr 90 pp 12, 15, 19

[Text] Nuclear power has been under a cloud, especially since the accident at Three Mile Island and the far more significant disaster at Chernobyl.

Meanwhile SA [South Africa]'s nuclear programme seems to have reached a pause, after the successful

commissioning of Koeberg and the production of nuclear fuel on a semi-commercial scale at the Atomic Energy Corp (AEC).

The AEC itself has acquired a new chief executive officer—Dr Waldo Stumpf.

The latest environmental concerns are the acid rain effect, the hole in the ozone layer and the greenhouse effect, all caused by the emission of man-made substances into the atmosphere. These are important issues in their own right. But has this shift in public concern had any spin-off for nuclear power?

Until recently, says Stumpf, overseas attention was focused mainly on energy resources. That has changed completely and the focus for the next few decades will be what happens to energy wastes in the broader sense.

The shift from regional or national to global awareness has been sudden and perhaps a little unexpected. But the new emphasis is now well established in the minds of all strategic thinkers, as well as the general public.

Stumpf says it is difficult to tell whether the concern over the burning of fossil fuels has diminished hostility to nuclear power. People react emotionally to many issues. However, the latest reports received from the U.S. say that public opinion is starting to swing back towards favouring nuclear energy. As for the problems with fossil fuel, "events will sooner or later force themselves on to the public mind."

An unfortunate misconception of the past decade, says Stumpf, has been that the available non-nuclear sources of power, namely oil, coal and fossil fuels generally, which have been in use for many years, are benign. But the message has been understood by the public that fossil fuel, too, has adverse effects—though some of them may be only very long-term.

People often talk about the long half-lives of nuclear waste and how you have to store the material for so many years. What the public has come to realise is that burning fossil fuel produces large volumes of pollutants that also have long time spans—during which they may do great harm. With nuclear wastes you are talking of needing to store very small volumes of highly concentrated waste.

As for the greenhouse effect, some models are being developed and studied. These, however, are incomplete. It is a difficult model to quantify because we are dealing with a global model; and predicting climate is difficult enough without introducing manmade influences.

Some of the model projections that have been accepted widely indicate a very long recovery period if the world were to go ahead with present rate of pollution of the atmosphere, especially with the greenhouse gases. Carbon dioxide is only one of them; there are others which are even worse. Methane and CFCs [Chlorofluorocarbons] are greenhouse gases, too, and the latter also affects the ozone layer badly.

As the world continues to burn fossil fuels and wood and release other substances into the atmosphere, the level of pollution will increase. At any given level of atmospheric pollution—such as that now prevailing—it is possible to imagine a theoretical halt to all further pollution.

If you were to cut off all further pollution from that point onwards, one of the present global mathematical prediction models indicates it would take something like 500-1,000 years for the atmosphere to recover itself. This is a very long time span, roughly equal to the time span to dispose of radioactive waste.

To sum up, he feels that the message about the objective merits of nuclear power is coming across slowly. In his travels overseas, he has noticed that in the last two or three years there has been a dramatic change to a more neutral stance between fossil fuels and nuclear fuels.

If the shift continues, he believes that, over the next five years, public opinion will develop a more balanced view of the two options.

Does that mean governments will take positive steps to get nuclear power on the road again? Stumpf says we have to look at what has happened over the past decade.

Most of the world was suddenly caught by a shortage of energy at the time of the oil crisis. Since then, many countries have ended up with an over-capacity in power generation, though this is not true for all. Much of this came about through energy conservation, which is an excellent strategy to follow.

It is one to which SA should pay great attention.

Over-capacity has hit most of the countries with ambitious nuclear programmes (including France), which naturally has affected plans for further development. This is unfortunate. A shift in public opinion at this stage will not reduce over-capacity. This would apply to America, where public opinion has had an exceptionally severe effect on nuclear development. And we must remember that SA, too, is suffering from over- capacity.

Towards the end of this century or early in the 21st, however, it is reasonable to predict a fairly strong revival in nuclear power. By then most of the surplus capacity would have been worked off. But it would be economically impractical now, or later, to go for a massive crash programme for building nuclear plants in order to shut down fossil fuel power stations.

Both the AEC and Eskom—in their strategic thinking—see nuclear and coal acting as partners in the future. "We would never like to see them in opposition to each other. That is the way the world should see them as well. We cannot wish away the fossil fuel component of our generating capacity," says Stumpf.

Now, there is a far greater focus in SA on the cleaning up of the sulphur dioxide emission—which is technically possible to a limited degree, though expensive. As for carbon dioxide, there is no immediate technical answer.

In the light of expectations for the nuclear industry internationally, what are the hopes for the uranium market?

Stumpf cannot see a revival in the uranium market unless the whole nuclear installation programme also increases, and that we cannot realistically predict on any scale before the second half of this decade. The uranium market could certainly be coupled to that revival with, maybe, a lag of two years. In the short term, it is unlikely that we will see an upturn in the uranium market. Much of the over-capacity could well disappear towards the latter part of the decade. Then the question would be, "what are the alternatives?"

Countries like Sweden have opted for a phase-out of nuclear power. Recent reports from Sweden indicate that the government is re- considering its nuclear phase-out plan. That is the reality of the dilemma that confronts people in many countries when they come to that situation. It's difficult to change.

Regarding reactor technology, Stumpf believes that pressurised water reactors (PWRs) have established themselves. So well, in fact, that it is hard to believe another contender that drastically diverged from their design could be a big option for the future. Some countries have tried, especially West Germany, which has done a lot of work on gas- cooled graphite moderated reactors. But they have been abandoned on economic grounds.

On the question of safety, Stumpf warns against the error of thinking that only small reactors can be safe. Larger reactors can be made just as safe. But he prefers PWRs to boiling water reactors, which have lost the battle in the marketplace for good technical reasons.

He does not see dramatic changes in nuclear fuel technology during the decade. Beyond the turn of the century, however, we are bound to see dramatic and cost-effective technology coming to the fore.

To make nuclear fuel, you have to extract the uranium from the earth and refine it and that technology is fairly mature throughout the world. Then you have to convert this uranium into a gaseous form, which is also a fairly well established technology. It is also not one of the expensive parts of the nuclear fuel cycle. The next step, however, is very costly.

You have to increase the concentration of the fissile isotope U235 to around 3.25 percent for a pressurised water reactor.

Most of the present enrichment plants were actually funded by the weapon programmes of the Western states. So economic operation of these plants was not a strong motive in the early days. Today there is strong competition for enriching uranium. The Soviets, China and eastern Europe are all offering enriched uranium on the world market.

However, once the former military plants have outlived their useful life, which should be towards the end of the century, the world will definitely be in need of cheaper enrichment technology. There is, in particular, exciting work being done all over the world in laser enrichment, which is still in the development phase. It could, however, become competitive with the alternative of the gas centrifuge.

So on the enrichment side, we certainly would see in the early part of the next century some new technology coming in which is far more cost effective. The limited SA demand dictated a smaller than commercially viable plant. This, together with the escalation in local electricity prices, has made competition in the world market impossible.

It has to be recognised that SA's coal will eventually run out, depending on growth in its use, some time in the next century. That is an inescapable fact and it needs to be planned for.

It would be unwise to introduce new nuclear power plants only when all coal resources have been committed. So there would have to be a phasing-in programme in the early part of the next century.

Once again, even our own uranium reserves are limited under certain conditions. If we use our uranium only in PWRs, just a certain proportion of the potential energy can be utilised.

But what happens beyond that?

Now, the only viable alternative would be to go to fast-breeder reactors (which produce more fissile fuel from non-fissile uranium), say in the latter part of the next century.

Since about 1985, says Stumpf, the AEC has been involved in a programme of rationalisation: of developing a more businesslike approach to all its activities. This has borne fruit in terms of its total budget, which has decreased in real terms by 43.5 percent over the last five years. This was partly because the AEC did rationalise. It also embarked on an ambitious marketing programme—not only to sell nuclear fuel to Eskom but also to market its know-how and by-products to the rest of SA.

Isotopes for medical use have proved particularly successful as import replacements. The AEC will continue

on the commercialisation path. And this cost-directed policy will also apply to work on enrichment technology. Any future plant will have to be able to compete on economic grounds with overseas technology.

But SA would not want to be entirely dependent on overseas supplies of nuclear fuel, especially as we have the uranium reserves and an accepted policy to upgrade our mineral resources.

Stumpf feels that more attention needs to be given to educating the public about nuclear energy. With the slowing down of the nuclear programme, we have probably got about a decade's grace to address this problem properly. "We must somehow prepare the public in a responsible way for the future nuclear programme."

France has done a great deal in this field. The French are training most of their engineers and scientists in public education. Stumpf believes this need will be addressed in SA in the near future, reaching the schools and the public at large "so that they understand the use of nuclear power in a more objective way."

Ecology Party Founder Withdraws from Leadership

MB2106131890 Johannesburg SAPA in English 0718 GMT 21 Jun 90

[Text] Johannesburg June 21 SAPA—The founder of South Africa's Ecology Party [EP], Mr. Colin Slater, has announced his withdrawal from all future involvement in the party due to pressure of work.

Mr. Slater said in a statement that his large business had not allowed him the time needed for the future development of the party.

A new leader will be chosen at a meeting of the executive committee within the next few days.

Asked to comment on the future role of the Ecology Party, Mr. Slater said current political developments indicated strongly to him that it was only after the resolution of the present political power struggle—which would take some time—that the real relevance of the EP would come to the fore. "The Umlazi result tells us all where present and immediate future political concerns are to be found."

Shanxi's Environmental Protection Efforts Show Results

90WN0093A Taiyuan SHANXI RIBAO in Chinese 20 Apr 90 p 2

[Article by staff reporters Hao Shubo (6787 2873 3134) and Ren Tailong (0117 1132 7893): "Shanxi Key Areas' Comprehensive Environmental Improvement Efforts Begin to Show Results"]

[Text] Since the third provincial environmental protection conference in 1985, the comprehensive environmental improvement efforts in Shanxi's key river valley and areas, including one river (Fenhe River), two cities (Taiyuan and Datong), and three areas (Kouquan in Datong, Guangshengsi in Hongdong, and Yongji County), have begun to show results. As shown by environmental monitoring, some pollution indicators have improved.

The one river, two cities, and three areas are the focal points for comprehensive environmental improvement in the province during the Seventh 5-Year Plan. In the past few years, the provincial government alone has appropriated 120 million yuan as special funds for environmental improvement in key areas. A total of 26 environmental control projects have been planned for the Taiyuan and Jinzhong sections of the Fenhe River, and 16 are now in operation. The volatile phenol, COD, and other important water quality indicators have improved in the Taiyuan section. Compared with 1983, the Taiyuan Iron and Steel Corporation's steel output has increased 24 percent, but the waste water it discharges has dropped 18 percent; dust fall in the plant area has dropped 55.3 percent; and the acceptable rate of combined pollutants discharge has increased from 33.2 percent to 74.5 percent. The volume of industrial pollutants discharged into the atmosphere by the Taiyuan Chemical Corporation has dropped 15.8 percent. The total amount of suspended particles in the atmosphere over Taiyuan City has been brought under control and has dropped somewhat. Datong City has in the past four years ordered 139 environmental improvement projects to be completed within definite time limits, carried out 33 concrete environmental jobs, and improved the seriously polluted environments of 24 enterprises. The three improvement projects completed by the Shanxi Agricultural Chemical Plant in Yongji with an investment of 6 million yuan have brought environmental pollution in surrounding waters basically under control. The environmental outlook of Guangshengsi in Hongdong and Kouquan in Datong has also begun to change.

Sichuan's Environmental Conditions Surveyed

90WN0093B Chengdu SICHUAN RIBAO in Chinese 2 Apr 90 p 1

[Article by Li Mingping (2621 7686 1627): "Air and Water Quality Improved in 18 Sichuan Cities"]

[Text] The Provincial Environmental Protection Bureau recently announced that the quality of the atmospheric environment of 18 cities in Sichuan Province and the water quality of river sections nearby have improved, but noise pollution has worsened. According to environmental quality data provided by environmental monitoring stations in 18 cities, seats of municipalities, prefectures, and autonomous prefectures, comparing 1989 with 1988, the average value of sulfur dioxide in the atmosphere dropped 10 percent; the total amount of suspended particles dropped 17 percent; rain acidity dropped 2.6 percent; and the rate of above-normal pollutants and the frequency of acid rains also dropped. This indicates improved air quality. In river sections near major riverside cities, the average value of chemical oxygen consumption [COC] dropped 13 percent; biochemical oxygen demand [BOD] dropped 11 percent; nitrite nitrogen dropped 23 percent; volatile phenol dropped 50 percent; the rate of above-normal cyanides, total mercury, and petrochemicals also dropped. This shows improvement in river water quality.

While improving the economic environment, rectifying the economic order, and readjusting the industrial structure, the province has had nearly 2,000 enterprises closed down, suspended operations, amalgamated with others, or switched to the manufacture of other products; established 34 smoke and dust control zones and 217 soot-free streets, and improved the use of coal in five cities including Suining, Mianyang, and Panzhihua and 37 counties, saving more than 1 million tons of coal and reducing the discharge of sulfur dioxide by 50,000 tons and soot by 25,000 tons; and built more than 5,200 methane-generating pits for the treatment of domestic sewage in 120 cities and counties including Neijiang and Luoshan, with a total volume of 150,000 cubic meters, equivalent to medium-sized sewage treatment plant.

The monitoring data show worsening area environmental noise and traffic noise pollution in 18 cities, where the average equivalent sound level rose by 1.2 decibels. Particularly in the cultural, educational, and commercial areas and on both sides of main transportation lines and roads, the noise is way beyond the normal standard and seriously disturbing to residents. Contamination of water in sections of major rivers near cities and in small- and medium-sized rivers remains quite serious, and the average values of sulfur dioxide in the air and the total amount of suspended particles over cities are still in excess of the national second class standards. The situation of urban environment in our province remains grim. To bring the quality of urban environment up to standard, we still have to work hard for a long time.

JAPAN

Plan To Cap Carbon Dioxide Emissions Responds to Global Warming Concerns

OW1806063490 Tokyo KYODO in English 0554 GMT 18 Jun 90

[Text] Tokyo, June 18 KYODO—The Japanese Government has decided to cap carbon dioxide emissions by the year 2000 as part of its efforts under a 20-year plan to combat global warming, officials said Monday.

The decision, taken by ministers concerned with environmental protection, will require an action plan which will set a target of reducing carbon dioxide emission growth to the lowest degree possible in 2000 through technological and scientific efforts aimed at reducing the greenhouse effect which causes the global environment to gradually become warmer.

The 20-year master plan, to cover 1991 to 2010, will be drawn up this fall and will also include measures to combat other gasses linked to the greenhouse effect such as methane, chlorofluorocarbons, and nitrous oxides, the officials added.

The latest move, along with the 100-year program for preventing global warming which the Ministry of International Trade and Industry (MITI) proposed in May, will testify to Japan's renewed commitment to the issue at a summit meeting of seven major industrial countries slated for early July, the officials said.

The upcoming 20-year government action program will be based on an agreement reached by a gathering of environmental ministers of 69 countries held at Noordbroek, the Netherlands, last November.

At that meeting, many industrial countries agreed to freeze their carbon dioxide emissions at a certain level by 2000.

The government also hopes to score some environmental-protection points in the international forum since Japan, along with the U.S., has been criticized for lack of enthusiasm in tackling the issue.

International policy coordination on global warming is being discussed mainly at the United Nations Intergovernmental Panel on Climate Change (IPCC), which is expected to come up with a final report on curbing carbon dioxide emissions in August.

The U.N.'s international panel of scientists issued in May a report that said unless the amount of carbon dioxide and other harmful gasses is cut immediately by more than 60 percent, global temperatures will rise over the next century, with unforeseeable consequences.

Responding to the report, British Prime Minister Margaret Thatcher said if other countries did their part, Britain would reduce the projected growth of its carbon dioxide emissions to stabilize them at 1990 levels by 2000.

West Germany has also proposed that Europe should cut present emissions by 25 percent by that date.

The U.S. has so far failed to make any such proposal, arguing that global warming is not a scientifically established fact.

Japan's new proposal is timed for the IPCC August report and the second meeting of environment ministers scheduled for late October to early November.

The 100-year MITI project, which the government plans to put on the table at the Houston summit, is intended to serve as a grand design for Japan's long-term environmental protection policy.

Its primary focus is placed on the development of new technology to cut carbon dioxide emissions.

Sozaburo Okamatsu, director general of MITI's industrial location and environmental protection bureau, said, "The approaches of European countries to this issue, which emphasize the restriction of carbon dioxide emissions, are not effective enough considering the prospective increase of the world population.

"We should aim to develop revolutionary technology for reducing carbon dioxide emissions so as to sustain enough economic growth to feed the growing world population," Okamatsu said.

The proposed technology includes space-based solar-power generation, devices to boost efficiency of electricity utilization based on superconductivity, nuclear fusion as a means of power generation, and devices to trap carbon dioxide emissions.

MITI proposed the program at an international conference on environment in April sponsored by the White House, and it drew favorable comment from President George Bush and other U.S. officials.

The ministry hopes its program may bridge the differences between the U.S., which is opposed to measures that carry the risk of an economic downturn, and European countries advocating radical and immediate action to protect the world's environment.

THAILAND

Board Reports Extent of Pesticide Poisoning

42000078 Bangkok THE NATION in English 6 May 90 p 1

[Article by Pichaya Changsorn]

[Text] About half of the farmers interviewed in a nationwide survey by the National Environmental Board were

found to be suffering from pesticide poisoning. Thirty-one per cent of them are serious cases.

A total of 238 farmers were interviewed in the three-year survey, which concluded last December.

The NEB study also found that 15 per cent of those surveyed had developed moderate symptoms and another five per cent had slight symptoms of toxic contamination.

Survey team leader Jarupong Boonlong told THE NATION yesterday that he estimates at least 100,000 farmers nationwide are suffering from pesticide poisoning.

"They need medical treatment," said Jarupong, the chief of the NEB's Toxic and Hazardous Substance Section.

But most hospitals and public health centres surveyed by the NEB in 44 provinces are still ill-equipped to deal with such patients, he said.

Evaluation of the data compiled by the survey is expected to conclude in October.

Jarupong said excessive pesticide use by farmers hoping to improve their crops and the traditional technique of planting rice in muddy water were probably partially to blame for the alarming rate of contamination.

While farmers wade through muddy water in their rice fields their feet can easily absorb toxic residues, he said.

Jarupong said Thai farmers can be dying slowly from exposure to poisonous substances used in producing pesticides.

Jarupong said that of the 238 farmers interviewed, 51.3 per cent had demonstrated reactions to the toxic substances. Thirty-one per cent had experienced "severe" reactions, including breathing difficulties, blurred vision and muscular convulsions and fainting.

Jarupong explained that in extreme cases, farmers could go into shock if they continued to be exposed to insecticides.

The toxicologist said another 15 per cent showed moderate reactions such as vomiting, sweating and exhaustion. The five per cent slightly affected by the substances complained of headaches and dizziness, he said.

Jarupong said he believed at least 100,000 farmers would be found to be suffering from pesticide-related illnesses if a comprehensive survey on the problem was conducted.

But he declined to predict how long farmers could stay alive after being contaminated by the substances, saying it depended on several factors including the weight of the victims, the length of exposure and the toxicity of the pesticides in question.

"I've found that some people would lose consciousness after using the insecticides for five years while some who have been spraying with the chemicals for 35 years have developed no symptoms," Jarupong said.

He likened the effects of pesticides to those of cigarettes, with some people who have been smoking for life remain healthy while others who have only smoked for a few years are dying from lung cancer.

Jarupong also said the pesticides widely used at present are more destructive to people than to the environment.

In the past, Jarupong said, pesticides in Thailand were mixed with organochlorine, a chemical that breaks down slowly, causing environmental problems. Thai farmers now use pesticides with a high level of organophosphate, which he said breaks down within three to five days but is much more damaging to human health.

Jarupong charged that most health centres in the country are still not well-prepared to treat people.

He quoted a World Health Organization report as saying that 7 per cent of victims of pesticide poisoning in Thailand had died.

This death rate was high when compared to records in both developed and underdeveloped countries, he said.

He cited statistics from 609 public health centres across the country that in 1987, 499 patients suffering from pesticide poisoning had died, out of 9,738 seeking treatment for the condition.

However, Jarupong said that almost half of these deaths were reportedly suicides where pesticides had been used.

But he maintained that exposure through work remained a potentially lethal problem, with Thai farmers using pesticides up to four times a day instead of the twice a day as recommended. He noted that Thailand still lacks a law controlling the use of pesticides.

The Toxic Substances Act was amended last year to require that all imported pesticides be registered but does not control their use.

As a result, he said, some pesticides that were banned last year are still being used by farmers.

INTRABLOC

Bulgarians Appeal for State Action on Ruse Chlorine Threat

AU2006190590 Sofia BTA in English 1731 GMT 20 Jun 90

["Appeal for Civic Response"—BTA headline]

[Text] Ruse, June 20 (BTA)—According to independent and oppositional organizations and to many citizens, very little has been done to solve the gravest problem of the Danube town of Ruse, the permanent danger from chlorine and its damage on the people's health. The Forum for Democratic Revival "Ruse" appealed for civil response against "the passiveness of state power".

Signatures are being collected to call to the Grand National Assembly which should oblige the Government to introduce an official protest at the International Court in the Hague. In view of that, the appeal reads, it is necessary to engage publicly all M.P.s [Members of Parliament] in the city. They will be offered the whole documentation on the chlorine problem of Ruse and they will hand it to the prime minister right at the first Parliament session. During that initiative, the majority of the people of Ruse will be present in front of the National Assembly in the capital city.

The Forum for Democratic Revival "Ruse" believes that the Ruse chlorine problem would be the first substantial success of democracy.

Romania Rejects Bulgarian Allegations of Polluting Ruse Area

AU2206184790 Bucharest ROMPRES in English 1711 GMT 22 Jun 90

["Agora: Perplexity at News Items in the Bulgarian Press"—ROMPRES headline]

[Text] Bucharest, ROMPRES 22/6/1990—A number of news items were brought out in the Bulgarian press of late relative to the chlorine pollution of the town of Ruse from the chemical combine in Giurgiu.

Learning of those news items, the "ROMPRES" news agency contacted an institution in Romania and is now empowered to inform of the following:

Upon the Romanian side's initiative, a meeting was held in Bucharest on June 9 between the relevant ministers of Romania and Bulgaria, and attended by experts and representatives of the ecological movements of the two countries. They analysed problems related to environmental protection in the border area, in the Giurgiu-Ruse zone included. As for the chlorine pollution of Ruse, a problem raised during the meeting by the Bulgarian side, the Romanian delegation showed that the sodium-chlorine products manufacturing platform of the chemical combine in Giurgiu had been closed as early as July 1988 and that, according to measurements performed in the Romanian territory over the respective interval, there had been no chlorine and hydrochloric acid concentrations in the area. Problems related to pollution, however, remain an issue to be paid attention to.

According to those established by the relevant ministers of the two countries, a new meeting, on an expert level, was held on June 14, when a protocol was signed and a programme was set to agree on a common, unitary method of performing measurements.

Under like circumstances, the allegations in the Bulgarian mass media can only create perplexity as they lack any real basis. Furthermore, as shown by the aforesaid consultations, the two countries' governments are in constant dialogue.

CZECHOSLOVAKIA

Minister Says Nation Unable To Fulfill Obligations on Pollution

LD0706213390 Prague CTK in English 1248 GMT 7 Jun 90

[Text] Prague June 7 (CTK)—Czech Minister of the Environment Bedrich Moldan told journalists here today that it is by no means feasible for Czechoslovakia to fulfill its obligation stemming from the 1985 convention on long-distance pollution in Europe and to reduce emissions of sulphur dioxide going beyond the Czechoslovak borders by 30 per cent by 1993.

The government dealt with this question on Wednesday and is convinced that it is up to federal bodies to tackle the problem. As plants and mines under the federal ministries of mining, power and metallurgy and the heavy industry are the biggest air polluters it is up to them to work out such a concept that would meet international norms as soon as possible. In this respect, the Czech Republic is in a complicated position as most electricity is generated on its territory, Minister Moldan said.

According to him, it is necessary to create a realistic plan aimed at reduction of harmful emissions in all branches for which the federal state commission for technical development and investments should be responsible. In Minister Moldan's view, Czechoslovakia will not succeed in reducing the emissions of sulphur dioxide exceeding the Czechoslovak borders by 30 er cent even by 1995 but most probably, if mainly economic instruments are used, as late as in 1997.

Prague Air Pollution Sources Reviewed

90CH0123A Vienna PROFIL in German 17 Apr 90 p 78

[Unattributed article: "Leaden Gold"]

[Text] Prague by night. The Old City Ring. For Alexander von Humboldt (and not just for him), one of the most beautiful squares in the world. A spotlight lights the Tyn Church. Despite it, the gold-plated peaks cannot be made out in the night sky. At first, it is a fascinating show.

Smog can certainly have romantic sides, too.

Almost daily—especially during the cold months of the year—there is a not insignificant air pollution bubble laying over Prague. With an average annual concentration of 100 micrograms of sulfur dioxide per cubic meter, the metropolis of Czechoslovakia is by far the most polluted city. According to the World Health Organization (WHO), the allowable limit is 60.

The city on the Vltava (Moldau) River is interspersed by dense network of environmentally harmful large enterprises. The big stinker stands in Smichov, the fifth district of Prague: the automotive factory CKD Tatra on Pilsn Street blows 344 pounds of sulfur dioxide, 86 pounds of nitric oxide and 258 pounds of ash from its smokestacks. And this goes on around the clock—without a single filter installation. For 35 years, the allowable limits have been constantly exceeded.

At the Hygiene Institute in Prague, the list of worst pollutants counts 63 enterprises, from which the majority are settled in the fifth district. Mirko Pulchart, the city hygienist, reports a rapid increase in acute bronchial ailments, above all in children. His statistics are interpreted to mean that the chronic ailments also indicate a growing tendency.

There are no precise numbers in Prague, either. Medical studies were not desired under the communists, and now there is no money. Nor pertinent literature: "They don't even have these kinds of concentrations of pollution in the West, so there are no scientific investigations available for use by which we can orient ourselves," according to Micho Pulchart.

There are 1.2 million people living in Prague. Almost all the private households are heated in the wintertime with northern Bohemian brown coal, which contains large amounts of sulfur. This additional amount of sulfur dioxide is increased by traffic emissions at extreme peak values in some parts of town.

The Vitezneho unora, the street along the Prague national museum, was converted into an urban expressway by the communists. Since it runs through a valley floor, the pollutants collect there as in a catch basin. When the air is still, nitric oxide readings of 500 and more micrograms per cubic meter are taken. When the average daily measurement of the concentration of nitric oxide exceeds 150 micrograms, acute illnesses in the respiratory tract and organs appear. "Complaints about headaches, inability to sleep and sickly changes in the mucous membranes belong to my daily routine," reports an intern in central Prague.

Prague is also at the top of the country in lead readings. The allowable limit is 0.7 micrograms per cubic meter of air. In Smichov, the values often enough reach more than 10 times that. In the Old City, the gold of the famous city is mixed with an average of 0.5 milligrams of lead in the air.

For 1.2 million residents and the large number of industrial enterprises, there is only one sanitary treatment plant. The daily trash is tipped into uncontrolled garbage dumps, and in the entire country there is still not a single hazardous waste dump.

Olga Havlova, under whose patronage the populace of Prague is currently pointedly informed about environmental conditions of their city, brings the situation to this point: "I will stop smoking immediatly when we have clean air in Prague." The President's wife will certainly keep up her 60 cigarettes per day for a while yet.

Environmental Pollution in Northern Bohemia Viewed

90CH0123B Vienna PROFIL in German 17 Apr 90 pp 74-78

[Unattributed article: "It is Peaceful Across the Bleached Out Peaks"]

[Text] "You could pickle cucumbers with that." Eva Janackova from the Civic Forum of Most stands in front of a spring in a forest above her home town. The acidity of the water approaches the pH values of household vinegar: "When it rains here, it is really acid rain falling from heaven."

Most, with just barely 100,000 residents, is the center of the north Bohemian industrial district, and one of the 13 "ecological problem areas" of Czechoslovakia. Coal mines as far as the eye can see, in all directions. On the horizon are the cooling towers of giant power plants with oversized stacks from which pollutants shoot out untempered by any filter. Some 60 percent of the Czechoslovak energy supply is produced here. Almost all of the coal burned in Czechoslovakia comes from northern Bohemia. Every year, 120 million metric tons of brown coal is mined.

Sulfur dioxide, dust and ash, mixed with heavy metals, have been drizzling for decades on a scale of tons on northern Bohemia. In addition there is the highly toxic exhaust from big chemical industry which was settled around Most. The supposed black abundance has long since become a curse for people and the environment here.

The air is hardly adequate for breathing, the ground is permeated with heavy metals, the groundwater is poisoned with toxic substances. There are only two wells around Most with problem-free water.

The decades-long bombardment of pollutants has already destroyed 123,550 acres of forest in north Bohemia. The Hausberg of Most now only displays a thin stock of trees. In the Erz Mountains surrounding Most, too, the forest will be dead in five years. Then there will be grave problems in Most with the water supply.

The people of Most draw their water from the mountains of the area which is increasingly threatened by erosion. Steppe grass and dead tree trunks cannot withstand the destructive power of wind and weathering. The attempt to stop the advancing desolation by planting more resistant blue spruce has brought little to fruition.

The communists have left behind them a bitter harvest of sometimes truly grotesque dimensions. The Bela River flows through Most. It was the dirtiest river in Europe years ago. Indeed, a water treatment plant did help the situation, because of which the course of the river was repeatedly changed to accommodate the current situations of the open-pit coal mines. Now, the river is flowing through its fifth river bed. At one location it is back in its original one—flowing in the opposite direction.

Literally everything was sacrificed for coal mining. Dozens of villages were flattened, thousands of people were forced out of their familiar surroundings. The Stalinist economic planners did not even stop in front of a city rich in tradition like Most.

Entire batteries of earthmoving equipment descended on Most in 1972. The entire city, which had a history reaching back to the 16th Century, was leveled so that the coal underneath could be mined. The single relic from the past times—the late Gothic Church of Most—now stands on the edge of the city, in the middle of a chemical factory. It was removed piece by piece and reassembled almost 2,600 feet from its original place.

Granted, it will still be several years until the church nave is connected to the tower. During this time, the rain can destroy the interior of the church unhindered. The figure of Christ must now make do without the cross—the responsible Communist official did not approve the transfer of the Christian symbol.

The new Most bears the monotonous trends of real socialist urban construction. One main street, several showcase structures. The tallest building houses the management of the largest lignite mine, next to which is a pyramid-like hotel and a cultural center. A lot of concrete, little glass. The rest is made up by a supermarket, a couple of other stores and any number of pre-fabricated apartment buildings—in row and section. There was a new thrust of concrete very five years, and more is still being built.

Most is almost devoid of people all evening long. There is no city center, and so the people see no reason "to go into town." For the children, there are a handful of playgrounds which do not deserve the name. Trees? At the most, on traffic signs: Maple Street, Beech Street, Alder Street. The only recreational attraction in Most is a heated swimming pool, with no roof.

According to Eva Janackova, half of all the children of Most are unable to leave the inhospitable city even on the weekend. If the parents have weekend shifts, there is no one there to care for the children. Neighborly assistance is a foreign word. Everyone lives for themselves alone.

As the first apartment flats were built, the norm was 320 people per apartment row. In the meantime, the apartment buildings have been build twice as high and are situated close to one another. The results are social tensions, about which no one feels free to talk about honestly. Officially, there is no noteworthy crime in Most, no problems with violent crime, certainly none against women and children, no alcoholism.

If anyone runs into trouble with the law, you will hear from the local police chief that it is certainly a gypsy. Eva Janackova, who is running for office in the first free elections in June as the future mayor of Most, can no longer stand to hear "such idiocy."

There were always gypsies among the many people who have come from all over the country to Most to earn more money, but they soon had to give up their way of life.

Outsiders were not tolerated in the Worker's Paradise—and so the gypsies were stored in ghettos and promptly left alone with their problems. In the completely devastated gypsy ghetto in Most, two social workers have begun to work on the shortcomings of the past decades.

The pollutants in the air do not distinguish between Czechs and gypsies. Katja and Milena, who are both six years old, lie in the same room in the Most hospital. The two girls have been suffering from major heart problems since birth. Jiff Biolek, the director of the pediatric unit, is now permitted to say what he has known for some years: "The pollutants make people ill here, especially children. The genetic changes resulting from environmental poisoning are also causing more and more heart problems at birth."

The pediatric doctor had already noticed in the 1970's that "something cannot be right" with his patients. He noticed strikingly that many of the children had "insufficiently developed bone marrow." Since he suspected a correlation with the air pollution, the doctor wanted specific data on air quality from the responsible Health Service people. "That is not your concern," was the answer. Developmental problems at birth occur twice as often in North Bohemian as in the rest of Czechoslovakia.

"Weight, 1.54 pounds." In an incubator (one of the only three available) lies a tiny three-week old infant. A girl who still has no name, but with raven-black hair. Labor began after barely six months of the mother's pregnancy. An early birth which requires Jiff Biolek to apply all his medical expertise.

"If nothing goes wrong, that will be a completely normal girl," the pediatrician wagers a view into the future. Two months after the visit to the neonatal unit, he reports with almost fatherly pride in his voice, "Zuzana already weighs three and one-quarter pounds." The child can still not survive without the incubator, though.

Fewer and fewer children get the chance for a normal healthy life in North Bohemia. The number of croup-like illnesses increases rapidly from year to year, and every other child suffers from severe respiratory problems. In the valley basins between Most and Chomutov, there are especially numerous instances of weather inversion conditions during the cold seasons.

The 11-year-old Petr from Duchcov, a couple miles away from Teplice, has learned to live with the pollution. Before he goes to sleep, he puts a fresh hankerchief and a bowl with water next to his bed. He usually gets nosebleeds in his sleep. Whereas he used to be frightened by it, it is now routine every evening. With a couple good grips, he gets the blood to stop, and then he continues to sleep as if nothing happened.

Children's daily life in the East. Asthma, vision problems (caused by the high concentrations of ash), eczema are all part of it.

Once a year, Petr is sent into the country with his classmates. In the "nature school," the children from the dirtiest areas of Czechoslovakia are supposed to recover from the environmental toxins. Eva Janackova from Most, who herself has two children between nine and 11 years old, does not think much of these measures. "Fourteen days are far too few. The children suffer from a real adjustment shock, in the trip out and the return."

Many people also react with shock to all the bad news in North Bohemia which has come out since the fall of the communists. It has made it clear to them what kind of poison kitchen they must live in. In the former spa at Teplice, where there has only been pollution-eaten house facades instead of clean air for a long time, the citizens' forum is constantly publishing environmental data.

In the showcase of the new meeting place for the citizens' group, there are two graphics showing average life expectancy for men and women in the Teplice county—with comparative values for other regions of the country. Men must die 13 years earlier here than in South Moravia, where environmental conditions are still somewhat intact.

Miroslav Koren, a journalist from Duchcov, began to compile some health statistics seven years ago. Things he could not publish before the political collapse, he now passes around like valuable trophies. Since 1983, there has been a steady increase in cancer and bronchial illnesses in Teplice county. The doubling in arterial sclerosis is also striking. Koren's private statistics also contain the suicide rate of this area—it has also more than doubled.

The hope for good earnings from the coal district has proven to be a lie. The majority of the miners earn—despite the "death premium," do not earn more than 4,000 crowns (which is barely 1,500 shillings). Those who work underground can earn up to double that. "For that, they risk their lives daily," says Eva Janackova. Increased salaries are otherwise only available in those petrochemical sections where people must work with cancer-causing substances. Without safety facilities.

Chemopetrol Litvinov, 8.7 miles from Most: 12,000 employees. In addition to crude oil, 20 other various raw materials are processed here—asphalt products, fuel, natural gas, butane, motor oil, heavy heating oil, asphalt, plastic, polypropylene. Two coal-fired power plants supply the refinery with the necessary energy.

The entire factory is a special kind of rust bucket. It was founded by the Nazis in 1942 as the "Southern Land Fuels Plant," later it was named the "Hermann-Goering-Plant," after the war it was called the "Stalin Plant" and belonged to the Soviets. Only in the 1950's did it convert back to Czech ownership. A determination of the future name of "Chemopetrol" is still pending.

That could be the least of its problems. Milan Necase, who has become an expert on catylists through self study, is the director of the union commission for environmental protection. Since January 1990, he has tried to motivate his colleagues to participate in the long overdue cleanup of the enterprise.

The new management is seeking intensive contacts with comparable enterprises in foreign countries. Western know-how, also from Austria (VOEST-Alpine Linz) is supposed to convert the rusted, poison-spewing giant trash heap into a modern facility.

"For years, the waste heat from our factory thermally poisoned the surrounding area, too," reports the chemical worker Petr Rybar, who works in the citizens' form of Litvinov. A battery of greenhouses, in which vegetables have been grown, has been heated with the excess heat for two years. The new greenhouses are right in front of the biggest stinker in the plant. Where the ground, as people in the factory know, contains the most toxins.

During a walk around the giant refinery grounds, Milan Necas repeatedly points out the steel structures: "The most important columns were painted seven years ago with seven layers of paint." They are completely eroded now. The aggressive fumes do not stop for anything.

They also do not stop for people who work here. The doctor who has worked here for years was just retired.

He had not run any illness statistics. The cancer rate is about 10 percent higher in North Bohemia than in the rest of the country. Petr Rybar confirms this: "Many colleagues have already succumbed to cancer."

Chomutov is the second largest city in the region after Most. There are just a dozen giant power plant cooling towers marking the "skyline" of the city. Here too, the people suffer under the enormous burden of pollution. Data on the actual extent of steadfast toxic burden was not collected up to this time.

An official of the Health Service, whose director does not want to release any information, points out the window: "Drive in the direction of East Germany, and then you'll see how things are around us."

The guide pointed to Karl-Marx-Stadt. The GDR border is 22 miles away. A well-built road snakes up a mountain. Only a couple miles above Chomutov, and the thin forest already shows you what the man in the health office meant.

A trail leads away from the main highway. A pair of run-down houses, a stray dog, and then nothing but a so-called forest.

At one knoll, the one-time forest floor is overgrown with steppe grass. There are intermittent gulleys. In the desolate ground—half buried—there are black plastic chips as mulch for tiny pine trees. There are blue spruce, which are planted all over in the Erz Mountains, but they do not have a chance to develop roots because the ground is so overly acidic that nothing can grow there any more. Sawn-off tree trunks, and other dead trees behind them, one next to the other. Naked fir frames, and no more needles to be seen anywhere.

It is peaceful over the bleached out peaks. No bird chirping, no rustling in the brush. There have not been any bees or insects for years. In northern Bohemia, most of the bird species have already died out. Half of all vegetation is acutely endangered, and three quarters of the Czech nature preserve areas are damaged by environmental poisoning.

The Erz Mountains are already almost dead, and the giant mountains are very sick. Above all, the number of deciduous trees is lessening from year to year. Not even the robust birch trees can withstand the environmental poisoning.

Dagmar Robkova, who runs a wildlife preservation office in Litomerice (Leitmeritz) with two colleagues, is sounding the alarm: "The Bohemian forest must also recognize this (problem)." Although the Bohemian forest is outside of the industrial region, pollutants in the air are increasingly attacking it. Not only domestic pollution, but also the sulfur bombs dispatched from the GDR have begun to destroy the ecosystem of the Bohemian forest.

The results can be traced in all of Czechoslovakia. The "control central" for weather and water in the entire country is in "Cesky les." The auerhahn, which still has its one natural breeding ground in the forest between Marienbad and Domazlice, will definitely not exist much longer.

The Czech Minister for the Environment Bedrich Moldan, whose position should be strengthened with additional authority after the first free elections in June, does not have any patent solutions for the northern Bohemia problem region.

Josef Toman, from the Czech Federation of Wildlife Preservationists, makes his demand as surprising as it is direct: "We need nuclear power in order to be able to shut down the coal-fired power plants." Toman is for a "French solution"—a large number of smaller nuclear power plants in the entire country. The decision to complete Blocks 3 and 4 at Temelin, despite Chernobyl, indicates that Moldan may be right: "I am personally against nuclear power. But if a majority is for further construction of nuclear power plants, I will adjust to that."

Slovak Environmentalist Group Reelects Chairman

LD2406191590 Bratislava Domestic Service in Slovak 1630 GMT 24 Jun 90

[Text] The extraordinary Congress of the Slovak Union of Protectors of the Environment and the Countryside [slovensky zvazochrancou prirody a karjainy] ended today in Zilina. Mikulas Huba once again became the chairman of the Central Committee. He emphasized that in the near future the union will strive very intensively for the adoption of a unified law on the environment.

GERMAN DEMOCRATIC REPUBLIC

Environment Minister Outlines Policy in Bonn

LD0706191990 East Berlin ADN International Service in German 0854 GMT 7 Jun 90

[Text] Bonn (ADN)—There will be no environmental dumping on the territory of the present GDR, said the GDR Minister of the Environment, Conservation, Energy, and Reactor Safety Prof. Karl-Hermann Steinberg, in Bonn on Wednesday evening. The market economy is to be developed in the GDR from the beginning with a strong ecological component. In a lecture the minister explained the environmental policy of the De Maiziere government, which has started with the firm aim of bringing an end to the policies pursued for 40 years at the expense of the environment. The GDR is facing the task of bringing about the fastest possible clean-up of the environment and the creation of a environment law framework, said the Christian Democratic Union politician. Steinberg mentioned as one short-term measure a staggered program of closedowns and renovations for industrial plants, and said that this will have to be preceded by social security for the workers affected. In the medium term, there are plans for

an environmentally sensitive re-equipping of those energy and production facilities that can be operated in accordance with EC and FRG norms. The minister said the long-term task is the fundamental restructuring of industry. He paid tribue to the support already given by the FRG. The GDR wants to make an appropriate contribution to the solution of European and global environment problems, is seeking collaboration in the planned European environmental agency, and would welcome it being based in Berlin.

Environment Secretary on Energy Sector Restructuring

LD1206111590 Hamburg DPA in German 2310 GMT 11 Jun 90

[Excerpts] East Berlin (DPA/VWD)—According to the East Berlin Environment Ministry, the entire GDR energy sector has to be restructured with the help of a ten-year program and at a cost of about DM 50 billion. To this must be added a further program costing billions in order to overcome grave environmental damage, State Secretary Uwe Pautz (Democratic Awakening/DA) of the GDR Environment Ministry said in a conversation with the GERMAN PRESS AGENCY (DPA).

"For this I need all of the Federal Republic's might," the politician responsible for energy issues said. Pautz intends to expose to market conditions the 23 combines and 92 enterprises of the energy sector with a workforce of about 300,000, which lie within his competence. [passage omitted]

According to Pautz, 3-4,000 new gas stations will have to be built. At present there are only about 1,000 gas stations, many of which will have to be closed down or modernized due to insufficient environmental protective measures. [passage omitted]

Pautz said that 70 percent of GDR power stations need injections of capital. For this energy sector alone between DM25,000 and DM35,000 are needed. Nine lignite power stations or power station blocs have to be replaced, and new power sources providing an additional 4,000 megawatts must be built. [passage omitted]

Nuclear Program To Be Continued

AU1806010790 Vienna KURIER in German 17 Jun 90 p 4

["kmm" report: "The GDR Continues to Count on Nuclear Power"]

[Text] Despite the decision to close down the Greifswald Nuclear Power Plant, the GDR continues to count on nuclear fission. Like the former fraternal country CSFR, the East Germans want to get away from brown-coal combustion, which causes heavy pollution. The GDR—followed by the CSFR—is Europe's biggest producer of sulfur dioxide, which kills the trees.

Even the disputed Greifswald Nuclear Plant is to be resurrected. While this year a reactor of the Soviet type is to be closed down, work on a second reactor in the same plant continues.

In the mid-1990's the nuclear power plant in Stendal, which is currently under construction, is to be completed. "Of course, everything with top modern western technology, which corresponds to the safety standards of the EC," Karl-Hermann Steinberg, spokesman of the GDR environment minister, told KURIER.

After the sensational death of Greifswald, in the medium term nuclear life will flourish even more than before.

Social Report Reveals Extensive Water, Noise Pollution

90WN0094A Frankfurt/Main FRANKFURTER ALLGEMEINE in German 15 May 90 p 6

[Article by Ernst-Otto Maetzke: "In the GDR One in 20 Still Drinks From a Well—Unknown Environmental Facts From the GDR—Water Poses Toxic Threat, Potential for Epidemic"]

[Text] Frankfurt. 14 May. The "Social Report" from the Institute for Sociology and Social Sciences of the East Berlin Academy of Sciences, completed on 1 February 1990, now generally available for the first time, gives a general overview of environmental data in the GDR which had been kept secret until now. The Institute had previously generated similar reports to give to the SED [Socialist Unity Party of Germany] leadership. They contained chapters on demographics, education, working conditions, income, health, and housing, and on leisure, the family, justice and "social involvement." But they were printed in such small numbers—10 to be exact—that not even Politburo members received a copy for themselves.

The most surprising chapter in the "Social Report" is the one on the environment, with its description of the drinking water situation in the GDR. The GDR has only one-tenth of the world's average water supply per capita per year: in addition, only 94.5 percent of the population is connected to a running water supply; 5.5 percent must fetch water from a well. This explains what has long given Western observers cause to ponder—that "well digger" is still a vocational trade in the GDR.

The high degree of chemical contamination of surface and ground water leads to a latent acceptance of risks to the nation's health. The "Social Report" points out that very little had changed in spite of increased efforts to improve the situation during the 1980's. A large amount of waste water was still being disposed of untreated; water pollution leads to the danger of poisoning and epidemics by hampering the water's ability to cleanse itself.

The structural hygienic condition of smaller water treatment plants and much too sporadic rinsing of the pipeline network causes deposits to form in the pipes, where bacteria and morbific agents not only survive at high water chlorine levels, but even multiply. In this context, the "Social Report" recalls a typhus infection in Jena in 1980, whose outbreak had apparently led to intensified efforts. Apart from chemical contamination—from phenols, fluorides, pesticides, mineral oils, heavy metals and detergents—the unsatisfactory state of human waste treatment in the GDR has become dangerous. The state's hygiene inspection can clearly no longer check it in ground water and in surface water used for bathing. The "Social Report" states: "Human waste treatment plants currently catch only a very small portion of the human waste generated, they are often operating beyond capacity or are under completely inadequate supervision. The difference between the recorded amount of human waste generated and the amount removed is different among the bezirks; a 'high cover-up figure' is generally normal. Removal from weekend cottages and vacation sites presents a problem."

Similarly, details that give cause for alarm can be found in the Academy of Sciences "Social Report" concerning the environmentally harmful removal of domestic garbage, what is known here as "settlement trash." In this case it is "a lack of removal equipment," that forces it to be deposited on small garbage dumps close to towns, instead of on authorized landfills. There do not appear to be any new numbers about trash removal capacity in the GDR. The "Social Report" for 1990 repeats old ones from 1985. At that time investigation showed that there were 121 authorized landfills, 4,870 "supervised depositories," and 7,437 illegal rubbish dumps. An "Institute for the Local Economy in Dresden" has come up with an up-to-date survey of the first catagory. According to the survey, the number of authorized landfills has risen to 173, with the now certain prospect that 70 percent of them will have reached capacity by the year 2000. In the same year, 1988, the sites of "old dumps" seem to have been determined for the first time: "According to this finding, between 15,000 and 20,000 sites suspected of being old dumps must be anticipated, between 10 and 20 percent of which international experience shows represent old dumps requiring cleanup."

Concerning the relatively fully known instances of air pollution in the GDR the "Social Report" points to the important fact that its true extent can no longer be checked: as a result of the shortages of measuring equipment or its total lack. The stock of measuring equipment, which is too small anyway, for example, for automatic sulfur dioxide measurments, is in fact in arrears, because as a result of wear more pieces of equipment are taken out of service than new ones are built. The "Social Report" adds: "Monitoring of emissions is rendered extremely difficult as the result of the lack of suitable measuring devices for sulfureted hydrogen, nitrous oxides, carbon monoxide, solid particulates, and hydrocarbons." Primarily in the areas surrounding production sites of the cellulose industry, for example, the Schwarza artificial fiber combine near Suhl, in the case of carbon disulfide readings over the upper limit up to 47 times in excess of what is permissible are registered.

Noise is included in environmental pollution in the previously socialist countries much more than in Western countries. The noise generated there has different sources and a different intensity. As the condition of the streets continues to deteriorate, normal traffic noise is creating louder sounds as vehicle drive by. Similarly in the qualitatively inferior apartments in areas of new construction in the GDR the noise of extractor fans, water pumps and heating is more pronounced than in the West. The report from the Academy of Sciences points to the principal source of noise in the troubled apartments: "In spite of individual improvements, a decentralized heat supply based on brown coal creates considerable noise in the immediate vicinity." It states that the problem of "spontaneous venting of steam from steam boilers" was still unresolved due to a shortage of imports, and in the Cottbus Bezirk even old, howling aircraft jet engines were being used to blow out railcars.

Only the small and nondangerous part of noise pollution in the GDR however emerges in the environmental chapter of the "Social Report." In the chapter on working conditions there is no mention of noise that goes beyond mere nuisance. Among the nuisance factors "noise that can damage hearing" is listed first. In the year before last, 840,000 "exposed workers" suffered from it; three years before that there were 16,000 fewer. Exposed workers in the six-figure numbers are exposed to the next three factors—probably often combined: heavy physical labor (750,000), total body vibration (330,000), and chemical toxins (257,000). But among those exposed to such health risks the percentage of those exposed with a "high" health risk fell between 1985 and 1988 by one-quarter—from 3.2 to 2.4 percent—and the percentage with a "clear" health risk fell from 19.8 to 12.2 percent. But there is a difference in level in this improvement: in centrally-run industry better conditions obtain than in the locally run economy, which requires more heavy labor that is injurious to health, primarily from women. Overall, the "Social Report" describes more than one-third of all employees in production plants as being "exposed to pathogenic work factors." Every fifth workplace urgently needed alteration. Before the "change" the Central Institute for Labor in the GDR had calculated that 50 years would be needed if the current rate of speed were maintained. Now things will go faster.

Ecological Farming Methods To Protect Environment

90WN0102A East Berlin FELDWIRTSCHAFT in German May 90 pp 195-197

[Article by Prof. Dr. P. Kundler, Muencheberg Research Center for Soil Fertility, GDR Academy of Agricultural Sciences, and Prof. Dr. M. Dambroth, Institute for Crop

Cultivation and Plant Breeding, Federal Agricultural Research Institute, Braunschweig-Voelkenrode: "Fundamentals for Transition to Ecological-Economical Farming"]

[Text] Current forms of land management increasingly encounter social criticism because they are viewed as constituting a serious danger to the stability of the ecosystem in agricultural areas. This is a concern which is being voiced not only by people active outside of agriculture. Increasingly, voices within the agriculture sphere itself are being heard which question current forms of land management, they harbor doubts regarding the necessity and environmental tolerance of many measures involved in plant and livestock production. In the final analysis, this development is the result of a generally increased environmental consciousness, which no single social group may evade.

There is no doubt that agriculture with its current technologies impacts considerably upon the agricultural ecosystem. The most important of these points of impact involves soil compacting, the waterlogging and erosion of the soil, the nitrate stressing of groundwaters, the eutrophication of surface waters, the reduction in the multiplicity of plants and animals, and the clearing of the agricultural landscape.

Together with their negative social consequences, these factors tend to damage the production bases of agriculture itself, pressure arises for higher production costs, and the long-term agricultural economy is brought into question.

The essential reasons for this stress include overly high wheel loads and load pressures involving agricultural equipment, increased field sizes, too much traffic in the fields during cultivation, traffic on soil which is too wet, excessive doses of barnyard liquid fertilizer or too little organic fertilizer, as well as the imprecise and prematurely discontinued application of mineral fertilizers and plant protection agents. These agronomic errors, which result in stress upon the ecology, while they do not occur on an areawide basis, have, nevertheless, increased in volume in recent decades.

Together with their own negative influences, the natural production bases of agriculture are increasingly being damaged by industry, housing settlements, and traffic. These factors include, primarily, harmful emissions from the air, as well as the application of wastewaters and sludges containing harmful substances to agricultural land areas. It is urgently necessary to reduce this type of stress.

Agriculture cannot evade the accusation that it causes environmental stress by referring to production imperatives which determine its conduct. Society cannot be expected to become reconciled to agriculturally caused stresses. Prohibitions and regulations cannot solve the problem. It is, moreover, the task of agriculture itself to draw attention to the fact that the production imperative imposed upon it no longer reflects the ecological goals and, therefore, requires correction. Agriculture must, on its own, create the ecological stability of its production locations and must prove that it is in a position to do so. Toward this end, it must make a transition from managing the land with an overly yield-oriented and performance-increasing manner to a land management system which is more ecologically and economically balanced. This is the form of land management which is concentrated not only upon the cultivation of crops, but which takes into account the requirements of nature and environmental protection, the need to maintain the landscape; which takes into account the protection of varieties, waterways, and soils, and includes livestock production as well. Thus, ecological-economic land management has to do with efficient production of plant and livestock products to the same extent to which it is expected to protect the soils, groundwaters, surface waters, the multiplicity of varieties, and the landscape in the agrarian ecosystem.

Ecological-economic land management is identical with integrated land management. Integrated means that the totality of the agrarian ecosystem should be considered and that all measures connected with land management should be coordinated with each other in such a manner so as to serve this goal. An ecological-economic or integrated land management is a more comprehensive concept than integrated plant production or even integrated plant protection. Whereas integrated plant protection can only be regarded as a partial segment of integrated plant cultivation, the activities pulled together under the concept of integrated plant production are limited to the cultivation of crop plants and they have their limitations at the perimeter of the field. Ecological-economic or integrated land management goes beyond this. It takes account of all aspects connected with the given agricultural ecosystem. It includes the creation of contiguous field borders, the management and care of waterways, as well as questions of land utilization intensity in drinking water protection areas or in natural biotope areas. This, then, is essentially the comprehensive way in which management of the agricultural ecosystem is regarded.

A transition to an ecological-economic management of the land cannot be compelled by prohibitions or decrees applicable to agriculture. What is primarily necessary is the conviction and knowledge on the part of farmers as well as altered outlying conditions which make ecological conduct possible and demanded. Toward this end, agriculture must be liberated from the constant pressure to produce ever growing quantities of plant and animal products to secure the necessary volume of profits. In the GDR, the dismantling of foodstuffs subsidies, which promote an unhealthy high consumption, waste, and lead to high losses in foodstuffs, can eliminate the pressure for increased production quantities and can provide agriculture with the opportunity of concentrating more strongly on improving quality, on increasing efficiency, and on introducing environmentally protective technologies.

A second essential outlying condition involves the qualitative improvement of the means of production in industry as they impact on the ecological-economic management of the land. Vehicles with low ground pressures and low wheel loads, equipment designed to conserve or protect soil with the capability of planting seeds in mulch layers or in dead plant cover, machinery for the application of mineral fertilizer and plant protection agents with a high degree of precision, as well as machinery with characteristics that make possible the precise and environmentally protective application of these materials are necessary.

A third condition is a just social division of costs, because economy and ecology cannot always be created as a simple unit in agriculture. Contradictions require compromises which are borne by all of society. This is true, for example, of the management of potable water protection zones and areas where low-lying marshlands are in danger of being degraded or have already been degraded—marshlands which are widespread in the GDR.

And problems involving the continued use of large-scale livestock production facilities when their environmental protective handling in the territory is not possible also need to be named. In these and in other cases, agriculture must be restructured for ecological reasons. In cases where agriculture produces unrenounceable ecological performances to its economic detriment, but to the benefit of all of society, society should be prepared to help carry the economic burden.

The Most Important Partial Goals of an Ecological-Economic Type of Land Management

1) In the agricultural territories, proportions should be striven for between plant production, livestock production, and the processing of agricultural products which would facilitate a location-specific efficient use and permanent maintenance of natural resources. Territorially high concentrations of livestock can be mastered only at high economic cost involved in the preparation, storage, and transportation of the resulting volume of liquid barnyard fertilizer. On the other hand, a very low quantity of livestock in a territory results in problems involving the efficient supply of organic substances to the soil to assure good soil structure, good biological soil activity, and good soil nutrient dynamics. If the scope of the possible proportions between plant and livestock production is either exceeded or falls short, then an ecological-economic management of the land is placed into question.

2) On arable land, an important partial goal for ecological-economic land management is the establishment of crop rotation programs which are adapted to the natural conditions at the given locations, programs which prevent the strong concentration on individual types of crops, programs which assure a balanced relationship between types of crops from the phytosanitary standpoint and with respect to their influence upon soil fertility and partially fallow land in the interest of protecting the soil and limiting the utilization of resources to the maximum extent possible. In the interest of multifarious crop rotation, the cultivation of protein and oleaginous crops, including alternative plant varieties, is of increasing importance with respect to industrial utilization.

3) Increasing energy costs and worktime requirements, as well as increases in soil compaction and soil erosion involving the overly loosened and evenly leveled top soil, which is unprotected at its surface, speak against the conventional and intensive working of the soil with semideep and deep plows, irrespective of crop type, as well as the general use of several working passes used in preparing the seedbed. This is why the concept of a conservationist or protectionist working of the soil was developed. In this form of working the soil, plowing operations are restricted within the framework of crop rotation or plowing is not done at all. For any necessary loosening of the soil, primary use is made of tine-type cultivators. Seed and seedlings are predominantly deposited in mulch layers close to the surface, that is to say, certain quantities of plant remainders from the previous crop remain on the soil surface and protect against drying out, muddying up, and soil erosion. Field experiments have shown that the use of protectionist/conservationist soil management, in contrast to conventional intensive soil management, results in savings of about one-third of the costs, without leading to shortfalls in yields. Important prerequisites for the broad introduction of protective-conservative soil management is the use of intercrops which cover the ground rapidly and uniformly and seeding equipment which facilitates the implantation of seed material into or under the mulch layer.

4) Ecological land management includes as an additional partial goal the precise calibration of fertilization, in accordance with the ability of the soil and the crop to handle fertilization. The frequent practice of fertilizing ahead of time so as to be absolutely certain that an optimum supply of nutrients is provided under all conditions pertaining to the weather and crop development frequently results in excesses of mobile nutrients in the soil which are easily leached out and then burden the groundwater. At the same time, this results in sizable economic losses. The provision of nutrients to the soil must be optimized by matching fertilization with crops and estimating the degree of nutrient depletion accurately on the basis of the crop involved and the capability of the soil to convert the nutrients applied. It is frequently possible, by foregoing a maximum yield target, to bring in a yield which is only a few percentage points lower by saving on nitrogen fertilizer—a yield which is, however, ecologically and economically more justified. Combination organic-mineral fertilizers tend to elevate the yield levels for varying application quantities of

mineral fertilizers to a higher level. Through crop rotation, it is possible to influence the amount of fertilizer used and, in that connection, influence the danger of stressing the environment and causing economic losses.

5) Ecological-economic land management ascribes special significance to water management in the agrarian ecosystem. The goals involve the assurance of a rational agricultural production, the efficient use of natural water offerings in the form of precipitation and groundwater, the frugal use of supplemental water for necessary irrigation, as well as the prevention of nutrient and harmful agent stressing of the groundwater as well as of surface waters. This includes the rehabilitation of waterways as well as bodies of standing water and the creation of moisture biotopes in the agrarian areas which are close to nature. In their totality, these goals can only be achieved through a coordinated crop rotation, soil management, fertilization, plant protection, a soil drainage program, and an irrigation program.

6) Ecological-economic land management includes the suppression of pathogenic organisms, harmful agents and weeds (as accompanying flora on farmland), or suppression of their effects, to the extent to which this is necessary to support efficient agricultural production. As means of suppression, full use is made of crop rotation, variety selection, and soil working and the application of plant protection agents which have the best possible environmental tolerance capabilities should be pegged to ecologically and economically justified threshold values. In this regard, the application of plant protection agents is ecologically justified and economically necessary. On the other hand, the intensive prophylactic application of plant protection agents must be rejected.

7) An essential partial goal for ecological-economic land management involves the assurance of the existence of ecotypes within the agrarian landscape which are close to nature. These include quarries, ravines, small woods, field margins, protective timber strips, as well as constructed paths and ditches. For purposes of expanding these areas near to nature in the agrarian landscape, it is primarily problem fields or parts of fields the use of which as arable land is no longer viable as a result of unfavorable location conditions (dry areas, swampy areas, high stone content) which can be considered.

The above sequence is no ranking sequence. Ecological-economic land management only functions if all partial goals are realized, together with their interactions. Important scientific results pertaining to the above exist both at home and abroad. The experimental expansion of these results and the theoretical intensification is the subject of contractual work in the form of a comprehensive research project which has been in operation since 1988 by the Federal Research Institute at Braunschweig-Voelkenrode and the Research Center for Soil Fertility at Muencheberg. The results of this joint project should be reported on a continuing basis.

Leipzig Bezirk Analyzes 1989 Air Pollution Data

90WN0105A Leipzig LEIPZIGER VOLKSZEITUNG in German 17 May 90 p 3

[Article by Willi Tank: "Too Much Is Left in the Air, Because for too long Environmental Protection Has Been Left Lying on the Ground"]

[Text] "In many plants there is not much more than good intentions of doing something for environmental protection." Dieter Halbig, a member on the bezirk council for environmental protection, made this statement yesterday, which was signficant for all of us, during a press conference. Bezirk OMR [Obermedizinalrat] Chief Public Health Officer Dr. Georg Enderlein and other experts were in attendance. Trends from the 1989 annual report on air monitoring were the focus of interest.

There is no real reason for optimism, as the annual emissions data issued by the State Environmental Inspection of Leipzig show. The bottom line for the bezirk in 1989 was 225,000 tons of solid particulates, 945,000 tons of SO_2 and about 143,000 tons of nitrous oxides. It is no consolation that this is six percent less solid particulates than in 1988, because the reason for the change lies in a decreased use of fuel. The amount of SO_2 increased by 1.8 percent and nitrous oxides increased by 2.6 percent. The highestest level of pollution is in Kreis Borna, with its chemical factories, major power plants, and briquet factories (in 1989 SO_2 levels totalled 688,000 tons and about 133,000 tons of solid particulates emitted).

There is an inseparable link between environmental pollution and a nation's health. Dr. Enderlein proved that with from the 1989 annual report. Since 1974 there has been a clear increase in the number of respiratory tract ailments among children in the Espenhain region. Absences from work due to such ailments is higher in Kreis Borna than elsewhere. It has not yet been proved whether a connection exists between environmental pollution and endogenic eczemas, but the medical men do not want to exclude the idea. It is amazing that in spite of the air pollution, people in Borna and Altenburg live two years longer than those in Rostock, for example, the doctor told me.

Medical aspects of environmental protection are keeping the experts from bezirk hygiene inspection busy. Dr. Bredel described the situation as follows: Permanent levels of SO_2 in Leipzig are 10 times higher than in comparable cities in the FRG. Here we have a situation that existed 20 years ago in the Ruhr. Dr. Enderlein confirmed this. In 1989 the emissions density of SO_2 per km^3 in the GDR was 48 tons, in the Leipzig Bezirk it was 192 tons, in the city of Leipzig 570 tons, and in Kreis Borna 1,897 tons (!). The concentration of SO_2 is linked directly to health conditions. This is particularly noticeable in the case of smog. Inhabitants who suffer from asthma or bronchitis have more problems. If SO_2 concentrations exceed a certain level, the SMH [Emergency Medical Service] is summonded more often than

normal. Experience has shown air pollution levels to be low in low-pressure weather conditions.

Beyond good intentions, what still has to be done to protect the environment? Dieter Halbig's response cannot be misunderstood: In future our Leipzig area needs more attention from central offices. It is known that the government has passed an environmental program for the bezirk. The first thing should be additional deliveries of coke and natural gas. Old heating installations should be taken out of service as quickly as possible. Expanding the district heating network is essential. Only low-sulfur coal from Lausitz should be burned. The use of alternative fuels such as light heating oil or liquid gas is also important. In Leipzig especially the introduction of the catalytic converter simply has to be part of the agenda, because the consumption of gasoline is increasing incessantly What this says is that only a collaborative effort of central, regional and individual responsibility will rid Leipzig of its infamous ranking as the most environmentally polluted area There was discussion yesterday about landfills and water. Both of them get into one's nose and make one's eyes water, but the LEIZPIGER VOLKSZEITUNG will come back to the topic because our environment and the prospects for our health are involved.

HUNGARY

New Officials for Environment Committee

LD1406082290 Budapest Domestic Service in Hungarian 1800 GMT 13 Jun 90

[Text] The Environmental Protection Committee of parliament has elected a new chairman and secretary because, in accordance with the National Assembly's decision yesterday, a minister of state secretary cannot be a member of a parliamentary committee. Thus Miklos Lukacs, hitherto chairman of the Environmental Protection Committee, was released from his post and Nandor Rott was elected in his place. Mrs. Laszlo Tarjan, hitherto secretary of the committee, was replaced by Gyula Pasztor.

At the committee session, biologist Janos Vargha drew attention to new environmental protection issues such as the French proposal, according to which, in exchange for a new block built possibly in Paks, electricity would be produced there for West Europe.

POLAND

Environmental Accident, Civil Defense Inadequacies Outlined

AU2006152390 Warsaw GAZETA WYBORCZA in Polish 13-14 Jun 90 pp 4-5

[Dariusz Fedor report: "A Report on the Coming Catastrophe"]

[Text] Poland runs the risk of contamination from radioactive and toxic chemical substances. In this respect, it does not differ from other countries. There is also a high risk of a disaster occurring as a result of damage to dams. Highly developed countries possess plans for cooperation between various services in the event of an ecological catastrophe. We do not have any such plan.

Every day more than 150 tons of chlorine are transported across Bialystok in tankers. An inspection conducted by the Civil Defense Force Staff Headquarters has confirmed that Soviet chlorine transports destined for the GDR also pass through Medyka and Krakow.

Even today there is still no precise data available on contamination levels following the Chernobyl disaster. Following the recent discovery of an area in the Grodno region with excessive radioactivity levels, the Polish side, acting on a recommendation made by the Civil Defense Force, has decided to take precise readings for an area stretching from Lublin to Olsztyn.

Not one of Poland's 30 dams—as reported in PRZEGLAD OBRONY CYWILNEJ (the Civil Defense monthly and the special 1989 issue)—has an alarm system. Almost all the dams, especially those at Solina and Roznow, are in a very bad state.

Most of Poland's public disaster warning systems have been shut down, because there has been a six- to eightfold increase in the cost of maintaining them since last year.

There are 20,000 tons of ammonia stored at a facility in Grodno (18 kilometers from the Polish border).

An oversight or plain negligence could result in particularly grave contamination that would affect the entire Bialystok region. A similar quantity of ammonia has been accumulated in Wroclaw, where more than 1,000 tons of chlorine are also kept. There is also a possibility of contamination from the west: About 4,000 tons of ammonia are being kept at Schwedt, which is 8 km from the border with the GDR.

The Wloclawek nitrogen plant, which has funded excellent air contamination detection equipment for the factory and the area, does not—as we learned from the Civil Defense Force Staff Headquarters—keep a record of ammonia and chlorine (which is considered a gas warfare agent) emissions, because it does not possess the necessary equipment.

The transportation of toxic substances by road is checked only sporadically. We know that about 30 such transports cross Wroclaw daily. The figure for other voivodships is probably similar. This year it has become possible for private consumers to purchase toxic substances. This will undoubtedly result in an increase in the number of inspections. At the same time, during the first quarter of this year, it was found that about 30 percent of vehicles had technical defects, 20 percent of vehicles lacked appropriate modifications, and most drivers had received no training.

Civil Defense Force units, which were meant to be the main force for dealing with the effects of various catastrophes, were underfunded for years and did not perform their tasks. There is a shortage of equipment and units are badly trained. The Civil Defense Force Staff Headquarters has already prepared a plan for the formation of rapid response units and talks are being held with Western firms that manufacture special rescue equipment. However, the Civil Defense Force does not have any money. Expenditure on similar formations in the FRG, Switzerland, and Sweden amounts to between $40 and $50 for every citizen. In our case, the figure is about 45 cents.

Reports highlighting the appalling state of our civil defense preparations were sent to Premier Messner and to every government since then. No government has responded to them.

In 1986, following Chernobyl, a plan was to be drawn up for coordinating the activities of the Civil Defense Force, the militia, the military, and the health service in the event of a catastrophe or natural disaster. It has still not been drawn up. The one law on dealing with the effects of accidents involving the transportation of toxic substances on land was abolished in 1988.

Since then, the action that is taken when similar accidents occur is based on goodwill and not on any legal regulations.

People at Civil Defense Force Staff Headquarters say that following Chernobyl, Poles became aware of the dangers that exist, but apart from there being a feeling of consternation nothing happened. There would have to be another such catastrophe, before a real system for protecting the population comes into being....

Foreign Help Sought To Cut Power Plant Emissions

PM2206110290 Lodz GLOS PORANNY in Polish 18 Jun 90 pp 1-2

[Article signed MAR: "Chance to Desulfurize Belchatow Power Station"]

[Text] It is a well-known truth that pollution is no respecter of state borders, especially when it comes to air and water contamination. It is also well known that Poland is one of Europe's largest "manufacturers" of pollutants and that it "exports" a large proportion of them. Consequently, it is not surprising that even countries some distance away from us want this "production" reduced.

Sulfur compounds are among the most harmful chemicals released into the air through factory chimneys. Polish heat and power generating plants and power plants emit particularly large volumes of these because they lack facilities for desufurizing waste gases. And the Belchatow Power Plant is the largest of them all: it burns lignite which contains O.67 percent of sulfur; it is responsible for releasing into the atmosphere one-fifth of the total volume of the sulfur dioxide escaping from chimneys the length and breadth of our country; and it "exports" some 65 percent of its "output" of sulfur compounds.

Can the Belchatow Power Plant afford to install a waste gas desulfurization system? Can it count on help from abroad?

Systems for efficient desufurization of waste gases based on the so-called wet process are well known and widely used in the world. However, they are very expensive. It would cost $35-40 million to install such equipment for a single power unit at the Belchatow Power Plant. Needless to say, the station is unable to face such expenditure on its own.

Fortunately, however, an opportunity has arisen to obtain help from abroad: The Dutch have offered us 60 million guilders to help reduce the emission of sulfur dioxide into the atmosphere, and Belchatow could stand to receive at least a portion of that amount. We could also take advantage of the know-how and experience of the Netherlands company, ESTS: the sulfur removal plant developed by the company for the Amer Power Plant and installed there two years ago successfully absorbs 92 percent of the sulfur dioxide released by the plant.

The Warsaw-based Energoprojekt Research and Development Office is currently putting the finishing touches to the technical and economic analysis of an installation of this type of anti-pollution system at the Belchatow Power Plant. Preparatory work is also under way at the plant itself, with a view to installing the system before the end of this year and obtaining the first results in 1994. Will these projects prove successful? We can only hope that the Dutch will keep their word. After all, 12

percent of the winds which sweep over their territory come from the East, bringing Polish sulfur, among other things, along with them.

Three Coal Mines To Close Down

AU1306125690 Warsaw GAZETA WYBORCZA in Polish 8 Jun 90 p 2

['rs' report: "No More Coal From Walbrzych"]

[Text] Three coal mines in the Walbrzych coal basin are due to be closed. The cost of this operation will be 4.5 trillion zlotys [Z]. This decision was made by the minister of industry at the end of May, following the publication of a report by three teams of experts and talks with the affected mines. Some 164 million tonnes of coal, worth between Z23 and Z25 trillion, will remain underground.

Only the "Nowa Ruda" mine has any chance of solvency. Between January and April 1990, this mine reduced its costs of extraction from Z622,000 to Z422,000 per tonne, and plans to reduce them further to about Z400,000 per tonne.

Coal extraction in the three mines, "Thorez," "Victoria," and "Walbrzych," costs between Z587,000 and Z685,000 per tonne. The state budget provides from Z411,900 to Z528,000 in subsidy to each tonne of coal extracted from these mines.

The cost of closing them down is five times higher than the value of their assets. The "Kopernik" seam, which has been worked since 1982 at a cost of over Z20 billion, is useless. It has to be covered up and sealed with concrete so that it does not endanger its surroundings. This will cost Z210 billion.

Within five years of closing the mines, it will be necessary to pay around Z7 billion per year as compensation for the damage caused by mining. Of the 16,000 people made redundant, 10,000 will receive other jobs in the restructured industry, but new jobs will have to be created for the remaining 6,000.

In the opinion of experts, the restructuring should be preceded by a report on the state of the environment in Walbrzych Voivodship. A bank for restructuring will also be set up. A special economic zone will be created, to facilitate economic restructuring.

Pollution in Upper Silesia: Effects On Children Examined

90WN0112A Vienna PROFIL in German 23 Apr 90 pp 78-83

[Article by Burgi Czeitschner: "Where Babies Have To Die"]

[Text] Poland in figures:

- Surface area: 312,677 km^2, 34 percent of which is forested (one-third of which is damaged)
- Upper Silesia: 2,370 km^2 (the entire forested area—200,000 hectares—is sick)
- Population: 38.3 million (Upper Silesia: 2.5 million)
- Warsaw: 1.6 million (Katowice: 363,000)
- Urban population: 60 percent
- Per capita SO_2 emissions: 130 kg per year (Austria: 25 kg)
- Sulfur exports to Austria: 17,000 metric tons
- Per capita nitrous oxide emissions: 56 kg per year (Austria: 32 kg)
- Life expectancy at birth: 66.8 years (men), 75 years (women)
- Mortality rate in 1987 (deaths per 1,000 inhaibitants): 9.8 (Austria: 11.0)
- Infant mortality in 1987 (per 1,000 live births): 17.4 (Austria: 9.8)

The discussion at the rectory of the Upper Silesian parish of Miasteczko Slaskie is having trouble getting underway. Through the window can be seen the enormous smokestacks of the local lead and zinc plant that have been belching smoke since 1964. The Polish Pope looks down over the shoulder of the taciturn priest—from an oil painting on the wall. Father Pawel Laby suddenly takes a deep breath and picks up a thick, large, brown ledger: the death registry of his parish of 3,000 souls. He begins to count: "1964: 22 deaths. Some 10 years later: 37 deaths, six of which were cancer cases. 1978: 40, of which five were childern (2 stillbirths, 1 oxygen defficiency, 1 premature birth). 1982: 50 deaths, again including five children and nine deaths from cancer. During the previous year 63 people died, as many as 19 of them from cancer."

Pawel Laby shuts the death registry: "It is obvious that the smelting plant is poisoning the people. It is difficult, however, to explain to those people that a human being is more important than production." His intercession with factory management in opposition to the incessant menace of the unfiltered poison time bombs have availed little thus far, though the oldest part of the installation, which is among Poland's largest, was shut down last year. "For economic reasons" the priest explains, "not because of the danger to people."

Jan Makiela, the technical director of "Huta Cynku," apparently passed his public relations course with flying colors: "We have the most modern technology. Our gaseous emissions are within the norm—only in the case of lead are threshold values exceeded." Nonetheless, again this year his combine had to pay the annual "fine" to the populace of Miasteczko Slaskie. The people of the area are "compensated" for the continuous rain of pollutants from the lead smelter with about the equivalent of 300 Austrian schillings. One single resident refuses this money: Father Laby, whose garden is located at the edge of the "dead zone" of Miasteczko Slaskie.

The ordinary workers in the lead smelter earn no more than 800,000 zloty per month on average. According to the present exchange rate, that is about 1,000 Austrian schillings. Supplemental family allowances are already

included in this amount. Only people who work on weekends or nights on the four-shift system can reach 1 million zloty per month. The women who work in the smelter earn half as much as the men at most—equal rights for women, communist style—which the new Solidarity works council chairman thinks is just fine: "What is unjust about that?"

In the hospital at Gliwice, 25 km from Miasteczko Slaskie, there is harmony between the sexes. There are only cancer patients here, distributed throughout four floors. The hospital has long been too small. The patients have to lie in rooms with eight beds. Krzysztof Rytwinski, the oncology infirmary's surgeon, looks at the skeleton of a building outside his window: "The new hospital was supposed to have been finished two years ago. Construction had to be interrupted, however, because there was a lack of money." In the meantime, the skeleton is ready to be torn down—wind and weather have almost destroyed it already.

The surgeon, who can look back on 25 years of experience in his profession but must still get along without a telephone at home, has been observing for some years a "dramatic rise in tumor diseases." Krysztof Rytwinski cites the dust which is full of pollutants of every kind as one of the most critical carcinogens. "According to the WHO (World Health Organization), the norm is 22 micrograms per cubic meter. In Gliwice we have an average of 212, and in Katowice it is 208 micrograms." The doctor also cites extreme values for the carcinogen benzoapyren (a polycyclic hydrocarbon). The norm is 10 nanograms per cubic meter—in Gliwice the readings are 92, and in Katowice 98 nanograms.

Katowice, Bytom, Gliwice, Chorzow, Zabrze—Kattowitz, Beuthen, Gleiwitz, Koenigshuette, Hindenburg. The former Upper Silesian industrial region is called Gornoslaski Okreg Przemyslowy (GOP). Some 98 percent of Polish hard coal is mined within these 2,370 square kilometers (approximately half the area of the Ruhr). Every year nearly 200 million metric tons of coal is mined—mostly underground.

A living room in Katowice, 11th floor, a view of this city's out-sized independence monument. It is shortly after 2000. Borscht has just been served, and the plates on the dining table suddenly begin to rattle. What causes the guest from Austria to freeze as if he were in an earthquake, is a part of daily life here. "Those are the underground coal pit holes, they simply collapse all the time. A reading of five on the Richter scale is quite normal here" the man of the house explains placidly, enjoying his soup.

In Gorny Slask—Black Silesia—there are 3,000 industrial installations. There are presently 60 coal and nonferrous metal mines in operation, and in addition, there are 18 iron and steel foundries, seven nonferrous metals plants, eight large-scale and 40 industrial power plants, 30 chemical plants, and 80 machine construction works. One-half of Polish steel and half of the country's energy is produced here, and almost 20 percent of all of Poland's industrial products come from the GOP. "Here the technically-interested tourist can experience the blast furnaces, the belching smokestacks, and the factory milieau, or watch the steel being tapped" it says in the Polyglot Travel Guide, 13th Edition, Munich 1989/90. Teutomania instead of any reference to the truly breathtaking pollution of the environment of this region: "The visitors to Upper Silesia will encounter the unique dialect here with its many German loan-words, as well as the old traditions, costumes, and songs."

Whoever travels through Upper Silesia paying attention to the environment will learn that more than one-third of the total particulate emissions in Poland are let into the air around Katowice. Some 40 percent of this country's gaseous emissions come from the GOP, as well as 60 percent of its industrial waste—almost entirely highly toxic special waste which needs to be monitored.

Irina Norska-Borowka knows what that means for the nearly 2.5 million people who have to live in the Polish industrial heartland. For more than 20 years the director of the children's clinic in Zabrze has been observing the effects of environmental pollution. The physician does not mince words: "The mortality rate of people in general—and above all that of the children—is closely related to the ecological disaster that the communists have given us over the past decades. The polluting of the air, the soil, and the water exceeds the norm. Approximately 1.5 million people live here under health-threatening conditions."

In Katowice Province, 24 babies out of 1,000 die during the first year of life—in Sweden, the figure is six. The rate of premature births is around 20 percent (in comparison: in the Most region of northern Bohemia it amounts to 12 percent), and every fifth child is born already sick—often enough with the most serious handicaps. Only 60 percent of the handicapped babies survive the first three months of life. The rest have to die because their respiratory tracts are defective or because they were born in an extremely anemic state or with rickets. The physician comments on her statistics: "There are no really healthy children here—every child is carrying around a burden of pollutants that you cannot even imagine. Sometimes you just shudder."

In Zabrze, where all the readings are highest, every second child is suffering from a chronic illness and is experiencing developmental problems. More than 60 percent of the six-year-olds are ill; in the group of 10-year-olds, over 70 percent are quite ill, and nearly 60 percent of the 14-year-olds require medical attention. Half of the 18-year-olds of Zabrze are ill or at risk. In Katowice Province there are more than 35,000 children who already either have chronic problems or must be regarded as patients at risk. More than one-third of these children suffer from irreversible damage to the locomotor system, as well as from permanent illness of the nose, throat, and respiratory passages. Nearly 50,000 children have psychomotor disturbances.

Last year the teeth of 266 children were examined at the Zabrze children's clinic: The concentrations of lead, cadmium, zinc, copper, and manganese exceeds all norms, according to the physician. Worrisome too, is the increase in the incidence of diabetes among this region's youth: "Every year there are at least 70 new cases of diabetes."

The serious pollution of the environment also has an effect on the adults. Apart from the fact that every pregnancy in Upper Silesia becomes a risk for mother and child as early as the third month, more and more people have to die earlier and earlier. Irina Norska-Borowka ums up her working conditions: "We have too few doctors, too few beds, and too few medicines. We have more than enough patients, and their numbers are ever growing."

Bernard Blaszczyk, director of the Katowice Province Environmental Affairs Office, shrugs his shoulders. In an almost apologetic tone he says: "We have only attained four percent thus far. More is not possible yet." What does he mean by that? Attempts have been under way for a year in the Katowice area to reduce the emissions of sulfur dioxide, heavy metals, and hydrocarbons—for the first time. In contrast to North Bohemia in Czechoslovakia, there is a whole series of international aid offers to at least make initial attempts to get the enormous burden of pollution under control in the Upper Silesian industrial area. Sweden, in particular, has made strong commitments to the GOP because Upper Silesia is precisely the location where most of its pollution originates. Last October the government in Stockholm voted to promote environmental protection in Upper Silesia with the equivalent of 700 million Austrian schillings. Finland as well has offered the Poles an assistance package of 420 million schillings. About $30 million will be pumped by Washington into environmental projects around Katowice in the near future, and the Federal Republic of Germany has also held out the prospect of an extensive aid program. Unvarnished data concerning the state of Upper Silesia's ecology have also been available since the founding of the Swedish-Polish Association for Environmental Protection.

For some weeks now there have been regular demonstrations in Zabrze against the largest coking plant in the town. "The Makoszowy must be closed" says Krzysztof Dziadak of the local branch of Solidarity. Hundreds applaud. Even Bronislaw Kaminski, the minister for environmental protection from Warsaw, takes the view that the most dangerous environmental time bombs must be shut down. The decision to do so, however, is up to the minister of industry. Thus, the "Makoszowy" coking plant will be able to continue to spew its unfiltered filth into air, and the coal pit belonging to it will not stop polluting the environment either. The Upper Silesian coal pits foul the surrounding rivers with 6,800 tons of salt daily. In addition, there is the untreated waste water of the other industrial installations. Tadeusz Przybylski of Krakow University on the subject of Upper Silesia: "An ecological disaster area. Even Upper Silesia's entire forest area—and that is 200,000 hectares, after all—is sick, and one-third of it is already dead."

At present, work is under way in both Stockholm and West Berlin on the development of a detailed relief program for Upper Silesia containing the following points of emphasis:

- Reduction of air pollution by reducing SO_2 emissions. Technology transfer should afford relief in this instance.
- Install power-heat hookups. In order to reduce emissions from home heating sources, housing units are to be heated with the waste heat from the power plants.
- Connect up the southern Polish industrial area to the Soviet-West European natural gas line (the pipeline runs past Upper Silesia but thus far no thought has been given to a tap-in).
- Building municipal and industrial water treatment installations.
- Assistance with waste disposal management.

Zdzislaw Madrowicz from Zabrze remains skeptical: "It is well known that paper does not blush. You see how things are with us." The miner, who is disabled and can only work half-days in an office of his smelting plant, presumably is not unjustified in seeing things pessimistically. His country's problems are truly gigantic. Just the cleanup of the Vistula River alone, which gets a large share of its pollution from Upper Silesia, is estimated at 120 billion schillings. Merely to clean up this river, the construction of 820 purification plants would be necessary. In comparison to that, the cleanup of the Baltic Sea would be an outright bargain. Experts have calculated that to keep the Polish Baltic Sea coast clean, "only" 513 purification plants with a capacity of 1.85 million cubic meters of waste water per day would have to be set up in the country—equivalent to a financial expenditure of 2.6 billion schillings.

"Just the license for a desulfurization installation in one of Upper Silesia's big stinkers costs 560 million schillings" calculates Jonas Nycander of the Swedish-Polish Association for Environmental Protection on his portable computer. A few kilometers from the Swedish environmental engineer's office in Katowice, an assistant physician at the children's clinic in Zabrze cautiously opens a package from Stockholm: "Medicine for our children. You do not know what this parcel means for us. Our hospital can only afford the absolute essentials."

[Box p. 81]

The Children of Chorzow

The Katowice-Bytom superhighway. Four lanes in each direction. To the right and the left the calling cards of communist urban planners: Prefab houses—kilometer after kilometer of them. Monotonous, joyless, grotesque.

Suddenly, four huge smokestacks appear on the horizon. Chorzow Steel Works—about 15 km outside of Katowice.

A strange spectacle. Imagine steel being produced on the open street in the middle of Linz! In Chorzow, where you can actually see the steel workers at their jobs from the sidewalk, the smokestacks have been belching for 35 years. Around the clock the dirt is being poured out into the air unfiltered. In the shadow of the four gigantic chimneys there is an inconspicuous building complex. What might formerly have been yellow now appears to be dirty gray housepaint. The children's hospital of Chorzow.

Anna Kasznia-Kocot, the medical director, is just coming out of the operating room. "A very routine tonsilectomy for a change" she says smiling amiably and inviting us on a tour. In the first room, right next to the door, a crib. A 14-year-old boy is dozing away. "Hydrocephalus" explains the physician who must perform at least four operations a day. The boy with hydrocephalus wakes up and begins to cry. Two beds further, the next child with hydrocephalus. "The environmental pollution causes many genetic changes. Added to that is the high consumption of alcohol of the people here and the poor nutrition. Most malformations, however, are the fault of the environmental conditions."

In the next room a two-year-old boy is just being prepared for an operation. He has a protuberance on his back which constantly becomes inflamed. He has been in the hospital for a week. No one comes to visit him—his mother has to work and his father is in the hospital at Gliwice with stomach cancer. In another room, two girls: five-year-old Mariana has a serious defect of the cardiac valve; three-year-old Elzbieta, it is hoped, will soon be able to move the fingers of her right hand. Until yesterday's operation, her fingers were grown together. Next to Elzbieta a tot of one and one-half years whose members are growing in the wrong direction. The physician, who is known throughout the country for her skill, explains: "We do not know yet whether we can operate. The child is in very critical condition."

The horror-visit lasts one and one-half hours. Upon leaving the hospital, it appears that another load of coal has been laid on in the steel mill opposite. Enormous brownish-yellow plumes of smoke are billowing from all four smokestacks. Every year 1,000 children are born in Chorzow.

[Box p. 83]

Rain as an Accomplice

Room 403 in the Hotel Katowice. A bed, a table, a chair. As a sign of special "comfort": a hidden heating unit. Glowingly warm walls, even during the night—which is why the window is opened before going to sleep. The (unaccostumed) noise outside is blocked out of the mind with relaxation techniques: "I am very calm, the room is quiet," and so on. Raindrops clatter on the metal-clad window sill. A glance at the alarm clock: 0310. Relaxation techniques again to get back to sleep: "I am very calm, the rain does not disturb me," and so on.

Suddenly, a strange smell in the room. Pungent, penetrating. As in a nightmare, a billow of smoke comes in through the open window and fills the so-called hotel room with an intense sufurous stench. Out of the bed then and shut the window and open and close the door until the worst of the stink has gone. Another glance at the alarm clock: 0335. An electronic beeping ends this restless night four hours later.

At breakfast then (which you can usually wait more than a half hour for in the Hotel Katowice, but in exchange you get to watch the breakfast baked goods getting older morning after morning) comes the explanation for the nocturnal apparition: When it rains, the factory smokestacks are always cleaned out in Katowice (and not only there). That way, the rain is made an accomplice—it drives to the ground the flue ash that otherwise would swirl about in the air. For years they have been saving expensive filter installations this way in the Upper Silesian industrial complex.

Whoever drove his car that morning in Katowice, had to first scrape off his windows. Instead of snow, a blackish-gray slime stuck to the windshield wipers. The rain lasted too briefly to wash away the traces of that night's "cleaning."

Demonstrators Protest Zarnowiec Nuclear Plant Construction

LD1206194790 Warsaw PAP in English 1744 GMT 12 Jun 90

[Text] Gdansk, June 12—The Agreement for Alternative Energy staged a demonstration against the construction of the "Zarnowiec" Nuclear Plant on the streets of Gdansk today [12 June].

Participants in the demonstration protested against the idea to create an international consortium, chiefly formed by French and Belgian enterprises, which would finish the construction of the "Zarnowiec" Nuclear Plant.

Anti-Nuclear Greens Picket French Consulate in Krakow

LD1206223890 Warsaw PAP in English 2013 GMT 12 Jun 90

[Text] Krakow, June 12—A group of the Krakow signatories to an anti-atomic agreement: members of the "Wolnosc i Pokoj" (Freedom and Peace) movement and Federation of Greens staged today a picket in front of the French consulate here.

The protestors relayed to the French general consul an open letter in which they protested the French assistance to the Polish atomic industry, especially attempts to

transfer French nuclear technology to the power plant in Zarnowiec (northern Poland).

ROMANIA

New Environmental Protection Law Being Formulated

AU2606084890 Bucharest ROMPRES in English 0745 GMT 26 Jun 90

[Text] Bucharest ROMPRES, 26/6/1990—A new environment protection law is in the making as part of a concerted effort to cut down on pollution. Private and group initiative to promote non-polluting technologies coupled with waste water treatment and exhaust gas processing, as well as the use of residual heat are all given careful consideration. The "He who pollutes he should pay" principle is strongly upheld since it is assumed that it is easier to put ecologically-safe technologies to work than to redress the damage done by pollution. Provisions are made that take into account the gradual, if quick transition of the economy to the free market and to privatization. At the same time, Romania's integration in Europe is duly considered from economic, social and ecological points of view when it commits itself to safeguard the most precious thing on earth: life in all its forms.

YUGOSLAVIA

World Bank Grants $1 Billion Ecological Credit

LD2006154890 Belgrade TANJUG in English 1450 GMT 20 Jun 90

[Text] Belgrade, June 20 (TANJUG)—The World Bank will grant Yugoslavia a one-billion-dollar credit for ecological purposes, one half of the sum needed to realize an environment protection project, provided that it also be of interest to the neighbouring countries and that Yugoslavia invest one billion dollars on its part.

This was said at a press conference in the Federal Secretariat for Development in Belgrade on Wednesday, at which the newsmen were informed about the results of a World Bank mission's several-day visit to Yugoslavia.

The credit would be granted on a 15-year period, with a possible five-year grace period, and with a 7.75 percent interest rate, it was said.

The priorities of the Yugoslav environment protection project include the protection of the Adriatic Sea and waterways, and the securing of water supply in the basins of the rivers Sava, Mura, Drava, Sana, Una and Bosna in northern and central Yugoslavia, as well as the protection of some industrial zones.

So far, Yugoslavia has also developed cooperation in this area with Japan, the United States and West Germany.

BRAZIL

Growing Amazon Forest Destruction Reported

PY2606004890 Brasilia Domestic Service in Portuguese 2200 GMT 25 Jun 90

[Text] Speaking at the opening session of the Sixth Brazilian remote sensing symposium being held in Manaus, Science and Technology Secretary Jose Goldemberg warned that the destruction of the Amazon forest has increased.

Goldemberg said that, based on information gathered by the national institute of space research [INPE], 404,000 sq km of forests have been destroyed in the region.

He reported that some mathematical corrections had to be considered in order to estimate the exact forest area that was destroyed last year. According to the estimate, 30,000 sq km of forests were destroyed between 1988 and 1989.

Goldemberg said that the new method of calculation, which has been specially designed by the INPE, has provided accurate results. He said that the calculation work took two months and cost approximately $300,000.

He added that 167 satellite pictures that were taken this year were compared with 101 photos taken in 1988, and with 128 photos that were used as background [words indistinct] in 1989.

The symposium is being attended by more than 500 scientists from 15 countries. Simultaneously, an international symposium on the procurement of basic data on the Amazon is being held.

Deforestation Linked to Increase in Leishmaniasis

PY2506154290 Brasilia Radio Nacional da Amazonia Network in Portuguese 1000 GMT 25 Jun 90

[Text] Uncontrolled deforestation is causing an increase in the skin disease called leishmaniasis, which is transmitted by phlebotomus insects commonly known by the name of asa de palha [straw wings].

According to the Leishmaniasis Research Laboratory of Minas Gerais, 49 cases of leishmaniasis were reported between October 1988 and October 1989; 50 percent of the patients live in residences located on the outskirts of Belo Horizonte. Dr. (Valeria Maria de Oliveira), a research team member, believes the insects that transmit leishmaniasis are currently in the process of adjusting to city life after having been expelled from the jungle by indiscriminate deforestation.

Policies, Personality of Environment Secretary Profiled

90WN0116A Sao Paulo VEJA inPortuguese 9 May 90 pp 34-35

[Text] Secretary of Environment Jose Antonio Lutzenberger is President Fernando Collor's green thumb kid. The secretary has spent 20 of the first 51 days of his term outside the four walls of his office, most of them touring other countries as an ecological activist. He spent 15 days in the United States, where he attended two conferences that actually took up only two days. However, he kept busy in his spare time. He paid a call on the World Bank, where he asked for a loan for Ibama, the Brazilian Institute on the Environment, and he contacted colleagues and spokesmen for the environmentalist movement. He visited city parks in the company of friends and spent a weekend as a guest of a farmer who practices organic agriculture, taking advantage of the occasion to criticize American scientific methods. On his return to Brazil, however, he shifted gears. Instead of flying to Brasilia, he landed in Porto Alegre, his birthplace, where he spent the Labor Day holiday. On Wednesday he started working on his private affairs and enjoyed a period of relaxation. Wednesday morning he visited an exhibit of paintings by his father Jose Lutzenberger, the late architect and artist of regional renown. In the afternoon, he went to check personally on the progress of the environmental control work his company is doing at the Riocell cellulose factory, for which he does consulting work, and made a reservation for a flight back to his government job—but not until this Monday when, it is assumed—he will arrive in Brasilia.

During his tour of the United States, Lutzenberger demonstrated the reasons for his international reputation. Invited to serve by President Collor because of his standing as an authority on ecology, he moved easily among officials in the field and gave a speech at a White House conference attended by President George Bush. He was so well received that he was invited to the opening session of a second conference last week, one sponsored by the Senate. He pleased his audience because his message is the same as it was in the days when he used to declare himself an enemy of the authorities in matters of ecology. The difference is that back then he was not receiving a taxpayer-funded salary for doing so. And since the U.S. Government, at least beyond its own borders, acts like a powerful ecological activist, there is nothing better than finding another such figure installed in the government of a foreign country. During his speeches in Washington, Lutzenberger tried to make himself the ecological ambassador of his ideas, but in practice he played the same old role—that of herald of the Apocalypse.

A Planet Without Oceans

At the conference sponsored by the U.S. Senate, Lutzenberger gave a speech that attracted attention more for the extreme ideas on the future of humanity on this planet than for the technical precision of his statements. Among

the futuristic predictions made by the secretary is that Earth may become a planet without oceans as a result of the greenhouse effect, the overheating caused by excessive pollution. "All this could become a desert and as barren as the planet Venus," he said. We do not know what the beaches of Venus looked like before the oceans disappeared, but you cannot find two scientists who would agree with each other as to the destructive potential of the greenhouse effect. There is tremendous controversy with respect to that phenomenon and what must be done to retard it. The greenhouse effect is responsible for the existence of life on Earth. Otherwise, Earth would look like Mars—rocky and frozen. Another of the secretary's predictions is that along about the years 2020 and 2030 humanity will be squeezed together on the streets by a traffic volume of three billion cars, if the economic development plans of the wealthy nations remain unchanged. This calculation, like so many others, is a projection made on the basis of current figures left wide open to speculation. Using similar reasoning, one could predict that 200 years from now all human beings living today will be in the cemetery after having died of old age. Even so, no sensible people would conclude that there will be no one left on earth by then. All indications are that by the year 2030 cars will be powered by hydrogen—or some other clean fuel—and will be much less of a problem than the secretary anticipates. BMW and Mercedes-Benz are already testing prototypes of hydrogen cars in Germany.

In his addresses, Lutzenberger criticized the statement by economist Julian Simon, for whom humanity's ultimate recourse is the human brain. "That is an extreme example of the alienation of the economists," the secretary said. Simon was referring to the fact that the human brain is able to transform an inert and abundant mineral like silicon, for example, into a computer component—and, theoretically, even to colonize Venus or Mars should Earth become uninhabitable. Lutzenberger terms Simon's idea utilitarian, and belittles intelligence as a force by which to transform the planet. He compared development to a child who does not stop growing even after reaching adulthood, until he becomes a giant. "Even in countries where the land in the cities is already densely occupied, economists and government officials always want to build more factories, airports, roads, and bridges," he said.

When he finished his speech last week, Lutzenberger was enthusiastically applauded by representatives of more than 40 countries. He was the ideal spokesman for the industrialized countries desirous of cleansing themselves of their sense of guilt concerning ecology. People listen to and fawn upon Lutzenberger, but everyone knows that the real consequences of what he says are nil. Only one group in the audience at last week's U.S. Senate conference was worried about the threats raised by Lutzenberger: Brazilian legislators invited to the meeting. They kept busy trying to prevent the secretary from saying anything that might commit this country to something it would find impossible to fulfill. One of the legislators sought out Lutzenberger before the conference, after having read the prepared text of his speech, and managed to persuade him not to include a passage in which he accused Brazil of promoting the genocide of the Indians. "Fortunately, he left that part out," the legislator said. Among those Brazilians in attendance, Lutzenberger's address provoked a different kind of reaction. "He sounded like a religious leader," complained Senator Jarbas Passarinho (PDS-PA) [Social Democratic Party-Para State]. "He is more of a philosopher than an administrator," said American ecologist Barbara Bramble, a personal friend who accompanied Lutzenberger during his stay in the United States. "You can hire an administrator to implement what the philosopher thinks, but the reverse never works out."

An ill-tempered man, arrogant and given to self-promotion, the secretary does not like to give interviews to the Brazilian press. He prefers to deal with foreign journalists, whom he considers to be more specialized. During his visit to Washington, he had dinner with Thomas Lovejoy, director of the Smithsonian Institution, an organization that backs ecological movements all over the world with generous grants and, in Brazil, extends that largesse to legislators such as Sao Paulo Deputy Fabio Feldmann. Lutzenberger prefers to speak in German or English. He is frugal in his habits, and goes around in worn-out clothes, with hair that is badly in need of a trim. In Washington he paraded about with a large ring of keys hanging from his belt, as if he were staying in some fortress. After the end of the White House conference, which entitled him to occupy a suite at the luxurious J.W. Marriott Hotel where the $224 daily tariff was paid by the White House, he moved to the modest Windsor Inn, priced at $69 a night. Since the hotel had no elevator, the secretary set up housekeeping on the ground floor so as not to have to climb stairs. He shared the room with his daughter Lara, his personal assistant and manager of his informal office, to whom he speaks only German or English.

Lemon Verbena

The secretary is full of little obsessions. At his meetings with American officials he took down figures and information on little scraps of paper because, for ecological reasons, he hates to waste paper. In his office in Brasilia he has substituted lemon verbena tea for the traditional demitasse of espresso coffee. He has removed the air conditioner and usually works with the windows open, dressed in sport shirt, jeans, and tennis shoes. He puts on a suit only for audiences with President Fernando Collor. When in Brasilia, Lutzenberger arrives at the office at 0800, goes out to lunch promptly at noon, and leaves work at 1800. Before lunch he usually takes a walk on the department grounds in the company of another adviser. One of the stories circulating around his agency is that Lutzenberger had argued with the gardener because he did not want pesticides used against the ants, nor will he allow the grass to be cut. He is also said to be behind the

idea that workers should stop cleaning the pond in front of the Itamaraty building so that a perfect ecosystem can develop in the water.

The secretary does not like Brasilia—he thinks everything is too far away, and he has not found a restaurant that he likes. For the time being he is living in a hotel, but since he hates the thought of living in an apartment he is considering occupying the residence of the administrator of the Brasilia National Park, which is situated in the middle of a forest. Back in Porto Alegre last week, he finally turned his attention to work. On Thursday he telephoned Minister of the Economy Zelia Cardoso de Mello to complain about the lack of funds and the fact that the personnel in his department had not received their paychecks for two months. Once back in Brasilia, he is likely to spend only a short time on the job. On 15 May Lutzenberger will take off again, this time for Norway, where he will attend a preparatory meeting for a 1992 UN conference.

Institute Asks Police To Protect Environmentalists

PY1306012890 Brasilia Domestic Service in Portuguese 2200 GMT 12 Jun 90

[By (Nasibrum) Jr., from the Brazilian Institute of Environmental Affairs (IBAMA)]

[Text] IBAMA President (Tania Munhoalf) wants the Federal Police to protect (Osmarino Amancio), the successor of Chico Mendes [an environmentalist leader who was murdered in northern Brazil]. She is also asking for protection for (Marcio Moscatelli), the Angra dos Reis Municipality planning adviser. The two environmentalists have received death threats.

(Osmarino Amancio), a brother of Chico Mendes, received a death threat in Acre State and he could be removed from the state by environmentalists.

(Marcio Moscatelli) received death threats after he reported about the destruction of the Angra dos Reis mangroves.

A petition for the protection of the environmentalists was filed last week with the Justice Ministry by 28 environmentalist entities that issued a communique, denouncing the impunity of the murderers of Chico Mendes and the death threats received by other ecologists.

CHILE

Toxic Waste Dump in Antofagasta Revealed

PY2106021290 Santiago Radio Cooperativa Network in Spanish 2300 GMT 20 Jun 90

[Relay from Antofagasta by Fernando Stockner]

[Text] The Antofagasta branch of the Flora and Fauna National Defense Committee [CODEFF] has revealed the existence of a toxic waste dump in a desert area near the city of Antofagasta. Regional authorities have admitted that the establishment of the dump was authorized 10 years ago.

According to CODEFF, the dump is located on kilometer 1325 of northern highway No. 5, 40 km south of Antofagasta. The dump consists of a pit located 700 km south of the Panamerican Highway and has no signs indicating what it is.

The dump occupies one hectare and one of its pits is currently being used. It seems that others have already been sealed. According to CODEFF, the pit is 100 square meters big and the transparent red liquid it contains is 60 centimeters from the surface.

(Guillermo Sublev), member of the CODEFF Antofagasta branch, has revealed that Reactive Agents for Floating, Incorporated [Reactivo de Flotacion, S.A.], a Shell subsidiary, was authorized by the Antofagasta Health Service to establish this dump on 30 October 1980.

(Sublev) added that official organizations have managed to establish that the aforementioned enterprise unloaded three shipments per week of 45 tons of toxic waste. This means that a total of 23,400 tons of chemical waste have been dumped in this area.

When asked about the impact it could have on the environment, (Sublev) said:

[Begin (Sublev) recording] What we want to do is stop the dumping of toxic waste in that area. No permeability study or any other type of study has been made to determine if it is an adequate site to dump toxic waste. We fear that the amount of toxic waste dumped in the area has surpassed the admitted amount since the soil in the area percolates well. [end recording]

(Sublev) added that although there are no people living in the area, nor are there any buildings, this area is regarded as a potential area for development in the future.

On his part, Regional Health Ministry Secretary (Mario Desmier), confirmed that the Shell Float Enterprise had been authorized to establish this dump. He also admitted that it was used twice to dump oil from vessels that had anchored in Antofagasta.

Investigation Into Toxic Waste Dump Announced

PY2206031590 Santiago Radio Cooperativa Network in Spanish 2300 GMT 21 Jun 90

[Relay from Antofagasta by Fernando Stockner]

[Excerpt] Regional Health Ministry Secretary (Mario Desmier) has announced that an investigation will be

carried out to determine the degree of toxicity of the chemical waste that has been dumped south of Antofagasta.

(Desmier) said that the pit, which was authorized by the regional health service in 1980, is still being used. According to the authorization, the company [Reactive Agents for Floating, Inc.] was allowed to dump some 100 to 150 cubic meters per month at the site. (Desmier) said that the regional National Resources Ministry Secretariat had leased this site after receiving a report from the health service's Environment Department.

He explained, however, that if the department determines that the waste is highly toxic or that it has filtered into various areas, where it will be difficult to neutralize its effects, this dump will be closed.

(Desmier) explained that the enterprise would have to build an impermeable pool to store its waste or build a [words indistinct]. There will be an official report in two weeks, said (Desmier).

Antofagasta Health Service Director (Manuel Samorano) visited the pit with officials and members of the Environment Department. He said that they do not believe the problem is as serious as some have depicted. "It is a less harmful way of storing waste," he said, "but if anyone has a better idea we are open to suggestions." [passage omitted]

Government Battles Bus Owners Over Santiago Pollution Issue

PY2306214290 Madrid EFE in Spanish 1103 GMT 23 Jun 90

[Text] Santiago, 23 Jun (EFE)—The government of President Patricio Aylwin, who is confronting the powerful businessmen of the public transport sector, will go through a crucial week in the struggle against Santiago's serious pollution problem.

The antipollution plan that has been set in motion in this capital of 4.5 million people establishes, among other things, that 40 percent of the vehicles will not be allowed to circulate during rush hour. Public transportation owners immediately reacted to this measure, which was implemented on 20 and 21 June. They warned authorities that they will suspend bus services if they are not compensated for the days in which they were forced to suspend their activities.

The transport unions urged the government to solve their situation within a week, but their demands were categorically rejected by President Aylwin and Transport Minister German Correa.

Political sources told EFE that the authorities "will not accept pressure." A government official pointed out to EFE: "What do the bus owners want? Do they want the people to begin dying of pollution before they react?" Santiago air pollution levels this week reached levels considered critical to people's health.

The drastic government measures, which also included a 50-percent reduction in the production of the 80 most polluting industries in the area, brought about a strong decrease in the pollution indexes, but these levels will remain low only with the help of strong and persistent rains, which have not appeared. There were isolated showers in Santiago yesterday but they were so mild that they did not change the atmospheric situation.

The authorities are aware that traffic restrictions do not represent a final solution to the pollution problem, the sources said. Nevertheless, the authorities pointed out that the two main reasons for this evil are the enterprises that discharge toxic gases through their smokestacks and the urban bus service, which, with its obsolete and poorly maintained units, discharges huge quantities of noxious particles.

The industries have reacted positively, not only by reducing their production but by accepting the necessity of installing costly filters that will clean their emissions.

In the opinion of the government officials contacted, the bus owners union "is not accustomed" to applying the measures that have been called for. The same sources recalled that in 1988 the owners union "overthrew" a Santiago military intendant (governor) and that in 1989 they again forced the hand of the then ruling military authorities.

More than 50 percent of the Santiago buses have old and reconditioned engines that do not meet the minimum technical requirements required by authorities.

Political commentators told EFE that, in the end, Santiago's air quality depends on who has more political power: the bus owners or the government. They added that government authorities now enjoy the support of the majority of Santiago inhabitants, who are eagerly expecting an executive branch capable of standing up to the demands of those who are viewed by Santiago's inhabitants as being among the people chiefly responsible for the existing pollution.

As an old lady told EFE in downtown Santiago: "If the buses stop, they will do us a favor (...) at least the air will be clean and we will be able to breath easily."

PERU

Coca Farms, Chemicals Damage Ecology in Alto Huallaga

PY1506124590 Lima Television Peruana in Spanish 0100 GMT 15 Jun 90

[Excerpts] Seven million hectares have been deforested in the Central Huallaga region as a result of indiscriminate tree cutting and an increase in coca plantations. Adding to this ecologic damage are cocaine chemical wastes, which affect not only the rivers but fish and plants as well. [passage omitted]

Peru is currently the world's largest producer of coca leaves. The purest form of coca leaves, which produce the best drug, can be found in the Alto Huallaga Valley. More and more people are depending on drug trafficking as a source of work; that is, its growth and sale and the laundering of narco dollars in the capital market.

In the Alto Huallaga region, 200,000 people depend directly or indirectly on the growth of coca leaves and the laundering of narco dollars, but not on its processing and final sale. According to local authorities, this figure represents 95 percent of the population of Tingo Maria and Leoncio Prado Provinces. [passage omitted]

The pollution of the rivers seems to be significant. It has been calculated that in 1986, nearly 90 million liters of kerosene and sulfuric acid, as well as 35 metric tons of quicklime, carbon [carburo], and toilet paper, were thrown into the rivers in the Alto Huallaga region. All of these are waste products from the production of cocaine paste. [passage omitted]

ISRAEL

Record Pollution Levels in Haifa

44230128Z Tel Aviv HA'ARETZ in Hebrew
12 Apr 90 p A5

[Article by E. El'ad]

[Text] A series of record pollution levels was recorded in a number of the residential neighborhoods on Mount Carmel in Haifa beginning two days ago at 9:30 p.m. until early yesterday morning at 1 a.m.

These facts were made evident yesterday following an examination of the data recorded at the observation stations of the electric utility and the Union of Haifa Towns for the Quality of the Environment.

As published yesterday, exclusively in HA'ARETZ, pollution was measured two days ago at 9:30 p.m. at a level of 2,605 milligrams of sulphur dioxide per cubic meter of air. This is the second highest level of sulphur pollution recorded in the largest residential neighborhood in Haifa—Neve Sha'anan.

An hour and a half earlier, when the refineries and electric utility switched to burning low-sulphur oil (one percent) following the directives of the meteorological service, the concentration of sulphur gases in Neve Sha'anan was only 73 milligrams per cubic meter.

At 1 a.m. yesterday, an additional sulfur dioxide deviation was measured in Haifa's Carmel center—1,203 milligrams per cubic meter. In the Ben-Dor neighborhood at the Nesher local council at 10:30 p.m. two days ago, a concentration of 1,066 was recorded. A half hour later, in the Tel-'Amal neighborhood, another record concentration was recorded—982 milligrams per cubic meter.

It should be noted that in the evening hours two days ago many complaints of foul smells in their neighborhoods were received from the residents living in various regions in Haifa.

The assistant manager of the meteorological service, Dr Dov Menes, said yesterday, following the severe pollution events in Haifa, that a most critical and unusual situation resulting from a combination of extreme meteorological hamsin conditions without wind was occurring at the same time.

Dr Menes said that from the viewpoint of the meteorological services, the warning to begin burning low-sulphur oil starting at 8 p.m. "was their dilemma." According to him, even if the refineries and electric utility had switched, at the same time, to low-sulphur oil, something they are really not equiped to do, this would not have prevented the unusual level, but it would have been lessened.

"Despite the fact that at the electric utility, at the same time, they operated at one-quarter capacity, and at the refineries at one-half of their production capacity, pollution still occurred," Dr. Menes said.

The mayor of Haifa, Arye Gor'al turned yesterday to Prime Minister Yitzhaq Shamir regarding this matter.

UNITED ARAB EMIRATES

New Legislation Proposed To Curb Water Pollution

44000265 Dubayy KHALEEJ TIMES in English
30 Mar 90 p 3

[Text] The government is examining the possibility of introducing legislation to curb pollution in the country's waters and fix responsibility on errant parties causing this damage.

Dr. Abdul Wahab Muhaideb, Assistant Under-Secretary (preventive medicine) and deputy chairman of the Higher Environmental Committee, told this paper yesterday that the proposed legislation was now being drafted in coordination with other departments concerned with marine pollution.

The Ministry of Health had also sought help from the Kuwait-based Regional Organization for the Protection of the Marine Environment (Ropme) in evolving this legislative measure, Dr. Muhaideb said. It has been proposed that the government lay down guidelines for apportioning liability in cases of marine pollution.

It would also strengthen the existing international rules concerning compensation.

Meanwhile, Dr. Muhaideb denied a report in Al Bayan which said that the Higher Environmental Committee had disbursed compensation amounting to Dh1.2 million to the municipalities in Dubai, Sharjah and Umm Al Quwain for the damage caused by vinyl acetate drums from the sunken ship, Ajman Glory. This compensation, according to the report, was paid to the committee by the company which owned the drums.

Dr. Muhaideb said that the government had not claimed any compensation from the company. He noted that the committee had been following developments in the case for the last six months. Currently, the issue of compensation was before the law ministry and no final decision has been arrived at, he added.

Hazardous Chemicals Held in Dubayy

Chemical Held in Port Rashid

44000266A Dubayy KHALEEJ TIMES in English
26 Mar 90 p 3

[Text] A container load of "hazardous" chemicals bound for Karachi has been held back in transit at Port Rashid by carrier Maersk Line pending investigations into its contents.

The shipping line was tipped off by its Karachi office about the decision of Karachi port authorities that they would not allow such chemicals to be imported into Pakistan.

The cargo originated from Los Angeles. The exporters are MRJ Importers. Sherman Way, California and the importers are Pacific Chemicals, Karachi.

The container No. MAEU-2741170 was picked up by Cecilie Maersk from Singapore and off-loaded at Port Rashid on 18 March for onward shipment to Karachi. But further shipment of the container was stopped by Maersk following information from its Karachi office and instructions from its headquarters in Copenhagen.

An official of Port Rashid said that the container was stacked with a mix of parcels of cargo of hazardous chemicals classified as poison and corrosive (No. 6 and 8) by the IMO [International Maritime Organization] hazardous cargo declaration list.

He said the port handled hundreds of thousands of containers every year, including those containing hazardous chemicals. It was normal cargo as long as it was handled and used properly, he said.

"Maersk Line is not interested in these supposedly illegal activities—in the transhipment of toxic or waste material," a spokesman for Maersk Line said in Dubayy.

"On the face of it, the details of the cargo are in accordance with IMO regulations. What we have to be sure is the end use of the cargo—whether it is intended for dumping in Pakistan or for normal industrial use. We are going through the manifest right now," he said.

"Pending that we are keeping it in transit as a normal container and awaiting for further instructions from our headquarters," the spokesman said.

Authorities Begin Inquiries

44000266B Dubayy KHALEEJ TIMES in English 27 Mar 90 p 3

[Text] The Port Rashid authorities have sent a copy of the hazardous cargo declaration list, pertaining to a container-load of chemicals originally bound for Karachi, to the UAE [United Arab Emirates] government's Higher Environmental Committee.

The committee had begun inquiries into the consignment following a report in this newspaper yesterday about the hazardous chemicals now awaiting transshipment at the Dubayy port. A committee official said last night that there was no danger as long as the container remained in the port area and was handled carefully. "We will see that it never enters the country," he added.

The port authorities sent a copy of the hazardous cargo declaration list to the committee for independent verification after they were convinced that the California-based shipper and the carriers, Maersk Line, had not flouted any international or national regulations in bringing the container to Dubayy for trans-shipment to Karachi.

In compliance with International Maritime Organisation rules and Basel Convention requirements, the declaration list specified that the container was carrying chemicals classified as poisonous and corrosive, a port official said. This list was made available to the port even before the consignment actually landed here on 18 March.

According to the port official, the manifest declared that the container was packed with 11 types of chemicals, including nitric acid and sulphurous acid. Going by the names on the manifest, they appear to be basic chemicals and not "wastes" or "pesticides," he said. Hence, the possibility of the shipper wanting to dump them i n Pakistan looked remote, he noted.

The port authorities find no reason to check the contents, primary because it is trans-shipment cargo and not meant for consumption in Dubayy. The port handles hazardous chemicals routinely, and has a special cargo area designed for handling these consignments. The chemicals named on the manifest are also not on the banned list, the official pointed out.

While the authorities are convinced that the consignment is perfectly in order, Maersk Line is in a quandary over what to do with it. A spokesman for Maersk Line said yesterday that it may be sent back to Los Angeles, since the Karachi port authorities had refused to accept it. He, however, emphasised that the Karachi post had done this because of doubts over the chemicals' end use, and not on account of the nature of the consignment itself.

When asked whether the Karachi port's decision would have any bearing on the consignment remaining in Dubayy, the Port Rashid official replied in the negative. Maersk Line is awaiting instructions from its Copenhagen headquarters. The container can remain at Port Rashid's bonded area for an indefinite period, but all the agencies concerned are looking for an early end to the tangle.

Environmental Technology Agreement Signed With French Science Firm

LD2506221590 Moscow TASS in English 2208 GMT 25 Jun 90

[Text] Moscow June 26 TASS—The production of medicinal preparations, the organisation of safe chemical production and the intensification of Soviet agriculture on the basis of French technologies will be priority directions in the cooperation between the French concern Rhone-Poulenc and the USSR State Committee for Science and Technology. This is recorded in an agreement signed here on Monday.

Commenting on the agreement, Soviet Deputy Prime Minister and the committee's Chairman Nikolay Laverov told TASS that, according to this document, the French concern's cooperation with Soviet partners would deepen, including the creation of joint enterprises. Out of numerous spheres of cooperation, only six remained in the agreement. On the present stage they are of special interest for both sides. These included catalysis, membrane technologies protecting the environment, pharmacology and gene engineering. Thus, the cooperation beween the USSR State Committee for Science and Technology and Rhone-Poulenc, started twenty years ago, entered a new stage, Laverov stressed. It is very important for both sides, because it is aimed at developing new science-intensive technologies.

Coordinated projects on Soviet territory will be financed in the Soviet currency, Laverov said. If the need arises to import equipment, Soviet organisations will try to reduce hard currency expenditures to the minimum.

Laverov received on Monday Rhone-Poulenc President Jean-Rene Fourtou, who gave to the USSR as a gift 500,000 francs worth of new medicinal preparations.

Ekoprom Consortium Plans To Combat Pollution

LD0706210990

[Editorial Report] Moscow Television Service in Russian at 1430 GMT on 7 June, in its "Vremya" newscast, broadcasts a two-minute video report by Ye. Blokhin from the first working meeting of the Ekoprom consortium which took place in Moscow on 7 June. He begins by noting that the consortium's main aim is to improve the ecological situation for the better in the country in the next few years. Video shows the meeting in progress.

The participants in the meeting say that it is no longer possible to postpone tackling this question: There is on average 340 kg per annum of harmful waste per Soviet person (video shows cars and trucks driving on road, a factory chimney) and in a few regions it is no longer possible to use water even from artesian wells. At the same time only one per cent of the country's budget is being spent on nature protection. Even these funds are not being used in full a speaker says. It was in order to speed up the production of new ecological equipment that this consortium was set up by a decision of the USSR Council of Ministers. Defense enterprises, which are being released as a result of conversion, will take part in working out new technologies. A wish to cooperate with Ekoprom has already been expressed by firms from the United States, the FRG, the Netherlands, Italy, and Sweden.

Blokhin then interviews A.I. Chabanov, president of the Ekoprom consortium, in the meeting hall, asking him whether enterprises will spend their funds on the purchase of equipment which Ekoprom will produce. Chabanov says they undoubtedly will, inasmuch as new economic mechanisms are being brought into play: Above all, he says, on the one hand, the taxation system will encourage investment of money in ecological equipment. On the other hand, there is now a system of large fines for enterprises exceeding the maximum permissible concentration in their discharges into water or into the atmosphere. Therefore enterprises will be interested in purchasing equipment to protect the environment for economic reasons.

Taking part in the first meeting of the Ekoprom consortium are Comrades Balkanov and Silayev. Video shows Balkanov, Silayev.

Appeal of All-Union Veterans' Council on Ecological Concerns

90UM0635A Moscow VETERAN in Russian No 23, 4-10 Jun 90 p 3

[Article signed by the All-Union Council of Veterans of War, Labor and the Armed Forces: "Appeal of the All-Union Council of Veterans of War, Labor and the Armed Forces"]

[Text] Dear compatriots!

Man's economic activity has become a powerful nature-transforming factor in the modern world. However, it has both constructive and negative influence upon the environment. The area of land unfit for use is increasing, forests are being destroyed, which is leading to irreversible changes in the climate, and the air, surface water and underground water are being polluted. Great complexities are arising in providing water to the population, industry and rural production. Incompetent use of mineral fertilizers, herbicides and pesticides in many agricultural regions is leading to the poisoning of farmland, production of low quality agricultural products, and the poisoning and death of the animal world. All of this is often the result of a parasitical attitude toward nature, and of an egoistic attitude toward the future. Neglect of the principles of competent nature management has led us to the brink of catastrophe. This must be deeply recognized, and when we come to understand it, we must not be indifferent to it. Development of life on the planet depends on the position each of us takes, and primarily

people of the senior generation, wizened by life's experience. And the personal responsibility of each individual for what is happening in our common home, and for preservation of the motherland's ecological health, is now rising as never before.

It is to you, the veterans, that we appeal, understanding that the experience of former years might help to evoke the growing generation's deep interest in preserving our unique nature and restore faith in something that never dies—one's home, one's own chunk of land, village and stream.

What is it that each of us must do? First of all, join together with the proponents of environmental protection, and take part in the activities of labor and social organizations working to create ecologically safe conditions for the society's development. Second, try to encourage each individual to engage in noble nature-conserving activity. Third, do more practical things—perhaps inconsequential at first glance, but concrete and useful.

Let each person not be indifferent, let him understand that it is precisely he who determines the future conditions of life, or more accurately, the conditions of survival. We appeal to you to take a direct part in ecological actions and measures dedicated to World Environmental Conservation Day, which will be celebrated by the entire planet Earth on 5 June.

Ecological actions may include concern for our home, for the future of life on Earth, for our children and grandchildren, and for our physical and moral health.

Today as never before, we sense a need for deep scientific study, especially when it comes to predicting the ecological consequences of the economic decisions we make, and the need for serious ecological expert examination of all projects calling for economic transformations. We must not begin a single construction project without first meticulously analyzing the evolving situation far into the future. Each individual in our society must receive answers to questions troubling him concerning ecological problems, and feel certain that his health and the health of his family are protected by serious measures and by state law.

We appeal to the councils of war and labor veterans at all levels to participate in development of a movement of young friends of nature, of blue and green patrols and of young journalists, to provide assistance to secondary schools and preschool institutions in organizing the training of the growing generation in nature protection concerns, and impart to them the habits of a thrifty attitude toward the environment.

It is our recommendation to the republic councils of war and labor veterans to interact and cooperate with union republic state committees for protection of nature and with public nature conservation organizations.

It is our deep belief that having recognized the impending catastrophe, we will all gather our forces, unite, and do what has long been obvious. To ignore the complex ecological situation is a crime! We are crossing the danger line! It is our duty to combine our experience and knowledge, to raise social consciousness, to create an atmosphere of responsibility for the motherland's future!

World Aid Sought for Chernobyl Aftermath

LD2605110590 Moscow TASS in English 1826 GMT 24 May 90

[By TASS diplomatic correspondent]

[Text] Moscow May 24 TASS—A draft resolution on international cooperation to eliminate the consequences of the Chernobyl nuclear disaster was put to consideration by the first regular session of Ecosoc [United Nations Economic and Social Council], currently under way in New York. It was submitted by delegations from the Soviet Union, Belorussia, and the Ukraine.

The draft provides for elaborating a relevant international programme and for dispatching an intersectoral mission to the afflicted areas of the Soviet Union.

During the session 22 countries supported the draft. However the draft resolution was submitted shortly before the start of the session and some countries were not prepared for its detailed discussion.

As a result Ecosoc decided on May 18 to include the issue in the agenda of the Ecosoc summer session and to submit a draft resolution for its consideration.

"This issue was posed before the international community and the UN system in this way because of the extreme complexity and scope of the accident's consequences," a Soviet Foreign Ministry spokesman told TASS today.

"The accident at Chernobyl posed before the country new, highly complex, large-scale problems that affect practically all sides of life," he continued. "Huge resources and the efforts of the country's leading scientists and specialists were directed to this end, which helped prevent catastrophic consequences from the Chernobyl fall-out.

However it should be acknowledged that the problems today remain as acute as ever. According to new data obtained from extensive investigations, the scale of the fall-out at national level and the Chernobyl phenomenon itself, including its international aspects, was underestimated.

"In terms of its long-term consequences, the accident at Chernobyl is the largest technological catastrophe of the 20th century. This national disaster affected hundreds of thousands of people and damaged the health of millions of people on vast areas within the zone of radioactive fallout," the spokesman said.

"Vast populated areas of Belorussia, the Ukraine and some western regions of the Russian Federation, including some 7 million hectares of farm land and more than 2.5 million hectares of forests, were contaminated."

"Having admitted that the measures adopted before were insufficient, the USSR Council of Ministers drafted and adopted the state programme of urgent measures for 1990-92 to eliminate the consequences of the accident," the spokesman continued.

"A total of 26 billion roubles was set aside for these purposes over the next three years. Large-scale programmes were drafted by the Councils of Ministers of Belorussia, the Russian Federation, and the Ukraine.

On April 25 the USSR Supreme Soviet passed a special resolution on Chernobyl that envisages drafting a single, long-term state programme to protect the Soviet population from the consequences of the Chernobyl catastrophe, as well as setting up of a nationwide committee to eliminate the consequences of the accident under the USSR Council of Minister's State Commission on Emergencies.

"The supreme bodies of legislative and executive power in Belorussia and the Ukraine asked the world community for aid to overcome the consequences of this disaster," the Foreign Ministry representative said. "In this context the missions of the USSR, Belorussia, and the Ukraine in New York, Geneva, Vienna and Paris and their delegations at the first session of Ecosoc proposed elaborating a programme for international cooperation on Chernobyl, which would pool the efforts of the international community.

Chernobyl Union To Hold Congress 15-17 June

LD1406133690 Moscow TASS in English 1216 GMT 14 Jun 90

[By TASS correspondents Aleksey Petrunya and Andrey Chirva]

[Text] Kiev June 14 TASS—The main purpose of the voluntary USSR Chernobyl Union is to defend the interests of people who took part in Chernobyl clean-up efforts in 1986, as well as of their families and victims of the catastrophe. It will begin its first congress here on Friday [15 June].

Chairman of the union's board Georgiy Lepin told TASS that it was set up in October 1989. "About 600,000 servicemen and civilians were involved in the liquidation of Chernobyl consequences. Many more people live in contaminated territories," he noted.

Five million hectares of land are contaminated by radionuclides in the Ukraine alone. Some 60,000 people live in the so-called rigorously controlled zone. The disaster's consequences have spread to several regions of Belorussia and the Russian Federation."

"The state," Lepin stressed, "is assisting the victims of the disaster. Several government decisions have been passed recently to this effect, in addition to the decree of the USSR president. The Congress of People's Deputies of the USSR has approved a comprehensive programme to liquidate the consequences of the Chernobyl disaster and to aid victims."

Lepin believes, however, that far from everything has been done so far. Many Chernobyl victims are socially unprotected and lack proper care from local authorities.

The Chernobyl Union plans to help them all. The union is in constant contact with the Soviet and republican governments, as well as with the local authorities. The best polyclinics and hospitals have been placed at the disposal of those who helped combat the consequences of the disaster. They are being treated at the USSR Medical Radiology Center and the Kiev City Diagnostic Center.

The congress will discuss problems linked with clean-up efforts, adopt the society's charter, a "code of honour" of its members and an appeal to the Soviet Government and to world public opinion.

The congress will end on June 17.

Chernobyl Union Congress Opens in Kiev

LD1506102190 Moscow TASS in English 1003 GMT 15 Jun 90

[By TASS correspondents Alexey Petrunya and Andrey Chirva]

[Text] Kiev June 15 TASS—"Humaneness and benevolence" is the motto of the Chernobyl Union, an all-union public organisation, the first congress of which opened in the Ukrainian capital today.

One of the main purposes of the union is to protect the interests of participants in the Chernobyl accident clean-up operations, their families and all people who suffered as a result of the disaster, since state assistance is not effective enough.

Delegates to the three-day congress, who represent many regions of the country, will discuss problems connected with the elimination of the consequences of the breakdown at the Chernobyl Nuclear Power Station.

They will adopt the union's statute, a code of honour for its members, the status of Chernobyl people, and appeals to the USSR Supreme Soviet, the Soviet government and the international public, and will elect the leading bodies of the Chernobyl Union.

Chernobyl Survivors' Congress Forms Union

LD1706230690 Moscow TASS in English 1904 GMT 17 Jun 90

[By TASS Correspondents Aleksey Petrunya and Andrey Chirva]

[Text] Kiev, the Ukraine, June 17 TASS—About 100 regional organisations and movements in the Soviet Union that unite survivors of the 1986 Chernobyl Nuclear Power Plant accident and those who participated in the cleaning up of the accident's consequences, have held their first congress in Kiev.

The three-day congress, which closed today, proclaimed the formation of a Chernobyl Union, which will extend relief aid to Chernobyl survivors in cooperation with the government and local authorities.

It was said at the congress that 50,000 out of 600,000 participants in the clean-up efforts had lost ability to work and that several thousand of them had died. Speakers also denounced the callousness of bureaucrats.

The congress discussed the structure of the new public organisation, the status of Chernobyl accident survivors and the strengthening of the union's material basis, which would make it possible to extend relief aid to them.

Chernobyl Union Congress Ends in Kiev

PM2006152190 Moscow KRASNAYA ZVEZDA in Russian 19 Jun 90 First Edition p 4

[Correspondent Colonel A. Polyakov dispatch under the "Direct Line" rubric: "Our Common Pain—The First Chernobyl Union Congress Ends Its Work In Kiev"]

[Text] Kiev—Emotions have been boiling over for three days running in the Political Enlightenment House, where the congress took place. Delegates called for unity and heatedly argued that they were all equal, but when it came to the election of various commissions, they tried at all costs to nominate their own region's representative. All the same, they came together on the main point—Chernobyl is our common pain.

The congress delegates spoke of the need to increase social protection for all who took part in the elimination of the consequences of the accident and for people living in the contaminated territory; to improve medical services for them; to determine more quickly and more expertly the effect of small doses of radiation on man; and to determine the legal status of those who were burned by the invisible fire.

There were 35 military delegates taking part in the work of the congress. It was decided to form a military section within the structure of the Chernobyl Union. Many believe that military servicemen have again ended up being the least socially protected group. It was pointed out that the Ministry of Defense and the Central Military Medical Directorate have been slow in providing all-around support for officers and soldiers.

Lieutenant Colonel, Retired, B. Shuklin, a delegate at the congress and former military helicopter pilot who took part in the elimination of the accident, spent a total of 78 days in the contaminated area and received a total irradiation dose equal to that of 42 X-rays. He unexpectedly fell seriously ill in late 1986, ending up more than once in hospital, but only after four years did physicians reach the conclusion that the illness was linked with Chernobyl.

"We believe that an organ should be set up under the General Staff to study the problems of Chernobyl soldiers and military garrisons stationed in or near the contaminated areas," Lieutenant Colonel V. Grishin, a member of the union's Executive Committee Bureau, said. "Military legislation on benefits, which is now manifestly out of date, needs to be brought into line with civilian legislation, and a group for collaboration with the union needs to be set up in the military and the USSR Supreme Soviet."

V. Shovkoshitnyy, Ukrainian SSR [Soviet Socialist Republic] People's Deputy, member of the recently created Ukrainian Supreme Soviet Commission on Chernobyl, and an active participant in the elimination of the consequences of the accident, was elected president of the Chernobyl Union.

A telegram was sent on the congress' behalf to USSR President M.S. Gorbachev, proposing that Internal Troops subunits posted to guard the power station be withdrawn from Chernobyl and replaced with volunteers.

Results of Radiation Monitoring in Korosten Reported

904E0106A Kiev SILSKI VISTI in Ukrainian 6 May 90 p 2

[Article by Ye. Harher, the vice chairman of the combined expedition of the NVO [scientific production association] "Typhoon" and V. Hiriy, the head of the laboratory: "Radiation—The Situation in Korosten"]

[Text] **Reports have appeared in the central press concerning the level of radiation in the city of Korosten in Zhytomyr Oblast, reports in which alarm has been expressed about the population's living conditions in the zone contaminated with radiation. We, participants in the task of making detailed observations of the radiation level in Korosten and the surrounding areas, want to relate the results of this investigation.**

This year in February and March a detailed investigation was carried out. Offices of the State Committee of Hydrometerology of the USSR (the Joint Expedition of the "Typhoon" NVO [Scientific Production Association], "Ukrgeologa" (Northern ukrgeologa) [probably republic production association in the sphere of geology

attached to the UkSSR Ministry of Geology], and civil defense took part in this investigation, along with the representatives of the local authority and the community of Korosten.

In 1989, the aerial gamma-spectrometric readings in Zhytomyr Oblast showed the limits of the zone contaminated with cesium-137 with a density from 5-15 curium per square kilometer. Korosten appeared in this zone. In the city, several probes of soil were taken. Since 1989, as a more detailed investigation spread out to include more territory, work began in the city to precisely determine the radiation level by means of a massive selection of probes of soil and a gamma-spectrometric analysis. These investigations showed that during the time that elapsed after the ChAES [Chernobyl Nuclear Power Plant] disaster there formed (especially in the city on account of the radionuclides washed off from roofs and from contamination transported by vehicles into parking areas) points and local foci of a size from 1 to 15 m^2 with an elevated level of radioactive contamination (dosage strength).

The probes of the soil from these sectors confirmed our suppositions. The extent of contamination in them appeared between 0.03-0.27 milliroentgens/m^2; (if this kind of contamination was in the range of several square kilometers, then there would be 30-270 curium per square kilometer).

As a consequence of this data, a resolution was accepted to carry out a detailed investigation of the city's entire territory and sectors of it with a higher level of contamination. A general scheme for investigation of the city's territory included a measurement of the strength of radiation doses and a selection of soil within the coordinates of a grid superimposed on the map of the city with equally measured out units measuring 0.4 km. There were 342 probes selected within the grid, and for more specific measurements of the more contaminated sectors, an additional 165 probes were made within the grid. In the areas where the main probes were made, the measured strength of doses was from 14 to 100 microrentgens per hour; the average strength of doses was 42 microrentgens per hour. The analysis of the probes of soil gave an interval for the curium of contamination with cesium-137 within all points within the grid from 0.2 to 22 curium per square kilometer, with average contamination of 6.3 curium per square kilometer. In addition, the number of probes with a density of contamination by curium of less than 5.0 curium per square kilometer made up 41 percent [of the total probes]; from 5.0 to 10-44 percent; from 10.0 to 15-13 percent; more than 15 curium per square kilometer—2 percent.

The spot-like quality of the contamination's distribution catches one's attention. However, one can easily follow the direction of the radioactive trail from the northwest side of the city to its southwest side. The most "contaminated" area is the northern part of the city, where the contamination is more than 10 curium per square kilometer, which encompasses 18 percent of the investigated territory (the total investigated territory measures 46.1 km^2, the territory of the city measures 35 km^2). A specific measurement of the most contaminated sector was carried out with additional selections of probes of soil (165 probes) within the grid; in principle, this measurement only slightly altered the general range in terms of contamination by cesium-137 in Korosten.

Special mapping was carried out in the city's local sectors having significantly high levels of doses ("particular points"); these points were the drainage areas of private buildings and community properties. In the city there appeared 783 such sectors, which had a higher level of contamination, which constituted altogether 0.016 km^2 (around 0.05 percent of the city's territory). These sectors do not indicate that these were the dosages, which the entire population was subject to, but they do indicate points with an unacceptably high level of radiation.

An investigation was also conducted of the most "contaminated" northern section of city (801 homesteads), in which the spread of cesium contamination-137 consisted of: up to 5 curium per square kilometer—281 garden plots; from 5 to 10—385; from 10-15—109; more than 15 curium per square kilometer—36.

All these results were handed over to the city council and the civil defense of Korosten. According to the civil defense's information, the most contaminated part of the territory was already evacuated, and preparations were underway for further work on a large scale.

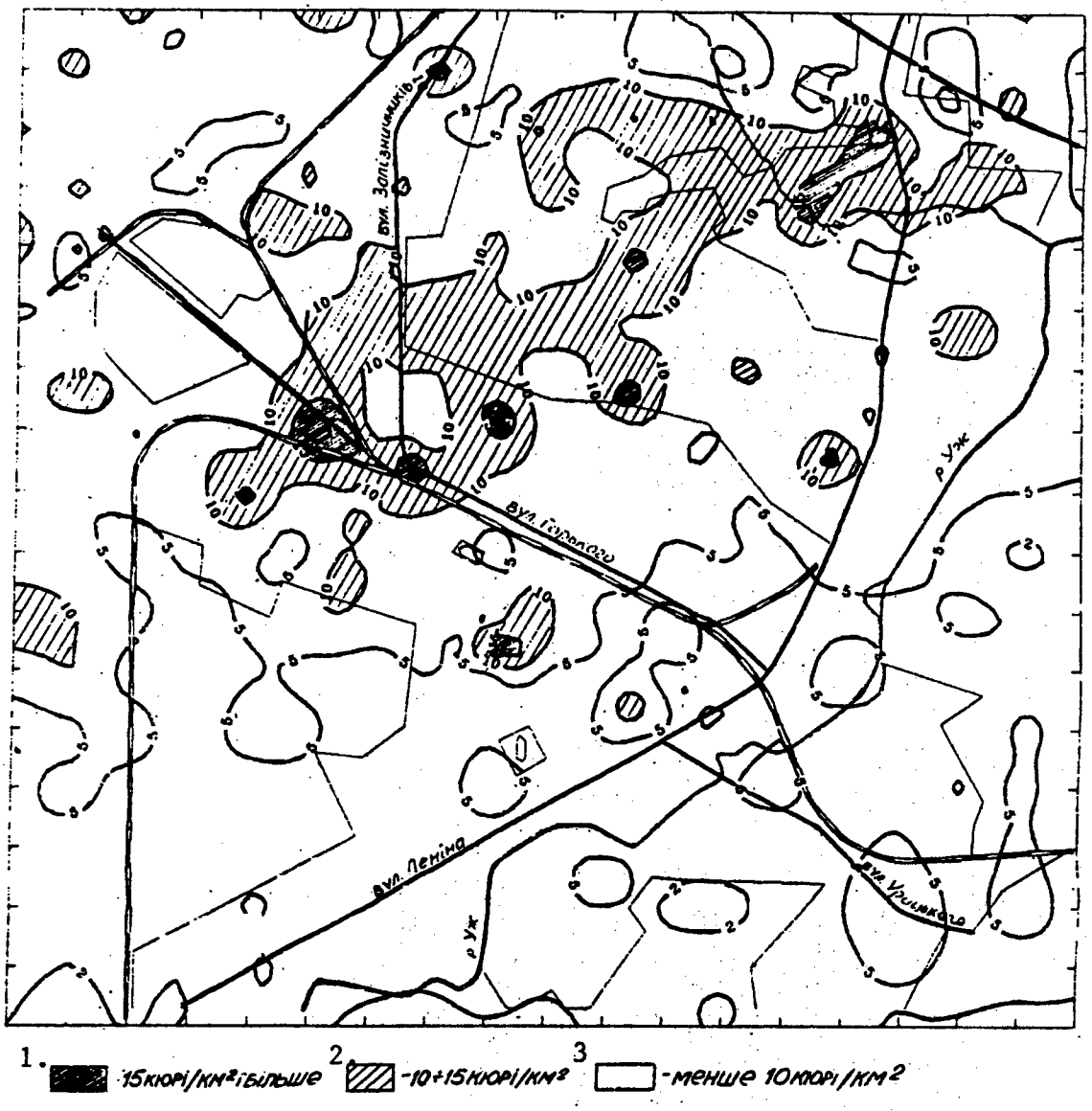
The investigation of the probes of soil in areas of other radionuclides shows that the content in relation to the cesium-137 makes up: for cesium-134—not more than 15 percent; ruthenium-106—3 percent; cerium-144—3.3 percent

The analysis of the probes of soil for strontium-90 for the most contaminated sections showed a level of contamination between 0.13-1.2 curium per square kilometer; an analysis of the drinkable water showed a contamination level of (5-10) X 10^{-12} curium per liter, which is considerably lower than permissible levels of contamination.

The radiation level in Korosten is visually depicted on the schematic map of the city.

From the editor. The reader can ask: was it worth it, to give the results about the radiation level in one city in an all-republic newspaper? What kind of interest does such information have for residents of other cities and villages?

We have in mind the following goal. The general picture of the contamination of Ukraine's territory with radionuclides after the disaster at Chernobyl AES is essentially known (a publication in SILSKI VISTI has presented information). The zone, which is unsuitable for living, has been marked out, as have the zones of strict control, regions where the atomic disaster has not directly affected areas. However, the general picture is similar to the "temperature in the middle of a hospital."



Radiation level in Korosten

Key:
1. 15 curies per square kilometer and greater
2. 10 to 15 curies per square kilometer
3. less than 10 curies per square kilometer

A specific person wants to and has the full right to know the specific conditions in which he lives—including his own backyard. For today what has been done in Korosten should also be done everywhere where there is even the slightest doubt about radiation safety. There is a pressing need in such regions to conduct a mapping of homesteads and to inform people with scientifically calculated recommendations about the handling of agricultural processes, food, individual hygiene, and so on. It seems that this should be an urgent task for the Hydrometerology and sanitary services, organizations of the State agricultural program, and the civil defense.

Chernobyl Fund Suit Shows Rule-of-Law Progress

PM1906113790 Moscow KOMSOMOLSKAYA PRAVDA in Russian 16 Jun 90 p 1

[D. Andreyev report: "Lawsuit—A Noble Cause"]

[Text] Let us make a mental note of the date: On 13 June 1990, at 1430 hours, in the presence of press representatives, Vladimir Panov handed over documents petitioning the USSR Public Prosecutor's Office to bring a lawsuit on behalf of the Krasnoyarsk environmental organization "Green World" against the USSR Ministry

of Nuclear Power Generation and the Nuclear Industry and the USSR Ministry of Finance.

The nature of the suit is simple.

After Chernobyl, we managed to collect just over 542,999,000 rubles [R]—some people donating R1, others as much as R10—for the tragic Account No. 904 to aid the victims of this quiet nuclear "bombardment" and also to eliminate its consequences.

Now then: On instructions from directive bodies (the USSR Council of Ministers, USSR State Planning Committee, and USSR Ministry of Finance), R65 MILLION OF PEOPLE'S DONATIONS HAVE BEEN TRANSFERRED TO THE USSR MINISTRY OF NUCLEAR POWER GENERATION AND THE NUCLEAR INDUSTRY [capitalized as published]. As the "greens" have managed to establish, this is to compensate for the damage this department incurred during the accident at the nuclear power plant. Under which law?! "Green World" activists are asking.

I know that from a legal viewpoint this lawsuit obviously does not stand a chance, because all the necessary resolutions and instructions exist.

But the suit also has another aspect, which outweighs a million legal technicalities and "healthy considerations": It is blasphemous, seditious, and cynical to give away the people's money—collected kopek by kopek—to the ministry that is to blame for our tragedy. It is the ministry that should be made to pay many times over in this terrible connection!

From this point of view the suit is irreproachable.

It is also irreproachable and unique because it sets up for the first time a situation whereby a social organization and people have acted on their initiative and decided to call the state to account—in the form of two of its ministries. I think that now, with informal movements gathering momentum, there will ultimately be more lawsuits like this one. That is right: Our legal system consigns far too much to the archives simply because the defendant is some abstract "state," which often conceals very real departments and people. In any real rule-of-law state, lawsuits of this kind are brought and are vindicated. There is hope that our laws too will finally become impartial in this respect.

Chernobyl Cleanup Participants Meet in Lithuania

LD1806075590 Vilnius Domestic Service in Lithuanian 1900 GMT 16 Jun 90

[Excerpts] Gintautas Jasiunas reporting from the meeting of members of the Chernobyl Movement which took place today in Panevezys:

[Jasiunas] People who took part in the cleanup of the Chernobyl accident gathered in Panevezys today. I am talking to Grazvydas Judelis, vice chairman of the Republican Chernobyl Movement, and Gintatutas Papinigis, coordinator of the above Movement here in Panevezys, about the issues which are being solved here at this meeting:

[Begin Judelis recording] Participants of the cleanup of the Chernobyl disaster gathered here in Panevezys today in order to rally all those who became victims, we even can say that, and to elect our Council so that in future we could defend our interests and our rights. [passage omitted] We are trying to find out the number of those who became victims in this republic. [passage omitted]

It has emerged recently that people who went there have been shortchanged in many ways. The Soviet armed forces, while recruiting people both against their will and with their consent to work in Chernobyl, had promised them everything: They promised them apartments, cars, telephones and so on, and so on.

However, when the time for settling accounts came all these things are not there. People do not know to whom to turn. [end recording]

Belorussian Deputy Premier on Republic's Chernobyl Cleanup

LD2406094290 Moscow TASS in English 0932 GMT 24 Jun 90

[By TASS Correspondent Aleksandr Kryzhanovskiy]

[Text] Minsk, Belorussia, June 24 TASS—The Belorussian Parliament has decided to set up a special commission to assess the activity of governmental and other officials, connected with the cleaning up of the consequences of the Chernobyl Nuclear Power Plant accident.

Deputies sent invitations to Soviet President Mikhail Gorbachev and former Belorussian leaders—Politburo member Nikolay Slyunkov and Georgiy Tarazevich, chairman of the commission for nationalities policy and ethnic relations of the USSR Supreme Soviet's Council of Nationalities—to take part in the discussion of the issue.

Belorussian Deputy Prime Minister Alekander Kichkaylo delivered a governmental report about the cleanup work. He said more than 3.5 billion roubles had been spent for this work in the republic and that 12,000 houses and flats and hundreds of community cultural centres had been built for the evacuated population.

However, he noted, the Soviet Union has no scientifically substantiated concept of safe living conditions for people in areas contaminated by radionuclides. These areas make up 30 per cent of Belorussian territory and have a population of two million.

The state programme for the cleaning up of the consequences of the accident in the republic provides for the additional evacuation of 118,000 people from 527 populated localities, which will require huge funds.

Kichkaylo said many governmental and charity organisations from Holland, Spain, West Germany, Italy and other countries, as well as international organisations, including the U.N. European Economic Commission, the International Atomic Energy Agency and the World Health Organisation, were rendering aid to Belorussia.

The European Parliament unanimously voted for the provision of the Belorussian population with emergency medical and food aid.

One hundred experts from international organisations have arrived in Belorussia to help work out recommendations to make the living conditions safer.

Belorussian Joint Decree On Progress of Chernobyl Accident Cleanup

90WN0059B Minsk SOVETSKAYA BELORUSSIYA in Russian 25 Mar 90 p 1

[Resolution of Belorussian Communist Party Central Committee, Belorussian SSR Council of Ministers and Belorussian Republic Council of Trade Unions: "On Progress in Carrying Out the State Program on the Elimination in the Belorussian SSR of the Consequences of the Accident at the Chernobyl Nuclear Power Plant"]

[Text] Recently in the republic a number of supplementary measures to eliminate the consequences of the accident at the Chernobyl nuclear power plant have been implemented. However, sluggishness, inconsistency and at times indiscipline have been demonstrated by the leaders of certain ministries and departments, the ispolkoms of oblast, city and rayon soviets of people's deputies, in carrying out tasks stipulated by the state program and resolutions of the Belorussian Communist Party Central Committee and the BSSR Council of Ministers dated 7 December 1989 No 319 and 19 January 1990 No 20.

Implementation of the Belorussian Communist Party Central Committee and BSSR Council of Ministers resolution of 7 December 1989 No 319 by the ispolkoms of local soviets of people's deputies of the Brest, Vitebsk, Grodno and Minsk Oblasts was organized in an unsatisfactory manner regarding the evacuation of citizens desiring to move to different regions of the republic from the zone of immediate evacuation during the first quarter of the current year which was stipulated in the program for the period 1990-1991. As of 15 March, 78 families had been relocated to the Brest Oblast out of 340 stipulated by the resolution, to the Grodno Oblast correspondingly 64 out of 400, to the Vitebsk Oblast 48 out of 601, to the Minsk Oblast 122 out of 350. In the Gomel Oblast 375 families of the planned 628 had been evacuated and in the Mogilev Oblast 48 out of 279.

Adequate interaction between the ispolkoms of oblast and rayon soviets of people's deputies has not been organized on relocation issues; an effective system of mutual assistance and timely information about progress is absent; the required explanatory work with the residents of the populated areas being evacuated is not being carried out.

The BSSR Minzdrav [Ministry of Health] (comrade V.P. Filonov) has been inconsistent in questions of coordinating the locations for the construction of new villages which has lead to delays in timetables for design and construction.

The Gomel and Mogilev Oblispolkoms have been slow in reviewing and approving technical-economic calculations, construction designs and the planning of new residential villages.

The Belselstroy [Belorussian Rural Construction] organizations, the BSSR Minstroy [Ministry of Construction], BSSR Minzhilkomkhoz [Ministry of Communal Housing], BSSR Minvodkhoz [Ministry of Water Resources], the "Polesyevodstroy [Polesye Water Resources Construction], Beltransstroy [Belorussian Transportation Resources Construction] and Belenergostroy" [Belorussian Energy Resources Construction] associations have shown a lack of administrative abilities in the construction of residential villages.

Material-technical supply issues for the program in question for this year have not been fully resolved by the BSSR Gosplan [State Planning Committee] and BSSR Gossnab [State Committee for Material and Technical Supply]. The manufacture of individual dosimeters is progressing slowly at defense complex enterprises.

The BSSR Gosagroprom, the BSSR Ministries of Education, Culture, Health and Trade, Belkoopsoyuz [Belorussian Union of Cooperatives], Goskomtrud [State Committee on Labor] and the BSSR Minfin [Ministry of Finance] have not fulfilled the requirement for elaborating and submitting to the BSSR Council of Ministers proposals for expanding benefits for those specialists in agricultural, culture, health, education, trade as well as pensioners who work in zones of radioactive contamination.

The Belorussian Communist Party Central Committee, the Belorussian SSR Council of Ministers and the Belorussian Republic Council of Trade Unions resolve to:

1. Take into consideration the declaration of the Brest, Vitebsk, Gomel, Grodno, Minsk and Mogilev Oblispolkom Chairmen (comrades V.I. Burskiy, V.P. Kulakov, N.G. Voytenkov, D.K. Artsimen, A.I. Tishkevich, N.F. Grinev) that they have taken supplementary steps to ensure the relocation of families from the contaminated rayons within the established timetables.

2. Take into consideration the declaration of comrades V.G. Yevtukh (BSSR Council of Ministers), N.F. Korniyevich (BSSR State Planning Committee), V.S. Voronov (BSSR Ministry of Construction), L.M. Chura (Belselstroy), I.V. Titov ("Polesyevodstroy" SSO), I.A. Antonovich (BSSR Minmontazhspetsstroy) [BSSR Ministry of Installation and Special Construction Work],

that they will ensure the construction and commissioning of residential villages in accordance with the Belorussian Communist Party Central Committee and BSSR Council of Ministers resolution No 20 of 19 January 1990.

3. Approve the proposals of the Gomel and Mogilev Oblispolkoms regarding the relocation in 1990 and through the first quarter of 1991 of those families having children up to the age of 14, pregnant women and individuals who have been advised not to reside in these populated areas because of medical reasons, from towns and villages in the permanent monitoring zone (15-40 Ci/square kilometer), included in lists 2 and 3 of the State Program On Eliminating the Consequences in Belorussia of the Accident at the Chernobyl Nuclear Power Plant.

Grant these citizens the right to join residential-construction cooperatives without having to sign up on the waiting list (with the exception of Minsk) and without regard to their place of residence.

The BSSR Gosplan, BSSR Gosstroy and oblispolkoms are to stipulate for 1990 and in projects for 1991 corresponding tasks for the design and construction of the necessary number of apartments to accommodate the relocated families.

4. In connection with the requirement for the rapid evacuation of families with children up to 14 years of age, pregnant women and individuals who have been advised not to reside in these populated areas because of medical reasons, from towns and villages in the permanent monitoring zone (15-40 Ci/square kilometer), included in lists 2 and 3 of the State Program On Eliminating the Consequences in Belorussia of the Accident at the Chernobyl Nuclear Power Plant, oblispolkoms will allocate in 1990 and through the first quarter of 1991 up to 20 percent of the living space built through state capital investment regardless of which department the expenditures were affiliated with, and also of living space built with resources of enterprises, institutions, organizations and collective farms.

Party committees, ispolkoms of local soviets of people's deputies, BSSR ministries and departments, the soviets of labor collectives and labor union committees, leaders of enterprises, institutions, organizations and collective farms will conduct explanatory work in the labor collectives and ensure a thoughtful attitude toward the needs and desires of those relocated as well as an understanding of the necessity of implementing the measures which have been approved.

The BSSR Gosplan will stipulate in the State Plan for Economic and Social Development of the Belorussian SSR for 1991 the allocation to the oblispolkoms of the maximum state capital investment level for housing construction from the capital investment account designed for aiding in the elimination of the consequences of the accident at the Chernobyl Nuclear Power Plant in compensation for the living space which they provide.

5. Assign comrades V.G. Yevtukh (BSSR Council of Ministers) and N.F. Korniyevich (BSSR Gosplan) the task of submitting jointly with the oblispolkoms a proposal to the BSSR Council of Ministers within two weeks regarding a decrease in the construction of production facilities in the republic and the allocation of the freed capital investment and material-technical resources for the construction of housing in the Brest, Vitebsk, Grodno and Minsk Oblasts for families who have been relocated in accordance with the current resolution.

The BSSR Gossnab is to analyze and resolve the issue regarding the identification and delivery of currently unavailable plumbing equipment, flooring, roofing and finishing materials for the construction of the apartment buildings mentioned above.

6. Oblispolkoms and the Minsk Gorispolkom, the construction ministries and departments in conjunction with the BSSR Gosplan, BSSR Gosstroy, contract organizations and client enterprises are to analyze within ten days questions regarding the advisability of construction projects which have been reinitiated, halting construction on a number of carry-over projects or scaling-down assembly-construction work with the goal of locating material-technical and labor resources for an increase this year in the construction of housing for the relocation of citizens from areas contaminated by radionuclides. Results will be reported to the BSSR Council of Ministers before 15 April 1990.

7. The BSSR Academy of Sciences, BSSR Ministry of Health, Belorussian Republic Directorate on Hydrometeorology, BSSR Gosagroprom and BSSR Goskompriroda [State Environmental Protection Committee] are to submit their conclusions within five days regarding the possibility of utilizing designated land plots for the construction of new villages and facilities in the Brest, Gomel and Mogilev Oblasts for residents relocated from areas contaminated by radionuclides.

Oblispolkoms in coordination with the BSSR Gosstroy, BSSR Academy of Sciences, BSSR Ministry of Health and the Belorussian Republic Directorate on Hydrometeorology will determine those populated areas where construction of the aforementioned apartment buildings for the years 1990-1991 is to be carried out in addition to the tasks established by the Belorussian Communist Party Central Committee and BSSR Council of Ministers resolution of 19 January 1990 No 20 which provided for the construction of apartment buildings in rayon centers.

8. Allow the BSSR Gosplan, BSSR Gossnab and BSSR Gosagroprom in conjunction with the BSSR Mintorg [Ministry of Trade] to undertake a reallocation of construction materials according to republic consumer limits and regardless of departmental affiliation among

enterprises, organizations and collective farms with the goal of ensuring the construction of residential housing using the economic method for families who have been relocated from rayons in the Gomel and Mogilev Oblasts which were subjected to radioactive contamination.

9. BSSR Ministries and departments, oblispolkoms and the Minsk Gorispolkom in conjunction with labor collectives are to bring their plans for assembly-construction work into complete compliance with the existing material-technical resources within two weeks and report on progress in April of the current year to BSSR Gosplan.

BSSR Gosplan and BSSR Goskomstat [State Committee for Statistics] will analyze the results of this work and report to the BSSR Council of Ministers and, if necessary, include these changes in the State Plan for Economic and Social Development of the BSSR for 1990.

10. The Belorussian SSR Academy of Sciences along with the BSSR Minzdrav, other interested ministries and departments will elaborate a concept for the complete medical-biological, social, psychological and economic rehabilitation of people residing in contaminated territories, accelerate the elaboration of a method of evaluating the total affect of all radionuclides, the influence of radiation taking into account all anthropogenic factors and of lowering the radiation burden on man in the populated areas with low levels of radiation contamination.

Elaborate radiation-ecological passports for the rayon centers and other populated areas of the permanent monitoring zone (15-40 Ci per kilometer) before 1 July 1990.

11. The BSSR Gosplan is to ensure the manufacture in 1990 at republic enterprises of no fewer than 60 thousand individual dosimeters and radiation control devices and to increase their deliveries outside the republic.

The communists-leaders of the following Minsk production associations are to organize the manufacture of the stipulated number of these devices and to increase their production in the future: V.I. Lenin "Gorizont," Gomel "Izmeritel" PO [Production Association] and radio engineering supplies plant, the Borisov "Ekran" PO and the Rechitsa "Ritm" plant.

12. Taking into account the inadequate level of general education training of students residing in contaminated areas due to a shortage of pedagogical personnel, the BSSR Minister of Education will resolve before 1 May issues regarding the opening of training courses for graduates expressing the desire to study at the republic's institutes of higher education.

13. Comrades M.V. Kovalev, N.N. Mazay (BSSR Council of Ministers) and V.S. Ulashchik (BSSR Minzdrav) will locate supplementary resources for improving the base for health care, for the acquisition of needed equipment and medicines, and will carry out measures to improve training for medical personnel and to increase their presence in the stricken rayons.

14. The BSSR Gosagroprom and the Western Regional Branch of VASKhNIL [Lenin All-Union Academy of Agricultural Sciences] will accelerate the resolution of issues involving the diversification of production, supplying the collective and state farms and enterprises in the contaminated zone with agricultural machines equipped with hermetically sealed cabins and storage compartments; will accelerate the establishment of normal working and living conditions, carry out research on the economic effectiveness of the possibility of producing clean products and provide recommendations regarding the initiation of agriculture operations in areas which were subjected to radioactive contamination.

15. Demand from KPB [Belorussian Communist Party] obkoms, gorkoms, raykoms and the oblast, city and rayon soviets of people's deputies an increase in personal responsibility of its staff. They will conduct systematic monitoring so that the measures which have been stipulated for eliminating the consequences of the accident can be completely fulfilled.

16. The commissions of the KPB Central Committee and the BSSR Council of Ministers (comrade A.T. Kichkaylo) are to carry out concrete and effective measures to implement the state program as well as other decisions on eliminating the consequences of the accident at the Chernobyl nuclear power plant and to submit, if necessary, proposals to the union organs of the republic government.

Ensure that the population is systematically informed of the work underway.

Belorussian Chernobyl Union President Summarizes Group's Goals

90UN1824A Moscow SOYUZ in Russian No 18, May 90 p 4

[Interview with the president of the Belorussian socio-ecological union "Chernobyl," Vasiliy Yakovenko, by SOYUZ correspondent Aleksandr Shagun; place and date not given: "New Ecological Movements and Parties Formed"]

[Text] **Recent weeks in Belorussia have been marked by an increase in the ecological movement and by the formation of new organizations and movements. In Gomel, for instance, the Belorussian socioecological union "Chernobyl" conducted its constituent conference. There were organizational meetings in Minsk where the creation of an ecological party of Belorussia and a republic water association was announced. Their main goal is to rehabilitate the environment.**

The new Belorussian socioecological union "Chernobyl" made itself heard quite widely. The union president, author and journalist Vasiliy Yakovenko, spoke to your

correspondent and emphasized the fact that his union, or rather his party, was formed as a counterbalance to the official structures.

[Shagun] Excuse me, Vasiliy Timofeyevich, but both the Belorussian SSR [Soviet Socialist Republic] Supreme Soviet Presidium and the Council of Ministers of the republic has already done a great deal to alleviate the pain of the tragedy. And I did not even mention the Central Committee of the Belorussian Communist Party. A new wide-range program was designed through their initiative and active support aimed to eliminate the aftereffects of the disaster.

[Yakovenko] But people still live in areas where the cesium contamination of the soil is 40 curie units per square kilometer. The children are terribly sick; the adults are suffering. And at the same time new villages and cattle farms are being built in the contaminated areas. As an example I can name the village of Mayskiy in the Mogilev area, and some residential complexes in Gomel Oblast at a total cost of R200 million.

I am convinced that the meetings, strikes, and storms of Council of Ministers offices that have swept across the republic recently were caused mainly by the absence of any help for the residents of the contaminated areas. There is nobody to help them defend their rights and interests.

[Shagun] What can you do then to make life easier for the people from the hard-hit areas if the authorities cannot do it? And the authorities have actual power and material and financial resources.

[Yakovenko] Very often it is not the indifferent official help that my compatriots need, but a kind attitude, involvement, and concern. Entire villages and kolkhozes [collective farms] are being resettled in new, clean places. But the people get scattered every which way. Some are sent to the RSFSR [Russian Soviet Federated Socialist Republic], others end up in different parts of the republic. Human relations are being cut through the quick. We have spoken against this deplorable practice. We started making arrangements for group resettling of workers and of kolkhozes to the clean lands. This was just one of our undertakings.

The second one, and perhaps the main one is the public control, the control of the quality and condition of radiation, the quality control of foods, and the offers of alternate proposals to the government offices of the republic.

Now we have started a fight for a considerable lowering of the radioactive contamination norms for agricultural produce. These "impurities" are accumulating more and more in the human body and more of various diseases appear now. So that we do not make mistakes, the "Chernobyl" union has enlisted well-known experts on radiobiology, radiation medicine, physics, officials of Soviet organs, and lawyers.

Contaminants Engender Special Baby Food Production Procedures

90P50017A

[Editorial Report] Kiev SILSKI VISTI in Ukrainian on 2 May 1990 page 3 carries a 1600-word article entitled "The Field From Which the Children Are Fed", offering detailed advice on cultivation of contamination-free raw material for baby food.

The article notes that baby food production is becoming a problem because of contamination of the raw material by heavy metals, mycotoxins, and pesticides. With the aim of correcting this situation, special zones are being designated in most oblasts in the steppe and forest steppe zones of the Ukraine in which "clean" corn for grain, buckwheat, and sunflowers are being cultivated this year for production of baby food products. The article's recommendations, addressed to specialists, equipment operators, and others who work in the fields, contain instructions worked out by specialists at the UkSSR Gosagroprom, scientists at the southern branch of VASKhNIL, and scientific research establishments.

Toxic Substance Mishandling Trend Seen As Possible 'Chemical Chernobyl'

90WN0099B Moscow IZVESTIYA in Russian 21 May 90 Morning Edition p 2

[Article by Ye. Solomenko: "The Risk Factor: How To Safeguard Our Menu"]

[Text] At the beginning of February in Novosibirsk a panic began. When people put a spoonful or so of sugar into their tea, the liquid took on a frightening blue color right before their very eyes. City health authorities couldn't understand what was going on and turned for help to the scientists from Akademgorodok in the Institute of Organic Chemistry. An analysis showed: the sugar was loaded with crystals from a dye which people call "zelenka." The food processors blundered and mixed it in with the sugar and packaged it.

A far more dangerous chemical could wind up on our dinner table in similar fashion. And it almost did. Back in January specialists from the "Inya" agricultural firm noted that greenhouse plantings of cucumbers were behaving oddly. The foliage appeared diseased although the cucumbers themselves looked quite marketable. Neither the plant protection station nor the oblast health authorities could find the cause. So the agricultural firm's management knocked on the door of the same Institute of Organic Chemistry.

The results of the analysis shocked everyone: the greenhouse soil turned out to be contaminated by a strong toxic chemical - amine salt.

"But we didn't use it! the "Inya" workers said surprised. We sterilized the soil with a formalin solution."

The investigation initiated by the procuracy discovered that the toxic substance was contained in the formalin containers which arrived at the agricultural firm from "Iskitimskaya Selkhozkhimiya." Everything was as simple as in a horrible dream: they took barrels which had toxic residues on the bottom and did not take the time to check if the container was empty or clean. And they threw in the formalin solution. Now these cucumber plantings on all twelve hectares have been destroyed completely and a deep removal and replacement of the soil is underway. More than 7 million rubles went down the tubes.

It is quite possible that the losses could have been measured not in rubles but in hospital beds and human lives. By the way, where's the guarantee that similar "formalin" didn't find its way to other farms as well?

And memory obligingly serves up more and more facts. About the cans of green peas which were first sold and then the polite director proposed over the radio (to those who hadn't already eaten them) that the cans be returned to the store. About the tea which had a completely normal color with and without sugar but which had very abnormal radioactivity (they say that the frightened residents of Novosibirsk literally returned strategic reserves to retail stores - dozens of tons of tea).

All of these "case studies" lead us to a terrible conclusion: each time that we sit down at the dinner table, we (especially our children who are more sensitive to the "wonders of chemistry") take a risk.

However, our powerful instinct for psychological self-preservation bristles: but there is a control system, it will protect us. We were brought up in the sacred belief that our beloved state had insured us once and for all against all possible misfortunes and that thousands of vigilant guards protected our health, peace and safety. There is control.

Often, there is no control, only its appearance. In order to arrest just one of many violators of the chemical border (I am speaking about pesticides), to guarantee the reliable monitoring of their content in produce, the Novosibirsk plant protection station would have to analyze each year 50 to 60 thousand samples. If only they had the resources to "shovel through" a tenth of that.

This is because the overwhelming majority of the warriors of our health and chemical "customs service" is armed with instruments which should have been donated to a museum a long time ago. To monitor the quality of food products with their help is the same as trying to create an orbiting space station with a stone axe.

That's our ability to economize in areas where you musn't cut corners and then to toss out billions on the implementation of risky projects...

And that's why you have to wait about four days for the results of an ordinary analysis. And when the analysis sends out as "SOS" because, for example, some onions are practically bursting with pesticides, it turns out that the onions are already being sold hand over fist. In this way, the absence of an express-analysis makes the monitoring of perishable store and market produce essentially impossible.

However, even if the analysis was done and doesn't show anything, that doesn't guarantee that we won't be poisoned. That's because the health authorities might check the produce for one pesticide while the state farm used an altogether different one. The farm itself often doesn't know what kind of "pig in a poke" was handed to them by the "Selkhozkhimiya" association because it is not unusual that the chemicals are delivered without a label, without instructions. And they don't take into account at all what kind of chemical products were used on a field previously although everyone knows that they don't disappear without a trace but have the bad habit of accumulating in the soil.

Recently the Siberian Division of the USSR Academy of Sciences lead by its chairman, V. Koptyug, has gone on the offensive in the fight for clean food products. Highly sensitive methods of analysis are being worked out including an express-analysis system; a pesticide analysis center is being created as well as an ecological arbitration center...

Our environment today is reminiscent of the situation in which a person is drowning in front of a crowd of people. Everyone is yelling, "Save him," but nobody is venturing into the water. There are a lot of meetings, appeals, emotions - but very little concrete work, dull and thankless. Here in Siberia an attempt has been made to combat an ecological catastrophe with the "whole world" by uniting the forces of the Novosibirsk Oblast Environmental Protection Committee, the enormous resources of the Siberian Division of the USSR Academy of Sciences, the collectives of the polluting enterprises themselves and public groups including the "greens" whom some official ecologists fear like fire and refer to as loudmouths.

The ecological program for the period up to the year 2005 for the Novosibirsk Oblast is now being completed. This is not just another paper bulwark but the first experience with a scientifically substantiated systems approach to a resolution of the problem, a plan to move from slogans and empty talk to concrete and effective actions. This kind of collaboration and this kind of plan for joint actions is kind of an experiment. It can't be ruled out that this method will provide the key in future years to success on a country-wide scale.

But whose jurisdiction does this key fall into? Who handles the entire complex of protection measures? A total of five ministries and departments are responsible for issues of pesticide control in the USSR. Once again - the immortal system of bureaucratic departmentalism!

And then there is the problem of storage. In the Novosibirsk Oblast only 12 percent of all treatment

materials, fungicides and insecticides all stored in normal warehouse facilities designed for this purpose. The rest are homeless vagrants; the chemical bombs spend the night under the stars, and the winds and rains spread them throughout neighboring forests, valleys, farm land and rivers.

In addition, almost 300 tons of these poisonous deposits won't go anywhere now because they have either been ruined due to poor storage conditions, their product life has expired, or their use has been discontinued. What do you do with them? The manufacturers do not accept them back for reprocessing. Store them underground? That's dangerous; you can expect more accidents. So this horrible supply, this "chemical bomb" which sooner or later will explode just accumulates in warehouses.

But is the Novosibirsk Oblast really the most dangerous in regard to chemical contamination? How about Moldavia which has been stuffed with herbicides? And the Moscow region, loaded with heavy metals, mercury and cadmium, lead and arsenic? And Central Asia, thoroughly saturated with nitrates and defoliants? I remember how the chairman of a large vegetable collective farm was brought to a hospital in Ashkhabad. He was poisoned by one of the melons from his own fields.

We have become accustomed to viewing this problem as a technical, economic or organizational one. Let's finally face the facts: this problem is political. And if society is not morally healthy, it cannot be physically healthy. During the decades of our lawlessness a caste of officials has been formed and taken root which is firmly convinced: "This beast will eat anything you put in his feed trough!" So they are still throwing things at us: radioactive tea, meat which has been subjected to radiation or some other kind of food product shot full of chemicals. And nobody is surprised anymore, it seems, that the state prefers to add the radiated meat to ground beef or sausage instead of destroying it. In short, it prefers to use tricks and loopholes in order to somehow feed it to the people. State and collective farms pump more and more chemicals into their fields. From year to year more and more people poison their bodies with huge doses of nitrates, pesticides and other "cides." It is a reliable and efficient conveyor: from the rows in the state farm to the "rows" in the cemetery.

Where is the solution? To open specialized stores where ecologically clean produce would be sold at higher prices? (A number of Western countries have experience with this and it appears to function well). But to me that seems amoral. That means that health is for the well-to-do portion of society and poisoning for the poor people? We forgot long ago that the main capital of any state is not its gold reserve, not its mineral resources or its military arsenal but the health of the nation. We have forgotten that a healthy citizen is a valuable worker, defender of the Motherland and parent of the next generation.

This kind of "forgetfullness" has already lead us to terrible statistics on disease and mortality rates (especially among children). And tomorrow? Will our grandchildren be deformed and become mutants because their grandfathers allowed themselves to be turned into meek sheep crowding around the feed trough full of nutritious poison?

The children of the Earth are good-for-nothing. Having presumptuously added the word "sapiens" (wise) to the name of the human race, we are becoming increasingly dangerous inhabitants of this planet which we have mutilated. Remember how you loved to dance in puddles under a warm June downpour when you were a child? How you would drink from creeks in the forest and how there wasn't any better tasting water than that? Today we open a protective umbrella over our head with a shudder: what does the rain bring with it - acid, radiation?

This is not a voice of nostalgia for my childhood but a single thought: how to survive? But maybe it would be worth it for nature to brush us off the face of the earth - erase us like a first grader corrects a mistake in a dictation with an eraser, and once again begin the search for a life form which will be "sapiens" to a greater degree than we have been?

Fungicides, pesticides, herbicides, insecticides...In the same category is genocide. We are candidates to become victims of a new, chemical Chernobyl. We apparently are no longer frightened by statistics on contamination levels which exceed many times over the PDK - maximum allowable concentration, the boundary which separates the "possible" from the "impossible." We have had the occasion to be witnesses of how these ceilings of the allowable have been raised under the pressure of bureaucratic government. And only the cats refuse to respect the new "standards" and refuse to eat our sausage: a cat's intuition is more reliable than GOST [State All-Union Standard]. What can we do? Create a group of highly qualified experts completely independent of the will of the departments, answering only to the country's parliament, which would conduct an inventory of these BDK - infinite allowable concentrations? Today a cucumber or piece of boiled sausage from our dinner table is not simply a cucumber or sausage but factors...Risk factors. Weapons of mass destruction.

I step outside on a Spring day in Akademgorodok, jumping over a puddle, smiling at a squirrel flashing between naked birch branches like a red flame. But my tongue keeps tripping over words which won't go away: herbicides, pesticides, fungicides... A van boldly shoots past reflecting sunlight from the joyous puddles. On its white side is a blue sign: "Produce." Blue like the tea not long ago with sugar from Novosibirsk.

Uzbekistan Sees Series of Radioactive Substance Mishandling Incidents

90WN0086A Tashkent PRAVDA VOSTOKA in Russian 25 Apr 90 p 3

[UzTAG report: "In a Ravine Near Almalyk...And Not Only There"; passages in boldface as published]

[Text] **Radiation supervisors found some strange objects in a ravine near Almalyk. They were elliptical objects with flattened ends, weighing 150 kilograms each. All four were sources of gamma radiation....**

"The radioactive anomaly was detected by helicopter," said Yu. Semenov, chief of the Radiation Ecological Division of the Krasnokholmskgeologiya Production-Geological Association. "When the inspectors arrived at the site, they found the items in a lead casing. Fortunately, the casing was intact."

It will be the job of the oblast public health and epidemiology center and the responsible agencies to find out how the sources of radiation ended up near the substation of the Almalyk Mining and Metallurgical Combine and who put them there.

Experts define this discovery as a major emergency. The dosimeters registered radiation of more than a roentgen per hour. It is horrifying to think of the damage the carelessly discarded "scrap metal" could have inflicted on nature and the human being. Now the items are being kept in the storage facility of the combine's radioisotope laboratory.

"Just recently this kind of 'hidden treasure' was discovered only by accident," Yu. Semenov went on to say. "Now we have begun a methodical search. We are doing all of this work in conjunction with civil defense offices and the radiological laboratories of public health and epidemiology centers. Our experts are drawing up a map of the radioactive gamma background of populated points. The first in line will be Tashkent and the large industrial and oblast centers.

"Regrettably, these discoveries are not isolated incidents. Division radiation inspectors were amazed by some manure they found near the Tashkent Hippodrome in Solnechnyy. The level of radioactivity in a space of 20 meters by 40 meters was 10 times as high as the permissible limit. And this manure was going to be spread on the fields!"

Investigations in Samarkand turned up sources of radioactivity on the grounds of an oncological clinic and a home for the elderly. The doses of radiation were far from harmless. This is truly a case of negligence bordering on insanity.

In Tashkent the division inspected 114 schools and tekhnikums. Unsupervised sources of radioactivity were found in a third of them and were removed. Sources in the ravines of the Uzbek Metallurgical Plant are almost inaccessible. Inspector L. Chernikov detected an anomaly during an automobile gamma survey of Bekabad and reported that the region was inaccessible to the population, but the metallurgical dump sites were growing and should be covered with a meter of clean soil.

Measures of this kind, however, eliminate the result but not the cause. Why are the dump sites radioactive? Apparently, sources of radiation were smelted along with scrap metal, like the find in Almalyk.

It is a significant point that the "owners" of dangerous "scrap" are not being monitored strictly yet. The incident in Almalyk is further evidence of this. The elementary rules of safety are still not being observed in the choice of construction sites.

According to existing rules, all building sites must be tested for radioactivity. Last year, however, the division received only a single request from the Tashkent gorispolkom to inspect the Urikzor lot, which had been approved as a site for an individual construction project. Experts took 120 samples of earth from the garbage dump. They conducted a detailed analysis. Their conclusion was: Clean! There were no more requests.

There is an old saying that it is easier to prevent an illness than to treat it. This also applies to our topic. The violation of regulations costs much more than their observance.

The latest report of division personnel is that the gamma-radioactive background of Tashkent is normal.

1975 Leningrad AES Accident Admitted

LD1406200290 Helsinki International Service in Finnish 1600 GMT 14 Jun 90

[Text] The Radiation Protection Center has received confirmation from the Soviet authorities that the first unit of the Leningrad Nuclear Power Station [AES] had an accident in November 1975. The accident had not been notified abroad before. According to the information it received, the Radiation Protection Center estimates that the accident in Leningrad—on the scale of seriousness of nuclear power station incidents—is possibly classified in class three; that is, it would be a serious incident.

Opposition Leader Details Campaign Against Kalinin Nuclear Plant

90WN0084A LITERATURNAYA ROSSIYA in Russian No 17, 27 Apr 90 p 10

[Article by Yu. Shcherbakov, chairman of the All-Russian Society for the Protection of Nature Kalinin Department Presidium, deputy chairman of the Central Soviet Presidium commission for the public examination of the ecological situation in the Kalinin Nuclear Power Station zone and the draft plans for expanding the station, and Kalinin State University professor: "An Atomic Mine on the Upper Volga"]

[Text] In the 50th issue of LITERATURNAYA ROSSIYA for last year, I read an article by Boris Kurkin entitled "Parameters of Nuclear Safety or a Ragout of Dead Rats" and I cannot fail to comment on it.

I completely agree with the author and the newspaper: Not one of the absolutely necessary conditions for the accident-free and ecologically least dangerous development of nuclear power in our country has been—alas!—implemented during the designing, construction and operation of nuclear power stations—and mainly because of the resistant attitude on the part of our domestic nuclear technocracy to the problem. To a great extent, this is why we are building both nuclear power stations and nuclear heat and electric power stations where one should not build such stations due to natural and other component factors. This is criminal.

Unfortunately, even the Kalinin Nuclear Power Station in Udomlya is not an exception in this respect. As one of the organizers and participants in its public examination, I am concerned about the need for an intelligent siting of nuclear power installations. First of all, however, so that the reader will not form the opinion that a public examination is surely an examination by dilettantes (a kind of public organization that monitors the plans of scientists and law-makers for a "peaceful" atom), I should state that this is not the case at all. Our Central Soviet Presidium commission for a public examination of the ecological situation in the nuclear power plant zone and of the plans for expanding the station united scientists in different specialties from the very first moment. The Central Soviet of the All-Russian Society for the Protection of Nature discusses the commission's conclusions. Its composition also has sufficient people who are competent in the area of nuclear power and the ecology. Thus, it is not worthwhile to talk about dilettantism and a purely emotional approach that involves a love of meetings.

Our commission did not originate accidentally. At the time, all of us—even scientists—were in a certain euphoric condition with regards to the development of "peaceful" nuclear energy. The Tver people greeted the news of the construction of a nuclear power station in Udomlya near Kalinin with a certain sense of patriotism. Even the fact that the station would be built on the Upper Volga basin's watershed itself did not cause any misgivings: You see, the atom was "peaceful" and the station—"ecologically clean."

The builders started up its first unit in 1984. Something did not go well. The scientists in our university considered it their duty to work with the Kalinin Nuclear Plant's collective. They asked me to write up a plan for cooperation.

I had to delve into the essence of the matter. At the time, of course, far from everyone had access to the material. However, even on the basis of the incomplete data with which I managed to acquaint myself, doubts originated in my mind regarding whether the construction site had been correctly selected, considering the geophysical structure and the ecology and capacity of the region—water resources are limited.

Having discussed the situation, Yu. A. Abramov, a Kalinin University professor, and I wrote a report. The rector's office approved it. The report was sent to the party obkom.

It was impossible not to understand our report. It did not require that one be a specialist. However, we encountered not so much a lack of understanding but a desire not to understand. That same euphoria had affected everyone. Multimillions in investments. The transformation of "provincial" Udomlya into an industrial city of power engineers. The oblast's prestige....

As a result, not our conclusions but the plans of the Ministry of Atomic Energy and Industry received support. On the site where even the second nuclear power station unit was ecologically contra-indicated, it was decided to build eight—a million kilowatts each.

All of the studies for the eight million-kilowatt units reached the oblispolkom in 1986. However,... as they say in Rus, there was no happiness; the accident helped. After the tragedy at Chernobyl, not only public opinion took our side. It became easier to knock on the doors of certain offices.

Our group grew considerably and was filled with employees of the oblast planning commission, the oblast medical and epidemiological station and the Society for the Protection of Nature. It found quite a few helpers in other competent organizations and departments. We received the oblispolkom's complete support. This significantly expanded the capabilities of the public commission of experts. It is a public one primarily because it works without pay.

Altogether, almost 15 competent organizations have helped us to draw objective scientific conclusions regarding the entire complex of problems. The USSR Academy of Sciences is among them. Scientist academicians A. P. Aleksandrov and V. A. Kirillin and corresponding member A. A. Sarkisov, the most authoritative people in the energy area, have signed off on our conclusions. Leading employees in the Institute for Applied Geophysics in the State Committee for Hydrometeorology, the Main Geophysical Observatory imeni A. I. Voyeykov, one of the main administrations in the USSR Ministry of Health, and the Moscow-Oka Basin Administration have supported our conclusions. In December of last year, the results of the expert group's work were reported on and considered during a buro session of the USSR Academy of Sciences scientific council on biosphere problems.

The oblispolkom leadership—especially its chairman, V. A. Suslov—supported our recommendations to halt the further expansion of the nuclear power station. The

allocation of construction sites was halted on the basis of an oblispolkom decision. At that time, the designers and builders began to worry.

Their main counterargument: The country needs power!

Yes, it needs it, who can dispute this? However, should it really be at any cost? The cost of new Chernobyls? And where! In the very heart of Russia. On a watershed in an area where its main rivers have their sources! Should something similar to Chernobyl happen here—not Moscow, not the Volga region and not the country's European part itself would escape destruction. And only the European part?

One of the serious dangers that can potentially threaten the nuclear power station in Udomlya is the karst phenomenon. The plan and certificate of Atomenergoproyekt's Gorkiy department dated 10 October 1987 categorically deny the possibility of karst formations in the zone of the nuclear power station. Objective research convinces one otherwise.

The station is located on a carbon field. The carbon rocks were formed approximately 200 million years ago as sea-bottom deposits. Limestone and dolomite, which are interlayed with chalky clay, predominate here. They are actively destroyed under the influence of temperature, atmospheric precipitation and underground water. Consequently, ancient karst formations should exist among them.

At the time, we still did not have access to the investigations' materials. That is why we ourselves had to look for bore holes and construct a profile of the terrain. Our assumptions were justified. Besides our own research, we had the findings of the Kalinin geological survey party of the Tsentrgeologiya Production Association on this question. Their conclusion proves that karst forming is continuing. The designers had essentially nothing to say to contradict this.

Nevertheless, karst is not dangerous by itself if you approach it from the appropriate engineering positions. It is the fact that this was not taken into consideration during the designing. The designers, in rejecting karst, did not provide for any measures against it. This is dangerous.

Even under complete safety conditions, however, the nuclear power station in Udomlya will not be able to operate at its designed capacity because there is not enough water to cool four units—the two commissioned and two under construction—and eight of them are being planned!

We tracked zones in Western Europe and North America that adjoin the watersheds of large rivers. Nowhere, even in our country, did we find large industrial installations on them. The world's historical experience takes the specific nature and special environmental protection role of watershed areas into consideration. Our present designer "atomic scientists" have disregarded this experience and have planted a very large nuclear power station on a watershed. As a result, besides the danger of poisoning the Volga region and the regions of other rivers with radioactive discharges, a water supply problem has arisen.

A watershed is called a watershed because all water flows from it. The only credit item in the water balance on these territories is atmospheric precipitation. The designers tried to prove that there is sufficient for the operation of the four units. We decided to check the water balance that they compiled. It was not easy to do this. The Northwest Administration of the hydrometeorological service replied to a letter from V. A. Suslov, chairman of the oblispolkom, with a rejection.

Subsequently, we took 50 years of oblast hydrometeorological buro data for Bologoye, Maksatikha and Vyshniy Volochek as the apices of a triangle within which Udomlya is located. Based on them, we obtained the average annual amount of precipitation in the area of the nuclear power station. In addition, it was necessary to take losses from evaporation into consideration. There is a special hydrological laboratory—one of the most respected in the country—in the city of Valday. It is located north of Udomlya and evaporation is less there. However, all of its data helped us to compile a map of the evaporation surfaces of the above-mentioned coolant lakes' water catchment area. Calculations showed that 60 million cubic meters a year are required to supply only the four nuclear power station units with water, or more than two-thirds of the average annual water catchment area of Lake Udomlya from which the Syezha River flows. If one takes this water for the plant's needs, the Syezha will perish. Based on common sense, it is no accident that the law prevents removing more than a third of the annual run-off from rivers. The designers have tried to get around this obstacle by being silent about it. However, one cannot go around nature's laws. The intake of such an amount of water threatens the lake (it has already begun to overheat), the Syezha and the surrounding area with a catastrophe.

How can this be? The USSR people's deputies from our oblast submitted an inquiry to the Ministry of Atomic Energy and Industry. The ministry's reply dated 27 June 1989 says that the cooling system will be replaced "by the construction of water-cooling towers." Yes, water-cooling towers will cool water more efficiently than the lake itself. However, ... from where should the water come? Not from the lakes located here and not from the flow of the Syezha—there is not enough for this.

The designers presumably planned to use the water resources in the Mologa River basin. We researched this question also. At its lowest level, the Mologa does not have the necessary amount of water. This means that it would be necessary to regulate its flow, that is, build a dam and a reservoir—another stagnant "sea" in the Upper Volga basin and an extremely extensive one. The Mologa in its upper portion, which it would be necessary

to "regulate," flows along the so-called Mologa Depression, which is an extensive and flat one. We already know from the experience of other submerged areas, of which our country has more than enough, what it means to build a reservoir under such conditions. It means the loss of a large land-tenure territory, enormous financial expenditures, prolonged construction, and irreversible ecological changes in the contiguous region.

It seems that the Ministry of Atomic Energy and Industry has—under the impact of the irrefutable facts—begun to understand, recognizing that "without additional coolers one cannot limit the thermal strain" on the lakes that will be operating within the orbit of the nuclear power plant (with the construction of the planned units, it would be necessary to include the neighboring lakes of Kezadra and Navolok here). Atomenergoproyekt has developed "Design Proposals for Reconstructing the Kalinin Nuclear Power Station Cooling System Considering the First and Second Phases."

The very fact of reconstructing that which has still not been built testifies to the low quality of the designing and the lack of trust in the project. It is planned to expend 270 million rubles on the general reconstruction. After the building of the water-cooling towers, the "average heating" of the water in the cooling lakes during summertime will be equal to five degrees Celsius in the designers' opinion. However ... the question of where to get the water has not been removed. Also, what is meant by "average heating" if the warming already is causing fish to die in the discharge zone?

I have intentionally not touched upon the problems of the plant's accident-free operation. Equipment failures increased significantly with the start-up of the second unit. There were 44 of them during 1987, including 11 due to the fault of the personnel. There were 13 and 4, respectively, during 1988 [sic]. They also occurred during last year. G. A. Shchapov, the plant's director, cited these data during a press conference in Udomlya.

We have information from the Kalinin Oblast medical and epidemiological station—a state agency and a completely competent one—that the radiation situation in the area of the nuclear power station is causing uneasiness. What will happen when the units complete their service life and it is necessary to shut down the plant?

These are special subjects. I will only say that Atomenergoproyekt has still not offered a plan for maximum permissible discharges into the atmosphere and a forecast of the local population's exposure to radiation for the 70 years. An automatic system for monitoring the radiation situation, which the draft provided for, has still not been set up in the 30-kilometer zone.

The designers and operators prefer to work "in the dark" on the off chance that the population will not learn about the possible dangers. This, however, only inflames passions around the nuclear power station even more—and they are justified to a great extent.

According to the "Requirements for Siting Nuclear Power Stations," their maximum capacity should reach eight million kilowatts only under favorable conditions. The conditions in which the Kalinin Nuclear Power Station is being built—karst processes, the location of the plant on a tectonic break and a watershed with limited water supply resources and the danger of radioactive contamination of the Volga and Msta—are extremely unfavorable. For these reasons, even the two units here are providing 25 million rubles of electrical energy less than the plans and specifications call for. The Ministry of Atomic Energy and Industry, however, intends to complete and start up the third and fourth million-killowatt units.

Regarding the others—the fifth to eighth, circumstances are changing considerably and not without the influence of the public commission of experts. A meeting on questions concerning the construction of the Kalinin Nuclear Power Station was held during January of this year with L. D. Ryabev, deputy chairman of the USSR Council of Ministers. I participated in the debates. A decision not to design and build the third and fourth phases of the Kalinin Nuclear Power Station (the fifth-eighth units) was agreed to. The USSR State Committee for Environmental Protection was given the mission of conducting as rapidly and as carefully as possible a state examination of the karst problems in the vicinity of the nuclear power station's building site and the water balance for its operating units and those being built. A special state commission has been established.

Work has been begun, the ice has begun to break. We are hoping for fruitful cooperation with the "atomic scientist" power engineers and for a mutual understanding and wise solution of the problems. No matter how difficult it is, we will not retreat from our position.

One cannot allow a very powerful atomic delayed-action and long-term "mine" to be placed at the very heart of Russia, on the watershed of its main European rivers and in the upper reaches of the Volga in the form of the next power giant. Boris Kurkin and everyone, who strongly opposes it, are correct: Russia is not a testing ground for irresponsible experiments. This concerns not only its people but all the inhabitants of the earth.

Balakovo Protests Against Nuclear Power Station

PM0606081390 Moscow Television Service in Russian 1700 GMT 2 Jun 90

[From the "Vremya" newscast: V. Ryazanov report]

[Text] [Announcer] Civic movements in Balakovo City, Saratov Oblast, have launched a protest action against the continuing operation of existing power units and the building of new ones at Balakovo nuclear power station [AES].

[Ryazanov—video shows marchers carrying protest banners] Approximately 1,500 persons formed from early

morning a human chain along various sections of the city streets and highways leading to Balakovo AES.

[Laboratory Technician G.G. Bochkareva speaking to camera] Our children have developed both blood diseases and allergies.

[Ryazanov—video shows banner-carrying demonstrators] People are alarmed and indignant; despite repeated appeals to the union and republic leaderships and the USSR Ministry of Nuclear Power Generation and the Nuclear Industry, a powerful AES is still operating and being expanded here on the banks of the Volga, right next to the city. As for the situation on 1 June [video shows a window display of "Radiation Conditions at the AES Industrial Site," external shots of power station, power line pylons, technician at instrument panel]: The radiation level recorded by instruments is not in excess of background radiation values. Only one of the three operational power units—each one of which has a capacity of 1 million kilowatts—was actually in operation.

We were told that the rather frequent shutdowns of power units—the Balakovo AES ranks first in the sector in terms of the number of shutdowns—were due to the poor quality of Soviet-made power industry equipment. There have been no failures by the nuclear reactor. Specialists are convinced that safe operations by the AES are reliably guaranteed. [video shows unidentified man seated at desk, showing an item of equipment to the reporter] They are ready to meet citizens' representatives at any time and answer all the questions perturbing them. What will you tell people?

[B.S. Samoylov, chief engineer at Balakovo AES, talking to camera] Only the truth and trustworthy information about the power station's operations.

[Ryazanov—video shows agitated demonstrators talking] The city residents were unwilling to hear the AES spokesman out. This is the price to be paid for the years of silence and secrecy which shrouded operations by this and other nuclear power stations in the country—loss of confidence, waste of efforts; something else is also alarming.

[Yu.M. Bugrov, chairman of Balakovo City Soviet] We are waiting for someone to arrive—we don't know who, we don't from from where, we don't know for what purpose. Unfortunately, even the deputies themselves who organized this action are simply not keeping us informed.

[Ryazanov—video shows people outside official building, a group of citizens at discussion around a table, outside shots of Balakovo] It is proposed to hold a citywide ecology rally in Balakovo 24 June. An action group has been set up to organize it. It appears that Balakovo's citizens are beginning to realize that no constructive result will be achieved by disjointed efforts and by remaining hostage to soapbox passions.

Anti-Nuclear Demonstration Continues at Balakovo AES

LD2406141490 Moscow Domestic Service in Russian 0330 GMT 24 Jun 90

[Text] A protest against the construction of phase two of the atomic power station [AES] is continuing in the town of Balakovo in Saratov Oblast. This protest began on 1 June on the initiative of the Greens' Movement. A city of tents has appeared along the road leading to the AES, and pickets have been stationed there. Another ecological rally is to be held on the town's central square. The demands include a halt to the construction of the fifth and sixth power sets, and that a thorough ecological and technical expert examination be carried out at the operational station.

Anti-Nuclear Protests in Ural Regions

LD2306180990 Moscow Domestic Service in Russian 1500 GMT 23 Jun 90

[Text] We have already reported that an interregional anti-nuclear protest march has started simultaneously in Bashkiriya and Tatariya. Its participants are coming out in favor of halting the construction of nuclear power stations in the republics and of declaring the territories of Bashkiriya, Tatariya, and Udmurtiya nuclear-free zones. There is a municipal rally in Ufa today. Taking part in it are all those concerned at the fate of future generations and the future of the Earth.

Rally Held To Protest Tatar AES Construction

LD2606013790 Moscow Television Service in Russian 2100 GMT 25 Jun 90

[Video report from Tatar Soviet Socialist Republic by correspondent I. Latypov, identified by caption; from the "Television News Service" program]

[Text] [Latypov] The Tatar Nuclear Electric Power Station [AES] is being constructed in spite of arguments by Kazan scientists to the effect that the wrong site has been chosen, something that could result in a catastrophe. This was done contrary to the will of the Tatar Autonomous Soviet Socialist Republic Supreme Soviet which had adopted the decision to halt the construction. The USSR Ministry of Atomic Power is heading for an open confrontation with the peoples of two large autonomous republics which do not want to be pawns of dubious projects. [video shows protest rally, close-ups of several slogans]

Yaroslavl, Ivanovo Nuclear Projects Halted; Public Pressure Cited

90WN0099A Moscow PRAVDA in Russian 21 May 90 Second Edition p 8

[Article by Z. Bystrova: "Fact and Commentary: A Dissenting Opinion"]

[Text] More than once I have had occasion to be a participant in the emotional and fierce battles between city dwellers and the representatives of Minatomenergo [Ministry of Atomic Energy and Industry], science and the departments. Often both sides lacked patience and convincing arguments. And what's more - trust.

Efforts of the Yaroslavl public were not in vain in blocking the questionable resoluteness of nuclear energy workers in their desire to brighten the lives of the ancient Russian city of almost a million inhabitants with an ATETs [Atomic Thermoelectric Plant]. Rumors were adrift that the construction design of a town near Yaroslavl for the nuclear energy workers was already being worked out and that geodesists had been parachuting into collective farm lands, conducting reconnaissance and brushing off questions of the inhabitants of the areas contemplated for Atomstroy [Atomic Energy Construction Association] construction projects.

No, the decision wasn't one which was made automatically, one that would be more acceptable to the people of Yaroslavl. Practically everyone in Yaroslavl feels involved in the decision reached by the CPSU obkom bureau and the oblast soviet ispolkom regarding the rejection of plans for the construction of an atomic thermoelectric plant in favor of using gas fuel as an energy source.

The population and the general public of the oblast support that decision. A public panel of experts voted in favor of it. The possibility of decreasing energy consumption was demonstrated competently - urbanization of the industrial oblast has been halted. Ways to cut losses in existing energy resources were noted and the possibility of providing a heat supply to a number of oblast cities through the construction of water-circulating thermoelectric plants was taken into account, something which PRAVDA once wrote about.

There is a second bit of encouraging news. It has to do with the Ivanovo Oblast which is next to the Yaroslavl Oblast. Here as well the general public defended its right to have a dissenting opinion. Its reasoning and ideas have been taken into consideration. A message arrived at the offices of the oblispolkom which we quote in its entirety: "The USSR Minatomenergoprom, in accordance with the decision of the Ivanovo Oblispolkom of 18 January 1990 No 21, has halted elaboration of the technical-economic justification for the construction of the Ivanovo ATETs. The "Atomenergoproyekt" institute has been instructed to cease field exploration work as of 15 February 1990."

No, it's not an unwillingness to understand, to realize, or to keep pace with the demands of the times that is behind all of this, but rather the sense of personal responsibility that has come of age and which is felt by each of us for everything that happens in our home.

Rally Protests Construction of Khmelnitskiy AES

LD0506183390 Moscow Domestic Service in Russian 1300 GMT 5 Jun 90

[Text] An ecology rally has taken place in the Ukrainian town of Slavuta which is in Khmelnitskiy Oblast. The rally's participants demanded the closure of the Khmelnitskiy Nuclear Power Station [AES]. It should be said that this issue is not being raised for the first time. Picketing of the station is underway. Fifteen people are continuing a protest hunger strike. A coordinating strike committee has been set up. The Dolgunovskiy Cement Factory has refused to supply its output for the construction of the AES. Yuriy Gonuchak, a member of the Khmelnitskiy Rukh organization—it should be said that the movement as a whole is one of the initiator's of today's rally—said that if the session of the oblast Soviet of People's Deputies does not take a decision on a moratorium on the construction of the station then a strike will begin. An interfax corespondent has cited the following figure: more than 80 percent of the oblast's inhabitants are coming out in favor of this decision. But I have a question: what do these 80 percent of inhabitants of the oblast propose should happen about the oblast's power supply? In the long term, naturally.

Plans To Build Kostroma Atomic Power Plant Shelved

LD1506204690 Moscow Domestic Service in Russian 1800 GMT 15 Jun 90

[Text] The public opinion campaign in Kostroma Oblast to halt the construction of an atomic power station has ended in victory. The first session of the oblast soviet of people's deputies of the new convocation today adopted by a majority of votes a decision on this. The oblast soviet executive committee has been instructed to work out ways of making use of the construction base and the building workers.

The Kostroma Nuclear Electric Power Station was being erected in the immediate vicinity of a major rayon center, in a place where the ground was unsuitable because of its geological structure. No account of ecological considerations was taken in the plan. Only the insistence of people's deputies, of the State Committee for Environmental Protection in Kostroma Oblast and the Committee for the Protection of the Volga brought this fact to public attention and averted another fateful mistake. The session of the oblast soviet of people's deputies addressed to the USSR Council of Ministers a request to heed its decision.

Moscow's Severnaya Power Plant Project Abandoned

PM0806130090 Moscow Television Service in Russian 1700 GMT 6 Jun 90

[From the "Vremya" newscast: Reportage by A. Konstantinov, identified by caption, from Moscow's Severnaya heat and electric power station construction site]

[Text] [Announcer] Another report from Moscow. So the Severnaya TETS [heat and electric power station] is not to be. The first Moscow City Soviet session has adopted a decision to stop the construction work; Moscow City Soviet also submitted to the republican government, or rather, the USSR Council of Ministers, a proposal to stop financing all work connected with the construction of the TETS.

[Konstantinov, speaking over video of construction site, trucks driving through mud, piles of construction materials] Everything comes to an end, including such a widely publicized and costly project as the Severnaya TETS. Only recently this construction project was being called the biggest in Europe—after all, we cannot build anything that is not epoch-making. But today, having heard about the decision, the will of the Muscovites, the inhabitants of the nearby villages, as the recent song used to say, have received the right to breathe freely. But the leadership of this project thinks that there has been a mistake. Giving way to populist moods in the desire to boost their popularity rating, the people's deputies were simply led on by an ecologically ignorant and selfish population. By way of proof, figures are cited. More than R53 million has been assimilated, and uninstalled equipment and structural components worth another four million are lying around. [video shows building materials lying on the ground] In the event of a cold winter, they believe, apartments will be icy. But if I am to express my own sympathies honestly, I am inclined to side with the population, who may not know very much about ecology, but are wise about other matters, having learned, perhaps, from the bitter decades when considerable, uncontrolled discharges resulted in tragedies and the culprits escaped responsibility.

Incidentally, about responsibility. Several hundred millions were spent on the erection of the Crimean AES [nuclear power station]. Who squandered this wealth? We do not know. Under pressure from the people, construction of the Voronezh AES was stopped, and again, no culprits were identified. Another waste of money, this time amounting to tens of millions, near Moscow, and the same result. [video shows a pipe with graffiti reading "No to the TETS"]

If in no other respect, when it comes to the dictatorship of anonymous and faceless industry, we are more experienced than anyone else in the world.

Public Resistance to Nuclear Submarine Dismantling Plan

LD1306094790 Moscow TASS International Service in Russian 0805 GMT 13 Jun 90

[Text] Moscow 13 June. (TASS)—There has been resistance in the Far East by the civilian population and navy which is without precedent in the Soviet Union, the weekly 'MOSCOW NEWS' reported today. It started after the local paper 'VOSKHOD' reported that a military department intends to turn a bay situated right next to the town of Sovetskaya Gavan and the settlement of Vanino into a "chopping board" for decommissioned nuclear submarines belonging to the Pacific Fleet.

There was a series of meetings. A group set up a unified inter-rayon strike committee. There were calls for nuclear vessels to be picketed by land and sea.

Energetic protests by the 100,000-strong population of the coast compelled the chief of Sovetskaya Gavan naval garrison, Vladimir Kuroyedov, to suspend the order from the commander of the Pacific Fleet on starting to unload the active cores containing nuclear fuel from the reactors. Public representatives were allowed to check the submarines where work had been planned.

The strike committee suspended a June general strike. The demands of local soviets and resolutions from meetings have been sent to the fleet headquarters: that a date for a withdrawal of submarines for dismantling be announced by 1 July.

Navy Chief Chernavin Cited on Nuclear Sub Dismantling Protest

PM1806084190 Moscow IZVESTIYA in Russian 15 Jun 90 Morning Edition p 6

[Own correspondent B. Reznik report followed by commentary by Fleet Admiral V. Chernavin, commander in chief of the Navy, under the "Details for IZVESTIYA" rubric: "Secrets of the Declassified Submarines"]

[Text] Khabarovsk—The public is protesting against any kind of work being carried out on the nuclear reactors of submarines moored in Sovetskaya Gavan bay.

The reason for the protests were rumors to the effect that radioactive components containing nuclear fuel will be removed on the spot from nuclear submarines moored in Postovaya Bay which have outlived their useful lives. This seriously alarmed the local inhabitants. And the fact that the rumors were not groundless was confirmed by the Vanino rayon newspaper VOSKHOD in its very emotional article "There Will be No One to Laugh."

Only a day later in the same newspaper A. Klimov, chairman of the Vaninskiy Rayon Soviet, called the journalist's article "fabrications," and assured us that "no work has been carried out on the boats and no work is planned." The rayon newspaper workers were then heavily criticized at a recent Vaninskiy Raykom [Rayon

Party Committee] plenum. Yu. Savakin, political worker at the Sovetskaya Gavan Naval Garrison, spoke from the rostrum there. "Work involving the removal of components or reactors has not only not been carried out," he said, "but is technically impossible here."

Such assurances from authoritative leaders should cool passions but, strange as it may seem, after this they broke out with renewed force. Inhabitants of Vanino and Sovetskaya Gavan gathered at sanctioned and unsanctioned rallies, demanded that the military and civil authorities tell them the truth, organized continuous pickets in the naval base area, and delegated their representatives to examine the moored nuclear submarines and measure the background radiation level...

The submarines were empty, there was no work being carried out on them, and the background radiation, as the instruments showed, corresponded to the norm. The next reassuring news came from L. Ivanyute, chairman of the city soviet, in the columns of the Sovetskaya Gavan newspaper SOVETSKAYA ZVEZDA. He told the inhabitants that the night before he had spoken on the telephone to G. Khvatov, commander of the Pacific Fleet, who confirmed that there were no instructions to dismantle the units.

So, was this unfounded alarm? Time has shown that it was not unfounded. Only 10 days later, at a joint extraordinary session of the two soviets, V. Kuroyedov, commander of the Sovetskaya Gavan Naval Garrison, was forced to admit under pressure from the public that there were plans to remove nuclear fuel from the submarine reactors, there were intensive preparations for this, and it was being done on the instructions of... Admiral Khvatov. "I am now convinced that thanks to you I will receive different instructions—not to carry out the work," Kuroyedov continued.

The premonition of the admiral from Sovetskaya Gavan did not deceive him. Even before the end of the session's work he received a telegram from the fleet commander saying that the ill-fated instructions were rescinded, and he reported this to the deputies straight away. The naval department's deception and its attempt to carry out dangerous work on the quiet in a place that was not suited for it, was revealed.

The public won, but the problem remains. Many old nuclear vessels are being taken out of service—partly within the disarmament program—and the question of where to put them and where to dismantle and strip them is an acute one. This is hardly the place for advice to the naval command. But one thing is clear: These questions can be resolved only openly and without cutting corners on what may turn out to be an irreversible calamity for the people.

Commentary by Fleet Admiral V. Chernavin, commander in chief of the Navy:

"The final decision on removing the radioactive components from reactors in nuclear submarines in Postovaya Bay has still not been made. The Pacific Fleet command needs about a month to work out all the possible options for this operation. For my part, I can say only that we have 30 years' experience here.

"The technique for this work is well organized and the Navy has the necessary resources and reliably trained personnel at its disposal to recharge the reactors. As a rule, such operations are carried out in the water at ship repair enterprises, which are located near populated areas, and also at places where nuclear submarines are stationed, using specially constructed nuclear tenders for this purpose.

"Safety is strictly observed here. I mean that during the process of removing radioactive components the background radiation in the area of the operation does not exceed permissible norms, and the submarine itself and the components that are taken out are completely safe as far as radiation is concerned.

"The removed components are taken to the nuclear tender and handed over to be used by industry.

"It was never planned that nuclear submarine units would be dismantled in Postovaya, and Admiral G. Khvatov told City Soviet Chairman L. Ivanyute so. I believe that the misunderstandings that arose in the village are the result of not providing the people with information and poor explanatory work on the part of the organs of people's power as well as the fleet and naval base command.

"We are prepared for open dialogue with the population. Thus, for example, at the request of the inhabitants of the Kola Peninsula and Arkhangelsk Oblast, an expert commission involving USSR people's deputies and representatives of several scientific institutes visited Northern Fleet bases in 1990. Moreover, these were institutes that are independent of the Navy. A comprehensive investigation showed that we have committed no violations.

"And there will be no violations in Postovaya Bay. We are inviting representatives of the city's public to our operations. They will be able to see for themselves that all safety measures are being observed. And it could not happen any other way—after all, naval seamen live in Sovetskaya Gavan. People who work on nuclear submarines and serve on them. Their wives and children. We are not our own enemies.

"And last. Moving submarines that have outlived their working life will demand further expenditure from us to the tune of 600,000-800,000 rubles. And that is the cost of the housing which we all lack today."

Pestryalovo Radar Construction Arouses Protest

LD0506145390 Kiev International Service in Ukrainian 1800 GMT 4 Jun 90

[Text] Meetings of many thousands and picketing against the Pestryalovo radar station near Mukachevo in

Transcarpathian Oblast have not subsided. They became especially acute when military builders ignored the decision of the oblast soviet that the construction had to stop. The telegram sent by local residents to President Gorbachev remained unanswered. This raised a wave of dissatisfaction and protests among the population. A one-day strike was held at many enterprises of Mukachevo, highways around the town were blocked, unsanctioned meetings took place at enterprises and opposite the city and raykon party committees.

At present, all basic construction operations at the radar station site have stopped because local residents have interrupted the delivery of building materials.

Oblast Soviet Stops Transcarpathian Radar Station Construction

LD1106225990 Moscow Television Service in Russian 2057 GMT 11 Jun 90

[From the "Television News Service" program]

[Text] As we have already reported, on the demands of the residents of Transcarpathia, the oblast soviet has adopted a bold decision. It has by its authority prohibited the construction of a powerful radar station in the settlement of (Pistryalevo). In the opinion of specialists, its operation may pose a danger to the population and the environment.

[Correspondent V. Lyashko, identified by screen caption] The first thing that the local authorities did was to put a militia guard on the radar station construction site. The round-the-clock duty details have instructions to inspect all vehicles heading for the station, to stop delivery of construction materials or equipment. By their decision the oblast soviet of people's deputies proposed that the Ministry of Defense withdraw the military builders from the project and carry out recultivation of the lands destroyed in the area of the station. It is probably the first time in our lives that a body of local authority has adopted such a cetegorical decision regarding the activity of a military department. Therefore I asked the chairman of the oblast soviet of people's deputies what the soviet will do if the Ministry of Defense refuses to observe its decision.

[N. Yu. Voloshchuk, chairman of oblast soviet, identified by screen caption] Seven hundred thousand working people of the oblast have signed a petition that a Carpathian facility should not be on this site. I think that our politicians are very reasonable and shrewd, and it is hardly likely that they will agree to that. Well then, if they do go against the will of the people, then the people will have their say as well. [video shows landscapes, police checkpoint and Voloshchuk being interviewed]

Semipalatinsk Party Official on Nuclear Test Controversy

LD1406125190 Moscow Domestic Service in Russian 1100 GMT 13 Jun 90

[Text] As we have already reported, the Soyuz group of deputies has held a press conference devoted to its trip to the region of the Semipalatinsk test site. Olga Vasilenko, our correspondent, has, in connection with this, had a chat with Kifrim Bastayevich Boztayev, chairman of Semipalatinsk Oblast Soviet and a people's deputy of the USSR.

[Begin recording] [Boztayev] We did not know about this group. They have come by special flight, special flight by TU- 154 from Moscow, without any warning. They did not meet our people. They have not been to the settlements of Semipalatinsk, especially to the settlements where people have been suffereing during 40 years of unprecedented nuclear tests at the Semipalatinsk test range. They have not seen the people, have not met them. They did not see the tragedy. Therefore, their opinions are only of deeply subjective importance. They do not correspond to the facts. I have not seen them. We did not take part in anything. We are learning everything through TASS material.

[Vasilenko] What is your attitude to statements made by those scientists, in particular Professor Tsib, who is cited by the group and who affirms that there were no any harmful influences and there are none at the present time?

[Boztayev] We have this document. It is almost 15 years of air and ground tests of very powerful uranium, hydrogen, and fission bombs. Without any measures to protect the population. All this from 1949 until 1963. All this was fully recognized by the commission, we can produce documents. There is a conclusion of a big group of scientists and now of the specialists of applied medicine of our oblast, of Kazakhstan, about the ruinous influence of underground nuclear tests on the health of people. The underground explosion causes psychosis among the population. After every explosion the number of people using medical establishments increases twofold of threefold. The influence of underground nuclear waves on health have not been studied yet.

[Vasilenko] Tell us, what kind of measures are you going to take as the first secretary, as the chairman of the oblast soviet, together with your oblast party committee, with the oblast soviet in order to speed up the elimination of these consequences, to help the people, to help them in social aspects as well?

[Boztayev] We ourselves... You know, during the 40 years of intensive tests of nuclear weapons on the Semipalatinsk densely populated land, among the population- ...[changes thought] There was no help whatsoever, no benefits or compensation. At the same time those who work at this facility have great benefits and compensations.

[Vasilenko] Do you live there permanently?

[Boztayev] For three years already, for three and a half years I have been the first secretary of the oblast party committee in Semipalatinsk. I myself come from Semipalatinsk Oblast. But I was working in East Kazakhstan for a long time. It is also a neighboring oblast. Well, what has to be done now, yes? Now there is no alternative. The only way out is to cease the nuclear tests at the Semipalatinsk test range. For people's sake, for health's sake. After all, people's health is the most sacred thing, the most valuable. What else do we need? How on earth can the nuclear weapons tests be held against the will of the people? It is immoral, it is inhuman to hold nuclear tests in densely populated areas, in conditions of psychosis, in conditions of ruinous impact on people's health. It is my official position, I state it everywhere.

[Vasilenko] Tell us, did you hear anything about the way out of the situation which has emerged in the speech made by Mikhail Sergeyevich Gorbachev at the session when he reported on his visit to the United States? After all, there were a number of suggestions connected with your region in his speech.

[Boztayev] I listened to the report made by the president. We will protect the interests of our people, we will make the voice of our people heard by the president, by the government and by the corps of deputies of the USSR Supreme Soviet. [end recording]

Officials Visit Novaya Zemlya Nuclear Test Site

WA2006203890 Moscow RABOCHAYA TRIBUNA in Russian 6 Jun 90 p 4

[Report on interview with Candidate of Technical Sciences G. Kaurov, chief of the Center for Public Information on Atomic Energy, by I. Yermakov: "Arctic Test Range: Entry Permitted"]

[Text] *Representatives of Soviet authority visited the nuclear test range on the islands of Novaya Zemlya for the first time in its existence. Members of the USSR Government and employees of a number of ministries and departments also took part in the trip.*

Candidate of Technical Sciences G. Kaurov, chief of the Center for Public Information on Atomic Energy, talks about the results of the inspection.

[Kaurov] The last explosion thundered on the Novaya Zemlya nuclear test range in October of last year. And later, as is known, after mass public protests, tests on ranges in the country were stopped. Now the USSR Supreme Soviet has to decide what to do further. Therefore, the people's deputies considered it necessary to visit the test site personally and to get objective information concerning its effect on the environment.

[Yermakov] Who took part in the trip, and how did it go?

[Kaurov] The interests of the legislative authority were represented by A. Vyucheyskiy, A. Zolotkov, and A. Yemelyanenkov, USSR people's deputies; A. Butorin, RSFSR [Russian Soviet Federated Socialist Republic] people's deputy, and by A. Shpektor, a member of the Supreme Soviet of the Komi ASSR [Autonomous Soviet Socialist Republic]. The interests of the executive authority were represented by I. Belousov, chairman of the USSR Council of Ministers; V. Konovalov, the USSR Minister of Atomic Energy and Industry; Admiral F. Gromov, commander of the Northern Fleet; P. Balakshin, chairman of the Arkhangelsk Oblispolkom [oblast soviet executive committee], and Yu. Romanov, chairman of the Nenetskiy Okrug Executive Committee.

During the trip, we inspected one of the areas of the range and the epicenter areas of underground detonations. The deputies were familiarized with the results of measurements of radioactivity and even with their own hands conducted a check of the ground, reindeer moss, and snow cover with the help of individual dosimeters.

[Yermakov] What were the results?

[Kaurov] The variations in the values of the gamma background were in the range of 8-15 microroentgens per hour. That is, they did not exceed the level in Moscow.

[Yermakov] Mistakes are excluded?

[Kaurov] The scientists working on the test range cited numerous data of measurements of the radioactivity of soil, mosses, lichens, grasses, various organs of northern reindeer and fish obtained in the period from 1960 to 1989. They are in no way different from similar measurements in Alaska.

[Yermakov] Do not the burial grounds of radioactive wastes constitute a danger for the region?

[Kaurov] This question also interested the people's deputies. But Vice Admiral G. Zolotukhin, chief of the directorate of the Soviet Navy, gave assurances: Radioactive wastes were not buried on the islands. USSR Minister Konovalov added that research is presently being conducted on the selection of the safest places for the construction of burial grounds.

[Yermakov] Did the deputies meet with the local population?

[Kaurov] And they inquired continuously whether they were concerned about the danger of local radioactive contamination. As a rule, the Novaya Zemlya inhabitants answered that they live and work on the islands without fear.

Gorlovka Mine Poisoning Commission Announces Findings; Cleanup Begun

90P50035A Moscow TRUD in Russian 26 May 90 p 3

[Article by TRUD correspondent N. Andreyev, Donetsk Oblast: " 'Unknown' Substance Identified"]

[Text] TRUD reported on 11-12 May about the mass poisoning by an unknown chemical substance of miners

in Yenakiyevo and Gorlovka. Coal extraction in four mines was halted pending determination of the causes. Miners throughout the central Donbass announced their intention to conduct a strike.

In the course of its investigation, a USSR Council of Ministers commission succeeded in clarifying the situation and relieving the tension among the workers. All the mines have resumed operation. The "unknown substance" has been identified once and for all.

"It was formaldehyde," said chemists' working group leader Academician A.D. Kuntsevich. It was found to be present over the course of several days, but has now disappeared completely. It has been shown that the formaldehyde penetrated via ground water into the Uglegorskaya Mine from the Gorlovka Chemical Plant. The chief likely source of the contamination is the plant's phenol-formaldehyde resins shop.

A second source is the plant's dump, where chemical production wastes have been sent unchecked for decades. It was the combined interaction of formaldehyde and aromatic hydrocarbons that caused the poisoning.

Now it turns out that at the very same Gorlovka Chemical Plant there is yet another, informal, dump in addition to the one about which we have already written. Why have the plant and Defense Industry Ministry representatives been silent about this one? Why has nothing about this been said by USSR People's Deputy Yu.Ye. Burykh, who works as chief of the chemical plant's technical department?

The USSR Council of Ministers commission has made a number of important decisions. They have ordered the closure of the phenol-formaldehyde resins shop, the waterproof lining of the dump site, and the removal of not only the liquid and solid waste material, but also of the soil saturated by them. Earthwork barriers are being constructed and test wells are being sunk to determine the underground "geography" of the substance's distribution. Work has begun on the repair or installation of decontaminating equipment and an additional sewer. Monitoring has also been initiated at the Gorlovka and Yenakiyevo Coal-Tar Plants, the Stirol Association, and other organizations and enterprises where formaldehyde or products containing it might be in use.

Numerous tests indicate that at present there are no toxic substances in the wells, in other water supply sources, or in the water found in the mines. Nevertheless, there is still a level of tension in the area. Participants at a well-attended ecology rally held recently in Gorlovka demanded that work begin on a government union-republic program of urgent measures for the 1990-93 period for improving the ecological situation throughout the entire Dnepr-Donetsk region.

Lithuanian Greens Party Congress Ends

LD1806011490 Vilnius Domestic Service in Lithuanian 1700 GMT 17 Jun 90

[Summary] The first congress of the Greens Party of Lithuania ended in Vilnius today.

The leadership of the party will consist of 11 people. The current political situation was assessed by the congress and several resolutions were adopted.

Romualdas Juknys from Kaunas, who was elected one of the three elders of the Council of the Lithuanian Greens Party, said that the agenda of the congress had been practically exhausted: the main task achieved was that the program and statute of the party had been confirmed, which means that the party can start functioning.

Speaking of the political orientation of the Lithuanian Greens, R. Juknys said that they emerged as a political and ecological force of Sajudis, and had now developed into a party, therefore, the same orientation would remain. He said that it seemed that the Greens would be closer to Christian Democrats and not the left-wing forces. R. Juknys said that Lithuanian Greens would stand for adherance to the Act of Independence and any kind of suspension or freezing of the act would be opposed by the Greens because they believe this would mean rescinding statehood.

Belorussian Goskompriroda Official on State of Republic's Environment

90WN0067A Minsk SOVETSKAYA BELORUSSIYA in Russian 5 Apr 90 p 4

[Article by A. Aleshka, deputy chairman of the Belorussian State Environmental Protection Committee: "At a Dangerous Edge"]

[Text] **At present, ecology is the test of any state for independence. All the material riches of the world will be worth nothing if the people do not have a blue sky, clean air, unpoisoned earth and pure water.**

Let me begin with the facts.

The amount of carbon dioxide in the atmosphere has increased by more than 25 percent from 1956 up to the present. Forests in the world are being reduced at a rate of 11 million hectares a year and desertification is proceeding at a rate of 6 million hectares. Or take drinking water. As is known, under the conditions of disturbed circulation, it is not a replenishable source. In essence, even now we are jeopardizing the fate of future generations with a disaster which mankind even recently could not even imagine. The supplies of such water in our nation were very rich, but not many are aware that at present we are slaking our thirst at the expense of the drinking water supplies of the year 2005. Thousands upon thousands of lakes, rivers and streams have been ruined. Many large lakes and rivers are being suffocated

with pollution and are on the brink of dying. Much good drinking water is wasted for industrial purposes.

Our republic has been exposed to all the ecological disasters which afflict mankind. Regardless of the measures taken to stabilize and reduce the release and discharge of polluting substances, the ecological situation remains acute. It has become particularly complicated after the Chernobyl accident.

The ecologically endangered facilities at present are being tested for their strength. The people more and more do not want to tolerate the level of water and air pollution which was allowed for many years running. A search is underway for new technological solutions and studies are underway to introduce reliable dust and gas scrubbers and more advanced systems for treating polluted waste water.

The Environmental Protection Committee [Goskompriroda] and its local bodies are paying particular attention to the questions of the location of national economic projects and the ecological expert evaluation of the plans. Last year alone, out of the 76 proposals of the Union and republic ministries and departments for new construction, 28 were turned down as not meeting the environmental requirements. Out of the almost 2,000 reviewed plans, one out of three was not approved and was sent back for additional work. These included the plans for the construction and reconstruction of the Smolevichi Gear Plant, the Minsk TETs-5, the Berezovskiy GRES, the Azot [Nitrogen] Production Association in Grodno and others.

In 1989, the environmental bodies have discovered over 5,000 major violations of conservation legislation. Over 2,000 officials were fined. Some 32 suits were brought totaling more than 3 million rubles.

The Ecological Commission Under the Presidium of the Belorussian Academy of Sciences is working effectively and it has reviewed a number of complicated ecological problems for the republic and has vetoed the placement of a number of environmentally dangerous projects.

Largely the situation is determined by the concentrating of industrial production in the towns and cities as well as by the intensification of agricultural production. Some 11 of the 210 urban settlements (Minsk, Mogilev, Gomel, Grodno, Vitebsk, Novopolotsk, Orsha, Brest, Bobruysk, Baranovichi and Borisov) are responsible for 70 percent of the industrial product, 60 percent of the urban population in the republic and almost 40 percent of the total republic population. In a majority of these cities, pollution of the air, for example, exceeds the standards for a number of harmful substances.

As a total, around 3 million tons of harmful substances a year are released into the republic's air basin. Thousands of different chemical components are in the air. Among them are particularly dangerous ones such as benzopyrene. This is a very dangerous poison for human health and its concentrations in the large cities significantly exceed the health standard.

Also threatening are the exhausts from motor transport operating on leaded gasoline. In Minsk, out of the total release of 230,000 tons of harmful substances a year, the share of motor transport approaches 60 percent. In just 1 year, a single Ikarus bus "produces" 24 tons of carcinogenic substances.

Among the primary measures to improve the air basin in the large cities is a radical conversion of many enterprises to resource-saving, low-waste production methods, moving foundry production out of residential areas, introducing efficient dust and gas scrubbers, converting the fuel-burning units to a gaseous fuel and utilizing unleaded gasoline in motor transport by installing special converters. But all of these measures will be extremely insufficient if we do not introduce a fee for the release of polluting substances. This economic lever will force the enterprise leaders to seek out ways for reducing the effluents.

The rights which were given to the bodies to protect the air basin against pollution now appear ludicrous. The act which is drawn up against a violator of air protection legislation is submitted for review to the administrative commissions of the city and rayon executive committees. It often happens that the efforts of the inspectors are nullified.

As for the sanction of halting the operation of a shop or enterprise and the bringing of large suits, these have no reliable legal basis under them. For this reason, it is not surprising that the procuracy bodies have not supported us by a single serious measure (for example, halting individual sections and shops at the Mogilev Chemical Fiber Production Association or the heating equipment plant in Minsk), but on the contrary, have come to the defense of the violators of the conservation legislation.

The result of using capital investments going for the combating of effluents shows the level of this work. Each year the investments are not fully utilized. For example, the construction of a hydrogen sulfide recovery unit at the Svetlogorsk Chemical Fiber Production Association has been underway for 12 years now. Of the 44 important measures provided in the specific program for the 12th Five-Year Plan, for the republic 13 have not been carried out. And a third of the completed and operating dust and gas scrubbers operate extremely inefficiently and such giant polluters as the thermal power enterprises which release 36 percent of the harmful substances of all the stationary sources in the republic operate completely without any scrubbing.

Nature did not stint on our water riches as there are around 20,000 rivers and 10,000 lakes. It might seem to some that we have no grounds to complain of the shortage of pure water. Many as yet are not complaining but use it wastefully and pollute with impunity. We must

invest a good deal of money so that the rivers and lakes are clean. By the end of this year, the degree of treating waste water will be brought up to 95 percent. Although virtually all cities and urban settlements have centralized sewage and treatment systems, the polluting of water is inexorably rising. Over the last 15 years, water mineralization in the major rivers of the republic, such as the Pripyat, Dnieper, Western Dvina and Neman, has risen by 20 percent. The waters are growing cloudy also in the small rivers. There are many reasons for this, including the victorious campaign of large-scale reclamation without considering the consequences and this we have been particularly successful at, to the release of insufficiently treated waste water, the leaching of organic and mineral substances from the fields which in many instances run right down to the water edge.

A very bad situation is arising in the republic with the underground water. The water levels are being more and more polluted in the zones of the industrial enterprises, in areas of large livestock raising facilities and in places where mineral fertilizers and toxic chemicals are actively applied. The construction of the Gorodok Hog Complex with 108,000 head can be considered an example of the flagrant ignoring of environmental requirements. With an ecological study of the plan for 54,000 head of hogs, it was established that the standards for utilizing the manure waste could not be met. Arbitrarily the construction was carried out for 108,000 head. Goskompriroda has insisted on reducing the capacity of this facility to 60,000 animals.

Unfortunately, there are many such examples. To some degree, one could understand the leaders of the various regions, if these projects were carried out 10-20 years ago, when the ecological problem seemed too many to be the raving of persons isolated from real life. In our times, such an underestimation of the problems of protecting the environment is simply blasphemous. Within a radius of 10-15 km around the large livestock raising facilities, water in the drinking wells is virtually unsuitable for use as the nitrate content and the level of bacteriological contamination often surpassed the health standards by 5-10-fold.

For many years running there has been a storm of paperwork over the problem of establishing a test range for toxic wastes. But up to now it has been built nowhere. And each year the republic accumulates over 140,000 tons of highly toxic waste and 45 million tons of industrial waste.

Of great danger are the accumulating toxic chemicals which are no longer usable. In Minsk Oblast alone, this chemical "bomb" weighs over 520 tons. It is not excluded that leaders can be found who throw this dangerous waste on ordinary dumps or arbitrarily bury it in the ground. Up to the present, according to incomplete data, already over 3,000 tons of toxic chemicals have been buried in the republic. Of particular danger are such burials in Verkhnedvinskiy, Gorodokskiy and Postavskiy Rayons.

At many industrial enterprises, the temporary toxic storage areas are overloaded, a further build-up on them is going on and this creates the threat of accidents as well as uncontrollable burying, the polluting of the soils, forests, the surface and underground waters. Thus, according to the data of the Sanitation Service, the content of certain toxic substances in the soil in individual areas of Minsk exceeds the maximum permissible concentration for chromium by 10-fold, for mercury by 20-fold and for lead by 40-fold. The appearance of mercury has been recorded in the Drozdy, Tsnyanskoye and Krylovo Reservoirs. One does not have to be either an ecologist or a physician to realize all the danger of such a cavalier attitude toward toxic, chemical substances which are dangerous for the health of man and for all living nature.

We have always said with pride that ⅓ of the republic's territory is occupied by forests. But let us reflect on such facts. The area of mature forests in our republic is just 2.4 percent, and this is virtually the most critical point. The total area is being reduced by transforming them into agricultural land.

Frequently, various seminars are held in the Polesye, and particularly in Brest and Gomel Oblasts. What do we learn? We "learn" how we must...destroy the landscapes, ignore the creation of shelter belts and turn the rivers into sewer courses. Just look how many humped levees there are along the entire length of the rivers and the wind dances behind them. Later we become angry and give sad figures on wind soil erosion which each year carries off more than a million tons of fertile soil to distant lands.

This is the doing of the reclamation workers. Following in their footsteps are the agricultural chemical workers. They have gained such power and such force that they are capable of cutting the last reserves of peat in the republic within 5 years and per inhabitant spread a kilogram if not more of toxic chemicals and mineral fertilizers.

At present, the powerful land reclamation forces are moving into the Belorussian Lake Region. And the Lake Region is virtually the only ecologically relatively clean region in the republic. Yes, thank God, the Chernobyl disaster bypassed it. This region must be protected against chemistry, saved from giant reclamation plans, with the exception of completely balanced amelioration, with the maximum preservation of the unique landscapes and the still living and pure lakes and forests. And what is the price of the one hydrological swamp reserve Yelnya in Miorskiy Rayon which is located on an unique upland swamp with an abundance of rare vegetation and fauna, with a system of small lakes and islands overgrown with first-growth forest. And so the reclamation workers are making their way to this reserve as they have to many others. Science should have its say here and there must be the immediate elaboration of a scheme for the ecological protection of the Lake Region. We feel

that this is one of the most important tasks which can play a decisive ecological role for all our republic.

In a number of places we have already reached that limit beyond which irreversible changes begin with the destruction of the natural landscapes. For this reason, at present there must be the departure from established stereotypes and a perestroyka in ecological thinking is essential. There can be no doubt that any plan, any actions in the agroindustrial sphere should proceed not only from the principles of social and economic importance but also ecological purity. The latter for our republic, particularly after the Chernobyl accident, makes profound sense and is particularly important.

In a word, the time has come for reasonable, scientifically sound actions. Nature is in danger and not only is our health in danger but also the future of our nation.

From the editors. In publishing this article, we are hopeful that the problems posed in it will not leave the readers unmoved. We are waiting for your reflections, proposals and messages.

Political, Economic Pressures Set Against Gulf of Riga Cleanup Efforts

90WN0067B Moscow POISK in Russian No 16, 21-27 Apr 90 p 6

[Article by Vladimir Steshenko: "A Lack of Trust, or How Scientists Protected Yurmala for 20 Years and What Happened"]

[Text] **At present, the entire nation probably knows about the passions raging over the closing down of pulp making at the industrial flagship at the resort town of Yurmala, the Sloka Pulp-Paper Plant (TsBZ). In truth, this may follow a rather oversimplified scheme. In truth for 2 years the Latvians have been arguing that the TsBZ is the main polluter of the seacoast and as a result the demand has appeared of the informal groups, the television and press: "Down with the Sloka TsBZ!" When under their pressure the deputies of the Yurmala City Soviet and the republic parliament were forced to take a decision to close down this plant, they encountered unforeseen economic problems.**

Do you remember the sensational announcement? Due to the paper shortage which had arisen supposedly due to the banning of pulp cooking in Yurmala, the next morning not a single Latvian newspaper was published. And during this time railway cars carrying paper were arriving on schedule in Riga, but a decision was taken (and we still are not perfectly certain by whom) that from then on only publications would be printed which were of the bodies of the Latvian CP Central Committee and then only once a week.

And then the "federalists" and the "independents" raised the cause of the TsBZ as the strongest argument in a political dispute. Some gloated: "So now you have obtained economic independence? Now try to get out of it!" Others pathetically exclaimed: "Is this not the economic blackmail by Moscow to refuse delivery at such a difficult moment?!"

I do not wish to assert that in the above-given scheme there is not a grain of truth. But as any simplification of a problem leads away from a solution to it, so the attempts of primitive political speculation over the very severe economic and ecological situation merely exacerbate it and do not make it possible to see the problem in all its tragic depth. Certainly Latvia and the entire Union which has many health resorts on the Riga Seacoast are confronted with the alternative: Is Yurmala to exist or not? The dispute was about all sorts of things and not just about this.

Some 70 percent of its forests are now infested with disease. The state-protected dune zones have been trampled down or are being built on. The floodplain meadows are destroyed. The beaches are being ruined. Pollution has been found in the only Yurmala underground drinking water spring. Over the last 20 years, the catch of fish in the Gulf of Riga has declined by 3-fold. Divers describe fantastic pictures of the dead sea floor and fields of dead spawn. For 7 years now, the Liyelupe River has been closed for swimming. Last year the republic SES [Sanitation-Epidemiological Service] officially proposed to the rayispolkoms to ban swimming on many areas in the coastal waters of the gulf and completely in Yurmala itself. The resort town, along with certain regions of Riga, had become one of the worst in terms of the level of the morbidity rate in the population. Yurmala is among the leaders in terms of chronic bronchitis, dermatites, ulcers, oncological illnesses and a whole number of children's ailments.

Scientists from the USSR and republic academies of sciences and various commissions which have verified the threat of an ecological disaster on the seacoast have uniformly pointed to its sources. There are several of these, but the main ones are Riga and the Sloka TsBZ.

Is it possible to compare a small plant with a large industrial city? Riga remains the only capital on the Baltic which does not have treatment facilities and which could not be built after 1971. Each year Riga releases into the Daugava and the Gulf of Riga some 225 million m^3 of waste water. In these wastes are 104,000 tons of pollutants. The TsBZ releases 30,000-40,000 tons of such substances into the Liyelupe a year.

The plant's treatment facilities on which at one time a good deal of money was to be spent are in a disaster state. The trend noticeable in recent years for a drop in the release of harmful substances has not caused and could not cause any substantial changes in the ecological state of the Liyelupe River.

The Sloka TsBZ is a century-old veteran. It is already rather decrepit and the equipment is worn out. The "youngest" paper-making machine is a quarter of a century old. The oldest is about 70.

The plant turns out 108,000 tons of paper and cardboard a year. Here they digest over 50,000 tons of pulp and they receive another 25,000 tons from other plants. This is the nation's only producer of punchcard paper and thousands of consumers of which live in all the USSR republics and it also produces paper for manufacturing disposable dishes. As a total, the Sloka TsBZ produces 0.4 percent(!) of the pulp turned out in the nation.

Each year they spend 1.8 million rubles on operating the treatment facilities. The TsBZ produces 3 million rubles of profit. The loss from the aggregate pollution of the Gulf of Riga is 100 million rubles a year, and of this amount Sloka is responsible for 20 million. Compare this with the profit. Is this not a self-consuming economy?!

At present, the authorities—neither the party nor the state—accept any reproaches for intentionally neglecting the nature of Yurmala or the recommendations of real scientists. Over the last 20 years, over 10 various conservation decrees, Union enactments and international obligations have been adopted. It is a different question that they have not been completely carried out....

Completely, for how is it possible to implement absolutely opposite decrees? For example, for preserving the resorts and preventing construction of industrial enterprises on their territory but, on the other, the financing of industrial construction in Yurmala and the broadening of the Sloka TsBZ.

If now one looks at the documents relating to ecologically harmful installations, everywhere one can see the obedient permissive signature of the Soviet power in Yurmala. But times have begun to change and now the city soviet has begun talking about halting the digesting of cellulose, initially by January 1989 and then the "precise date" was set of 31 March and later a new date appeared of 1 September.... Against the background of perestroyka, the mass meetings and picketing, the situation has acquired a serious political nature.

On 31 March a session of the Yurmala City Soviet was attended by virtually the entire republic leadership headed by its president. On 29 July, the republic Supreme Soviet supported the demand of the Yurmala residents to halt pulp production as of 1 January 1990.

The Councils of Ministers—both republic and Union—were in a state of shock. Some 20 persons spoke at a special session of the republic Council of Ministers. The chairman of the State Statistics Committee stated that due to the shortage of punchcard paper, the operation of the computers and computer centers will be disrupted. The minister of social security complained that for the same reason hundreds of thousands of persons would not receive their pensions and aid. The minister of trade announced that purchasers would have to go shopping with their own paper bags. Then more serious accusations were directed against the heads of the deputies. The prohibitive decision would disrupt the new economic relations which were being established with difficulty in Latvia and would cause a counterrefusal in the nation for supplying the republic with rolled metals, building materials, chemical products, wrapping cardboard and consumer goods. As was stated, the direct economic consequences of adopting a "rash decision" were assessed at 1 billion rubles. Ministerial workers concluded that "in the republic there are persons very interested in torpedoing the republic's transition to economic independence from the very outset by emotional decisions and bans which are economically out of balance and immature from the state viewpoint. And then an attempt was made to place the responsibility for the collapse in the social and economic spheres on the republic government." But who if not they themselves for some 20 years prevented the adopting of not only economic but also ecologically sound decisions? References to the center were little persuasive as it was precisely Moscow which proposed declaring the Gulf of Riga to be a sea reserve, while the refusal came from Riga.

Of course, the decision of the city soviet and the government was merely a gesture of desperation, an extreme measure which was the only one capable of forcing the Union and republic departments to work and not pretend that they sympathized with the ruined resort. In truth, the Union ones stood out more in terms of the number of refusals to go into the situation of Yurmala. If there had not been an emergency, nothing would have changed!

The ban of the deputies was a response to 20 years of deception and humiliation. It is worthy of note that the newly elected city soviet in its first session on 18 January of this year, regardless of the "informational volley" from the Council of Ministers, supported the decision of the former membership. Only seven deputies at that time voted in favor of continuing the digesting of pulp. But there was one who on the list for the roll-call vote crossed out both proposals ("digest" and "not to digest"), Andrey Vorontsov, a young historian, who recently had become an associate of the Latvian CP Central Committee. As the further development of events was to show, he was the only one who was keeping pace.

"We do not have any choice at all," he said in justification of his decision. "On the one hand, there is the need to fight for the ecological purity of Yurmala. On the other hand, there is the dismissal of almost 6,500 workers at the plant without any clear plan for finding jobs for them and also the economic blow against the very idea of Latvian independence. It is essential to draw up proposals which would offer a real choice. But for this it is essential to know how pulp-paper production in Latvia can be organized in a new manner."

It was becoming more and more apparent that only a compromise "third" solution could break the stalemate.

"The entire disaster of Yurmala is that the solution to the problem has been stretched out for decades," considers the USSR People's Deputy and Secretary Academician of the Latvian Academy of Sciences, Rita

Kukayn. "Scientists from Moscow and Riga were unanimous from the very first scientific expert evaluation and that was there was no place for the plant in the resort. But all the activities of the Union and republic authorities and agencies consisted not in a search for an answer to the question of 'What is to be done?' but rather a desire to prove that the conclusions of the scientists were just emotions. I cannot understand these people who even recently were responsible for the development of the republic. Certainly it does not take any particular knowledge to understand even the economic loss from such a natural disaster, rather it only takes common sense. In the summer I came out for an immediate closure of the plant. But now I am convinced that the government, having encountered the uniform viewpoint of the people and the deputies, will search for approaches acceptable for all. And I have come out in favor of the compromise document as our last concession."

Thus, on 16 February at a session of the republic Supreme Soviet, the deputies heard an announcement of a government program for normalizing the situation at the Sloka TsBZ. The most different approaches were examined for getting out of the existing situation. But most importantly, the deputies demanded that the government give convincing guarantees as it was a matter of trust in the government.

The decision was adopted to halt the action of the decree of 29 July 1989. The Council of Ministers has been ordered as of May this year to halt the plant (the date was set in accord with the water conditions in the river), to put the production and technical cycle in order and carry out the necessary production and technological modernization. After this the digesting of cellulose will be continued in a moderate amount until a new plant can be built.

The situation has been clarified for the Sloka TsBZ. But it is not the only source of misfortune for Yurmala which needs a comprehensive scientific plan and program for the development of the resort. In addition, in small Latvia there are still several other painful ecological points requiring extraordinary attention.

P.S. None of the specific parties guilty of the deterioration of the resort of Yurmala or polluting the Gulf of Riga and the Liyelupe, neither on the Union, the republic nor the city level has been held responsible.

Sea of Azov Pollution Study Findings Summarized

90WN0051A Krasnodar SELSKIYE ZORI in Russian No 2, Feb 90 pp 21-23

[Interview with Vladimir Yakovlevich Nagalevskiy, dean of the Kuban State University School of Biology, by T. Ovsyankina: "The Azov...Our Sorrow and Anxiety"; passages in boldface as published]

[Text] **The Sea of Azov.... Everybody learned about it in school. The ancient Greeks called it Maiotis. It was famous for its fish. It is no wonder it was also called the Beluga Sea. The first Russian settlers who came here in the 10th century called it the Surozhskoye Sea. The present name came down to us from the Ottoman Turks.**

The Sea of Azov does not cover a large area—around 38,000 square kilometers—and most of it is only 9-13 meters deep, but as the saying goes, good things come in small packages. The good thing about this package is its fish—pike, bream, gray mullet, herring, sturgeon, sevruga, anchovy, and sardelle. There used to be dace and bleak too. The supply seemed inexhaustible—take as much as you want, there is enough for everyone. Time, however, proved that this was not true. People began saying that the sea was getting shallow and salty, that there were fewer fish, that the shell rock was gone, that some types of flora and fauna were disappearing, that the water was polluted.... This alarmed the public of the Kuban, the Don, and other regions.

An expedition organized by TASS and the editors of SOVETSKAYA KUBAN in Krasnodar Kray was supposed to judge the validity of people's worries about the future of the sea. The members of the expedition listened to what many inhabitants of coastal communities had to say and spoke with fishermen, trappers, hunters, rice growers, and reclamation experts. After meeting with the public, party and soviet personnel, and economic managers and after completing their own studies and observations, the members of the expedition made a report and suggested some specific ways of improving the state of the ecology in the Azov basin.

The expedition and its findings were discussed at public lectures in Temryuk. The speakers included scientists, party and soviet personnel, and representatives of conservation organizations in the Kuban, Don, and Ukraine. Our special correspondent T. Ovsyankina spoke with V.Ya. Nagalevskiy, scientific administrator of the expedition and dean of the School of Biology at Kuban State University, about the results of the expedition and the future plans of its members.

[Ovsyankina] Vladimir Yakovlevich, tell us something about the joint public-scientific expedition, starting with a few words about those who participated directly in the project.

[Nagalevskiy] The decision on this kind of expedition was first made by a session of the kray soviet of people's deputies. The initiators were TASS, the editors of SOVETSKAYA KUBAN, our School of Biology, and the Krasnodar Kray Council of the All-Russian Environmental Protection Society. The participants were scientists and specialists from our university's School of Geography, AzNIIRKh [Azov Scientific Research Institute of Fisheries], KrasNIIRKh [Krasnodar Scientific Research Institute of Fisheries], VNIIris [All-Union Scientific Research Institute of Rice Growing], Kubanrybvod [Main Administration for the Protection and Reproduction of Fish Reserves and the Regulation of Fishing in the Kuban Zone], Azovrybvod [Main Administration for the Protection and Reproduction of Fish

Reserves and the Regulation of Fishing in the Sea of Azov], the Kuban Agricultural Institute, the Biosphere Preserve of the Caucasus, and the Krasnodar State Museum and Preserve. The most immediate and active participants were TASS correspondent V.Ye. Zhilyakov, SOVETSKAYA KUBAN assistant editor V.S. Smeyukha, Docent G.K. Plotnikov from the Zoology Department in our School of Biology, instructor in the same department M.Kh. Yemtyl, instructor in the Botany Department D.P. Kassanelli, Docent V.N. Lesnykh from the CPSU History Department of the Kuban Agricultural Institute, KrasNIIRKh department head M.S. Chebanov, chief of the Ichthyological Service of the Kubanrybvod Administration K.K. Chesnokov, head of the VNIIris Environmental Protection Laboratory Yu.V. Shilenko, AzNIIRKh laboratory heads L.G. Balandina and T.S. Kishkinova, and chief of the Fish Conservation Department of the Azovrybvod Administration I.M. Nikulshin. The expedition also received considerable assistance from party and soviet organizations in Temryukskiy, Slavyanskiy, Primorsko- Akhtarskiy, and Yeyskiy rayons in the kray.

The purpose of our expedition was to determine the present ecological state of the Sea of Azov and the organically connected Eastern Cis-Azov Zone and plan specific ways of protecting and using the resources of these regions. We also hoped to do the following:

Study the flora and fauna of the estuaries, flood plains, sand bars, and salt-ridden soils of the Eastern Cis-Azov Zone;

Conduct hydrological, hydrochemical, and toxicological analyses of the soils and rivers flowing into the Sea of Azov and the waters of the sea itself;

Compile an economic-geographic summary of the cis-Azov territorial production complex within the boundaries of our kray.

[Ovsyankina] What did the expedition learn? Tell us about the ecological crisis of the Sea of Azov.

[Nagalevskiy] Unfortunately, this is not just a crisis of the Sea of Azov. It is a crisis of the entire cis-Azov zone and it will certainly extend to the territories of the RSFSR and Ukraine near the Azov. The crisis includes the loss of the sea's commercial value as a source of bleak, dace, pike, and sea-roach and the reduction of the quantity of sturgeon and other food fish. It includes the higher salt content of the sea due to the reduced intake of fresh water. It includes the impermissible pollution of the Azov with industrial and household sewage and toxic chemicals. It includes the depletion of the flora and fauna of the cis-Azov zone. It also includes the soil erosion on the Azov coast and the disappearance and destruction of shell rock on the sand bars.

In the opinion of expedition members, the main cause of the ecological crisis is the severe pollution of the sea by industrial and household sewage. I will give you a few examples. The Kuban River has become one of the sources of pollution. Toxic substances are dumped into the river by Nevinomyssk enterprises—the Azot Association and the chemical combine, the Kropotkin Chemical Plant, the largest enterprises in Krasnodar, and the port of Temryuk. The Azov is being polluted with untreated sewage by enterprises in Yeysk and Primorsko-Akhtarsk. Expedition members also went to Taganrog, Mariupol, Berdyansk, and Kerch. This is what they saw.

Each year 160,000 cubic meters of sewage is dumped into the Gulf of Taganrog. The industrial sewage representing 41 percent of the total poses a serious threat to the gulf because it contains a broad range of substances—from iron, cadmium, copper and nickel to phenol and petroleum products. Furthermore, the gulf is not being polluted only by industrial enterprises. The waters of the Mius carry petroleum products, iron, and zinc from the Donbass. Rostov has become the chief polluter of the lower reaches of the Don. The Temernik River alone carries up to 70,000 cubic meters of untreated sewage each day. The Northern Donets carries the phenols and dyes of the enterprises built on its banks, equipped with primitive purification facilities, to the Don River.

The Azovstal Combine in Mariupol ranks highest among the sea's polluters. The dam built here, which took 90 hectares away from the sea, has become a veritable accumulator of toxic waste.

The situation is no better in one of the oldest health resorts of the Sea of Azov—the city of Berdyansk. A giant industrial oil plant stands next to the therapeutic mud baths here. It produces the lubricants the national economy needs so much, but violations of technological regulations and the absence or unsatisfactory performance of sewage treatment equipment have filled Berdyansk Bay with poisons. The threat of closure is looming over the mud baths.

[Ovsyankina] I have to interrupt your list of charges, Vladimir Yakovlevich, to say that these statistics are absolutely shocking. It is amazing that anything could still be alive in the sea....

[Nagalevskiy] But I have not told you everything yet. In all, the industrial sewage of 1,360 enterprises is dumped into the Sea of Azov. It is the repository of 12,500 tons of petroleum products, around 2,000 tons of synthetic surfactants, and more than 200 tons of phenol compounds each year. Every day 18.4 million cubic meters of household sewage—5.5 million of them untreated—is dumped into the sea.

According to expert estimates, the damage caused just by the loss of fish in the sea and other bodies of water in the Azov basin within the territory of the RSFSR and Ukraine amounts to 9.8 billion rubles.

The damming and flow-regulation of the Kuban and Don rivers and the construction of channels in some estuaries of the Eastern Cis-Azov Zone increased the salt

content, and bodies of water here began to dry up and lose their fish reserves. For the bleak, dace, beluga, and bullhead, these poorly planned human activities were a genuine disaster. The dams built on the Don and Kuban blocked the age-old routes to their spawning grounds.

The rivers of the cis-Azov zone used to pour more than 40 cubic kilometers of water into the sea, but now the figure is under 30. The high salt content of the water brought the crested jellyfish, the predatory enemy of the anchovy, here from the Black Sea. It deprives the anchovy of the main staple of its diet—plankton. The high salt content also lowered the freezing point of the water. Now it does not always have an ice cover when the temperature falls below zero, and this kills the cartilaginous fish on the bottom.

The Tikhovskiy Water Divider Assembly on the Kuban River has also aroused considerable public anxiety in the kray. It will cause the further reduction of river run-off into the Sea of Azov, undermine commercial reserves of valuable fish, and raise the salt content even higher. More than 80 million rubles was invested in the construction of this assembly. Its operation will cost the fishing industry 30 million rubles in losses. The price of our mismanagement seems inordinately high. We have suggested that all construction work be stopped and that the incomplete facility be treated as a monument to careless human interference with nature, a monument to ecological atrocities.

In our opinion, ecological questions should be given top priority from now on in the approval of construction projects for dams or reservoirs on rivers.

[Ovsyankina] You have said almost nothing about the toxic chemicals that seem so frightening to anyone with the slightest knowledge of the ecological state of the water and land.

[Nagalevskiy] Yes, this is another aspect of the ecological crisis. The unique estuaries of the Eastern Cis-Azov Zone are being destroyed by their oversaturation with toxic chemicals and with organic and mineral fertilizers: They are getting shallow and they are full of algae. Chemicals and careless economic activity have reduced the productivity of mollusks and have wiped them out in some places, and this eventually causes the erosion of the coastline. In Primorsko-Akhtarskiy Rayon, for example, the sea claims 7 meters of farmland a year. The Dolgaya, Achuyevskaya, Berdyanskaya, and Yasenskaya wetlands, with their famous bird colonies, are in a pitiful state.

Scientists have calculated that around 140 different kinds of pesticides are now being used in the Azov basin. Furthermore, the use of only 20 is regulated.

I have to say something about rice growing. Mixtures of around 10 highly toxic pesticides are used in the rice fields. The average hectare is treated with up to 9 kilograms of pesticides, but in some locations (Slavyanskiy Rayon, for example) the figure can be as high as 15. Rice-growing areas in the kray are responsible for more than 1.045 billion cubic meters of polluted run-off into reservoirs. Expedition members discovered that the run-off from the Petrovsko-Anastasyevskaya and Chernoyevskaya irrigation systems had a propanide content more than 760 times the permissible maximum, and an ordram content 80 times the maximum.

I must say, however, that rice growers are not the only ones to blame for pesticide pollution. Grapes, wheat, sunflowers, corn, and sugar beets require just as many toxic chemicals. Whereas rice requires just over 2,000 tons of pesticides a year, for example, other crops might need around 25,000 tons. Incidentally, Temryukskiy Rayon ranks highest in the Kuban in this respect. A hectare of farmland here is treated with around 32 kilograms of pesticides, and this is also the amount used per capita (including children) in the rayon. The per capita average throughout the country, just as in the United States, is 2 kilograms of toxic chemicals.

I must stress that although some of the chemicals used in rice growing are regulated by the kray environmental protection council, the majority have not even been registered by specialists and we do not know anything about their possible effects.

Judging by all indications, the steady pollution of the Sea of Azov has been recorded not only in our kray, but also in Rostov Oblast. More than 15,000 tons of 128 different toxic chemicals are used here each year.

I must admit that there has been a slight improvement in the situation on the rice fields and the fields sown to other agricultural crops. Whereas 36,000 tons of pesticides were used in the kray in 1974 and the figures in 1985 and 1986 were 42,000 and 41,000, the amount used in 1987 was much smaller—33,000 tons, and in 1988 only 28,700 tons were used. In view of the high toxicity of saturnol and the length of the detoxification period, VNIIris plans to stop all purchases of this compound from Japan and to ban its use on farms.

Human economic activity and the predatory exploitation of natural resources have transformed the flora and fauna of the cis-Azov zone beyond recognition. The song of the lark is no longer heard in the fields and the goldfinch and siskin are never seen in gardens. The bustards and cranes have disappeared. Tomtits are rare. The foxes which had once controlled the mouse population, and the wildcats which had kept the flood plains clean are few in number now. In just the last few years the names of more than 50 animals and plants have been recorded in the Red Books of the USSR, RSFSR, and Ukrainian SSR.

[Ovsyankina] What solutions to the ecological crisis can expedition members suggest?

[Nagalevskiy] First of all, the continued depletion of the water in the Azov basin has to be stopped. The locations of water dividers and dams on large and small rivers have to be reviewed and reassessed with a view to

ecological and economic effectiveness. All fisheries must be remodeled to expand their capacities. Engineering and technical work will be essential in the irrigation systems of the Don and Kuban to lower the level of subsoil waters in river deltas. During the years of the 13th Five-Year Plan the intake works will have to be equipped with fish protection systems. All of this will take time—probably the whole 5 years.

[Ovsyankina] But what can we do today? After all, we cannot put off the protection of this valuable basin until some time in the distant future, because the stakes are too high—human health and human lives, and the future existence of the sea and its reserves and of the flora and fauna of the cis-Azov zone.

[Nagalevskiy] We think the first thing that should be done in the next few months is the incorporation of an economic mechanism to encourage the conservation efforts of branches and enterprises. Taxes should be levied right away on the import, storage, and use of pesticides in order to encourage farms to use them more prudently and efficiently. Plowing must be prohibited on the banks of rivers, estuaries, and other bodies of water.

The members of the expedition agreed unanimously that the 50-percent rotation plan should be instituted this year on rice fields and that the areas of rice cultivation without herbicides should be increased in order to improve the ecological situation. The farming techniques developed by VNIIris and the Kuban Agricultural Institute for herbicide- free cultivation should become the main trump card in the reduction of pollution. Paradoxically, however, although the Kuban was already capable of producing 90,000-100,000 tons of hulled rice last year, the kray received requisitions for only 34,400 tons. The state pays 1,200 rubles for a ton of this rice, but the entire remainder is sold at the regular price of 400 rubles. This cannot encourage farms to incorporate new technology, because herbicide-free cultivation will necessitate substantial material expenditures and efforts.

I also want to discuss another aspect of herbicide-free technology. The rice fields cannot be leveled without good equipment, and it is non- existent. Strains capable of surviving lengthy periods of flooding are also nonexistent. Another major complication is the need for experienced and conscientious irrigators. They should work on the rice fields and not be available for other jobs, but many farms cannot afford this.

Industrial enterprises owe a huge debt to the Sea of Azov. Back in 1985 the CPSU Central Committee and USSR Council of Ministers published a decree on the complete cessation of the dumping of polluted industrial waste and on the reduction of water use by 20 percent. We saw on our expedition that few of these requirements are being met. We feel that violators of the party and government decree should be held accountable.

To enhance the effectiveness of conservation measures, we propose investigations to learn exactly which enterprises are harming the Sea of Azov and cis-Azov zone so that they can be monitored closely by conservation agencies. The storage of the waste from the Azovstal Combine outside the waters and coastal zone of the Azov must be organized without delay. Exploratory drilling in the northwestern and southern parts of the basin should be restricted, and it should be completely stopped in the locations of the reproduction of valuable food fish. The protection of the flora and fauna of the Eastern Cis-Azov Zone and its unique sand bars calls for an immediate inventory of endangered species of plants and animals. The Kuban Red Book could be of considerable assistance in this work. This book, containing the findings of more than 20 scientists and specialists in the kray, has already been written, but it has been held up for some reason in our publishing house. The delay is inexcusable because this collective work is being awaited impatiently by those who care about the fate of endangered animals, birds, and plants.

The network of preserves and sanctuaries needs to be reviewed. We feel that the Yeyskaya, Dolgaya, and Belosarayskaya sand bars should become sanctuaries and that the Achuyevskaya sand bar and the Akhtarsko-Grivenskiy estuaries and flood plains should be turned into natural preserves.

[Ovsyankina] Vladimir Yakovlevich, as you already said, the problems of the Sea of Azov are affecting not only the Kuban, but also Rostov, Donetsk, Zaporozhye, Kherson, and other oblasts. Are there any plans to unite the efforts of the public in these areas for the protection of the Sea of Azov?

[Nagalevskiy] At the end of last year a permanent regional ecological expedition with its own bank account was established in the editorial offices of SOVETSKAYA KUBAN.

A conference on the Sea of Azov was held at the end of January. It was the culminating point of the public-scientific expedition. It was attended by scientists, specialists, and representatives of the ecologically aware public of Krasnodar and Stavropol krays, the Kalmyk ASSR, and Rostov and Crimean oblasts. A lengthy resolution passed at the conference stipulated the measures that had to be taken to restore the ecosystem of the Azov. It also contained an urgent request that any governmental decision on this matter be preceded by the nationwide discussion and extensive press coverage of the draft government decree on the recovery of the Sea of Azov and adjacent territories. In our opinion, this will meet the requirements of fairness and glasnost and will convey the spirit of today's changes.

Today the famous ecological statement that the protection of natural resources can only be secured by their intelligent use is being voiced in tones of admonition and hope.

I should also mention the journalistic expedition of the Sea of Azov that was organized in Rostov. It was a study of the Lower Don, Northern Donetsk, Mius, and Rostov's smallest river—the Temernik. Public committees

have been set up in several Ukrainian cities, including Mariupol and Kerch, to save the unique fish reserves of the Sea of Azov and its waters. We realize that concerted effort on the oblast and kray levels will be essential. After all, even the most intelligent ukase of a superior agency is not enough if concerted action cannot be organized efficiently on the local level. Coordination is needed because it will be impossible to breathe life into the Sea of Azov if, for instance, the Don and Kuban should completely lose their potential as rivers feeding the sea.

At the suggestion of our readers, SELSKIYE ZORI is joining the public movement in defense of the Sea of Azov. We are awaiting your reports on the work being done in the cis-Azov zone to improve the ecological situation.

Georgian Goskompriroda Deputy On Republic's Atmospheric Pollution

90WN0060A Tbilisi ZARYA VOSTOKA in Russian 27 Mar 90 p 2

[Interview with Georgian SSR State Committee on Environmental Protection and Forestry Deputy Chairman Guram Kutateladze: "The Air Is Getting Cleaner, But..."]

[Text] **Almost five years ago in April 1985 the republic Council of Ministers approved the resolution, "On Additional Measures to Prevent Atmospheric Pollution in Cities, Other Populated Areas and Industrial Centers." Recently the Council of Ministers again returned to the problem and reviewed the fruits of the work in this direction. The answer to the question - has the air we breathe become cleaner? - is impossible to view as absolutely positive. Moreover, in some places the problem has become exacerbated. The Council of Ministers approved another resolution. We asked Deputy Chairman of the Georgian SSR State Committee on Environmental Protection and Forestry Guram Kutateladze to explain this document.**

[ZARYA VOSTOKA] Guram Aleksandrovich, the necessity for the republic Council of Ministers to review the issue is obvious. Despite that, could you name the main reasons for concern. What is the situation today in general?

[KUTATELADZE] The resolution which we approved once again provides for a program of action comprised by measures, which were not forced upon us from above, but proposed by the enterprises themselves and their ministries for the 1985-1990 period. In summing up these promising outlines, we can define the main goal - emissions of hazardous substances into the atmosphere from stationary sources must be reduced to the minimum allowable level.

Today, figuratively speaking, half of the path has been covered. We had to stop and take a look at whether we have taken the correct route. Will we obtain the desired result by 1995? A deep analysis has been conducted of processes which have hindered our progress and the role of personnel factors in the resolution of ecological problems.

[ZARYA VOSTOKA] What did the analysis show?

[KUTATELADZE] First of all, data from the Georgian SSR Goskomstat [State Committee for Statistics] were analyzed which showed that during the period 1986-1989 an overall tendency towards a reduction in emissions was observed as a result of conducting air quality protection measures.

So, if in 1986 532 thousand tons of hazardous substances were dumped into the atmosphere from stationary sources of air pollution, then already in 1989 they comprised 418 thousand tons, that is to say, during four years of the five year plan emissions of hazardous substances into the atmosphere by industrial enterprises were reduced by 21.4 percent in comparison to the level when the resolution went into effect.

[ZARYA VOSTOKA] But that is in the republic as a whole...and in particular cases?

[KUTATELADZE] And if we take a look at concrete cases, then the picture becomes clearer who "pushed" this work forward and who created obstacles. The reduction of emissions was achieved largely by carrying out large-scale measures. For example, at the Rustavi Metallurgical Plant the complex reconstruction of a coking plant was completed, the old, worn-out coking plant was taken out of operation, the plan for agglomerate production was reduced, the construction of a gas and particle filtering system in the tube-rolling and tube-drawing shops was completed as well as other projects. Of course, all these undertakings cost money and quite a bit. But as a result of these undertakings the plant was able to reduce emissions of polluting substances into the atmosphere by 18.5 thousand tons per year. Now the Rustavi Metallurgical Plant annually dumps 56.3 thousand tons of hazardous substances into the air. And that is still too much, especially if you take into account the maximum allowable emissions level (PDV) for the plant is only approximately 7 thousand. It is clear what a huge amount of work we still need to do.

At the Zestafoni Ferroalloy Plant a modern gas scrubber was built for four ore furnaces. In the near future five more furnaces will be equipped with gas scrubbers. For more than 10 years this shop worked with no gas scrubbers at all. Now, as we see, the problem is being resolved.

At the Rustavi Cement Plant during the period in question modern equipment was installed and put into operation which will allow particle emissions into the atmosphere to be reduced by more than 6 thousand tons per year. However, to meet PDV requirements by 1995 the plant will have to complete the reconstruction of a number of shops. Currently the plant dumps more than

40 thousand tons of polluting substances into the atmosphere each year but by 1995 this figure cannot exceed 17 thousand.

We could cite other similar examples as well. The main conclusion that I want to draw is that currently the overwhelming majority of the leaders of republic industrial enterprises have begun to face the problem of protecting the atmosphere.

[ZARYA VOSTOKA] This regards the issue of "positive tendencies." But today they are not the only thing which determines the situation. A clear effort to hinder the pace of improving air quality is evident. That means that there are those leaders and officials, who, as you expressed it, are not trying very hard to "push" the work in the necessary direction.

[KUTATELADZE] My answer would not be complete if I didn't say that progress on reducing emissions into the atmosphere by republic industrial enterprises is behind established levels approximately by 100 thousand tons per year.

[ZARYA VOSTOKA] The figures you cited above sort of pale in comparison with that figure.

[KUTATELADZE] Who was it that mainly slowed down this progress? The lion's share of responsibility is carried by the "Kaspitsement" Production Association headed by General Director N.G. Vashadze. Essentially not one of the requirements of the 1985 resolutions was met here. The measures undertaken by the association have not been effective and have not produced palpable results. Apparently, the necessity has arisen for us to take radical measures such as issuing a resolution to close down the enterprise until shortcomings are eliminated or turning over the case to the procuracy office. Frankly speaking, I would rather not have to go to such an extreme, taking into account the huge demand in the republic for cement (after all, more than 700 thousand tons per year), but the health of current and future generations is more important.

Currently the "Kaspitsement" Association dumps 82 thousand tons of hazardous substances into the atmosphere while the established PDV level for this enterprise is not more than 19 thousand.

At the Tbilisi "Elektroizolit" Plant (director - T.I. Tkavadze) also not one measure stipulated by that same resolution has been completed. To reach the PDV levels the plant needs to reduce hazardous emissions nine and a half times by 1995 but as of yet there have been no significant changes.

Among enterprises in a critical ecological situation are: the Kutaisi Lithopone and Batumi Oil Refining Plants, the Avchalskiy Sheet Silicate Materials Plant, the Khashuri and Borzhomi Glass Plants and a number of others. I say this so the public in the corresponding regions knows where the most serious danger is coming from. We are categorically against "brazen" industrial production - production at any cost. Our committee has taken the path of strengthening demands toward violators of clean air legislation.

[ZARYA VOSTOKA] In government documents of recent years, both at the union and republic levels, a policy of utilizing market mechanisms for a solution to ecological deadlocks has been followed. The implementation of environmental protection measures often requires huge resources. The crux of the matter lies not so much in the old-style psychology of the economic manager (although that, of course, does exist) as in his financial helplessness.

[KUTATELADZE] That's true. Large capital investments are needed in nature preservation efforts. First of all, it's high time to put an end to the no-cost utilization of natural resources. The enterprise must pay for using water and for the inevitable emissions into the atmosphere. Additionally, if an established standard is exceeded then payment skyrockets geometrically. These sanctions will begin to be applied next year; they should fit in harmoniously in the context of the economic reform. In conditions of economic accountability it will become profitable for the enterprise to be ecologically disciplined.

[ZARYA VOSTOKA] That concerns current ecological policy. But in many cases the "train already left." We need to resurrect what they've already managed to destroy.

[KUTATELADZE] An environmental protection fund must be created at the union, republic, city and rayon level. We have already submitted a draft for the republic fund. In the very near future the republic government will review it. Resources will come into the fund through three main channels: fines for ecological violations, resources which parties guilty of these violations will be forced to pay as compensation for inflicting damage, and payment for the utilization of resources which I already mentioned.

[ZARYA VOSTOKA] What sum can the fund count on initially?

[KUTATELADZE] The draft talks about 5-6 million per year.

[ZARYA VOSTOKA] A little thin.

[KUTATELADZE] I wouldn't say that. You have to start somewhere. If we just had one million right now, the problem in Kaspi would be resolved. We should not be idealists - it is impossible to solve all the ecological charades and riddles overnight. We need to purposefully spend resources, "extinguishing" the hotbeds of tension one after another but unswervingly.

[ZARYA VOSTOKA] And what directions are defined in the Council of Ministers' new resolution?

[KUTATELADZE] First of all, an upgrading of the role and responsibility of the local soviets. It is precisely they

who must become the primary interested party, especially now that fundamental political changes are underway in society. Then the strict monitoring of how the ministries and departments are carrying out their obligations. The resolution pays special attention to the timetables for the introduction into operation of new environmental protection facilities. In addition, the issue of "ecological adult education" is still crucial. Many of our economic managers in that sense are shockingly illiterate. But that is another entire stratum of problems associated with the training of personnel for the environmental protection services among other reasons. On the whole I believe that carrying out this resolution will allow us in the next few years to noticeably clean up the air.

Azerbaijani Scientists Prepare Plan to Combat Caspian Pollution

90WN0068A Baku BAKINSKIY RABOCHIY in Russian 12 Apr 90 p 3

[Interview with Corresponding Member of the Azerbaijan Academy of Sciences Abdul Guseynovich Kasymov, by Azerinform Correspondent N. Barskiy: "They Are Putting the Sea Under Protection; the Comprehensive Khazar Scientific-Technical Program Has Been Adopted"]

[Text] Our Caspian has truly suffered greatly and just the Baku Sewage System alone discharges over 250 million m^3 of waste over a year with more than 7,000 tons of oil products. A high share of its pollution comes from the industrial and household wastes of the cities of the Russian Federation, the other republics, the large industrial centers located in the basins of the Volga and Ural. The sea is heavily afflicted and specialists have stated this with alarm repeatedly, showing the danger of the polluting of the coastal strip in the near future if, of course, they do not break the dangerous chain of actions which threaten its criminal polluting and is irresponsible for today's and tomorrow's generations.

At present, scientists have come to the defense of the sea. The Azerbaijani Academy of Sciences has adopted the Republic Khazar Comprehensive Scientific-Technical Program. It, in the idea of its developers, should become a shield against the industrial and sewage wastes and should help the sea recover its resources for self-purification and maintaining an ecological equilibrium. At a presidium session, the Corresponding Member of the Republic Academy of Sciences A.G. Kasymov was approved as the program's leader.

The first question we asked of him in the conversation clearly demanded a very frank reply:

[Barskiy] Abdul Guseynovich [Kasymov], understandably the flooded beaches, the swept away piers and the Maritime Wave Park are the result of natural phenomena which do not depend upon man. We can do nothing about the rise in the level of the Caspian and here, as is known, common world mechanisms are at work leading to major transgressions and equally large regressions, to the advance of the sea onto land and then its retreat and these are as yet beyond human control. But certainly the lethal economic or, as scientists are fond of saying, the anthropogenic action on an unique body of water, on the Caspian, so important and dear for everyone living on its shores—is this really something predetermined? Is it impossible really to prevent its ever-accelerating slide toward death?

[Kasymov] It is bitter to admit but with all the importance of the Caspian for our republic, we actually for many years limited ourselves to merely recording the deteriorating state of the sea.

The adopted program provides for a long-range study of the Caspian Sea for the period up to the year 2005 and the bringing together for the purposes of protecting the sea the academy and sectorial scientific research institutes from the institutes of geology and geography to the Scientific Production Association for Space Research of the USSR Glavkosmos [State Space Administration] as well as the republic ministries and departments. Prepared under assignment of the Presidium of the Azerbaijani Academy of Sciences and the USSR State Committee for Science and Technology, it proposes the fundamental elaboration of the bases and methods for forecasting, surveying and assessing the biological and mineralogical resources of the sea.

[Barskiy] If not upon assignment, then out of the imperative of the heart of all those 'involved' for their entire lives with the Caspian.

[Kasymov] The rebuke can be accepted, but this time it is a question of a truly very responsible assignment, a sort of social imperative from society to the scientists. The Union organizations, the scientists and specialists from the other republics should take a most active part in carrying out this action.

The elaboration of the program has necessitated a comprehensive approach to studying the natural resources of the Caspian. In the coastal zone are located very important industrial facilities and population points, large ports, an extensive network of the republic resort system and it would be hard to overestimate the role of the sea as a climate-forming factor in the entire region.

The main purpose is to be the elaboration of effective methods for nature utilization and the protecting of the Caspian region against further pollution. Before proposing specific measures on the rational, integrated use of the sea's natural resources, we must clearly make a detailed study of the hydrological and hydrochemical regime of the Caspian, the influence of fluctuations of its level on the coastal zone and as a whole on the ecosystem, the state and prospects of the food supply, the biology of valuable commercial fish and the geological and geochemical indicators in the aim of prospecting for supplies of hydrocarbons and their extraction.

[Barskiy] So, Abdul Guseynovich, it is a question of the scientific aspects of a long-range study of the Caspian and this time clearly more profound and extensive than before. However, for the actual salvation of the sea, there must be truly nationwide efforts and help from the growing ecological Green movement and other organizations and associations and indeed everyone who is involved in the fate of the great sickman, as one might now style the Khazar and which has given the name to the new program.

[Kasymov] An Institute for the Ecology of the Caspian Sea could act as one of the main healers and there has long been a need for organizing such an institute.

Accident at Yerevan's Nairit Chemical Works Detailed

90WN0097A Geneva JOURNAL DE GENEVE in French 10 May 90 p 3

[Unattributed article—first paragraph is JOURNAL DE GENEVE introduction]

[Text] Popular pressure had kept Nairit, the synthetic rubber factory in Yerevan, closed since 30 December, 1989. Yet four months later, a new incident occurred there. Its consequences are being shamefully hushed up by authorities, whose intent does not seem wholly disinterested.

Last 14 April, the day before Easter, at 0745, one of the two towers storing the Nairite factory's chloroprene exploded, immediately spewing four or five tons of this highly toxic gas into the air of Yerevan. The remainder of the tower's contents was simply flushed away into the streams feeding the Ararat plain.

Four hours after the accident all the factory's valves were, in fact, opened to surreptitiously dispose of the remainder of the accumulated product as quickly as possible, in violation of all safety rules.

Important Factory

But authorities are still hoping to resume operations at the factory soon. It is an important one for the Soviet Union, since it is the chief supplier of synthetic rubber. According to Soviet Council of Ministers Chairman Ryzhkov, the closing of Nairit will trim the USSR's annual revenue by 14 billion rubles. By way of comparison, the Republic of Armenia's annual budget is under 2 billion rubles.

As a consequence of all this, the entire Ararat Valley, Armenia's fruit and vegetable basket, is contaminated. "Nothing serious", however, to hear the high-ranking government officials who came to Yerevan and assisted with evacuation. As for the factory's assistant director, he affirms, not uncynically: "No, no, it's not dangerous. The proof is that we're still alive." Do not bother digging any deeper. "And no samples are being taken," enjoined the prosecutor of a district in Yerevan.

Yet samples for analysis were taken. Results of the investigation proved that the product—shown to be quite resistent—is composed of highly toxic substances, particularly for embryos (gene mutation), genitals, the nervous system (it may paralyze it), the cardiovascular system, and the immune system (cancer).

Specialists insisted that children, older people, and the sick be evacuated with dispatch. But they immediately ran up against the "nyet" of the authorities. In the opinion of Hagop Sanassarian, president of the Ecological Association, the Nairit catastrophe will undoubtedly have even more serious repercussions than the earthquake in Armenia in December of 1988.

Armenia is now faced with several serious problems affecting the survival of its people. Not only is its own territory widely contaminated (land, air, and water), but the products it imports from Belorussia or the Ukraine, such as sugar, tea, infant and toddler food, and meat, are not innocuous either, having received a generous dose of irradiation following the Chernobyl catastrophe.

Rumors

The Armenians, desperately seeking help from all sides, wonder what to do. But Armenia is both economically and politically weak. The Soviet Union's central power, beset by serious pressures, notably from its Muslim peoples, is not about to make concessions to this tiny Christian land with its bothersome nationalistic demands.

Some rumors even hypothesize economic sabotage as the cause of the explosion. It is said that the valve cover that blew in the tower had been unscrewed in advance....

Aquifer Exploitation Seen As Central Asian Water Crisis Solution

90WN0060B Moscow POISK in Russian No 11, 15-21 Mar 90 pp 4-5

[Article by Stanislav Fioletov: "A Farewell to the Aral Sea"]

[Text] **If we lose the Aral Sea, and everything is leading toward this, it will be a huge catastrophe. But it will be even more frightening if we end up with several seas in Central Asia instead of one - where today orchards rustle in the breeze, where there are cities and villages... And such a prospect is quite realistic. Because of a rise in the water table, such large cities as Tashkent, Samarkand, Bukhara, Gulisman and many others are currently in a more critical situation from the point of view of seismic vulnerability than they were 20 years ago. One hundred percent of the territory of the Bukhara Oblast, more than half of the territory of the Fergana Valley, the Golodnaya Steppe and the Kashka-Darya Oblast has been flooded. They say there's no water. In reality there's even too much...**

There's no shortage of drafts but...

Today all scientists, writers and journalists write about the Aral Sea catastrophe. Emotions are running high. In the second issue of the journal KOMMUNIST is another report from Karakalpakiya. Again threatening figures on the number of sick are cited; they talk about a catastrophe of "planet scale," about the necessity of taking emergency measures to improve the situation in the region, the resolution of the CPSU Central Committee and the USSR Council of Ministers regarding the Aral Sea is criticized. But what is offered in place of that, where is the alternative?

At first glance there are quite a few plans to save the sea. As a matter of fact, they can be divided into two groups. One group consists of those plans which propose to bring water into the Aral Sea from outside. The second group consists of those plans which attempt to resolve the problem at the expense of the internal resources of Central Asia. Let's take a look at each plan without emotions, oohs and ahhhs, strictly on a documentary basis.

In 1987 the government commission on the Aral Sea proposed a plan to bring in water from Caspian Sea to the Aral Sea. Its implementation would have required raising water from the Caspian Sea 80 meters and pumping it 500 kilometers through the desert. In addition, the pumping stations would have to pump 80-100 cubic kilometers per year continuously for 18-20 years. It's clear even to a nonspecialist how much that would cost the government. I'm not even talking about technical difficulties.

Another group of scientists has proposed inducing artificial precipitation at the headwaters of the Amudarya and Sydarya Rivers to increase the flow of the rivers to 10-25 cubic kilometers per year. Technically, this is entirely feasible but... According to data of the same authors, this would cost the country from 40 to 100 million rubles per year. Besides that, the number of sunny days would decline drastically and the erosion of fertile soil would begin in the mountainous and foothill regions. And the main thing is that by obtaining moisture here, we will remove it from another place. Nature does not give anything away free. Nobody wants to say what kind of consequences this could lead to.

The diversion of a portion of the flow of the Siberian rivers. Much has been written and said about these projects in detail. It seems that these ideas were criticized and rejected for good. However, in Uzbekistan they are about to return to the projects, forgetting that in principle the plan is not even designed to resolve the Aral Sea problem. For example, its first stream of water was meant to help develop the new lands tracts in Central Asia in Kazakhstan. It would not be useful to ignore another fact either. The transfer of the republic to economic accountability and self-financing, the strengthening of its sovereignty, and its acquisition of complete independence will require that such a project receive the support not only and not so much of the center as the support of the general public, as well as scientists and specialists of the region from which we intend to remove it. And for the time being support cannot be anticipated from that quarter.

This means that ways to resolve the Aral problem must be sought locally at the expense of our own water resources. What, then, is being proposed in this regard?

Some scientists propose to divert drainage water into the Aral Sea, others - water from the Sarakamysh, Sultandag, Arnasay and other lakes. Still others propose to utilize the moisture which will be saved through an increase in the efficiency of irrigation and land improvement systems, an improvement in sprinkler technology and the territorial reallocation of water resources. Maybe, that will work?

Let's take drainage water. The entire amount is 18 cubic kilometers per year. Nine go to lakes and low-lying areas. Nine are recycled. Let's imagine that we direct the first nine into the Aral Sea. That will not save it but all the waste lakes will disappear. Toxic dust and salt will be carried away from their dried-up bottoms. It's not hard to guess where that will lead.

For the same reason it is impossible now to dump all the water which currently has accumulated in them (approximately 50 cubic kilometers). Additionally, the majority of these lakes are located in depressions of the earth's crust and located far from the Aral Sea. That means that pumping stations are needed as well as pipelines, purification facilities- the mineralization in these lakes has exceeded allowable levels for a long time. Regarding the water which would be saved in the future, it is simply hard to say anything definite. Large-scale research and calculations are needed. But time is of the essence. It turns that there is no way out. A dead-end?

No, there is a way out. Nature itself suggests it. This conclusion was reached by scientists of the Uzbek branch of the "Priroda" State Scientific-Research and Production Center. But before we tell about their project in more detail, we need to return once more to an analysis of the causes of the Aral Sea catastrophe.

Why Is It Drying Up?

This question, as a rule, is answered unambiguously - because of the thoughtless, voluntaristic interference of man in the affairs of nature. And convincing arguments are cited. At first glance that's how it is. The total volume of surface water resources of the Aral Sea basin is estimated at 126.6 cubic meters. Of this amount more than 116 cubic meters are removed. To where? First of all, for irrigation. In Uzbekistan alone from 1970 to 1986 unreplenishable water consumption in the republic almost doubled. Since 1950 all natural surface water resources of the region have been regulated by 89 reservoirs.

There are 10.4 cubic kilometers which remain in reserve. However, they do not reach the Aral Sea because they are intercepted by irrigation canals below the gauge gates. In

other words, the resources of the Amudarya and Syrdarya are completely exhausted.

You didn't need to prove that, the reader will say. Man and only man is the cause of the Aral tragedy. But then how do you explain these facts: during its history, which is not very long from a geological point of view, the Aral Sea has often receded, changed its form and finally completely dried up. And that is utterly impossible to associate with man's activities. Then with what?

With tectonic movements of the earth's crust, say the scientists from the Uzbek branch of the "Priroda" state center. This extremely important fact was never analyzed by anyone in regard to the Aral catastrophe. In order to determine whether a link exists between tectonic processes and changes in the level of the sea, repeat leveling data for 50 years was analyzed as well as a huge amount of space research information obtained by the center since 1972. The data convincingly supports the scientists' proposals.

Thus, the Fergana Valley is sinking at the rate of four millimeters per year. The northern Priuralye region, 0.3 - 0.8 millimeters, the Kosbulag depression at a rate of seven millimeters, the Amudarya depression at a rate of three, etc.

Along with areas in the Aral Sea basin which are sinking, there are places which are rapidly rising. For example, the eastern Priuralye region is rising at a rate of four millimeters per year, the area along the Karakum Canal at 2.6 millimeters, the Zaravshan Range at more than eight millimeters, the Golodnaya Steppe at two to four millimeters per year. These processes have not been going on for just a year or two but for a lengthy geological period.

But the most interesting thing is what is happening under the sea. The earth's crust here is five to seven kilometers thinner that in other areas. The Aral itself is located at the junction of several tectonic plates which have different characteristics and speed of movements. In particular, the western portion of the sea is located on the Northern-Ustyurt middle plate, which is rising. True, not all areas are rising at the same speed. For example, the Kosbulag depression is even sinking.

The southern portion of the sea basin is located at the union of the Central Ustyurt and the Southern Tyanshan plicate system. Once a depression, today it is rising in a southwest direction and rather rapidly.

The northern portion is located at the southern extreme of the Ural plicate system; the eastern portion is located on the Syrdarya middle plate.

Photographs from space have shown: certain areas of the Ustyurt Plateau have become very wet. This leads scientists to the thought that the sea possibly is flowing toward the Kosbulag depression. For the time being this is only a supposition. Just as the other one is. Since the Ural-Omanskiy fault, which intersects the sea, is under tension today, it is quite possible that a portion of the water from the Aral Sea is being sucked into it.

Now let's take at look at what is happening in other zones of the region. In the Fergana Valley ground water levels are rising rapidly because of the continuing sinking and rising of the Akchok, Akbel and Supetau Mountains. An analogous situation can be observed in the Amudarya Valley.

The situation in the Golodnaya Steppe is somewhat different. Despite the fact that the entire depression today is rising, there is no decrease in ground and surface water. Moreover, the water is increasing. The cause is the flow from the rising structure of the Dzhausumkum and Chardarya Reservoirs. There are many such examples.

In this way, current tectonic processes completely control the surface and ground flow of the Amudarya and Syrdarya Rivers. It is precisely these processes which first led to a restructuring of the configuration of the earth's crust in the region: to an intensive manifestation of geodynamic processes; to a worsening of seismic conditions (I mentioned this at the beginning); to a rise in ground water levels and - as a consequence - to flooding, bogging, and to the salting of huge areas. Finally, to a natural reallocation of the surface and ground flow within the Amudarya and Syrdarya basins, to a drying up of the delta and a lowering of the level of the Aral Sea.

In other words we are witnesses of a natural regression of the sea which occurs on the average of once in a thousand years and happened to occur in our lifetime.

Of course, this process could be longer and not as catastrophic if it weren't for other factors, among which is climatic change. For example, beginning in the 1960's the temperature in the sea's basin gradually increased by 0.5 - 1 degrees C., which entailed a decrease of precipitation at the source of our main rivers.

And, of course, the interference of man. Especially during the last 20- 25 years. This has doubled the rate of drying of the sea. And if we don't take urgent measures, we not only will lose the Aral Sea, but what is even more frightening, we will end up with several seas in different locations where people live today, where cities are standing and orchards rustling in the breeze.

Water Will Flow Into The Riverbeds

The project of the scientists from the Uzbek branch of the "Priroda" center is attractive first of all because it not only solves the Aral problem but also allows for the recuperation of the ecological situation in the whole region. What is the essence of the project? Water must be taken from natural underground reservoirs. On the basis of geographical divisions specialists from the center have identified 15 independent hydrodynamic basins of the Aral Sea region and have determined their reserves. For

example, the Fergana basin currently has approximately 16 thousand cubic kilometers of ground water and water under weak pressure. The Syrdarya has almost eight thousand. The Chuyskiy has more than 9 thousand. The Murgab has approximately 10 thousand cubic kilometers...

The total volume of centuries-old reserves of only the largest depressions is estimated at 100 thousand cubic kilometers. Only 1-2 percent of this is sufficient for restoring the Aral Sea. But, what is no less important, this will allow to a certain degree for the lowering of the water table, an improvement in the engineer-geological and seismic conditions of the region and in the conditions of the land, the return to agricultural use of the flooded, bogged and salted areas. On the whole it will allow for a recuperation of the ecological situation of the entire Aral Sea basin.

The problem could be resolved in two stages. First of all, the stabilization of the level of the sea. For this purpose it has been proposed that 30-35 cubic kilometers of water be pumped with the help of tapered or linear water barriers. That means, that about 10-12 thousand drilled wells are needed with a depth of 500-1500 meters. However, we can get by without new ones: there are more than 12 thousand already existing wells in the republic which are not operational. Resources are needed only for their reconstruction, repair and exploitation.

That may be true, but won't this route turn out to be just another project which is technically impractical? Is there any experience at all in the utilization of ground water on such a large scale? We had to dig in the specialized literature and information guides. And I ran across some data. The People's Republic of China, in turns out, occupies first place in the world in the area of land under irrigation and the utilization of ground water for these purposes. For example, as early as 1958 more than one thousand cubic meters of water per second were being removed in just seven provinces of the country. In only ten years (1949-1959) approximately 40 thousand wells were put into operation.

India turned out to have even more impressive experience in these matters. By 1964 the area under irrigation reached 31 million hectares. Approximately 30 percent of this land was irrigated with ground water from 30 thousand deep wells and about five million shallow wells.

In the USA in 1960 35 percent of the total volume of water used to irrigate 14.6 million hectares consisted of ground water. During ten years (1940-1950) in twenty states the number of operational drilled wells increased from 74,600 to more than 141 thousand. Currently in California, for example, ground water is used on more than 50 percent of the land under irrigation and in Texas in the area around Lubbock ground water is used on all irrigated land.

Such countries as Iraq, Algeria, Greece, Turkey as well as others have positive experience in utilizing ground water. Alas, in our country only about two percent of land under irrigation uses the resources of the underground hydrosphere.

Consequently, from this point of view the "Priroda" state center's project has been substantiated and is completely feasible. But then another problem arises: how do you get the water to the Aral Sea? After all, we're not talking about five or twenty kilometers! The scientists propose to pump it into river beds. But, in the first place, because of tectonic processes surface water resources have become unbalanced. In the second place, the rivers which have been regulated by reservoirs have been exhausted by the "economic" activities of man.

The scientists parried my doubts and replied that we must clean up the natural river beds, deepen them in some places, construct by-pass canals through Tuyamuyunskoye, Kayrakumskoye, and Chardarya Reservoirs.

For a complete restoration of the sea an additional 50 thousand deep wells with a capacity of 100 liters per second would have to be drilled in the region. Then each year they would be able to pump up to 150 cubic kilometers of water into the Aral Sea. At such a rate it would be possible to replenish the sea in six to seven years. After that you would use only a portion to maintain the sea's balance and the rest would be used for irrigation purposes. In the future waste, flood, and return water, as well as the water which will be saved as a result of increasing the KPD of irrigation systems, will be added to this amount.

Scientists estimate total expenditures for restoring the sea at 3-5 billion rubles. This is several times lower that the cost stipulated by the resolution on the Aral Sea of the CPSU Central Committee and the USSR Council of Ministers or the cost of those project which I mentioned earlier. But these expenditures would pay for themselves just by reducing the resources which each year go for local land-reclamation projects. The yield per irrigated hectare and of pasture lands would increase. The seismic stability of above-ground construction would improve.

Of course, viewing ground water as a natural resource, we must not forget that it is a part of nature in which everything is interconnected. The removal of such a large amount of water could lead to various negative phenomena. For example, to the degradation of the vegetation cover due to a lowering of the water table, to a lowering of the earth's surface, to the formation of sink holes, etc.

Well, the designers of this concept have thought about this as well. Their calculations show that this will not occur. During the removal of water for stabilizing the sea the water table will be lowered by one and a half to two meters. For our conditions this is a drop in the bucket. Only when the water level is lowered by five or six meters, will we be able to drastically improve the region's

ecological situation. And so that sink holes do not form, it is necessary to pump out the water evenly using the layered method throughout the entire territory of the basin.

And so, one more concept has been proposed for saving the Aral Sea. I was drawn to it by the systems analysis of the cause-effect relationships of the drying up of the Aral Sea and the worsening of the ecological situation of the region. Methods have been proposed not only for resolving the Aral problem but also for the recuperation of the ecological situation of the entire region. And not at the expense of bordering lands but on the basis of the nontraditional rational use of internal water resources which are more than adequate. And this is encouraging.

Of course, only scientists and a competent commission can issue a final verdict about its strong and weak points. It would be good if colleagues from the USSR Academy of Sciences express their opinion.

Minvodstroy Specialist Refutes 'Dilettante' Environmentalists on Central Asian Water

90WN0068B Tashkent PRAVDA VOSTOKA in Russian 28 Mar 90 p 3

[Interview with Soyuzgiprovodkhoz Institute department head Azariy Kuzmich Kiyatkin by PRAVDA VOSTOKA correspondent I. Khisamov: "The Aral, the Siberian—Aral Canal, Talkers and Reclamation Workers"]

[Text] The participants of the recent raid by Central Television to the Greater Aral Area were possibly one of the last witnesses of the notorious ship graveyard in the dried-up Muynak Bay. Now they intend to cut up the ribs and send them for resmelting. This operation will scarcely prove efficient as the nearest open-hearth furnace is many hundreds of kilometers away. On the other hand, we should not further plague the soul in showing to the pilgrims from the entire world the symbol of the sea's death. It is a pity that there is no such radical means for eliminating the consequences of the ecological disaster.

Governmental decrees have been adopted and international programs have been worked out and billions allocated. Special construction organizations have been organized. The question of saving the Aral and the Great Aral Area has involved the superior authorities, the Party Control Committee and even the procurator's office, the creative and public organizations and funds, the all-Union newspapers and magazines. Publications on the problems of the Aral and the Great Aral Area would make up a solid library.

But the sea is drying up faster and faster. In order to keep it even on the present level, it is essential annually to divert some 35-40 km^3 of water there. Last year the Amudarya did not provide the Aral with a single liter while the Syrdarya provided a little more than 3 km^3. A threatening sanitary-epidemiological situation is persisting in the Greater Aral Area, the level of harmful impurities is rising and the water shortage is evermore acute.

Against such a lamentable background, our conversation was carried out with A.K. Kiyatkin, one of the nation's leading specialists on the problems of Central Asian water management. He was born and lived for many years in Uzbekistan and has participated in the designing and construction of a number of major hydraulic engineering works on our rivers. The department headed by him at Soyuzgiprovodkhoz [All-Union State Design and Research Institute for Water Management Construction] (Moscow) is engaged, in particular, in working out a scheme for the integrated use and protection of water resources in the Aral Basin. His research and calculations have been employed in the governmental program for improving the ecological and sanitary situation in the Aral Sea Region and strengthening the protection of the water and land resources in its basin.

[Khisamov] Azariy Kuzmich [Kiyatkin], you have been a permanent participant in the major social measures to save the sea, such as the Aral-88 Expedition and the roundtable in Moscow. At the end of last year, a second session of the Aral Movement was held.

[Kiyatkin] At present, a general information collection is being prepared using its results. But for the writers this is a result but not for me. Generally speaking, attention must be drawn to the problem and this is being done. Representatives from other nations were also present at the same session. But no decisions were taken and no positions defined. They talked a little bit and then went their ways.

[Khisamov] But, it seems to me, the Committee for the Saving of the Aral has its definite stance. The volunteer workers are not satisfied with the official program for the Aral and Greater Aral Area, particularly as concerns the fate of the sea directly. Actually, there are plans to bring the drainage into the Aral up to 21-22 m^3, but only by the end of the century. That is not enough, the sea will cease to exist and will be turned into several small lakes! But the committee in its appeal to all the republic workers has literally asserted that even now it would be possible, without spending a single kopeck, to annually supply the Aral with up to 30 km^3 of water.

[Kiyatkin] This, forgive me, is a statement by dilettantes and for dilettantes. It is essential to look the truth in the eyes. They have completely miscalculated in that the comprehensive reconstruction of the irrigation network in the Aral Sea Basin and which will take at least 25 billion rubles can only provide 10 km^3 of annual moisture savings. Enormous, years-long and expensive work is ahead and this is what the public must be made aware of. To promise the people an immediate and effortless realization of a dream is to play with fire.

In truth, at present the activists of the Aral Committee are endeavoring not to bring up this statement which was

made clearly in the heat of the moment. They are adopting the principle proposed, in particular, by the Alma-Ata Prof A. Tursunov. He has proposed to issue orders to reduce water consumption by 20 percent and eliminate and release into the Aral all the reservoirs. But to abandon controlling the run-off would mean to ruin agriculture in the entire region and undermine hydroelectric power. Irrigated farming would remain only in the river floodplains. How then would people be fed?

[Khisamov] But certainly at the same time they have proposed altering the structure of agricultural production with a several-fold reduction in the share of the plantings of moisture-intensive cotton and rice, and the development of livestock raising, orchard raising, vegetable raising and viticulture.

[Kiyatkin] Yes, all that you have mentioned is essential for solving the food and other social problems. But this will not provide a saving in water! In the first place, the feed crops require even more moisture than does cotton. As for orchards, at least for the first 5 years until they are bearing fruit, the farmers would be growing vegetables between the rows. We must not allow the land to remain unproductive for so long. We have seen this in those orchards which were planted during the Aral session. And certainly precisely the next 5 years will be critical for the destiny of the sea.

[Khisamov] And then, how is it possible by decree to reduce water consumption?

[Kiyatkin] It is impossible. The problem will not be solved by rigid administrative measures. Nature has provided little water as proof of this. All the reservoirs have been "worked" below the dead storage but even with this large areas under rice in the lower reaches have dried out. If even another 20 percent of water is released into the Aral, this will be a terrible blow to the regional economy.

[Khisamov] Certainly everyone is aware how wastefully we use water. Its consumption per hectare often is double the requirement. The same thing is true in industry and the municipal economy. Clearly only the introduction of a price for water will force the workers to reduce its consumption?

[Kiyatkin] This is a very complicated task. Without taking up the economic aspects, for example, including a price for water in the cost of the end product, we will speak solely of the technical aspect of the question. First of all, it is essential to organize the metering of the water. Basin directorates have been established in the Syrdarya and Amudarya and they are directly subordinate to the USSR Minvodstroy [Ministry of Water Resources Construction]. The metering and allocating of water are their concern. But here the local authorities have put up great resistance. Thus, Tajikistan and Turkmenia are not turning over to the directorate the headworks on their canals. And this eliminates the possibility of providing a count. The desire of the republics to control the water—the basis of life—is understandable. But what should we do if there is one source in five republics? Centralized management is indispensable but how can we convince the people?

[Khisamov] The republics are preparing to convert to cost accounting. How in this instance can the water problem be solved? Certainly a large portion of the drainage of the Central Asian rivers is formed in Tajikistan and Afghanistan. Conflicts are already known between the oblasts and republics over water. What will happen then?

[Kiyatkin] Possibly we will have to work out intergovernmental agreements, as is done in other countries. I foresee that this will be a painful and difficult process. It would be much more reliable at present to complete the years-long control of the drainage of the Amudarya (this has already been done for the Syrdarya) and monitor consumption from the center. At present, many managers have a psychology that the Aral is ours in common but the water flowing across my territory is my own. It is essential to abandon the local approach as it is as lethal as the departmental one.

[Khisamov] Participating in the Aral Session was your American colleague from the University of Western Michigan, Prof Philipp Maclean. He asserted that the measures outlined in the USSR to increase the efficient use of water by 15-20 percent will not achieve the goal. An all-encompassing modernization of the irrigation systems, according to his estimates, will cost up to 100 billion rubles. Moreover, he feels that even with the most careful water-conserving measures the water resources in Central Asia are not sufficient for satisfying the future economic and social requirements, let alone to preserve the sea. He has proposed that the Soviet government possibly in the 1990s will be forced to return to the project of diverting a portion of the drainage of the Siberian rivers into Central Asia "not only for water management but also for political and social reasons." What would you say about this?

[Kiyatkin] I have also met with Prof Maclean and have read his articles. He is the most prominent specialist in the United States and probably in the foreign world on the water problems of the USSR. I must say that his conclusions largely coincide with mine. For me and for many specialists, the current water crisis is not unexpected. We wrote about this 20 and more years ago. During the years since the revolution, the population in the region has risen from 7 million to almost 40 million. By the year 2000, it will be 50 million. At present, for each inhabitant there is just 0.17 of a hectare of irrigated land. And this figure will steadily drop. How are we to feed the people, provide them with employment, and ensure social goods with such a water shortage? Well, we can invest billions and save a score cubic meters. But again they will not reach the Aral. The population is growing and along with this the demand for water.

[Khisamov] It turns out that it is either an ecological disaster or an economic one. But then this is the choice between a pistol and a knife....

[Kiyatkin] I am profoundly convinced that there is no choice here. We must return as quickly as possible to the project of diverting the Siberian water. Without this the Central Asian Region will have no prospects, even at the beginning of the 21st Century.

[Khisamov] Is your appeal reaching the public awareness? Certainly you are a representative of the odious Minvodkhoz [Ministry of Land Reclamation and Water Resources], that is, now the Minvodstroy. The water experts are accused of no more or no less than ruining our nature, having wasted many billions of the people on this. The USSR Supreme Soviet has also expressed a harshly negative attitude toward your department, having twice refused to confirm the candidate minister submitted by the government. The plans for reallocating the water resources have been declared to be almost an attempt at genocide.

[Kiyatkin] We absolutely do not doubt that the Siberian—Aral Canal must be built sooner or later, there is no other way. The water of the Ob of course should not arrive in the Aral before all reserves for the economic use of what still exists in the region have been put to work. However, in violation of a governmental decree, even research work on this problem has been stopped. All links have been broken between the many scores of enterprises involved in the project. We realize that at present such a matter simply cannot be raised for the nation. But it will require a minimum of 10 years just for the designing. So we must think not merely about today.

At present, it is generally fashionable to denounce the central departments. And it turns out that the territorial authorities have an axe to grind. I remember that the initial project which we began to develop in 1969 was aimed exclusively at supplying water for the Aral. Later the oblasts of Western Siberia, the Urals, Kazakhstan and Uzbekistan began demanding this water. Under the pressure of the leadership of these regions, the Union government was forced to change the specifications for the project. The route of the canal became almost a thousand kilometers longer and, as a minimum, twice as expensive. And most importantly, the initial goal of aiding the dying sea was deferred. According to the last project, the water would not even reach there....

[Khisamov] So you are proposing to return to the initial project of providing Siberian water for the Aral and not giving it to anyone else?

[Kiyatkin] I was merely trying to show that the Aral had been sacrificed to economic interests and upon the initiative of the very republics in its basin. Here I do not intend to condemn them. The burden on the natural environment in Central Asia is too great and this is an objective fact recognized by all. Hence, either people will have to be removed from here or water will have to be supplied. Yes, moisture in the region is irrationally used. But in order to save it, it is essential to spend colossal amounts on releveling a majority of the lands, concealing water in pipes and hoses, placing film on the crops, introducing drip and other economic methods of irrigation and automating water distribution. This would mean many, many billions.

[Khisamov] Savings is expensive, is that not a paradox? "Poverty is the key factor for the destruction of the environment," was how it was put by the former Norwegian Prime Minister G.H. Brudtland before an International Commission on the Environment and Development. According to the estimates of specialists, in order to completely solve the question of saving water, from 8,000 to 18,000 rubles must be invested in our country for each hectare. How many years would it take to pay off such reconstruction? And if we recall that our republic has over 4 million of these hectares, where are we going to get so much money?

[Kiyatkin] In the first place, these measures will immediately produce a large increase in the yield and, hence, profit. Secondly, Uzbekistan already has a good base for the production of pipes, hoses, adapters, siphons, film and other equipment for saving water. At present, the farms are not willing to take them as these are expensive. But if there were to be a price for water and correspondingly the price for agricultural products would rise, the attitude should change.

Of course, we should be aware of the scope of the forthcoming work. The republics of the region cannot handle it alone. The efforts of the entire nation are needed. And let me repeat: after order has been instilled in water utilization, we should immediately resolve the problem of delivering Siberian water to Central Asia. The very rich natural and economic potential of this region should in the future work for the prosperity of the peoples residing here and for the flourishing of the entire nation.

Public Ecological Union Formed in Karakalpakiya

90WN0086B Tashkent PRAVDA VOSTOKA in Russian 2 May 90 p 4

[Article by V. Lutsenko, UzTAG correspondent: "An Ecological Union Has Been Formed"; passages in boldface as published]

[Text] **A new public organization—the Union for the Protection of the Aral and Amu-Darya—has been registered in Nukus. This is the first ecological association in the Kara-Kalpak ASSR.**

"We want to normalize the ecological situation in the cis-Aral zone and save the Aral Sea, the Amu-Darya, and its delta," said Chairman Orzabay Abdirakhmanov of the union organizing committee. "By encouraging scientists, writers, journalists, artists, and the international public to cooperate with us, we hope to solicit and draft competent, sound, and promising proposals aimed at the

protection of the environment and the further development of the regional economy and culture. We will promote the adoption of a public program to save the Aral, the Amu-Darya, and its delta. We also hope to take part in drafting a law holding officials accountable for environmental damage and for the production and sale of foods dangerous to human health.

"The set of proposals drafted by the union include suggestions on the need to enhance the overall ecological awareness of the population and conduct regular ecological appraisals of industrial facilities when they are still in the planning stage. The organization advocates conservation measures corresponding to international standards and the compilation of a long-range environmental protection program. We are insisting on the establishment of the legal bases for the distribution of scarce water resources among the Central Asian republics."

Tajik Goskompriroda Chairman on State of Republic's Environment

90WN0057B Dushanbe KOMMUNIST TADZHIKISTANA in Russian 6 Apr 90 p 3

[Article by M. Nazriyev, chairman, Tajik SSR State Committee for Environmental Protection: "Defending the Ecology is Everybody's Cause"]

[Text] **The Tajik SSR State Committee for Environmental Protection [Goskompriroda] was created in January of last year; it is called upon to implement state control over the condition of the environment and the rational utilization of natural resources.**

The following data may give an idea of the work that has been done since that time. In one year, the subdivisions of Goskompriroda investigated 3,367 enterprises and ecologically hazardous facilities in the republic. At these, 883 violations of environmental protection legislation were discovered. Over 13,000 instructions were issued; their execution is mandatory in the same year. Somewhat over half have been executed.

Administrative charges for violation of the environmental protection legislation have been brought against over 1,000 officials and citizens. Presentations have been made for depriving of their awards managers and specialists of the Dushanbe cement combine, the fittings plant, the "Tadzhiktekstilmash," "Tadzhikgidroagregat," the "Inzhdorremstroy" trust-base, the Tadzhik aluminum plant, and other enterprises for failure to implement environmental protection measures.

Over 300 decrees have been issued on the temporary suspension or cessation of the work of shops, production lines, technological aggregates, enterprises, and construction, and the cessation of construction of new ones, such as the shop for ammonium production at the Vakhshskiy nitrogen-mineral fertilizer plant, the battery plant in Kulyabe, and the chloromethane shop of the "Tadzhikkhimprom" production association.

A number of program documents have been developed. Among them is the "Statute on the procedure for the formation of a reserve of a given natural environment and the utilization of natural resources," and the draft "Concept of environmental protection and the rational utilization of natural resources of the Tajik SSR," which will soon be put up for public discussion.

As the result of the work conducted in the republic as a whole, a tendency toward a certain improvement in the ecological situation has been noted. The average content of all controlled pollutants (except dust) in the air of Kalininabad, Tursunzade, and Leninabad has been reduced to sanitary norms. Discharges of hazardous substances have decreased 6 percent by comparison to 1988.

The improvement of watering equipment and other measures reduced water use from natural bodies of water by 142 million cubic meters in comparison to 1988. The discharge of polluted waste water into the river Bakhsh was reduced by 8.6 million cubic meters. Its water quality, as well as that of the Isfara river, has improved. Thus, it can be said that a foundation has been laid for the radical perestroyka of the cause of environmental protection in the republic.

However, today we are still only approaching the resolution of fundamental environmental protection problems, the elimination of the causes stipulating the increase in ecological pressure on nature. What are these causes? First and foremost, this is the insufficient allocation of funds. Thus, last year, only R25.5 million was allocated for environmental protection measures, comprising about one-half of one percent of the republic national income, while at the same time, in developed countries, this index is 4-6 percent. The next cause is the inadequate study of extremely complex ecological problems. As a result of this, there still do not exist quality standards for the state of the biosphere and the environment, nor are there fundamental norms for proportional consumption of natural resources for the production of basic forms of industrial and agricultural products.

The faultiness of the current economic mechanism and the contradiction among public, collective, and personal interests are one of the basic causes of the dissatisfactory ecological situation. Here are several examples of a predatory attitude toward nature's gift—water. Out of all the industrial enterprises consuming the water of the Syr-Darya and discharging waste waters into it, only two, the Isfara chemical and hydrometallurgical plants—have introduced water recirculation. This is obviously insufficient for implementing the state program to preserve the Aral Sea.

An incident has been established in Kumsangirskiy Rayon in which one lessee applied the poisonous chemical [tiodan], taken in a large quantity from the Kolkhoz imeni Zhdanov warehouse, in impermissible doses. This ignorant, and more importantly, irresponsible approach, caused water poisoning and a fish kill. In the village of

Sebiston, there was a burst in the dam of a sludge collector tank, and a 12-cubic-meter mass of untreated wastes was discharged into the dry ravine, and further, into the Toir-Su river. In the first case, nature was done R48,000 worth of damage; in the second, R28,000.

The causes conditioning the negative consequences on nature, and the incidents of the manifestation of this can be enumerated even further. I would like to pause briefly on the fundamental principles guiding us in our work.

First of all, this is legality. Every person, every generation, the present one and the one that will come to replace us, has the right to live under normal natural conditions. This right will be legitimized by the law on environmental protection now being developed. This same law will begin to regulate utilization of nature and will provide legal defense for environmental protection activity.

The following principle is the economic base of utilization of nature. It is quite clear that along with the legal levers of regulation, the economic levers are the most powerful. Payment for utilization of nature is being introduced within the country's territory starting from 1991, and we will be among those best prepared for this: Even now, an experiment is being conducted in Dushanbe for the collection of payment for polluting the environment. The essence of the experiment is that every enterprise producing atmospheric discharges and polluted waste water in the environment must contribute a prorated sum to a special account, in accordance with the expense of restoring the aftermath of the pollution. We note that the resources from the special account are directed exclusively toward environmental purposes.

The folk saying goes, "penny wise and pound foolish." Therefore, is is impossible to skimp on environmental protection activity. Predicting and preventing negative consequences of anthropogenic effects on nature is one of the basic principles. Restoration of that which has been violated costs a great deal more. Chernobyl and the Aral Sea are stark examples of this.

Laboratories outfitted with the most modern apparatus and equipment are needed to increase the efficacy of controlling the changes in the environment and conducting ecological testing. We set great hopes here in the conversion being conducted in our country. Yet major appropriations are needed for this, and as I have already noted, insufficient resources are allocated for environmental protection.

According to the accurate definition of Academician A. Yablokov, the sources of thoughtlessness that led to the emergence of ecological disaster zones are ecological ignorance, nearsightedness, adventurism, and immorality. Therefore, one of the most important tasks of those who favor environmental protection is the universal education of the population.

Close to this is the following principle, upon which Goskompriroda relies in its work—the principle of glasnost. The frequent speeches in the press by the committee's specialists is the confirmation of this. It seems that the publication of data on morbidity and human health related to the use of pesticides and other poisonous chemicals, the effects of electromagnetic waves and other factors would resolve many ecological problems within a short period. The so-called "official use" data must without fail become the property of glasnost.

The regeneraton of the national traditions of utilizing nature is one of the directions of the committee's activity. In the East, they say: a human is for fulfilling his debt to future generations; he must build a home, raise a worthy son, and plant a tree. In the republic today, 16,000 hectares of forest are lost annually! Let us recall: Previously, every fall, the peasant [dekhkanin] would go plant trees with his sons in the mountains—walnut, juniper, almond, pistachio, and others. This and other fine traditions must be reborn. If everybody planted just one tree per year, then in 10-20 years' time, this would be a great forest with many millions of trees.

I do not set as my goal the enumeration of all the difficulties that have appeared in the first year of Goskompriroda's work. At the same time, I cannot help but discuss one of them. We have a major shortage of qualified cadres. And ecology specialists are trained in only two places in the country—at Moscow State and Kazan State Universities. But unfortunately, they are not sent to work here.

I would also like to note the following. Elections of people's deputies to the Tajik SSR Supreme Soviet were recently completed. In the pre-election platforms of both the deputies and the candidates who did not get by, according to the voting results, a great deal of attention was paid to ecological problems. I do not think that the publication of the list of lamentably well-known cities with air pollution, including Dushanbe, was the impetus for this. Today, all the republic's residents have realized: The air we breathe, the ground on which we walk, the water in which we splash are our direct legacy, left us by our ancestors, and our task is to hand down what we have to our descendants, not the way it is now, but much better, and cleaner. And the benevolent attitude toward ecological problems on the part of the people's deputies is a guarantee that the proposals we raise will be accepted with understanding by the Supreme Soviet.

In conclusion, I want to say that a 24-hour dispatcher center is in operation at the republic Goskompriroda. Anyone can call 27-91-58 and report incidents of violation of environmental protection legislation, express his wishes, and make proposals for improving environmental protection.

Tajik Supreme Soviet Decree on Urgent Environmental Priorities

90WN0057A Dushanbe KOMMUNIST TADZHIKISTANA in Russian 12 Apr 90 p 2

[Unattributed report: "With Thoughts on Protecting the Environment: In the Tajik SSR Supreme Soviet Presidium"]

[Text] As has already been reported, the Tajik SSR Supreme Soviet Presidium considered the issue of measures for the recovery of the ecological situation in the Tajik SSR in light of the 27 November 1989 USSR Supreme Soviet decree "On the Immediate Measures for the Country's Environmental Recovery."

The decree adopted notes that the tension of the ecological situation in the republic, as in the country, has grown in recent years. The high population growth, the lack of land, the disorderly construction of rural and urban population points, andinterference with nature without consideration for the region's geographical-climatic conditions have led to the formation of hotbeds of conflicting utilization of nature. Dissatisfaction with the high level of pollution by atmospheric discharges from stationary sources and motor vehicle transportation, the low quality of drinking water, and the lack of pollution treatment facilities has intensified on the part of the population of the cities of Dushanbe, Tursunzade, Kurgan-Tyube, Leninabad, Isfara, and Kulyab, as well as the Yavan valley.

The number of species of the animal and plant kingdom is being sharply reduced as the result of anthropogenic effects; a portion of them have already been entered in the USSR and Tajik SSR Red Data Books and are perched on the verge of extinction.

Groundless withdrawal of lands from the state forest reserve is being permitted in the republic. Forest exploitation is being conducted unsystematically; their function in protecting the environment is being reduced. In 1988-1989 alone, 19,800 hectares of land of the state forest reserve, covering water reservoir, defense, sanitation-hygiene, and other forests of the first group were withdrawn.

The leaders of many republic ministries and departments, and executive committees of local soviets of people's deputies regard irresponsibly the implementation of environmental protection measures, especially capital investment for these purposes. State administration and control over the quality of the environment, the organization of rational utilization of natural resources, and the economic levers of resource and power conservation are insufficiently effective. Miscalculations in situating productive forces are permitted.

The Tajik SSR Supreme Soviet Presidium adopted for leadership and steadfast execution the USSR Supreme Soviet decree "On the immediate measures for the country's environmental recovery."

Through its decree, the Presidium instructed the Tajik SSR Council of Ministers to develop a draft of a long-range state comprehensive program for environmental protection and the rational utilization of the resources of the Tajik SSR for the 13th 5-year-plan and the period up to the year 2005, and to present it to the Tajik Supreme Soviet within 2 months.

It is proposed that oblast, city, and rayon soviets of people's deputies of the republic develop in 1990 oblast, city, and rayon programs for environmental protection and rational utilization of natural resources.

It has been recommended to the executive committee of the Kurgan-Tyube Oblast soviet of people's deputies that, in conjunction with the Tajik SSR Committee for Environmental Protection (Goskompriroda), the Tajik SSR Academy of Sciences, and other concerned organizations, it develop proposals for restoring and preserving the Kalininabad sources of potable ground water, and introduce them for the consideration of the Tajik SSR Council of Ministers.

The Supreme Soviet Presidium instructed the "Tadzhikenergo" production association and Tajik SSR Gosplan to develop in 1990-1991 an energy program with consideration for utilizing unconventional, ecologically safe energy sources.

The it has been proposed that the Tajik SSR Academy of Sciences, in conjunction with concerned organizations and departments organize the study of the long-range reserves of wild plants and to develop methods to restore them. In conjunction with the Tajik SSR Gokompriroda, scientifically based criteria for setting aside nature preservation reserves should be developed by 1995, and the map for their location presented to the Tajik SSR Council of Ministers.

Oblast, city, and rayon soviets of people's deputies, in conjunction with Tajik SSR Goskompriroda, Gosplan, and the Ministry of Finance are charged with considering the issue of introducing equitable payment for polluting the environment and nature utilization starting in 1991.

The Presidium charged Tajik SSR Goskompriroda, together with the Tajik SSR Academy of Sciences with implementing the coordination of the republic's scientific research and experimental design work in the field of environmental protection.

EUROPEAN AFFAIRS

GDR-FRG Commission Agrees on Environmental Union

AU1306112890 East Berlin NEUES DEUTSCHLAND in German 7 Jun 90 p 1

[ND-Staude report: "GDR-FRG Environment Commission Meets"]

[Excerpt] Berlin (ND-Staude)—The environmental union between East and West Germany is to be simultaneously implemented with the monetary, economic, and social union, and the same rank and importance is attached to it. The joint environment commission of the two states, which met in Berlin yesterday and was headed by the responsible ministers, Prof. Dr. Karl Hermann Steinberg and Prof. Dr. Klaus Toepfer, agreed on this objective.

The commission recommends the speedy presentation of the draft of the environment skeleton law in the People's Chamber so that it can come into force on 1 July. The law transfers the most important regulations of the FRG environment law for plants and products to the GDR. [passage omitted]

AUSTRIA

Environmental Fund Underutilized by Industry

90EN0616C Vienna DER STANDARD in German 28-29 Apr 90 p 20

[Article by Lydia Ninz: "Only 40 Percent of Environmental Fund Utilized"]

[Text] Vienna—Government subsidies hardly tempt industry to repair environmental damage energetically or even assign it a high priority. A large part of the designated public funds remain simply unused. In 1989 only 40 percent of the environmental fund was used.

Environment Minister Flemming could have presented industry with 500 million [Austrian] schillings out of this fund. In reality only 200 million schillings were spent. Flemming was left with the remaining 60 percent.

Within the fund three reasons are advanced why so little of the money is being used.

Reason number 1: Companies take their time about carrying out approved environmental projects. Therefore, they cannot present any financial statements to the fund and cash in on the subsidy since the fund pays only for money actually invested.

The companies could afford to take their time—unless a legal requirement forced them to hurry up—because once an amount was approved by the fund it would not lost, even if the project were delayed. However, the fund has learned from its past mistakes and as of now ties the subsidy to a definite schedule.

Reason number 2 for delay: Companies do not abide by technical specifications, so that the fund does not pay amounts previously approved in principle. A prominent example involves the flue gas purification for Austria's only special refuse incinerating facility, EBS, in Vienna. The fund does not want to release the approved 120 million schillings until it is satisfied that specifications have been met. So this money is also frozen for the time being.

The third reason involves the bureaucracy. According to the law, Flemming cannot spend the funds by herself; she must first obtain the approval of her ministerial colleagues Ferdinand Lacina (finance) and Wolfgang Schuessel (economy). And that, one hears from the fund, could take up to two months, even though officials from these ministries sit in the commission which scrutinizes these projects.

There is no holdup by the fund itself, we are assured. However, in the past industry frequently complained about the bureaucratic procedures of the fund, which suffered from personnel shortages and loss of know-how.

The environmental fund was not the only one that was left with a large part of its money. Only 73 percent of the financial resources of the water management fund were depleted. The remaining allocation of 2 billion schillings was rejected.

The fund itself is primarily blaming the communities which postpone their water sanitation projects to some future date; largely because the booming construction industry is causing higher prices and an overextended industrial capacity.

FINLAND

Increased Use of Fossil Fuels Projected

90WN0078A Helsinki HELSINGIN SANOMAT in Finnish 28 Apr p 12

[Article: "Rauno Ruuhijarvi of the Nature Protection League: Finland's Energy Policy Will Increase Carbon Dioxide Emissions"]

[Text] Construction of the Meri-Pori coal-fired power plant and the Haapavesi peat-fired plant shows that Finland's energy policy is still continuing in the direction of increasing carbon dioxide emissions, Assistant Professor Rauno Ruuhijarvi said at the Finnish Nature Protection League's seminar that discussed climate changes and the greenhouse effect. In March, the "Lammi Club" of experts assembled by the league discussed the effect of climate changes on Finland in the year 2030 and revealed the results of the work on Friday in Helsinki.

According to Ruuhijarvi, saving energy and using it more efficiently appear to offer the only alternative generally acceptable to citizens before there is a shift to renewable forms of energy. Energy conservation and improvement in the use of energy can be achieved only by high public nuisance taxes, Ruuhijarvi said.

Ruuhijarvi pointed to the significance of swamps in preventing the greenhouse effect. Studies indicate that swamps bind carbon dioxide, and, hence, stopping the drainage of swamps and damming up ditches may become a central issue in slowing down climate changes. The draining of swamps should be terminated, and peat growth should be accelerated anew.

Ruuhijarvi predicted that the problems that arise between developing countries and industrial countries would be more difficult to resolve. The industrial countries must be ready to finance the developing countries' operations and must make their own actions seem credible.

An increase in the nuisances caused by the use of fossil fuels seems unavoidable. "Countries that have large reserves of coal and a strong desire to industrialize and raise the standard of living, such as China, will have difficulties," Ruuhijarvi surmised.

The most pessimistic forecasts of the heat seminar will all lead to an inevitable environmental catastrophe. In 40 years, present-day Finland will change into a tourist Finland, an industrial Finland, or a know-how Finland, as a result of which development of which will proceed irrevocably to a heat, nuclear, or cold catastrophe. The catastrophe theory was presented by Doctor of Philosophy Yrjo Seppala. The commentators, Assistant Professor Satu Huttunen from Oulu University, Professor Liisa Uusitalo from the Helsinki School of Economics and Business Administration, Seppo Hannus, an office director in the Ministry of Commerce and Industry, and Matti Helminen, an office director in the National Board of Forestry, partially shared the gloomy view of the future but did not believe that the development was as simple as Seppala predicted.

FRANCE

Lalonde Launches Ecology Party

90WN0110A Paris LE FIGARO in French
12-13 May 90 p 4

[Article by Thierry Portes: "Lalonde Launches Ecology Generation"—first sentence is LE FIGARO subhead]

[Excerpts] The secretary of state for the environment is poaching on the grounds of Waechter (the Greens) and, to a lesser extent, Soisson (United France).

Brice Lalonde has finally announced the name of his movement, written in blue and green letters with a pyramid-shaped A, a wavy E, the earth and the sun inside the O's, and an N that extends a hand: Ecology Generation [GE]. Yesterday, the secretary of state for the environment, proud of the symbols in the GE banner, finally unveiled his long-announced "non-party." There to chant the credo in unison after him were Socialist Jean-Michel Belorgey, the chairman of the Assembly social affairs committee; volcanologist Haroun Tazieff, the local representative of Grenoble; Noel Mamere, the "presidential majority" town councilor of Begles, and Jean-Louis Borloo, the centrist mayor of Valenciennes. [passage omitted]

Cahors Precedent

It was evident yesterday that most of the representatives who have joined Ecology Generation come from the Left or center Left. For the time being, there are only one or two town councilors from the center Right. Thus, the main body of the GE troops is made up of Socialists and an even stronger concentration of left wing radicals from the Midi—mainly the Herault. [passage omitted]

By reproaching the Greens for "moaning and groaning" instead of "taking action" as he intends to do, Brice Lalonde has placed himself in direct competition with Antoine Waechter. During the recent municipal elections in Cahors, the secretary of state campaigned for the ecologist that kept the Greens' candidate out of the second round of voting. The ecologist in question, Michel Grinfeder, had promised to form an alliance with the leftist list already by the first round. From this experience, Antoine Waechter's friends have concluded that Brice Lalonde has been asked by the Socialist Party to rally Socialist voters. Already, several of the Greens' group representatives and local officials have joined Ecology Generation.

Coastal Change Research Program Established

90WN0110b Paris LIBERATION in French
9 May 90 p 23

[Article by Dominique Leglu: "Diving in Shallow Waters"—first paragraph is LIBERATION subhead]

[Text] IFREMER launches a new program on the coastal environment. Since 1945, half of the coastal marshes have disappeared or been badly damaged. The goal of the program is to find ways to preserve this transitional zone between the continent and the ocean.

"Coastal change" [previous two words published in English] is the term to remember from IFREMER's new national research program on the coastal environment. IFREMER (French Research Institute for the Exploitation of the Sea) plans to launch this program in cooperation with other research groups, and an organizational meeting will be held at the end of the month. In an era of "global change" [previous two words published in English], the French program is intended to focus more specifically on the as yet poorly understood coastal zone. This is the zone where the continent sinks gently beneath the ocean towards the deep waters of the open sea. It is a crucial zone in which water quality must be maintained,

despite the submersion of garbage and extraction of materials. Since 1945, 50 percent of the mud flats and coastal marshes, where 90 percent of the coast's undersea biological wealth is found, have disappeared or been badly damaged. Last July, Pierre Papon, IFEMER's chairman and executive officer, asked two specialists, Jean Bourgoin and Claude Alzieu, to "take inventory of the major questions concerning the coastal environment to which research will have to find answers by the year 2000." Their report[1] emphasizes the many, many gaps in current knowledge. For example, the effect of the tide on pollution is still poorly understood. A better understanding is also needed of how wind affects marine currents. Still less is known of the evolution of the shallow coastal bottom, where sediments are deposited in a very complex fashion. This knowledge is crucial to predicting coastal erosion and the course of pollutants.

Biological issues are just as important. The quality of shellfish could become a major problem—much more of a problem, according to the authors of the report, than the health risks associated with bathing. New techniques for identifying harmful bateria must be developed. The report also emphasizes the need to conduct epidemiological studies (of which there currently are none) on the long-term health effects of toxic products in the sea environment. Lastly, pollution monitoring must remain a priority.

All of these various types of research can rely on the existing network of large sea stations (such as Roscoff and Villefranche-sur-Mer) and a dozen smaller ones. However, "we have to manage to get everyone to work together," Zaer Massoud, IFREMER's scientific director stated. An encouraging initial budget of 4 to 5 million francs will probably be earmarked for the program, in keeping with statements made at the beginning of the year by Jacques Mellick, the minister in charge of the sea, in an address before a meeting of the maritime prefects: "Over the course of the past year, several major concerns have become imperative. The foremost is the protection of our coasts and surrounding waters from the risks of accidental pollution."

Footnote

1. *L'Environnement Littoral en l'An 2000: Quels Enjeux Pour la Recherche* [The Coastal Environment in the Year 2000: What Is at Stake for Research], IFREMER, 66, Avenue d'Iena, 75116 Paris, Tel: 47 23 55 28.

ITALY

Environmental League's Petition on Global Warming Published

90WN0118A Rome L'ESPRESSO in Italian 27 May 90 p 45

[Unattributed article: "Postcard Effect"—first four paragraphs are L'ESPRESSO introduction]

[Text] No doubt the greenhouse effect is one of the most serious environmental problems which should be confronted during the 1990's. If solutions are not sought in time, in a few decades the consequences of the earth's overheating will begin to be felt in all their tragic effects. The level of the seas will rise because of the melting of polar ice, coastal cities will be submerged, and the desert will spread to great regions still fertile today.

In any event, much can be done to avert the danger. Above all, one must lower the concentration of carbon dioxide in the atmosphere, where this gas causes the same effect as windows in a greenhouse. It is also necessary, therefore, to reduce use of fossil fuels (petroleum, coal, wood, and gas) which generate carbon dioxide when burned. At the same time tropical forests must be preserved since they trap carbon dioxide.

The energy policies of all nations of the world must certainly be reviewed. Italy, little as it is, can now decide to lose no further time, and during its forthcoming term of presidency of the CEE can especially stimulate other Community countries to launch a joint policy for reducing carbon dioxide. That is what the League for the Environment is requesting with a petition which we are reproducing in its entirety, and which anyone may subscribe to, and have his friends also subscribe, using the little card enclosed in this issue of L'ESPRESSO.

Finally, anyone wishing to contribute to the campaign can make a deposit in account no. 57431009, made out to the League for Environment, via Salaria 280, (telephone 06/8841552) indicating on the back: "Campaign on the Greenhouse Effect," or send a nontransferable check, also made out to the League for the Environment.

[The League's Petition:]

To the Prime Minister, the President of the European Parliament, the President of the CEE Executive Commission, the General Secretary of the United Nations

Considering that:

—alteration of the carbon cycle (provoked particularly by excessive consumption of fossil fuels for energy purposes and the growing destruction of tropical forests), the introduction of poisonous chemical substances into the atmosphere, and ineffective and harmful energy policies are causing very damaging effects, including the weakening of the stratospheric oxygen band, and possible climatic changes;

—the consequences of these changes will be disastrous for natural life, for the economy, and for the very survival of humanity.

—The undersigned citizens ask for:

1. Conclusion of the World Climate Convention which, with appropriate protocols, will set forth binding measure for the states, so that:

a) destruction of rain forests be stopped;

b) extensive reforestation efforts be undertaken , and a struggle carried out against desert expansion in arid zones;

c) the objective be adopted of reducing carbon dioxide emissions by 20 percen by the year 2000 with respect to the amount in 1988; and then move toward cutting in half the emissions which today are more than 20 billion tons annually. Developing a radical policy for energy conservation, use of renewable sources, and institution of an international system of taxation and incentives directed toward reorienting energy consumption can make this possible;

d) there be a drastic limiting of the introduction of chemical substances contributing to the greenhouse effect, and the destruction of ozone, through a a revision of the Montreal Protocol of 1987, leading to the banning of chloro-fluorocarbons by 1995;

e) needed support be provided Third and Fourth World countries so they may confront the financial and technological difficulties connected in carrying out these policies;

In practice, it is proposed that discussions for a Convention on Climatic Changes, which UNEP [United Nations Environment Program] wishes to begin before the end of 1990, be concluded by June 1991, so that it may be possible to adopt a protocol on CO2 by 1992 at the latest.

2. That the European Community, especially the Parliament and the Commission, be promoters of this great effort to save the ecosystem, and that the Italian government assume a leading role for this, starting out by unilaterally adopting the objective of reducing carbon dioxide emissions by 20 percent by the year 2000.

3. That a special meeting of the United Nations Security Council be called by 30 June 1991 to discuss steps urgently needed for the international community to confront the real and true threats to peace and world security represented by degrading the environment

NORWAY

National Pollution Issues Summarized

90WN0090B Oslo ARBEIDERBLADET in Norwegian 28 Apr 90 p 25

[Article by Oyvind Johnsen]

[Text] Yesterday the National Pollution Administration, NPA, presented the report, "The Future Is Now." Technically the report is a summary of the NPA's long-range plans for 1990-93. In reality it is a strong warning: although Norway is starting from a better position than many other countries, large parts of our environment are gradually sickening under our own and others' wastes.

Dead Lakes

Water pollution is one of the most serious problem areas. The three largest single causes are over-fertilization, the discharge of environmental toxins, and the acidification of the water and land. Several kinds of industrial pollution are also produced by the forestry products industry, run-off water, oil operations, and the chemical industry.

Over-fertilization consists of the supplying of nutrients to the water from agriculture, construction, fish farming, and industry. This leads to an increase of nitrogen and phosphorus, so that we get increased plankton growth. Gradually the water loses oxygen; bacteria, fungus, and algae spread, and fish and bottom-dwelling creatures die out.

Environmental Toxins

Environmental poisons in the water come from industry, combustion, and agriculture. Among other things, these include pollution from heavy metals, chlorine compounds, dioxins, tars, and organic tin compounds. A number of organisms die from these poisons, which gradually accumulate in the food chain and finally affect the animal species at the top of the food chain.

The acidification of water is probably what we have heard the most about in recent years. It involves sulphur and nitrogen compounds that come from industry, from fossil fuels like oil, gas, and coal, and from agriculture. Water courses and lakes are acidified, the balance of nutrients is upset, harmful heavy metals are liberated, and the stock of fish disappears.

Air Pollution

Air pollution is another dramatic problem area. Once again, sulphur and nitrogen compounds are the culprits, and on dry land they contribute to the death of forests, among other things. Urban pollution is due first and foremost to the use of automobiles, the heating of buildings, and industry. Besides contributing to the general air pollution, urban pollution has a harmful effect on people's health, and leads to respiratory diseases and allergies.

The air is also polluted by environmental toxins. Among others, these include lead emissions from cars and burning refuse, fluorides from aluminium factories, cadmium, mercury, and dioxins.

The Hole and the Greenhouse

The much-discussed hole in the ozone layer consists of a reduction in the concentration of ozone in the stratosphere. The cause of this reduction comes primarily from the discharge of so-called CFC gasses—chlorofluorocarbons and halon gasses. Twenty-five percent of the gasses come from industrial production, and 75 percent from the end products. These include first and foremost foams used in furniture and insulation, coolants, cleaners, and aerosol cans.

Carbon dioxide (CO_2) is the most important cause of global warming, the greenhouse effect. Norway alone released 35 million tons of CO_2 during 1989, first and foremost from transportation and energy production. Unless an effort is made, Norwegian discharge will increase by 30 percent in the course of the next 10 years.

Acute Pollution

So-called acute pollution turns up on our television screens at ever more frequent intervals, mostly in the form of oil spills that take a toll on thousands of sea birds, foul the beaches, and kill the young fish. The dramatic blowouts from oil platforms at sea occur infrequently, but in the worst cases they can pump out 10,000 metric tons of oil a day. Discharges from ships happen all the time, and are estimated at 20,000 metric tons a year.

Chemical discharges from ships also damage Norwegian waters. The NPA has estimated the chemical discharges at about 1,000 metric tons per year. There are no statistics for industrial chemical discharges, but over 100 Norwegian companies are so-called "high-risk companies."

Government Plans More Fines for Industrial Polluters

90WN0090A Oslo ARBEIDERBLADET in Norwegian 2 May 90 p 10

[Article by Arne Bjorndal]

[Text] Six out of 10 Norwegian businesses exceed the limits that the National Pollution Administration (NPA) has fixed for the discharge of pollutants. Now the NPA intends to use pollution fees more often to control the discharges. Last year eight businesses in all were cited for violating their limits. Chief Engineer Eirik Kvam of the NPA's inspection division provided this information to ARBEIDERBLADET. Last year the NPA conducted 340 unannounced inspections of Norwegian businesses that have agreements about the discharge of environmental toxins into the earth, water, and air.

According to Kvam, more major and minor violations of the discharge limits were proven last year than in 1988:

"The explanation is hardly that the businesses are exceeding their limits more often, but rather that the NPA has gotten better at uncovering violations of the discharge limits," he claims.

"More Fines"

"All the same, the results are far too poor. Our investigations show that the businesses don't do a good enough job when it comes to staying within the discharge limits," says Eirik Kvam.

Now the NPA wants to bring stronger remedies to bear against businesses that exceed their limits, Kvam explains. Among other things, the NPA will levy so-called pollution fees more often on businesses that pollute more than their agreements with the NPA allow.

1,500 Licenses

Approximately 1,500 Norwegian companies today have licenses to discharge harmful chemicals into the earth, air, and water. At a third of these businesses—500 in all—the NPA conducts its unannounced inspections.

Just four out of 10 companies which the NPA checked last year complied with the discharge regulations. Over one half of the businesses—52 percent—had minor deviations from their licenses, while 11 percent had gross and major deviations.

Three Groups

In all, 53 companies in the metallurgy, forest products, petrochemical, paper, and chemical industries account for the largest and most dangerous industrial discharges in the country.

In close second place are parts of the forestry products industry, mining, the fishing industry, tanneries, and the textile industry. Barely 100 companies belong to this group.

Demolition companies, iron foundries, the food industry, plastic processing industries, and parts of the paper industry belong to the third most important group of polluters. A good 355 companies are listed in this group by the NPA.

Improvement

COI—Chief Organization for Industry—aims to halve the total number of gross violations of discharge limits in the course of 1991, says Helge Fredriksen, director of COI's division for the environment and resources.

"This is a prioritized problem, and I think we are on the right path," he says.

He asserts that often other things besides high levels of discharge cause companies to come into the NPA's spotlight.

"For example, it can be a question of poor cooperation between businesses, or malfunctioning thermometers," he claims.

Tourism Threatens Svalbard's Ecosystem

90WN0132A Stockholm DAGENS NYHETER in Swedish 25 May 90 p 16

[Article by Thomas Lerner: "Tourism Threatens Svalbard's Countryside"]

[Text] Svalbard—The sun's rays are reflected from an empty beer can on the mountainside. It could have been discarded yesterday or decades ago.

The temperature at Svalbard is like that of a freezer in winter and like that of a refrigerator in summer. Therefore all refuse decomposes extremely slowly.

Svalbard is located only 130 miles from the North Pole. Nevertheless, wildlife is surprisingly abundant. The reason is that the Gulf Stream passes to the west of the group of islands and contributes to a climate that is mild in comparison with places in corresponding latitudes.

On the Edge

But animals, birds, and plants live right on the outer edge of what they can tolerate. Therefore conservationists are concerned over the increased concentration of tourism and prospecting for oil.

I see a flock of the birds called little auks soaring on the powerful upwinds up to the tops of the snow-clad mountains. Otherwise it is quiet. The flowers are resting under the blanket of snow, waiting for the short and intense summer.

Shortly after that a flock of snowmobiles dash past at 120 km per hour. A frightened arctic fox jumps in their way and wastes vital energy in avoiding the speeding monsters instead of using it to hunt for food.

Since the airport was modernized and the number of tours per week was increased many times, business travelers and other "luxury tourists" are also tempted to visit the island group. Snowmobile safaris and the midnight sun are often on the program. Many people are happy that there is more travel to Longyearbyn, which has slightly more than 1,000 inhabitants. Others urge caution and wonder how much nature can tolerate.

Vulnerable

"We should concentrate on the Norwegian open-air tradition, which is not motorized. A mistaken concentration on tourism can result in serious damage to the sensitive and vulnerable environment," says Asbjorn Borset, who is a consultant on game and the conservation of nature on Svalbard.

On the wall in his work room, which overlooks the Advent Fjord, hangs a poster with a picture of a polar bear. Twenty years ago, it was unusual to see the arctic king lumbering around on Svalbard and the tremendous expanses of ice around the island group.

On Tour With Snowmobiles

After the research workers' warning that the polar bear strain was being threatened with extinction, the magnificent animal was protected in the entire Arctic in 1973. At present, there are about 6,000 bears in the area.

I thought of the environmental conservationist Bjornstad's statement that "the best thing is to go on tour with skis" when I went out on a snowmobile the next day in Reindalen, a wonderfully beautiful, longish valley a few miles from Longyearbyn.

When the engines are turned off, only the faint breeze that is poking about a bit in the hard blanket of snow can be heard. An hour earlier, we saw a couple of Svalbard's reindeer frantically trying to kick something edible out of the hard-frozen ground.

Returned

The strange reindeer, too, with its big fur coat and short legs, was close to extinction at the beginning of the 1900's. After total protection, the strain is up to some 10,000 animals, and a certain amount of hunting is permitted.

The walrus is another animal that people were in the process of wiping out. Prohibition of all hunting resulted in the return of a colony to the northern part of Svalbard.

The authorities are well aware of the island group's vulnerability. The natural reservations or national parks cover extensive areas, where snowmobiles are forbidden to operate or are subject to restrictions.

A serious problem can arise if the company that is drilling for oil on Spitsbergen strikes something in its hole. An oil disaster would have more than ordinarily severe consequences in that area, where the temperature of the ocean is very low year after year. The Norwegian Society for Industrial and Technical Research has been searching for oil contamination on Svalbard since 1976. The damage after a small test discharge was evident even after several years.

But no matter how well the authorities handle the problem on Svalbard itself, nature is still affected. Discharges from factories in Europe and the United States are borne by the winds to the isolated group of islands in the Arctic Ocean. Dioxin, one of the most dangerous poisons human beings produce, has been found in fish from the ocean off of Spitsbergen, for example.

Refuse Turns Up

All refuse is decomposed extremely slowly because of the cold climate. It doesn't do any good to bury refuse in a hillside. Permafrost, the perpetual ground frost, means that the refuse finds its way to the surface when the top layer of soil freezes after a short thaw during the summer.

Therefore, classifying sources and recycling refuse are new ideas on Svalbard, too. When an airplane lands in Tromso on the northern coast of Norway, I wonder how a few thousand inhabitants' chances of developing their home district are to be protected equitably against nature's equal right to exist.

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