JPRS-TEN-91-004
13 FEBRUARY 1991

Foreign Broadcast Information Service 50 ANNIVERSARY 1941 - 1991

JPRS Report

Environmental Issues

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JPRS-TEN-91-004

CONTENTS

13 February 1991

INTERNATIONAL

Caricom Represented at Washington Global Warming Conference *[Bridgetown CANA 4 Feb]* 1
Deputy Minister Reviews Soviet Position on Global Ecology Concerns
[V.F. Petrovskiy; Moscow NEDELYA No 2, 7-13 Jan] 1
USSR Deputy Foreign Minister on Aspects of 'Green Diplomacy'
[V.F. Petrovskiy; Moscow TRUD 25 Dec] 3
Marine Pollution Conference Ends in Sevastopol *[Moscow KRASNAYA ZVEZDA 19 Jan]* 5
Black Sea Pollution Issues Investigated *[K. Smirnov; Moscow IZVESTIYA 28 Nov]* 5
Italian Firms Providing Environmental Technology to Poland, USSR
[Milan ITALIA OGGI 13 Nov] 9
USSR Seeks To Set Up Monitoring Station in India
[Bombay THE SUNDAY TIMES OF INDIA 2 Dec] 9
Beijing Environmental Conference Examines Climate Change Issues *[Beijing XINHUA 18 Jan]* .. 10

AFRICA

REGIONAL AFFAIRS

EC Funds To Aid African Rain Forest Preservation *[Paris AFP SCIENCES 4 Oct]* 11

MADAGASCAR

Plea Made To Replant Forest *[MADAGASCAR TRIBUNE 17 Nov]* 11

MOZAMBIQUE

National Seminar on Environment Held *[NOTICIAS 17 Dec]* 11
First Environmental Experts Receive Training *[NOTICIAS 17 Dec]* 12

SOUTH AFRICA

Environmental Group Details East Rand Toxic Dumping *[Johannesburg TV 24 Jan]* 13
Department To Investigate Toxic Waste Dumps Claims *[BUSINESS DAY 25 Jan]* 13
Province Admits More Medical Waste Found in Dump *[SAPA 28 Jan]* 13
Residents Complain About Somchem Chemical Testing *[SAPA 4 Feb]* 14

SWAZILAND

WHO Gives Go Ahead for DDT Chemical Use *[Mbabane Radio 28 Jan]* 14

CANADA

Environment Ministry's Green Plan Criticized *[THE WINDSOR STAR 12 Dec]* 15
Alberta Approves Controversial Athabasca Pulp Mill Plan *[THE GLOBE AND MAIL 21 Dec]* 15

CHINA

State Environmental Protection Programs Summarized
[Qiao Zhiqi; ZHONGGUO HUANJING BAO 4 Sep] 17
Qu Geping Outlines Environmental Protection in Eighth Five-Year Plan
[Qu Geping; ZHONGGUO HUANJING BAO 6 Oct] 19
Protective Legislation for Mining Industry Planned *[CHINA DAILY 29 Jan]* 21
Beijing Improves Quality of City's Environment *[XINHUA 21 Jan]* 22
International Seminar on Hainan's Economy, Environment
[Hong Kong CHING CHI TAO PAO No 44, 5 Nov] 22

EAST ASIA

REGIONAL AFFAIRS

First Asia-Pacific Global Warming Seminar Ends in Nagoya *[Tokyo KYODO 26 Jan]* 25

BURMA

Soviet Delegation Addresses Environmental Seminar *[Rangoon Radio 17 Jan]* 25

CAMBODIA

Pol Pot Calls on Cambodians To Protect Wildlife *[Bangkok BANGKOK POST 31 Jan]* 25

SOUTH KOREA

Ministry Prepares for New Global Environmental Laws *[YONHAP 29 Jan]* 26

TAIWAN

Government To Destroy Smuggled Wild Animal Products *[CNA 29 Jan]* 26

THAILAND

Prime Minister Comments on Air, Water Pollution *[THE NATION 29 Dec]* 26

EAST EUROPE

REGIONAL AFFAIRS

Safety of Nuclear Plants Surveyed *[G. Pennisi; Milan ITALIA OGGI 14 Nov]* 27

CZECHOSLOVAKIA

Minister Vavrousek Interviewed on Environmental Issues
[SVOBODNE SLOVO (SLOVO NA SOBOTU Supplement) 26 Jan] 27
Fire at Jaslovske Bohunice Nuclear Plant; No Radiation Leak *[CTK 16 Jan]* 28
Nuclear Plant's Director Dismisses Danger Threat *[PRAVDA 16 Jan]* 29
December Incident in Dukovany Nuclear Plant Hushed Up *[Vienna DER STANDARD 28 Jan]* .. 29
Austrian Criticism of Dukovany Nuclear Plant Fire Handling Rejected *[CTK 22 Jan]* 29
Prime Minister Calfa on Power-Plant Dispute With Austria *[Vienna DIE PRESSE 26 Jan]* 30
Protests Against Possible East Slovak Nuclear Plant *[NARODNA OBRODA 16 Jan]* 31
Radioactive Waste Found in Cesky Kras *[ZEMEDELSKE NOVINY 4 Dec]* 32

HUNGARY

Environment Minister on Threat of Radioactive Waste Importation *[NEPSZABADSAG 26 Jan]* . 33
Contamination at Borsod Chemical Combine Reported *[OTLET 13 Sep]* 33

ROMANIA

IAEA To Help Fight Pollution in Copsa Mica *[ROMPRES 29 Jan]* 35

LATIN AMERICA

REGIONAL AFFAIRS

ECLAC Ties Caribbean Environmental Woes to Economic Factors *[Bridgetown CANA 30 Jan]* ... 36

BELIZE

Oil Spill Causing Serious Environmental Damage *[Bridgetown CANA 1 Feb]* 36

BOLIVIA

Paz Zamora Creates Secretariat General for Environment *[La Paz Radio 16 Jan]* 37

BRAZIL

Amazonia Deforestation Declines 65 Percent 37
IBAMA President Comments *[CORREIO BRAZILIENSE 27 Dec]* 37
IBRD Invests $117 Million *[CORREIO BRAZILIENSE 27 Dec]* 37
States Committing Infractions *[CORREIO BRAZILIENSE 26 Dec]* 38
Measures To Stem Amazon Deforestation Assessed *[VEJA 9 Jan]* 38

CUBA

Water Testing Laboratory Set Up With Swedish Aid *[Havana TV 19 Jan]* 39

DOMINICAN REPUBLIC

Deforestation Drying Up Moca River *[EL SIGLO 9 Nov]* 39

NICARAGUA

National Parks To Be Created *[LA PRENSA 22 Dec]* 40
Government Bans Tree Felling in Las Maderas *[LA PRENSA 22 December]* 40

PANAMA

Vice President Urges Creditors To Consider Debt-for-Nature Swap
[LA ESTRELLA DE PANAMA 15 Jan] 40

NEAR EAST/SOUTH ASIA

EGYPT

National Water Needs, Current Supply Assessed *[AL-JUMHURIYAH 22 Nov]* 41

SOVIET UNION

UNEP Director Tolba Views Soviet Ecology Concerns *[M. Tolba; PRAVDA 26 Dec]* 42
Plan for State Environmental Protection Funding Proposed *[K. Gofman; IZVESTIYA 9 Jan]* 43
Ukraine Determines Compensation Procedures for Chernobyl *[TASS 23 Jan]* 45
Social, Ecological Newspaper on Chernobyl Issues To Be Published *[Moscow Radio 22 Jan]* 45
'Unique' Chernobyl Sightseeing Tours Planned *[TASS 2 Feb]* 45
'Radioactive Cloud' Reported in Ukraine *[Berlin ADN 2 Feb]* 45
Cabinet Resolution on Nuclear Plants Issued *[PRAVDA 26 Jan]* 45
Civilian Inspectors Oversee Some Defense Plants *[IZVESTIYA 28 Jan]* 46
Deputy on Safety of Reactor at Moscow Nuclear Energy Institute
[A.Yu. Gagarinskiy; MOSKOVSKAYA PRAVDA 20 Nov] 47
Moldovan Ecological Movement Holds Founding Congress 49
Meeting Summarized *[G. Lupushor; MOLDOVA SUVERANA 24 Nov]* 49
Address by Ecological Activist *[G. Malarchuk; MOLDOVA SUVERANA 24 Nov]* 50
Appeal to Citizenry *[MOLDOVA SUVERANA 24 Nov]* 52
Academician Views Moldovan Land Degradation, Drought Conditions
[M. Lupashku; SOVETSKAYA MOLDOVA 17 Nov] 52
Draft Azerbaijan Plan for Environmental Action Projected to Year 2005
[BAKINSKIY RABOCHIY 14 Oct] 55
More on 1957 Chelyabinsk Nuclear Accident *[TRUD 24 Jan]* 63

Environmental Problems Hit Gusinoozersk Electric Power Station *[Moscow TV 17 Jan]* 64
Nikolayevsk Ore-Dressing Plant Pollution Causes State of Emergency
[Moscow International 2 Feb] 64
Strontium-90 Levels Rise in Issyk-Kul Lake *[IZVESTIYA 22 Jan]* 65
'Brief Existence' of Mangyshlak Nuclear Test Site Reported *[IZVESTIYA 23 Jan]* 65
East Kazakhstan Oblast Plans Ecological Damage Repair *[Moscow TV 13 Jan]* 65
Pace of Space Debris Clean Up in Kazakhstan Criticized *[PRAVDA 30 Jan]* 66

WEST EUROPE

REGIONAL AFFAIRS

EC, EFTA Agree To Stabilize Carbon Dioxide Emissions *[Brussels EUROPE 7 Nov]* 67
EC Hosts Solar Energy Seminar in Nicosia *[Paris AFP SCIENCES 15 Nov]* 67

FRANCE

Environment, Energy Control Agency Created *[AFP SCIENCES 22 Nov]* 67
Pollution Cleanup Firm Launched *[AFP SCIENCES 22 Nov]* 67
National Environmental Coordination Organization Formed *[AFP SCIENCES 31 Oct]* 68
Politics of Lalonde's Ecology Generation Examined *[LE QUOTIDIEN DE PARIS 17 Dec]* 68

GERMANY

Government Adopts Carbon Dioxide Reduction Program
[WISSENSCHAFT WIRTSCHAFT POLITIK 14 Nov] 69
Land Reclamation Technology Development Project Launched
[TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN 29 Oct] 69
Morsleben Nuclear Waste Dump Defended as Safe *[VOLKSSTIMME 6 Dec]* 70
Water Seepage Causes Problems at Waste Disposal Sites
[U. Schiele-Trauth, C. Friedl; VDI NACHRICHTEN 7 Sep] 71
Schering's Decontamination Research Outlined
[Ernst-Ludwig von Aster; HANDELSBLATT 12 Sep] 72
Transparent Insulation for Solar Energy Systems Developed
[FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT 19 Sep] 73
New Systems Detect, Measure Pollution in Sea *[HANDELSBLATT 19 Sep]* 74

IRELAND

Content of New Environment Bill Summarized *[T. O'Brien; IRISH INDEPENDENT 5 Dec]* 75

ITALY

Government Plans for Energy Efficiency Outlined *[ITALIA OGGI 27 Nov]* 75

NORWAY

Representative Suggests Less Stringent Carbon Dioxide Policy *[AFTENPOSTEN 20 Dec]* 76

Caricom Represented at Washington Global Warming Conference

FL0402171091 Bridgetown CANA in English 1651 GMT 4 Feb 91

[Text] Washington, Feb 4, CANA—Caribbean Community (Caricom) member countries are being represented at an international conference on global warming which opened here on Monday.

Representatives from more than 130 nations will participate in the week-long meeting, expected to result in an international treaty to forge a worldwide response to the threat of global warming. The meeting, in which scientists, researchers, and government officials are participating, will seek to determine the potential impact of global warming on the natural world.

Over the weekend, Caribbean officials were involved in preliminary discussions and briefings with officials of other island-nations attending the meeting.

There is deep division about the magnitude of the threat of global warming and a key concern of Caricom participants is whether rising temperatures will cause seas to rise, one official said. He said the challenge for the Caribbean would be to pursue its development activity on an environmentally sound basis.

A United Nations study concluded last year that temperatures will rise about two degrees by 2025 and six degrees by the end of the century. According to one conference paper, scientists are trying to understand if rising temperatures will lead to increased cloudiness which could shield the planet from sunlight thus mitigating warming. However, certain types of clouds may increase warming by trapping more heat, the paper said.

Deputy Minister Reviews Soviet Position on Global Ecology Concerns

91WN0210A Moscow NEDELYA in Russian No 2, 7-13 Jan 91 pp 4-5

[Interview with Vladimir Fedorovich Petrovskiy, USSR deputy minister of foreign affairs and chairman of an interdepartmental commission for foreign policy and legal problems of cooperation in the area of protection of the environment, under the rubric: "Timely Interview"; place and date not given: "Diplomacy and the Ecology"]

[Text] **In the last two or three years the leadership of the country and the USSR Ministry of Foreign Affairs have paid noticeably more attention to elevating the question of the environment to an international level. An interdepartmental commission for foreign policy and legal problems of cooperation in the area of protection of the environment that has been created in the country has been summoned to contribute to improvement of the environment. The chairman of the commission is Vladimir Petrovskiy, USSR deputy minister of foreign affairs.**

[NEDELYA] Vladimir Fedorovich, one may probably speak of ecological diplomacy to some degree. What does it mean at the present stage?

[Petrovskiy] To be brief, ecological diplomacy is called upon to provide the proper conditions for consistent and unhindered development of international environmental cooperation and for an energetic union of the efforts of the countries and peoples of the world in the interests of preserving the environment. At the present stage of development of this relatively new and quite intensive realm of international activity, it is a question of adopting concrete measures to correct the unfavorable ecological situation on the planet, in particular regions, and in individual countries. From declarations to practical actions—that is how I would formulate the credo of ecological diplomacy today. It is applicable to all levels of environmental work—global, regional, and national.

[NEDELYA] Speaking about a global level of ecological interaction, it is probably worth touching upon the activities that the United Nations is implementing toward this goal. In December of last year, M. Tolba, executive director of the UN Environment Program (UNEP), was in Moscow on an official visit. What do you believe was the significance of this visit for the development of diplomatic activity in an ecological direction?

[Petrovskiy] Our contacts with UNEP, as the leading environmental component of the UN system, are becoming more regular in recent years and are becoming more concrete. This is the fifth visit of the leader of UNEP to our country. In the course of negotiations between M. Tolba and leaders of the parliaments, the governments, and the environmental departments of the USSR and the RSFSR [Russian Soviet Federated Socialist Republic], as well as the USSR Ministry of Foreign Affairs, a wide circle of questions concerning international ecological cooperation and USSR participation in the activities of UNEP were discussed. A meeting with the Soviet "Green" community was held for the first time.

Today, when the question of preservation of the environment is one of the priorities of our state policy, the significance of cooperation with UNEP is increasing.

Created in 1972 by decision of the Stockholm Conference on Human Environment, UNEP is the central link and coordinator of international environmental activity.

This organization, with its headquarters in Nairobi (Kenya), has branches in all parts of the world today. At the present time, UNEP is involved in implementing about 1,000 projects and programs affecting the entire ecology of the planet. Functioning within the framework of UNEP are such major environmental programs as the Global Environmental Monitoring System, the Global Resource Information Data Base, the Global Information Network on the Environment, and the International Register of Potentially Toxic Chemicals... Being carried out under the guidance of UNEP are a UN Plan of

Action To Fight Desertification, a Program of Regional Seas, a Global Plan of Action To Preserve Sea Mammals, a Plan of Action for Tropic Forests, a Program of Ecologically Rational Use of Inland Waters, and a Worldwide Policy Regarding Soils. Jointly with other organizations of the UN system, UNEP takes part in the execution of a Worldwide Climate Program, an International Geosphere-Biosphere Program "Global Changes," an International Program for Chemical Safety, an International Program for Education in the Realm of the Environment, and a program to help developing countries resolve environmental tasks. In recent years UNEP has acted as initiator in the adoption of such important environmental documents as the Vienna convention on preservation of the ozone layer, the Montreal protocol on substances that break down the ozone layer, and the Basel convention on monitoring the cross-border transfer of wastes and their removal, and under the aegis of that organization a global convention is being developed at the present time for preserving the planet's biological variety. Such rich opportunities with UNEP and its valuable accumulated scientific and practical experience in environmental work deserve the closest attention on our part, especially with the goal of resolving urgent ecological problems on the territory of the USSR.

Speaking about the recent visit of the executive director of UNEP to the USSR, I will note that he is making new opportunities available for translating our cooperation with that organization into the realm of practical resolution of ecological problems on the territory of our country. An example of this is the agreement on UNEP's participation in activities to clean up the Chernobyl disaster and in international projects to study and preserve Lake Baykal, as well as the agreement to give new content to the ongoing project under the aegis of UNEP to restore the Aral Sea. We also talked about preserving the Black Sea and the upper reaches of the Ob River. We discussed ways and means of promoting the idea of a Center for Emergency Ecological Aid and questions connected with preparations for the 1992 conference.

[NEDELYA] It is apparent that global ecological problems require long-term scenarios for their solution, but each day of delay may play a fatal role. Could you demonstrate what kind of ecological tasks can be accomplished today on the basis of international cooperation?

[Petrovskiy] Indeed, we must immediately begin correcting the unfavorable—and in many regions disastrous—ecological situation that exists on the planet, first and foremost by taking those measures that are ripe for implementation. One of them is the idea put forward by the Supreme Soviet of creating under the United Nations a Center for Emergency Ecological Aid. Its activity could consist of regulation of planetary cooperation in ecological situations of crisis proportions. Such a center, after approval of minimal funds from the budget of the United Nations and of lodgings for a data base and with the agreement of governments to finance trips of their experts to regions of ecological disasters, could begin to function immediately. We also proposed creating a similar organ for the European Continent. Simultaneously it would be possible to begin making up a register of the most dangerous industries and enterprises functioning in the various countries.

Another possibility is the regulation of an international system for monitoring the ecology of Earth from space. We believe that the numerous flight vehicles of the different countries moving through outer space with their unique equipment on board could be used more appropriately for ecological goals. In particular, the Soviet Union has expressed its readiness to cooperate in the creation of a space laboratory or a piloted orbital station that would be exclusively involved in monitoring the state of the environment. The Soviet Union has proposed that the projects "Priroda" and "Almaz," being carried out in the USSR, be put to this use. It could be a question of launching, perhaps in 1992, the specialized module "Priroda," which is equipped with an array of the necessary scientific apparatus, and joining it to the orbital piloted station "Mir." A Soviet space station of the "Almaz" series could also serve as a good base for monitoring the environment and studying the natural resources of Earth.

I would especially like to point out the opportunity opening up for environmental cooperation in conjunction with disarmament, reduction of military budgets, and conversion. The scientific and technological potential are very great here, and their use toward creative goals in the protection of the environment is an important, urgent task.

On the whole, any area of environmental work, even if it is directed at the distant future, will also result in certain benefits and practical achievements today that should be developed and encouraged. Anyway, the main thing in my opinion is for everyone to put his own house in ecological order: After all, global solutions, like global problems do not exist independently, but are made up of national, regional, and subregional components.

[NEDELYA] I would like to hear how domestic and international efforts can supplement each other in the resolution of ecological problems in our country.

[Petrovskiy] I will cite several examples of how they compliment one another. The most apparent of them is international cooperation in the matter of cleaning up the disaster at the Chernobyl nuclear power plant. Not long ago the General Assembly at the United Nations adopted with the general support of all of its members a special resolution that poses the task of mobilizing international aid and stipulates a whole range of measures in that area. The resolution, which was coauthored by 120 member-states of the United Nations, is a unique document that for the first time in the history of the United Nations calls upon all the organizations that are part of its system to respond to our national tragedy.

Another illustration is the implementation of a USSR-UNEP international project to render aid in the preparation of a plan of action to restore the Aral Sea. An international examination that is being conducted of the ecological and socioeconomic situation in the Aral region with the participation of leading Soviet and foreign specialists is expected to provide a basis for concrete recommendations for the restoration and life of that region.

The Baykal international center of ecological research, officially opened at the beginning of last December in Irkutsk, deserves special mention. The center, which is an international voluntary, nongovernmental organization, was created on the basis of the Limnological Institute of the Siberian Division of the USSR Academy of Sciences with the goal of uniting the efforts of Soviet and foreign scholars in the study and preservation of the unique ecosystem of Lake Baykal and in the comparative study of other major water ecosystems. The center was opened to unite all interested national and international organizations and foreign scholars.

I also stress such long-term trends in ecological cooperation as preserving the ecosystem of the Black Sea. This year we expect the signing of an international convention to preserve this very major water basin from pollution. The Soviet Union, taking part in devising this document, is very directly interested in increasing cooperation in the area of the Black Sea. It is also closely tied with protecting the Mediterranean Sea from pollution.

[NEDELYA] As you know, the UN Conference on Environment and Development is taking place in 1992 in Brazil. What can your country expect from this major ecological forum?

[Petrovskiy] We intend to take a very serious part in preparing for and conducting this conference, seeing it as the main event in international environmental cooperation in the closing century. Our country was guided by these considerations when it proposed that the Brazil forum be conducted at the highest political level. The course of preparations for the conference are even now oriented toward weighty results and decisions that will lay the foundation for the stable and ecologically safe development of mankind. In particular, the understanding is forming that the conference should end with the adoption of such fundamental documents as a Global Strategy of International Environmental Cooperation under the name "Agenda for the 21st Century," a document on the foundation of an ecological ethic and global conventions on climate and on preservation of biological variety. It is proposed that all these documents be accompanied by concrete measures of support in financial and organizational aspects. Naturally, the decisions that are made will put strict obligations on all countries, including the Soviet Union. The 1992 conference is able to stimulate environmental efforts inside our country and orient us toward the kinds of models of ecological development that will guarantee a cautious attitude toward the environment.

[NEDELYA] The "Green" movement, a large nongovernmental ecological organization, plays a traditionally active role in environmental activity. What can you say about the influence of environmental movements on ecological diplomacy today?

[Petrovskiy] I am convinced that domestic policy in the realm of preservation of the environment today, as never before, is in need of society's contributions. Let us say candidly that, to a great degree, the insistent calls to action of ecologists have served as the decisive trigger to renewed environmental action in our country, including participation in international ecological cooperation. The need of a dialogue with nongovernmental organizations is today an indispensable characteristic of any international measure in the area of the environment. In truth, society is now changing from a partner in the grand policy to its creator. The most important landmark in this direction is the final document of the Sofia conference on protection of the environment of member-states of the all-European process, which established the inalienable right of individuals, groups, and organizations involved in problems of the environment to freely express their opinion and to receive, disseminate, and openly discuss materials concerning environmental problems. These ideas received further reinforcement in the recently signed Parisian Charter for Europe. It is also necessary to note the European regional conference on the environment and stable development conducted in May 1990 in Bergen—at its first stage society took part on an equal level with state delegations.

A large program for nongovernmental organizations and so-called "independent" sectors is envisaged by the preparatory process of the 1992 conference, and we are counting on the active participation of Soviet society in the enactments of that program.

USSR Deputy Foreign Minister on Aspects of 'Green Diplomacy'

91WN0175A Moscow TRUD in Russian 25 Dec 90 p 3

[Interview with USSR Deputy Minister of Foreign Affairs V.F. Petrovskiy, by TRUD correspondent Ye. Shulyukin: "'Green' Diplomacy Serves Man"]

[Text] [Shulyukin] We are used to believing that environmental protection is the job of the economic organs, and scholarly and public organizations. As this problem has international significance, what role does diplomacy play here?

[Petrovskiy] We must begin with the fact that environmental protection has become one of a number of the priority problems of contemporary life that can be resolved only through joint, collective efforts. People say that borders are now losing their meaning in a political sense, but from the point of view of environmental protection, the concept of borders does not exist at all. The nature itself of this problem suggests international cooperation and international efforts. These are expressed mainly through the formulation of universal

legal regulations and the legal interrelations between states—both bilateral and multilateral.

You are completely correct when you say that many organizations are now involved with ecology. We have a special committee on environmental protection. In regard to the Ministry of Foreign Affairs, it chairs an interdepartmental commission on foreign policy and the international legal problems that relate to the Soviet Union's participation in various types of international activities. We are the coordinator of "green" diplomacy.

Our goal is, first of all, to provide for the fulfillment within the country of the obligations that the Soviet Union has taken upon itself in accordance with international environmental protection agreements. And, secondly, to succeed in bringing our country into compliance with the highest international standards in the area of ecology.

[Shulyukin] What has already actually been achieved in the area of "green" diplomacy?

[Petrovskiy] A fair amount. There is an entire series of international documents that determine standards for the conduct of states in the international realm. For example, the Stockholm and Nairobi declarations of the UN member-states are very significant. The Charter of Economic Rights and Obligations of States provides for coordinating the creation of new branches of industry and the improvement of those that already exist with issues relating to environmental protection. But I would especially like to point out the European experience. Two years ago, the concluding document of the Sofia meeting of CSCE member-states on environmental protection was signed, establishing the highest standards for cooperation in the sphere of ecology. The agreements included in the recently signed Paris Charter for the New Europe have great significance for the development of cooperation in environmental protection on the European continent. Besides this, a solid base has been created for bilateral cooperation, as well. Agreements have already been concluded with 16 countries. For example, there is an agreement with the United States on the creation of a joint Soviet-American park in the Bering Strait region.

[Shulyukin] What exactly is that?

[Petrovskiy] A kind of universal wildlife preserve is being created, in which the region's biological variety, its flora and fauna are preserved in their natural form. An analogous border preserve, called "Druzhba" [friendship], is being created with Finland. Our department coordinates all of the organization's cooperation with other countries. But I believe that there has not yet been enough has accomplished in this area. We have still not joined all of the agreements, and the possibility of participating in them is only now being examined.

[Shulyukin] Does environmental protection somehow accompany diplomatic activity geared towards protecting peace, disarmament, and providing international security?

[Petrovskiy] It accompanies this in a most direct manner. For the reason that, from the point of view of providing international security, the prevention not only of the nuclear but of the ecological threat as well has acquired exceptional importance today. Personally speaking, the only difference between them is the fact that in one case the catastrophe arises in an instant, and in the other—slowly, but the final result could be fatal for mankind in both cases. For this reason, for diplomacy, prevention of the nuclear and the ecological threat are two equivalent goals.

I will say more. In 1992 a UN conference will take place on the environment and development. I think that at this forum, the problem of preventing the ecological threat will be advanced to a position of paramount importance in terms of the efforts of the international association that stands at the dividing line between two centuries. Now it is very important that in its actions, policy not lag behind the growing threat. We are alarmed by the fact that occasionally too many projects appear, while there are not enough agreements and actions. For this reason, we want the 1992 conference to conclude not just with the adoption of declarations. They are necessary. However, there is something even more important—that it yield real, tangible results. In concrete terms, we are striving for the conclusion of a "limited" agreement, that is, one that would determine general limits for the approach to be taken towards the prevention of climatic change on our planet. And secondly—we expect that an agreement of the same type will be concluded on the preservation of the Earth's biological variety.

[Shulyukin] And what is the state of the hole in the ozone, which people talk and write so much about?

[Petrovskiy] The hole in the ozone is also a very serious problem. But significant work has already been carried out in relation to this. There is the Montreal Protocol of 1987, which is aimed at cutting back production and demand for substances that are harmful to the ozone.

Regarding the agreements, adopted in June, 1990, on strengthening the Protocol's requirements, the Soviet Union, along with all of the industrially developed countries, took upon itself the obligation of limiting, and in some positions, stopping, its output of freon.

[Shulyukin] In the agreement on arms reduction, they are negotiating how much of one or the other weapon will be destroyed. And in the area of ecology—how can things be expressed concretely?

[Petrovskiy] Concrete conditions exist. You and I were just speaking of the hole in the ozone. There are also conventions that obligate us to observe certain rules in the transport of goods across international boundaries. There is a convention that forbids the military or any

other hostile use of substances that affect the environment. That is, there exists a whole series of limiting measures for avoiding pollution of the environment. Over 140 environmental protection conventions have already been concluded. Of course, not all of them are equal. We have complied in practice with 60 agreements that directly or indirectly affect our interests. They regulate the activities of states not only on a global scale, but also regionally, in areas like, for example, Antarctica, the Pacific Ocean basin and the Atlantic, Baltic, and Danube basins.

There is one more policy that is very important: that is cooperation in overcoming the consequences of the accident at Chernobyl. The UN General Assembly has just adopted a resolution on this issue. It took place thanks to a phenomenon that is unique for the UN—120 states came forth as its initiators. This bears evidence of the realization that one country's pain in the ecological sphere is understood as a universal catastrophe. And now, on the basis of this resolution, there will be new international efforts.

Agreements have been signed on conducting international experiments in the Aral basin, on joint work in studying and preserving the unique ecosystem of Lake Baykal. Now we are concerned about taking on the problems of the Black Sea, The White Sea, and the Lower and Middle Volga.

In all of these issues, we are freeing ourselves from the stereotypes of the past. We are still hampered by survivals of the ultra-secret mentality and by our lack of understanding of the fact that ecological issues cannot be solved alone, in closed regions. International efforts are needed. They allow us to receive not only qualified evaluations and knowledge, but make the latest technology accessible as well. This is the basis for success in the battle to heal the environment.

Marine Pollution Conference Ends in Sevastopol

PM2401133991 Moscow KRASNAYA ZVEZDA in Russian 19 Jan 91 First Edition p 2

["Our Correspondent" report: "Headquarters in Sevastopol"]

[Text] A two-day conference of the International Consultative Committee for Marine Pollution was held in Sevastopol. Representatives of scientific nongovernmental and governmental organizations participated in it. The conference was held at the Ukrainian SSR Academy of Sciences Biology of the Southern Seas Institute.

The broadest spectrum of questions was raised in 19 scientific speeches and an extensive assessment was given of the pollution of the Baltic, the Black Sea, the Sea of Azov, the Barents Sea, and the Sea of Japan. The audience listened with great interest to reports by Lord Clinton-Davies, president of the International Consultative Committee for Marine Pollution, and Dr. V. Shebek [name as transliterated], executive secretary of the committee, on the work and program of this international nongovernmental organization.

A Soviet section of the international consultative committee was formed, with its headquarters in Sevastopol. It is headed by Academician G. Polikarpov, vice president of this committee.

Black Sea Pollution Issues Investigated

91WN0196A Moscow IZVESTIYA in Russian 28 Nov 90 Union Edition p 3

[Article by Kim Smirnov, IZVESTIYA special correspondent, reporting from Sevastopol, Odessa, Constantsa, Varna and Istanbul: "When Will the Black Sea Explode?: Myths and Truths About Ecological War"]

[Text] "Have you heard? They've closed all the beaches. It's the plague, I tell you, the plague..."

"And fish are dying in the Sea of Azov. Some unknown ailment kind of like AIDS. The fishing fleet is being shifted to the Caspian Sea. But they are afraid that they will carry the infection with them."

"What does that matter, if in 1991 the Black Sea is going to explode anyway? That will be the end of the world. That is what Zarathustra said. And it's a magic number: the same when read left to right or right to left..."

Waves of rumors are sweeping over the country, from Chernobyl to Chukotia. The Black Sea, which in many cities and towns is synonymous with recreation and therapy, is today not only "the bluest in the world" but also the most myth-shrouded. But what connection is there between the splendid legends of ancient Hellas, many of which were played out on these very shores, and the gloomy imaginings of today's mythmakers? And are their prognoses really unfounded? Are danger signals in evidence all across the Black Sea?

In hopes of finding an answer to these and other pressing ecological questions one sunny autumn day I boarded the research ship "Akademik Vernadskiy," which was the scene of the multinational "Eco-Black Sea '90" conference, a gathering of what might be described as the entire intellectual flower of present-day knowledge about the sea and its shores. The conference was sponsored by the worldwide movement Ecoforum for Peace. It was preceded by three purely research-oriented expeditions last summer: a Soviet expedition on the "Akademik Boris Petrov," a Bulgarian expedition on the "Akademika" and a third expedition on shore. Their findings, the very latest, were collected in a book entitled "Practical Ecology of Maritime Regions: The Black Sea" ["Prakticheskaya ekologiya morskikh regionov. Chernoye more"].

Well, is the Black Sea going to explode? It turns out that Zarathustra is not the only one saying that. Some scientists also believe it. This is a hypothesis which has been

circulated in the press and at state forums. According to it, dead, lifeless expanses of hydrogen sulfide which fill the sea from depths of 100-200 meters all the way to the bottom at a recorded depth of 2,245 meters have begun to shift and are ascending rapidly; when the reach the surface, so the hypothesis goes, the sea will explode. To be sure, at the conference it was demonstrated that this is simply a myth. Research and observations conducted over the past 70 years as well as the latest findings indicate no cause for alarm.

Yet more has been written about the mythical hydrogen sulfide explosion than about the terrible disaster which is indeed bearing down on the Black Sea and the Sea of Azov. A member of phylum Ctenophora, or comb jellies, originally from American shores, has struck a devastating blow at fish populations in particular and at fauna in both seas in general. This rapacious animal, more transparent than a jellyfish, consumes approximately one-half of the entire plankton biomass. This has been a knockout blow for the Sea of Azov, and it really is time to shift the fishing fleet to the Caspian Sea (according to press reports the Ministry of the Fish Industry has already decided to send eight ships from the Sea of Azov there), but then that will be the end of that sea as well. The number of Ctenophora in the Black Sea is already nearing one billion tons, which is much greater than the entire biomass of all the fish in it.

What happened? Is a comb jelly so powerful? "No," replies M. Vinogradov, deputy director of the USSR Academy of Science Oceanographic Institute and USSR Academy of Science corresponding member, "the ecosystems of both seas have been that badly weakened. Back in 1982, before the comb jelly invasion, we were sounding the alarm: the sea is dying. Eight years have not sufficed to create a program to save it. True, officially a program does exist. But it is a typical conglomeration of various topics being handled by various institutes."

My old friend, Bulgarian journalist Kirill Panayotov, introduces himself like this: "a sailor on dry land without rank or scientific titles and an enemy of the comb jelly and excessive complacency." He has proposed that all who share his beliefs in the countries bordering the Black Sea form an "SOS Black Sea Club" and "cuss out loud" in defense of the sea. He went too far, of course, by saying that they should use that kind of language. But when you know the whole truth about what is happening on these shores and nearby you will feel both pain and a desire to shout bad words at the top of your voice.

But you should not. You are standing next to a sickbed. On the ecological maps hung in the messroom of the "Vernadskiy" during the discussions the blue was rimmed with a deathly shade of red, an alarm signal. It is as if the Black Sea ecosystem is on the verge of a heart attack, and the Sea of Azov has already suffered a massive one. The critical points are those places where the Danube, Dnestr, Dnieper and Don flow into the sea with virtually the entire periodic chart of elements in their water along with agricultural and household organic wastes. Phosphorus and nitrogen concentrations in coastal waters are 30-50 times higher than in the 1960's. Each year the Danube and the Dnieper "enrich" the sea with 30 metric tons of mercury. The infamous algae blooms and "red tides" cover huge areas. Toxic microscopic algae have not yet taken part in these sinister blooms. But what if they do?!

Oxygen deficiency in some years affects up to three-quarters of the continental shelf in the northwestern part of the sea: oxygen is consumed by oxidation of the plankton "snow" and settling organic wasters. Valuable species of fish are disappearing. The dolphin population has been reduced from 2.5 million to 80,000. Pollutants have virtually an open highway to the sea: the majority of cities and towns do not have water treatment facilities. Beaches are being closed as a result of severe bacteriological pollution. Resorts are seriously threatened. Add to this the fact that the bottom, plowed up as a result of overfishing by trawlers, looks like the scene of a tank battle.

This is the mosaic which emerges from the data contained in reports by Bulgarian, Romanian and Soviet researchers: N. Bodeanu, A. Bronfman, M. Vinogradov, I. Volkov, M. Datov, V. Yeremeyev, V. Keondzhyan, A. Mandych, V. Romanenko, V. Saviny and A. Stoyanov. The integrating factor in this mosaic are these lines from the conference's final resolution: "The Black Sea, upon which depends the present and future of the peoples of Europe and the Black Sea region, at the present time finds itself on the verge of ecological disaster as the result of totally anthropogenic pressure."

Incidentally, Academician B. Laskorin, head of the expedition, feels that science itself is to blame for the sea's present tragic state. For too long science justified inept, suicidal economic activity with the "theory" that the sea would purify itself. The truth which he stubbornly defended both here and previously, during voyages on the Danube and in the Baltic Sea, was this: we must not argue about who is the biggest polluter, but instead identify and shut off literally all sources and means which are poisoning the sea.

Either the death of the sea or a technological revolutions on its shores based on ecological considerations—no third option is available. This will require great effort and expense. And that means agreement among all the people who live on the shores of this sea. V. Neykov, general secretary of Ecoforum for Peace, is correct when he poses this paradox: "If we do not save the sea the shores will perish as well. But we cannot save the sea without reaching agreement on land."

From this standpoint "Eco-Black Sea '90" was a serious breakthrough in the direction of mutual understanding. Agreement was reached on a unified research program. At the suggestion of Turkish scientists it includes an important section on an international fund to save the sea. From the very start the initiators of Ecoforum have

dreamed of long-range action: a Danube-Black Sea-Mediterranean project which will view these bodies of water as a kind of ecological trinity superseding national borders.

Now, at a time when serious political changes have taken place on the shores of the Black Sea and the ideas of national sovereignty and local government have become so popular, it is appropriate to remind people that the point of these concepts is not a tug-of-war acrose borders, but rather the making of the most reasonable and rapid decisions possible and the taking of direct action at the local level. I agree with Kolyo Kolev, former European boxing champion and now a well-known doctor and scientist and founder of the Bulgarian Ecological Culture Club: "If we do not use the data obtained by science to bring about immediate and specific actions at the governmental level, then tomorrow's generation and the dead Black Sea will curse us as their murderers."

The club sends materials on the critical state of the environment to all the main competing political forces. Each of these, even if it wished to, is unable to conceal these materials from public opinion and is forced to propose its own solutions or, even better, unite with its opponents, because ecology cannot be broken down along party lines.

That is what the Bulgarians are doing. What about us? We unfortunately have numerous environmental protection parties, leagues and associations which remind one of separate, "sovereign" principalities completely incapable of sharing their spheres of influence and funds, spending more on their new administrative apparatus than on work to diagnose, project and treat environmental ills. Beating on the ecological drum is often substituted for this kind of work.

We have already learned to protect nature that way. I daresay that under our present unlimited pluralism it is much easier to demand the resignation of the government or to determine who is the "greenest" of our numerous "Greens" than it is to bury the hatchet, combine forces and cut off all the sources of stinking sewage, which were modestly termed "septic and household sources" in the conference reports.

They say that we need idiot-proof technology so that no idiot can mess it up. We have no need for an idiot-proof human being. We have been conditioned to think like that. Our vaunted Soviet chemical industry is making its products right next to the beaches of Odessa, yet we do not voice our rage.

We have another amazing trait: we focus on two or three ecological disaster areas but hardly seem to notice all the rest. The state has been overwhelmed with nationwide mourning over the Aral Sea. Indeed, that is a personal source of sorrow for me and for you, for all of us. Yet right next door we have the equally moribund Sea of Azov. The hour for swift reaction and rescue brigades has struck. What are we waiting for?

Farsightedness and the ability to meet misfortune before it happens are what we lack most of all. That is our most important shortage. On this point we agreed with Andre Paviat, a French scientist, European Parliament member and director of the European Comet Program, who was also recently elected board member of Ecoforum for Peace. Outside the porthole the Bosporus "was ablaze with blue fire" (and was also thoroughly polluted), and we felt a strange dual attraction: that of my Black Sea and his Mediterranean.

He feels that my sea needs the same kind of "Blue Plan" that is being carried out for his sea under UN auspices. This plan envisions various scenarios in response to all sorts of possible options for interaction between man and nature between now and the year 2025. Its goal: to render harmless in advance any risk (including human ignorance) which is inevitable in the development of modern civilization. A group of 45 universities and approximately 60 other organizations in Europe and industrial firms from Italy, France, Germany and Belgium are working on this plan.

Why are business people making an alliance with ecology? "Because," Paviat explains, "they are able to calculate tomorrow's profits. It is becoming more and more advantageous for industry and agriculture to have clean faces. Business is becoming ecological."

Do we have farsighted people and ideas? In abundance. But there is also an abundance of obstacles facing them. O. Mironov, a doctor of biological sciences from the Ukrainian SSR Academy of Sciences Institute of Southern Marine Biology, was—almost 20 years ago—the first to propose that the sea could be rid of oil and various biogenic pollutants with the aid of mussels, marine worms of the class Polychaeta and other organisms. The purification is more effective by factors of 5-10 and more ecologically sound than when physical or chemical means are used. When Mironov proved that his method would also be less costly, costing just a few tens of thousands of rubles, that was the very thing which alarmed the bureaucrats: "If it were 50 million rubles we could do business with you...!" Now his idea is being tested successfully in Sevastopol. But he is not certain that his innovation has retained its primogeniture over two decades and that it is not already being implemented somewhere else with greater results.

* * *

"I swear by Zeus, the Earth, the Sun, Virgo, the gods and goddesses of Olympus and the heroes who rule the city, district and fortifications of the Chersonese that I will be single-minded with regard to the welfare of the city and my fellow citizens and will betray neither Chersonesus, nor the Kerkinitides, nor the Splendid Harbor... but I will protect the Chersonese for the people and will not violate democracy."

I was shown this vow, which the Hellenes gave thousands of years ago as they came of age, at the Kherson Museum by Valeriy Milodan, a naval seaman who worked in

peacetime clearing mines from Sevastopol Bay. Once this region was famed for its constellation of ancient Greek cities linked not only by maritime trade routes but also by a high level of spiritual culture, lofty concepts of patriotism and a vow of loyalty to their shore and their sea. A vow which we have inherited and which we have betrayed: we have brought both the sea and its splendid harbors to the brink of death.

Immediately after the war the great Soviet architect A. Burov proposed something that is now clear to all, an ecologically idealistic project to restore and rebuild Yalta. The project was rejected: "Where did you ever get the idea that Yalta will be suffocating from an excess of automobiles in 10-15 years?" Today the city is in fact suffocating from motor madness. Is Yalta alone in that fate? Today there are 52 square kilometers of highly urbanized land pressing in on every square kilometer of the western and northwestern Black Sea. Along the Adriatic Sea this ratio is only two to one.

What is the solution? To add another "trinity" to the inseparable ecological trinity of Danube-Black Sea-Mediterranean, i.e. science-public movements-municipal government. Their ties to each other should become direct. And those ties are being established even now. In Burgas the international firm EKOSI, in which the leading role is played by Soviet and Bulgarian specialists, has proposed that the oblast soviet conduct an actual trial of a concept of practical ecology which will blaze a path from theoretical projections to well-founded engineering projects. The Burgas authorities decided to try the experiment, and they have not regretted it.

Ecoforum's actions naturally included an historical first: a meeting of Black Sea mayors. Those of them who were on the trip with us were among the most enthusiastic participants in the discussions.

Arkadiy Shestakov, chairman of Sevastopol Gorsovet Ispolkom and a former sailor, had this idea: to turn Sevastopol into an "anti-Yalta." Into a city of ecologically clean tourism and recreation. In order to do this it will be necessary to create an infrastructure up to world standards and one which is definitely in complete harmony with nature, not in violation of a single one of its bans. The highest guideline should be ecology of culture. To reveal Sevastopol's cultural and historical image is the dream of A. Shestakov, V. Milodan and retired Rear Admiral L. Mitin, currently one of the leaders of the environmental protection movement.

During our voyage Shestakov signed in Istanbul a document on cooperation with the Association of Tourism Investors. Turkish specialists will assume the task of building, marketing and financing projects jointly with Soviet organizations. Even earlier the Sevastopol Gorispolkom and the American firms Production Development Corporation and Harkins and Association signed letters of intent regarding "establishment of an organization which will plan, direct and make decisions on matters pertaining to Sevastopol's economic development within the framework of joint programs. The volume of joint investment over a long-range period of cooperation could be $3-4 billion over a 25-30-year period.

These are the first outposts, the first miles traveled by rationally acting man along this unexplored path toward ecological coordinates in a sea of prevailing anti-ecology. The future lies with these outposts.

Bulgarian scientists showed us films made this past summer. A blue plankton "snow" shrouded a bomb which had sunk to the bottom half a century ago. We were sailing on a calm sea. Yet underneath us, in the depths, there was this bomb. And that "snow." It, too, was an unexploded bomb, but from a different, unfamiliar war.

Yes, what is happening to the Black Sea is an unfamiliar war which is being waged against it not only by individual poisoners, whether they use toxic substances or ministerial authority, but rather by all of us together, through our ignorance and shortsightedness; we keep on beating the drums instead of taking real rescue action. By our lack of ecological culture; by our ethnic and regional limitations, like ostriches sticking their heads into their sovereign sand when faced with a common danger; by our tolerance of outmoded technologies and no less outmoded technocratic thinking.

As we set sail I heard a colleague say: "Do the readers really need this right now, tormented as they already are by shortages, rallies and the rising crime rate?" He was right, in his own way. The fate of the Black Sea is an impending disaster, but there is no meat on store shelves today. But is the reason for the fact that we are rushing from one fire to the next not that we were unable (or did not want) to put them out in time, before they got well started? Every era has its own fires, and efforts to extinguish them are used as an excuse not to look even one generation ahead.

In lieu of an epilogue—the confession of Rasul Gamzatov, on board the "Akademik Vernadskiy":

"At first I felt like an architectural flourish on board this Noah's Ark of scientific research. Then I got used to it. And I did not protest when the shipboard intercom announced: 'Scientific associate Gamzatov is requested to come to the messroom to fill out a customs declaration.' But I want to fill out another declaration. A poetic one."

"Since ancient times poets have translated the melodies of the trees, the waves and the stars into human language. Yet we translate nature into cement, oil and ferrous metals. We have turned concepts of good and evil upside down. Molotov said this about a novel by Leonov: it is not the Russian forest that is being cut down, it is the Russian people. He cursed him. But in fact that was praise for a fearless artist."

"We have made legends out of many stupid slogans. Once after maneuvers Voroshilov proposed a toast to 'the conquest of nature': we have conquered the sky and the stars—airplanes fly there; we have conquered the earth—our tanks roll over it; we have conquered the sea—our ships sail there. But nature did not agree with him. Without freedom it dies. And the seas blaze like Homer's eyes. The hour has come to erect monuments to the seas and springs that have died. Except that soon there will be no one left to erect them."

"When faced with the sea Ovid, Dante, and Pushkin were mute. Yet we speak a lot. At rallies, and at scientific conferences. Let us actually do something. Let us start small. By saving springs. They are dying. Quietly. Anonymously. Without public funerals, as is the case with the Aral Sea. For me this is a very personal pain. When my father was dying he asked that water be brought from the spring in his native *aul*—he said that would heal him. They could not find the spring. It had gone dry. Thus my father died. People, I implore you: save the springs! And then save the sea as well.

Italian Firms Providing Environmental Technology to Poland, USSR

91MI0090A Milan ITALIA OGGI in Italian 13 Nov 90 p 46

[Text] A new agreement between Italian companies and East European countries on environmental protection. The protagonist once again is the Milanese group, Acqua. Yesterday the Mayor of Warsaw, Stanislaw Wyganowsi, and three representatives from the Italian companies (Acqua, Technimont, and Enimont) signed an agreement that establishes an Italian-Polish joint venture for environmental protection. The new company will be called System-Eco. Poland will hold a majority share: 51 percent of the $200,000 capital will be controlled by the Warsaw city council, 24.4 percent by Acqua, 19.6 percent by Technimont, and five percent by Enimont.

"For us, the new joint venture follows along the same lines as the agreement signed in Moscow two years ago," is the explanation given by Giuseppe Pisante's company. System Eco will be very busy in Warsaw: air and water monitoring, waste disposal, and pollution control. The city wants to pay more attention to environmental problems, and waste will be a demanding test bench. For decades, the sale of waste has been a "normal" market in East Europe. Now each country will have to solve its own waste problem. It will not be an easy task. "Once the offices are set up in Warsaw," they say at Acqua, "we will be operational, and will handle the disposal of Warsaw's solid and industrial waste. If the experiment works, it will be extended to all of Poland."

Two years ago, Acqua signed an agreement with Moscow. The phase of studying and monitoring air and water pollution has now been completed. During the next few months, construction will begin on a colossal treatment plant to reclaim the Moscow basin. Acqua's technicians found themselves with a degraded system on their hands: "Like a city in the West without any purifiers," they explain, "but this is aggravated by the large amount of salt that is scattered on the roads due to the snow. In Moscow all the drinking water is salty in the spring." The air pollution is also serious in Moscow: "It is like Milan, but Moscow does not have the chaotic traffic of the Lombard capital. Its cars are old and the drivers use very low quality gasoline. In addition, clouds full of acid rain from the factories in the West are carried into the Moscow skies by wind currents." For this reason the joint venture between Acqua and the Soviets provides for the installation of a network of stations designed to monitor and control pollution levels.

USSR Seeks To Set Up Monitoring Station in India

91WD0311A Bombay THE SUNDAY TIMES OF INDIA in English 2 Dec 90 p 4

[Text] New Delhi, 1 December—The USSR has sought the Indian government's permission to set up one of the world's largest ecology observation stations in this country to monitor changes in its environment.

"I hope the government will respond positively to this proposal," said Dr. G.I. Marchuk, chairman of the Soviet Union's Academy of Sciences, in an interview to THE TIMES OF INDIA NEWS SERVICE here.

This station, if set up, will be in north India, closer to the Himalayas. There is also a proposal to have another station to cover south India.

These stations, which will keep a watch on the changes occurring in the ecosystem due to natural and man-made processes, will be part of a series of chain [as received] of similar observatories being set up to cover three major geographical regions—tundra, forest region and Karakoram mountain area—in the USSR.

Dr. Marchuk was in the capital to take part in the third annual meeting of the joint Indo-USSR council of the integrated long-term programme (ILTP) for cooperation in science and technology. He is the co-chairman of the council. Prof. C.N.R. Rao, director of the Indian Institute of Science (HSC), Bangalore, is the other co-chairman.

Dr. Marchuk called on the Prime Minister, Mr. Chandra Shekhar, yesterday. Mr. Shekhar appreciated the progress made by the joint research programme. He also met the former Prime Minister, Mr. Rajiv Gandhi.

The council reviewed the progress in 76 joint research projects undertaken in both the countries since the programme started in 1988. Several new programmes have also been identified for joint research effort.

Beijing Environmental Conference Examines Climate Change Issues

OW1801204291 Beijing XINHUA in English 1537 GMT 18 Jan 91

[Text] Beijing, January 18 (XINHUA)—Some 300 Chinese scientists have called for a coordinated effort to promote the national economy and environmental protection at a national seminar on climate change and environmental problems, which ended here today.

The scientists put forward ten suggestions concerning China's participation in international environmental affairs.

According to the scientists, coal is still China's primary source of energy. Though the country is the world's third largest producer of carbon dioxide exhaust, its per-capita average ranks very low compared with that of other countries.

The scientists said that China is now making every effort to reduce the amount of carbon dioxide it releases into the atmosphere by making better use of energy and by planting more trees.

In the period from 1988 to 2000, the amount of carbon dioxide exhaust is expected to be reduced by 300 million tons, although the country is to double its gross national product.

The scientists urged further controls over the production, consumption and trade of freon and other materials harmful to the environment.

They stressed that more scientific research should be carried out to find substitutes for these materials and improve energy-saving technology.

In addition, they called for the state to strengthen efforts to coordinate environmental affairs and disseminate information regarding environmental problems.

State Councilor Song Jian, also director of the Environmental Protection Committee under the State Council, said at the meeting that the goal of protecting the global environment is to protect the interests of all mankind.

"We should regard the world environmental protection campaign as an opportunity to coordinate the development of the economy and the environment," Song said.

REGIONAL AFFAIRS

EC Funds To Aid African Rain Forest Preservation

91WN0033B Paris AFP SCIENCES in French 4 Oct 90 p 38

[Unattributed article: "EEC Financing Preservation of Africa's Rain Forest"]

[Text] BRUSSELS—The European Commission announced in Brussels on October 1 that the EEC will be donating 24 million ECU's (31.2 million dollars) to seven Central and West African countries to assist them in preserving their rain forests.

The African rain forest is the largest in the world after the Amazon rain forest and is also the nearest to Europe, explained the EEC executive board in a press release.

This subsidy, the largest the EEC has ever made to an environmental protection project outside the Common Market, will be divided among seven countries: Cameroon, the Central African Republic, the Congo, Equatorial Guinea, Gabon, Zaire, Sao Tome, and Principe. In June, the seven nations developed a joint plan of action to promote the development of economic activities compatible with the preservation of their rain forest.

MADAGASCAR

Plea Made To Replant Forest

91WN0179A Antananarivo MADAGASCAR TRIBUNE in French 17 Nov 90 p 4

[Commentary by Yuriy Fedunov (Novosti): "Madagascar: Ecological Crisis Nears"]

[Text] "Proceed 30 km east of the capital on National Highway 2 to the village of Carion, then turn right. Go six km further, along a beautiful eucalyptus-lined mountain road, and you will find yourself in the Angavokely Forest Reserve," according to the GUIDE TO MADAGASCAR published 15 years ago.

Today, people who try to follow those directions will be disappointed. The once-picturesque road now requires an all-terrain vehicle. It is bordered by stumps instead of eucalyptus trees. Burnt-out woodland stretches as far as the eye can see, without a trace of new vegetation springing up.

Forests at one time covered five-sixths of the island, which has a surface area of 590,000 square kilometers (equivalent to France, Belgium, and the Netherlands combined). But now, according to the Food and Agriculture Organization [FAO], forests cover only 15 million hectares, and the forest cover is declining by one percent per year.

Deforested slopes lose their topsoil. Unless urgent steps are taken, the day will soon come when vast stretches of central Madagascar are transformed into rocky desert. The primary causes: forest fires and man's economic activities.

Nearly 80 percent of the island's 11 million people dwell in villages. Wood and charcoal are the only fuels they have, especially now that the cost of petroleum products is soaring. According to World Bank projections, by the end of the century the country will need 2 million tons more wood each year than it produces.

To save the forests and put a stop to soil erosion, declining precipitation and other negative climatic changes, eucalyptus trees must be planted on at least 700,000 hectares by the year 2000. Such a task will obviously require extensive international assistance.

MOZAMBIQUE

National Seminar on Environment Held

91WN0201A Maputo NOTICIAS in Portuguese 17 Dec 90 p 1

[Unattributed article: "National Conference Advocates Preservation of the Environment"]

[Text] The participants in the Fourth National Seminar on Forests and Wildlife last Saturday in Maputo proclaimed the urgent necessity of creating—at the level of the central government—an organ that will group together all the individual entities responsible for implementation of the national policy on environmental protection, in accordance with a master plan and other integrated sectorial plans. They presented their proposal at the conclusion of the seminar, during which they discussed—among other matters—the outlines of the strategy to be followed in developing the environmental sector in Mozambique; changes in the system for managing forestry projects and enterprises; and the role played by the Provincial Forest and Wildlife Services and the Forestry Extension Service in connection with rural development.

To this end—as was stated during the seminar—the current specific functions of the National Forest and Wildlife Administration [DNFFB] should be expanded to include the protection of other renewable natural resources that currently remain unprotected within its zones of influence.

In keeping with this principle, the participants in the seminar proposed that the National Forest and Wildlife Administration be transformed into a National Wilderness Resources Administration. They added that until such an organ is created at the central governmental level, officials should be appointed and joint action plans developed at the provincial level—involving other governmental organs—with the objective of emphasizing the need for integrated action.

They also maintained that Article 5 of the Ministerial Decree which in March 1987 created the National Forest

and Wildlife Administration and specified its functions should be revised to enable that organ to respond to the new requirements of the environmental sector.

A report drafted at the conclusion of the seminar states that "the creation of a National Wilderness Resources Administration implies that the current functions of the DNFFB must be changed." The document goes on to say that the existing table of organization and by-laws of the DNFFB must also be revised, in view of the probable inclusion of the inland waterways and coastal zones.

Still on the subject of institutional reinforcement, the participants in the seminar indicated that in order to cope with the future functions of the DNFFB and the lack of support for the Provincial Forest and Wildlife Services, they were convinced of the need for creation of the post of national inspector of natural resources and for a revision of the job categories of the conservation agents.

They maintained that this will enable the National Forest and Wildlife Administration to intervene directly with the provincial organs to help them solve problems that they feel powerless to cope with by themselves.

The seminar—which during one week brought together personnel from the forestry and wildlife sector as well as representatives of certain international organizations that are supporting various forestry projects in Mozambique—recommended that in carrying forward the work of reforestation, priority should be assigned to the supply of firewood, the production of raw material for industry, the protection and preservation of the environment, job creation, and the general training of the population.

The general training of the population should involve the use of governmental projects as well as activities in the areas of production and environmental protection, with participation by nongovernmental organizations, state enterprises, mixed enterprises, and rural extension programs. There is also a need to redefine the reforestation projects.

First Environmental Experts Receive Training

91WN0201B Maputo NOTICIAS in Portuguese 17 Dec 90 p 2

[Text] Approximately 20 personnel representing various sectors of activity including cabinet ministries, industrial units, communications media, and democratic organizations of the masses and socioprofessional workers last Friday in Maputo completed a course for the training of environmental specialists—the first course of its kind to be given in Mozambique.

The course—which required one and one-half months to complete and was sponsored by the Environmental Department of the National Institute for Physical Planning—grew out of the need felt by society itself for the coordination of social as well as scientific activities in behalf of the protection and preservation of the environment.

Moreover, these recently trained specialists have the expertise not only to deal with a broad spectrum of questions relating to the earth and its environment but also to make recommendations of strategic importance to the managements of their respective organizations and services—and to the community as a whole—concerning the various practices that are harmful to the environment.

As part of their training, these specialists—who will play an important role in preventive activities—took classes that dealt with the environment of Mozambique and the world that surrounds us. These classes gave them a general knowledge of the hothouse effect, urban decay, desertification, and the extinction of species, as well as the position of man in the face of these dangers.

With respect to the environment that surrounds us, for example, they learned about personal hygiene as well as sanitation in the workplace and in specific regions or zones, and also studied various types of pollution together with measures for protection against them and methods for detecting them.

During these training sessions great interest was aroused in these and other topics, including man's awakening to the need for protecting the environment; the population of Maputo and its growth; environmental problems of great sensitivity; environmental protection as it relates to economic development; the environment as it relates to sociocultural issues; vegetation and its importance in Mozambique; colonial efforts to protect animals and plants; the African's dependence on his environment; environmental training in the community and in the schools; and the relationship between the political and military situation and the environment.

These subjects were presented by the environmental experts of the Environmental Department of the National Institute of Physical Planning at Eduardo Mondlane University and by representatives of various international organizations who are in our country working on various projects relating to the environment. The recently-trained personnel also visited a number of industrial units—in the capital and the city of Matola—which by their nature pollute either the rivers or the atmosphere.

Taking the course were personnel representing the ministries of Labor, Transport and Communications, and Education; the Cement Plant; TEXLOM; the Directorate of Urban Services; Mozambique Airlines; Mabor of Mozambique; the OTM [Mozambique Workers Organization]; the OJM [Mozambique Youth Organization]; Radio Mozambique; the newspaper NOTICIAS; the Institute of Social Communication; the Civil Aeronautics School; as well as the Environmental Department itself.

In a message presented at the conclusion of the classes—which were given on the premises of the World Lutheran Federation—the personnel who took the course stressed the fact that the protection of the environment has acquired great importance and should above all else be a matter of concern to every inhabitant of this planet.

This question of the fight to protect the environment is indeed the order of the day, and our country—which also has environmental problems including, among others, desertification of the majority of its provinces as a result of excessive exploitation of their natural resources; soil erosion; and the population explosion, particularly in our urban centers—cannot wait any longer to go forward with a program that is coordinated not only scientifically but socially, such as is taking place throughout the world at the present time.

In this way, the participants in the first course for the training of environmental specialists reaffirmed their willingness and availability to engage in activities for the purpose of educating the public about environmental issues.

SOUTH AFRICA

Environmental Group Details East Rand Toxic Dumping

MB2501102691 Johannesburg SABC TV 1 Network in English 1800 GMT 24 Jan 91

[Text] The Johannesburg branch of the conservation pressure group Earthlife Africa today revealed details of a number of illegal toxic waste dumping sites on the East Rand. It's believed that these sites pose a potential threat to public health, and the relevant authorities have been called on to take steps to eliminate any danger.

[Begin video recording] [Reporter Julie Hyde-Mew] Earthlife has identified three toxic waste hazards on the East Rand, the first along the banks of the Elsburg Spruit [stream] where dumping and burning of drums of waste and dumping of toxic heavy metals seems to be a common practice.

The second site identified by Earthlife is that of an abandoned factory at Ulana Park in Germiston. A large number of drums had been found both inside and outside the perimeter fence containing leaking toxic chemicals.

The third hazard is a municipal dump at Katlehong believed to contain chemical waste. It is unfenced and as little as 30 meters from a residential suburb. The dump has been closed down but is reputedly still being used by industries in Wadeville and by the Natalspruit Hospital. It is believed that the dumping of unincinerated medical waste could lead to the spread of hepatitis and even AIDS.

[Earthlife Africa spokesman Henk Coetzee] These dumps have got to be cleaned up. We also want to move to a situation where this sort of dumping can't happen, where the regulations are strict enough to prevent it, where enforcement of those regulations is strict, and where industries are hammered quite hard if they dump waste illegally. [end recording]

Department To Investigate Toxic Waste Dumps Claims

MB2601180291 Johannesburg BUSINESS DAY in English 25 Jan 91 p 2

[Report by Polly Jones: "Government To Probe Toxic Dump Claims"]

[Text] The Water Affairs Department would investigate claims of three East Rand toxic waste dumps reported by Earthlife Africa yesterday, authorities said.

Earthlife Africa spokesman Henk Coetzee told a Press conference in Johannesburg the dumps posed a potential health threat as the toxins in them could contaminate underground water sources.

SAPA reports Water Affairs deputy director for water control Maria Oliveira said investigations would start next week.

Coetzee said drums of chemical waste were being burned on the banks of the Elsburgspruit near Germiston. The stream contained toxins, and ash, oil and other waste was found in the veld.

An Earthlife Africa member found barrels leaking toxic substances at Ulanda Park, a deserted factory site near Germiston, which is occupied by squatters. The company which originally owned the factory was untraceable, Coetzee said.

Earthlife members had investigated another dump following a request from the Katlehong Civic Association. The dump contained blood bags, unburnt swabs, needles, plaster casts and medicine bottles and fears were raised over the spread of hepatitis and AIDS.

The dump, 30m [meters] from a residential area, was unfenced.

Earthlife Africa slated Krugersdorp businessman Benoni van Graan's proposal that a toxic waste dump be constructed in the Krugersdorp area on the grounds that the area ws prone to earth tremors and such a dump, close to a densely populated area, might leak.

Province Admits More Medical Waste Found in Dump

MB2901063291 Johannesburg SAPA in English 2336 GMT 28 Jan 91

[Text] Johannesburg Jan 28 SAPA—Amid a row over the dumping of waste matter apparently hazardous to the health of residents on the East Rand, Tranvaal provincial authorities on Monday admitted more waste had been dumped in the area.

"On Friday morning an employee of the Natalspruit Hospital did dump garden refuse at the dumping site. It appears that other waste products were also in the lorry, probably more garden refuse in plastic bags," the Transvaal Provincial Administration [TPA] said in a statement on Monday.

The TPA launched investigations into allegations the medical waste had been dumped on a waste site at Katlehong.

"The hospital has been instructed to stop this practise of dumping. All refuse will therefore in future be removed by the local authority concerned or by an appointed," the statement said [sentence as received].

Recent press reports stated dangerous waste such as used syringes were dumped on the site, threatening unsuspecting children who scrounged for sweets among the refuse.

Residents Complain About Somchem Chemical Testing

MB0402173091 Johannesburg SAPA in English 1718 GMT 4 Feb 91

[Text] Cape Town Feb 4 SAPA—A propellant test at the controversial Somchem [expansion unknown] weapons-testing site near Rooi Els Dam on the False Bay coast on Monday shocked residents and was heard 20 km away.

The chairman of the Rooi Els local council, Dr. Denis Cowan, said he had been told by several people that about 7.40 AM a roaring sound was heard for about a minute, after which a large cloud of gas rose high into the air and hovered over the area for about 20 minutes.

He said the council was worried about the testing of new products by Somchem on the dam site. The dam supplies Rooi Els, Pringle Bay and Betty's Bay with drinking water.

He said his council would soon launch proceedings in the Supreme Court about the legality of Somchem's presence.

The test was heard by residents of Rooi Els, Pringle Bay, Betty's Bay and Kleinmond.

The director of public relations of Armscor [Armaments Corporation of South Africa], Mr. John Adler, said Somchem did a propellant test under controlled circumstances.

He said he could understand why the residents of Rooi Els and surrounding areas were "dissatisfied", but declined to comment further.

The chairman of the Overberg Regional Services Council, Dr. Pierre-Jacques Rabie, declined comment.

Rooi Els is just over an hour's drive from Cape Town, on the eastern shore of False Bay.

SWAZILAND

WHO Gives Go Ahead for DDT Chemical Use

MB2801175791 Mbabane Domestic Service in English 1600 GMT 28 Jan 91

[Text] The World Heath Organization [WHO] has given Swaziland the go-ahead to use the DDT chemical in killing mosquitoes. The present manager of the Swaziland Malaria Control Unit, Mr. Simon Kunene, said Swaziland received WHO's blessing to kill mosquitoes with the DDT chemical during a meeting held in East Africa last week. He said WHO representatives said DDT was banned in agricultural use, not in killing mosquitoes. He said Swaziland, Botswana, Zimbabwe, and Namibia were the only countries where it is still possible to kill mosquitoes with the insecticide.

In another development, Mr. Simon Kunene asked the public to be on the lookout for the spread of malaria fever. He said special attention should be paid to the possible symptoms of the disease expected to shoot up next month. He said his team will be involved in [words indistinct] the nation. He said so far malaria cases are far below [as heard] when compared with those of last year. No death has been reported yet.

Environment Ministry's Green Plan Criticized

91WE0175A Windsor THE WINDSOR STAR in English 12 Dec 90 p A7

[Article by Anne McIlroy, Southam News]

[Text] Ottawa—Environmentalists and opposition critics dismissed the Conservative government's Green Plan Tuesday as a vague, timid and incoherent document that doesn't recognize the urgency of environmental threats.

Released after more than a year of delays, the five-year ecological strategy commits the government to spend $3 billion in new money on the environment, but doesn't say how the money will be spent.

It outlines 100 initiatives—on acid rain, global warming, national parks and the Arctic—but doesn't give details on how much each one will cost and, in some cases, when the programs will begin.

Some of the initiatives have already been announced, including pledges to reduce packaging in Canada by 50 percent, to stabilize greenhouse gases and to develop a strategy to deal with pollution in the Arctic.

Others aren't quite what they seem. A national drinking water act, which the minister promised to introduce, will apply only to Indian reserves and other areas of federal jurisdiction, officials said.

Environment Minister Robert de Cotret insisted Tuesday the Green Plan's $3 billion hasn't been diverted from existing government programs.

"The only thing that is recycled in this plan is the paper it is printed on," he said.

The money is divided among eight categories, including $850 million for clean air, water and land and $575 million to deal with global environmental threats such as the greenhouse effect and the thinning ozone layer.

Measures in the plan still have to be approved by the cabinet and Treasury Board, senior officials said during a briefing.

De Cotret said the government has worked out the specifics of how the $3 billion will be spent—although not in enough detail to make the information public. He said Canadians want action now, and he didn't want to delay the plan any longer.

His deputy minister, Len Good, said the new programs will be announced over time, part of a communication strategy to get more than one "pop," or splash of coverage in the media.

The Green Plan dominated question period in the Commons Tuesday as opposition critics attacked it.

They accused the government of backing away from its commitment on global warming, taking a soft line on polluters and failing to deal with the destruction of Canada's forests.

"You failed us before, why should we trust you now?" Liberal environment critic Paul Martin asked in the House of Commons.

Environmentalists and opposition critics said there are fundamental flaws in the document, and it falls far short of a coherent approach for dealing with environmental threats.

New Democrat environment critic Jim Fulton said the report speaks for itself when it says Canadians "feel that self-regulation is better than government regulation."

Winnipeg pollster Angus Reid said it's clear the government isn't listening to polls showing Canadians want Ottawa to crack down on polluters.

"They don't seem to have a clue."

Sources say de Cotret had trouble getting the paper through cabinet; the Chapter on water was gutted and a major research program scrapped.

The plan says spending will be examined every year "to ensure existing priorities are being met and to respond to new and emerging priorities."

Critics say that means it is at the mercy of Finance Minister Michael Wilson.

Although some parts of the plan are old, it did contain several new initiatives environmentalists say could prove effective.

- A pledge for a new national energy-efficiency act. If the act is tough enough, environmentalists say it could be a potent tool in the fight against global warming.
- A commitment to set aside 12 percent of Canada as protected space.
- A promise to provide an annual report to Parliament on the state of Canada's environment.
- A plan to review the environmental implications of all existing statutes, policies, programs and regulations.
- A pledge to implement environmental audits of federal departments and agencies, beginning in 1992.

Alberta Approves Controversial Athabasca Pulp Mill Plan

91WE0174A Toronto THE GLOBE AND MAIL in English 21 Dec 90 pp A1-A2

[Article by Christopher Donville]

[Excerpts] Athabasca, Alta.—After months of scientific studies and hearings, the Alberta government has approved a controversial plan to build a $1.6 billion pulp mill near this northern Alberta community.

To the cheers and jeers of an unruly crowd of supporters and critics of the megaproject, Premier Donald Getty announced yesterday that the project proposed by Japanese-controlled Alberta-Pacific Forest industries Inc. can proceed.

"After all the review, after all the discussion, after all the public input, there comes a time for decision," Mr. Getty said to an ovation from supporters of the pulp mill. "That time has come."

The news conference in a packed theater was continually disrupted by the taunts of a small but vocal group opposed to the massive forestry development.

Mr. Getty, who at times appeared to struggle to keep his composure, said the project will create thousands of jobs for the sons and daughters of residents who have seen their offspring leave for jobs in Edmonton and Calgary.

"This project is not about buildings. It is about people and jobs for people," said the Premier, who estimated that the mill will create 1,300 jobs on the site and in northern woodlands.

Later, he said the province has agreed to increase the amount of money it will "invest" in the development, which will be located at a bend in the Athabasca River about 180 kilometers northwest of Edmonton.

He said his government will lend Alberta-Pacific, which is controlled by Mitsubishi Corp. and Honshu Paper Co. Ltd., up to $400-million and spend an additional $75-million to improve roads, bridges and railway lines near the project. Originally the province had agreed to pay for the infrastructure improvements and provide just $150-million in financial aid.

"If it's such a good project, let them [Alberta-Pacific] build it with their own money," yelled one man, who was later carried from the news conference by RCMP [Royal Canadian Mounted Police] officers after he refused to stop heckling the Premier.

Despite the ruckus, supporters of the project expressed satisfaction that the government has finally given the mill the green light.

Meanwhile, the Northwest Territories [NWT] government and a number of native and environmental organizations are reviewing their legal options and are expected to go to court to try to halt the construction of the project.

"We're keeping all of our options open until we have come to terms with alberta's decision," said John Donikee, a lawyer for the NWT government. "We don't have a [legal] position right now."

The territorial government, which is concerned about pollution from the Alberta-Pacific mill flowing across its borders, was one of the most high-profile interveners at hearings conducted last fall into the mill's environmental impact.

For six weeks in late 1989, a seven-member panel headed by Gerry De-Sorcy, chairman of the Alberta Energy Resources Conservation Board, conducted hearings across northern Alberta and the southern NWT.

The panel, which was created by Ottawa and the Alberta government, was criticized for looking only at the environmental impact of the mill and not considering damage to the woodlands that are to be cut or the impact on the watershed.

Earlier this year, the panel completed its report and recommended that the project not proceed until more is known about the Athabasca River system ad the damage that could result from the Alberta-Pacific mill and a host of other mills in the northern part of the province.

Mr. Getty, who described the report as biased, told disappointed Athabasca residents in March that the mill would not be built until more studies had been conducted.

In the meantime, Alberta-Pacific, which had been criticized for the volume of deadly dioxins that would flow from its plant, redesigned the mill to use hydrogen peroxide in the paper-bleaching process instead of chlorine.

State Environmental Protection Programs Summarized

91WN0098A Beijing ZHONGGUO HUANJING BAO [CHINA ENVIRONMENTAL NEWS] in Chinese 4 Sep 90 p 3

[Article by Qiao Zhiqi [0829 5268 1142]: "Summary of China's Environmental Programs"]

[Text] China has drafted numerous effective policies and measures for environmental protection; among them, the drafting and implementation of environmental programs is one of the most important. At present, as a major component of environmental protection activity, environmental programs will be important in China's sustained, coordinated development.

1. Legal Basis

Major importance is attached to China's environmental protection legislation. The constitution, which is the basic law of the state, specifies that "the state shall protect and improve the living environment and the ecological environment and guard against pollution and other nuisances." The PRC Environmental Protection Law, promulgated in December 1989, makes the following clear statements with regard to certain aspects of the environmental program.

Chapter 1, Article 4. State-drafted environmental protection programs must be incorporated into the national economic and social development plans, and the state must adopt effective economic and technical policies and measures for protection of the environment so that environmental protection activities are coordinated with economic construction and social development.

Chapter 2, Article 2. Administrative departments concerned with environmental protection in governments at the county level and above must be able to carry out surveys and evaluations jointly with the relevant departments regarding the condition of the environment within their jurisdiction, draft environmental protection plans, and, following comprehensive balancing by the planning departments, report them to the people's government for approval and implementation.

Chapter 4, Article 24. Units that produce environmental pollution or other nuisances must incorporate environmental protection activities into their plans and establish environmental protection responsibility systems.

The above provisions of the Environmental Protection Law provide the broad legal guidelines regarding the cognizant units for environmental programs, methods of drafting them, and the procedure for their evaluation and approval, as well as on the incorporation of environmental programs into national economic and social development plans. This constitutes the fundamental legal basis for the drafting and implementation of the environmental program. In addition, when drafting specific long-term environmental protection plans and five-year plans, the State Council's Environmental Protection Commission and the State Environmental Protection Administration will also issue formal documents on various aspects of the drafting of environmental programs, which will provide broad guidance in their drafting and needed supplementation of the above legal basis.

2. Development History

China's environmental program activities have accompanied the development of environmental protection itself. Over the course of 16 years, China's work on environmental programs has evolved from simple to complex and from local implementation to overall development; this process falls into the following three stages.

a. The Beginnings (1971-1980). The first national environmental protection meeting, held in 1973, proposed the "32-character policy" for environmental protection and stated that the requirements for environmental protection and economic construction were "comprehensive programs, rational arrangements." This began the development of China's environmental program. During this period, because environmental protection efforts were just beginning and because there was insufficient theoretical and practical experience, the environmental program was fragmentary, dispersed, and unsystematic. Except for environmental status surveys, environmental quality evaluations and the like in a few areas, no large-scale, relatively thorough environmental program activities had yet begun.

b. The Testing Stage (1981-1985). During this stage, the most salient characteristic of China's environmental program was that environmental protection plans began to be incorporated into the national economic and social development plans and specific objectives that the plans must meet were stated. Certain areas and departments investigated environmental program theory and methods as research topics and obtained some valuable results. In addition, as major foundation work for the environmental program, environmental impact evaluation and environmental capacity studies were conducted throughout the country, so that environmental program theory and methodology made great progress compared with the previous period.

c. The Development Stage (1986 to the Present). During this stage, environmental program activities developed greatly, in both theoretical and practical terms, in association with the Seventh Five-Year Plan. During the Seventh Five-Year Plan, environmental program technical measures also made great progress in the course of extensive national development of surveys, environmental evaluation, and environmental forecasting. The scope of the environmental plan during the Seventh Five-Year Plan was rather broad, with extensive dissemination, and gave major guidance to environmental protection planning activity. Preparatory work for the drafting of environmental protection objectives for the Eighth Five-Year plan was in full swing in 1989. Starting out from an analysis of the national situation, with

control in terms of aggregate figures as its technical approach, and with incorporation into the national economic and social development plan as a support and guarantee measure, the environmental protection objectives for the Eighth Five-Year Plan period will constitute great advances both in scientific standards and in practicability.

3. Categories

Our natural conditions are complex and varied, and regions vary greatly in their economic level; as a result, the regions' and departments' environmental protection emphases will differ. The environmental programs in China can be classified in various ways.

In terms of duration, we can distinguish long-term, mid-term (five-year) and annual environmental protection programs.

In terms of geographic scale, we can distinguish national, province-level, and county environmental programs and the like.

In terms of emphasis, we can distinguish industrial pollution control programs, municipal overall rehabilitation programs, nature conservation programs, and the like.

In terms of environmental components, we can distinguish water-oriented environmental programs, atmospheric environmental programs, soil environmental programs and the like.

The above categorizations do not give an exhaustive view of the dialectical relationships between the environment and the economy, and they thus are not sufficiently comprehensive. In terms of the relationship between the environment and the economy, the environmental programs can be divided into three major categories.

a. Economically Constrained Environmental Programs. These programs emphasize the subordination of environmental protection to the needs of economic development and generally involve measures to deal with already existing environmental pollution and ecological damage and drafting of the appropriate environmental protection programs.

b. Environmentally Constrained Programs. These environmental programs embody the need to subordinate economic development to environmental protection and emphasize that economic development objectives must be placed on an environmental foundation, taking the thorough and effective use of environmental resources as the basis of environmental programs.

c. Coordinated Environmental Programs. This type of environmental program reflects the coordinated development of the economy and the environment and emphasizes the unity of environmental objectives and economic objectives, with drafting of environmental plans on the basis of the integrated environmental-economic system.

At present, all three types of environmental programs are being tested in China. In the current stage, economically constrained environmental programs are still the primary type, but we are making the transition to coordinated environmental programs.

4. Distinctive Characteristics and Effects

In addition to their regional, integrated and scientific character, environmental programs in China have several other characteristic that are closely related to China's particular circumstances.

a. Basic work in environmental quality evaluation and environmental information, statistics and economics is treated as a precondition for environmental programs. Because China made a relatively late start in environmental protection and because we have a rather weak foundation in the area, we are placing strong emphasis on environmental quality evaluation, environmental capacity analysis, environmental information management and statistics, and environmental economic surveys. As a result, the basic data for environmental programs are rather full and accurate, laying down a good foundation for the programs.

Division by functional areas and control in terms of aggregate figures constitute the technical approach for environmental programs. In China, environmental programs generally are drafted on the basis of functional subdivisions, and detailed analysis of the major pollution sources provides data for choosing among alternatives; control in terms of aggregate figures then guides the specification of program objectives and the drafting of specific programs.

The close interrelationship between the environmental program and national economic and social development is made the basic guarantee of the implementation of the environmental program. In China's planned-economy system, in order to implement the various objectives and measures of the environmental program, we must incorporate it into the national economic and social development plan. There has already been much effective research in this area, and there will be further improvements in the future.

Coordination and unification of the environmental program and environmental policy is treated as an important means of making the environmental program effective. In China the environmental program sets the direction for all environmental protection activity, and all environmental policies and measures are steps guaranteeing the implementation of the objectives set by the environmental program. As a result, China strongly emphasizes the coordination and unity of environmental programs and environmental policy.

For many years, environmental programs have been important in the coordinated development of China's environmental protection activities and in its coordinated overall social and economic development. First,

environmental programs have promoted the implementation of environmental policy. The core of our environmental policy system is "an emphasis on prevention," "pollution control by pollution producers," and "strengthening environmental management." These policies were enunciated in response to the facts that environmental problems are complex, that our economic capabilities are not strong, and that the legal basis is weak. Effective environmental programs and protection against environmental pollution and ecological damage in terms of rational arrangements and in terms of industry structure are of great importance for the implementation of environmental policy. Second, environmental programs have promoted effective management of the environment. The various management-strengthening measures currently being implemented are all closely related to the environmental program. Implementation of the environmental protection objective responsibility system requires that overall environmental protection objectives be broken down and assigned to specific units for performance; quantitative evaluation of municipal overall environmental rehabilitation efforts must be closely linked to specific environmental program measures; and the issuance of pollutant emission permits and the use of deadline-based management and centralized control require guidance by the environmental program. Third, environmental programs have promoted protection against environmental pollution. Completion of the drafting of environmental programs and their incorporation into national economic and social development plans are an effective way of assuring funding and resources for pollution prevention, which will provide a material basis for protecting and ameliorating the environment.

5. Problems and Prospects

China has been engaged in environmental protection activities for only a short time and we have insufficient experience, so that even though major efforts have been made in the past and considerable accomplishments have been posted, there are still many difficulties and inadequacies in environmental program work. For example, environmental programs are general rather than specific, are not thorough enough, and cannot perform the appropriate guidance function; environmental programs also lack rational scientific standards and appropriate legal standing; a qualified, advanced, stable contingent of program personnel has not yet been created, and so on. All of these problems must be rectified in the future.

Our environmental program work has now entered the stage of rapid development, and environmental program theory and practice will make considerable advances in the near future, with breakthroughs expected in the following areas.

Incorporation of environmental programs into national economic and social development plans will be further improved. Environmental programs will be incorporated into overall plans, not only in terms of objectives and measures, but also with specific targets, investment funding and the like.

The legal standing of the environmental program will be further clarified, and the environmental program management regulations are currently being drafted and are expected to be issued for implementation soon.

The standards and the scientific character of environmental programs will be improved further. At present, the techniques and methods of the environmental programs are becoming increasingly mature, and modernized operations techniques and computer technology are beginning to be used in environmental program work; a set of technological regulations giving comprehensive coverage of environmental programs is also being written.

Qu Geping Outlines Environmental Protection in Eighth Five-Year Plan

91WN0098B Beijing ZHONGGUO HUANJING BAO [CHINA ENVIRONMENTAL NEWS] in Chinese 6 Oct 90 p 1

[Interview with Chief of State Environmental Protection Administration Qu Geping: "Formidable Environmental Protection Tasks for Eighth Five-Year Plan"]

[Text] The current status of China's environment is that "there have been some local changes for the better, but the overall situation is still deteriorating and the prospects are disturbing." To implement the objective of "getting environmental pollution basically under control and slowing ecological deterioration" by the end of the century will involve formidable tasks in environmental protection work during the Eighth Five-Year Plan. Our reporter therefore visited State Environmental Protection Administration chief Qu Geping to ask some questions about environmental protection plans during the Eighth Five-Year Plan.

[ZHONGGUO HUANJING BAO] The economy will enter the Eighth Five-Year Plan next year. This is also an important period for environmental protection work. What is the basic line of thinking in the setting of environmental protection objectives for the Eighth Five-Year Plan?

[Qu Geping] Our main considerations in drafting the environmental protection objectives for the Eighth Five-Year Plan are as follows. First, they must coordinate with national economic and social development, be linked to the situation in economic readjustment, control and rectification, and bring increased order to the relationship between economic development and environmental protection. Second, we must choose rational objectives with respect to China's particular circumstances. We must set workable objectives based on China's economic support capabilities and the foundations that have been laid down in environmental protection work. Setting our sights too high will not do, because

if they are unrealistic it will not be possible to accomplish them. But if our sights are set too low, we will not do things that we are really capable of doing. These two types of deviations must both be prevented. Third, during the Eighth Five-Year Plan, while continuing to strengthen environmental management, we must emphasize reliance on scientific and technological progress, because this is the only way to advance environmental protection work to a new level.

[ZHONGGUO HUANJING BAO] What are the overall objectives for environmental protection in the Eighth Five-Year Plan?

[Qu Geping] The overall environmental protection objectives for the Eighth Five-Year Plan are as follows. We must strive to control the development of o73 environmental pollution, to increase the number of key cities and certain regions where environmental quality has improved, to check the decline of the natural and ecological environment, to achieve changes for the better in certain local areas, and to lay down a firm foundation for implementing the environmental objectives for the year 2000.

[ZHONGGUO HUANJING BAO] What are the key emphases of environmental protection work during the Eighth Five-Year Plan?

[Qu Geping] Our environmental protection work during the Eighth Five-Year Plan focuses, first, on the cities, and second, on industry. Urban environmental protection must be developed more thoroughly in order to achieve all-round rehabilitation; industrial pollution prevention must focus on effective work in large and medium-size industry. Atmospheric pollution control must, in close connection with energy conservation, vigorously improve obsolete combustion methods, make rational use of coal, and focus on controlling smoke and ash emissions; water pollution control must, in close coordination with water conservation, strive to decrease the emissions of wastewater per unit of output value, and focus on the effective protection of drinking water supplies; the focus of solid waste pollution control is on improved disposal and treatment of harmful wastes and on vigorous efforts to develop integrated waste utilization.

[ZHONGGUO HUANJING BAO] What plans are there for strengthening environmental management during the Eighth Five-Year Plan?

[Qu Geping] The overall spirit is that of comprehensive utilization of the "new and old eight systems and measures"; we are not planning to put forward new major measures.

[ZHONGGUO HUANJING BAO] Scientific and technological backwardness is the major factor responsible for China's environmental problems; during the Eighth Five-Year Plan, how will scientific and technological progress be used to advance environmental protection work to a new level?

[Qu Geping] During the Eighth Five-Year Plan, we must attach even greater strategic importance to the reliance on scientific and technological progress to solve environmental problems and we must give it specific implementation in the national, local and departmental plans. In connection with enterprise technological modernization, we must use waste-free or low-waste technologies, new water-saving and energy-conserving processes and equipment, and modern management, and destroy pollutants during production processes. We must develop high-efficiency, economical pollution-prevention technologies and measures, strengthen and modernize existing pollution-control measures, make thorough use of pollution-control facilities, and guard effectively against environmental pollution. We must make an effort to identify effective environmental control technologies and to disseminate them, set up a group of demonstration projects and demonstration areas, see to it that scientific research is converted into production capabilities, and promote the advance of environmental protection work to a new level.

[ZHONGGUO HUANJING BAO] Will it be possible during the Eighth Five-Year Plan to rectify the drift of environmental protection plans away from the main route of national economic and social development plans?

[Qu Geping] During the Eighth Five-Year Plan we must see to it that breakthroughs are made in incorporating environmental protection plans into the national and social development plan and rectify the drift of environmental protection plans away from the main route of national economic and social development plans. I believe that there are several favorable factors. First, Articles 4, 12 and 14 of the Environmental Protection Law promulgated last year specify that environmental protection plans must be incorporated into the national economic and social development plans, thus giving their incorporation a legal status. In other words, failure to incorporate environmental protection into national economic and social development plans is illegal. Second, as a result of 17 years of experience, there is already a definite foundation for our environmental protection planning work; during the Sixth and Seventh Five-year plans, environmental protection plans were already being incorporated into national economic and social development plans, providing the preconditions for improvement during the Eighth Five-Year Plan. Third, we are now in a period of national economic control and rectification; the incorporation of environmental protection plans into the national economic and social development plan is a major task in improving national economic and social development, and this period of control and rectification has furnished a good opportunity for incorporation of environmental protection into the plans. Thus, I believe that as a result of our efforts, the drift of environmental protection plans away from the national economic and social development plans will be partially corrected during the Eighth Five-Year Plan. The specific idea is that we should incorporate environmental protection plans into the economic

and social development plans in terms of the indicator system, investments, and line items. This idea has been supported by the State Planning Commission.

[ZHONGGUO HUANJING BAO] Will environmental protection investments during the Eighth Five-Year Plan be higher than during the Seventh Five-Year Plan, or lower?

[Qu Geping] Environmental protection investment in the first four years of the Seventh Five-Year Plan was 36.8 billion yuan, and it is estimated that the figure for the entire five-year period may be as high as about 47 billion yuan, equivalent to about 0.7 percent of national output value. At the current level of economic development, it is not a simple matter to pay out such a sum of money for environmental protection, and it expresses the importance that China attaches to environmental protection work. But it still is somewhat short of the investment levels requested for implementing China's environmental protection objectives during the Eighth Five-Year Plan. The environmental protection investment channels that the state has designated still have considerable untapped potential, and they still have not been fully utilized. For example, the state has specified that at least seven percent of technological modernization funds must be used as investments in environmental protection; the current figure is only 1.3 percent. Funding for the elimination of pollution is still too low, and in particular, investment for the "three simultaneous" activities in capital construction is rather low, so that there will be a great shortfall from the requirements of pollution-elimination standards; this funding should be increased. During the Eighth Five-Year Plan, while further utilizing existing investment channels, we must strive to develop new ones. If we step up environmental management, and especially if we strengthen environmental standards drafting and management, during the Eighth Five-Year Plan the investment in environmental protection will increase somewhat. There is a possibility of securing an annual environmental protection investment of 15 to 20 billion yuan.

Protective Legislation for Mining Industry Planned

HK2901040591 Beijing CHINA DAILY in English 29 Jan 91 p 3

[By staff reporter Zhu Baoxia]

[Text] The state is calling on provincial governments to speed up legislation concerning the prevention of pneumoconiosis, a lung disease caused by the chronic inhalation of dust, silica and asbestos that kills over 5,000 people each year.

Kan Kuegui, director of Department of Health Inspections under the Ministry of Public health said in a press release yesterday in Beijing that while since 1987 the state has repeatedly stressed the need for local legislation in fighting the disease, only two provinces and one municipality—Fujian, Jilin and Shanghai, have worked out specific legal documents to deal with the disease.

Meanwhile, according to Kan, the ministry and the Legislative Bureau of the State Council are revising the Labour Protection Principles decreed by the State Council in 1987.

The improved legislation will further clarify the responsibilities of enterprises with employees at risk, and explain the consequences of not complying with the labor protection measures.

The revised labour protection legislation can be expected to come into effect some time this year, said Kan.

Relevant state departments that oversee public health, energy and metallurgical industries are jointly drafting a report to the central government on the present situation and policies concerning the control of pneumoconiosis in hopes that the State will take further steps.

The Ministry of Public Health and the All-China Federation of Trade Unions and other departments involved are to sponsor televised courses on the prevention of work-related illnesses in March so as to arouse the public's consciousness.

A recent survey of the incidence of pneumoconiosis in 30 provinces, municipalities and autonomous regions indicates that between 1949 and 1989, 441,092 cases of pneumoconiosis were reported in China, and 87,919 people died from the disease.

Besides the present 353,173 people currently suffering from pneumoconiosis, another 500,000 people are suspected to have been exposed to the disease.

Sichuan, Hunan, Liaoning, Shanxi and Jiangxi Provinces each have an estimated 20,000 cases.

The disease is most serious in the coal industry, and coal workers make up 46.49 percent of the total number of persons afflicted by pneumoconiosis.

Workers in the non-ferrous metals, metallurgy, building materials and machinery and light industries are also at an especially high risk.

Silicosis and miners' pneumoconiosis account for 48.3 and 39.06 percent, respectively, of work-related illnesses.

Each year, the state spends at least 5.5 billion yuan to help the patients and their families.

Investigations show that no more than 53 percent of the concerned enterprises, either state or collectively-run, have reached the state standards for dust density control. Less than 20 percent of the coal industry adheres to the state standards for dust control.

Beijing Improves Quality of City's Environment

OW2101081891 Beijing XINHUA in English 0613 GMT 21 Jan 91

[Text] Beijing, January 21 (XINHUA)—The Beijing municipal government has decided to concentrate its attention this year on its fight to reduce air pollution and harmful car emissions, and to protect its water resources in an effort to improve the quality of the urban environment.

The city will also pursue 10 other measures to improve the quality of the city's environment, including: increasing the dust and smoke control areas in the outskirts of the city; installing pollution fighting PCV valves in all of Beijing's cars; planting 1 million trees in the city area and afforesting 17,500 hectares of land outside of the city; dealing with 50 pollution sources within the city; and creating two low-noise areas in Dongcheng and Xuanwu districts, respectively.

The Beijing municipal government has completed 10 projects aimed at improving the quality of the environment each year for the past five years.

International Seminar on Hainan's Economy, Environment

91WN0125A Hong Kong CHING CHI TAO PAO [ECONOMIC REPORTER] in Chinese No 44, 5 Nov 90 pp 25-26

[Article by Yang Lien-ch'eng (2799 6647 2052): "Hainan's Economic Development and Environmental Pollution"]

[Text] From 12 to 15 March this year, a high-level international meeting—"International Seminar on Hainan's Economic Development and Environmental Pollution"—was held in Haikou City, Hainan Island. In response to the Hainan provincial government's invitation, there were 24 international participants—from America, Canada, Japan, and Europe, as well as from the World Bank, European Development Bank, (?UN Development Program) [UNDP] [Lianheguo Kaifa Jihuashu 5114 0678 0948 7030 4099 6060 0487 5002], and UN Educational, Scientific, and Cultural Organization [UNESCO]—and 27 participants from the Chinese side. It is here that a plan for the coordination of economic development and environmental protection in Hainan Province, which is on the eve of large-scale economic development, was worked out. As the first follow-up action to this seminar. the International Advisory Commission on Hainan's Economic Development and Environmental Protection was founded, and it held its first meeting on 13 and 14 September in Haikou City. Nearly 40 commission members, observers, and Chinese and foreign delegates time and again deeply probed the plan and its specific measures for implementing the "Hainan experimental model," the characteristic of which is the coordinated development of the economy and the environment. They discussed and passed decisions on matters concerning the commission's charter, nature, purpose, as well as its fund. An experiment spanning the centuries had been held in the nineties, an experiment that formally opened the curtain on the first Golden Age!

This writer had the good fortune to hear speeches by delegates to these two international meetings. The meeting participants were all well-known Chinese and foreign experts and authorities in many fields. Their speeches, which were at a high professional level, provided many useful insights, and I extract below the important points made in some of the speeches:

Li Xue'e [2621 4872 6759], vice minister of the Environmental Protection Commission, State Council:

This 'Hainan Experiment' Seeks Sustained, Healthy Development

In his speech Li Xu'e said: In environmental protection there already exists a good relationship between China and the interntional community, and a step forward in this relationship has now been taken. The Chinese government firmly believes that a sustained development of the economy must not be achieved by a sacrifice of the environment and a waste of natural resources. Controlling pollution and protecting the environment is China's long-term basic policy.

The large-scale economic construction that is about to begin is a serious challenge to Hainan's environment and ecology. The Chinese government pays a great deal of attention to Hainan's development, and also to the integration, organically and dynamically, of its economic development and environmental protection. We agree with the viewpoint of the World Environment and Development Commission: The globe is one world, and mankind's activity cannot be limited to the interior of one country or one territory. On the issue of environmental protection, between country and country, between region and region there must be mutual concern, mutual support, a common search for opportunities, and the overcoming of difficulties in order to strive in common for a healthy, stable development. We wholeheartedly hope that in this "Hainan experiment," which seeks sustained, healthy development, there will be multilateral cooperation and support internationally.

K. (Pruett), senior director of the Rockefeller Foundation:

China Will Perhaps Become a Model

K. (Pruett) pointed out: This meeting has initiated an arduous experiment, which, if successful, will have an enormous effect on both Hainan and China. The goal of this experiment is, while accelerating Hainan's economic development, to protect its environment. We all think that it would not be wise to have a policy for improving the environment after the economy has already been developed.

China plays a major role among the countries of the world. When we look at the 21st century from the angle of global strategy, we see that China will perhaps become a model in the coordination of economic development and environmental pollution.

R. D. (Murui), (UNDP) representative in China:

If at This Time We Do Not Discuss Environmental Issues There Will Be Irretrievable Losses in the Future

R. D. (Murui's) opinions were: Following the announcement in 1988 of Hainan's establishment as a special economic zone, it was necessary for the Hainan provincial government to give timely consideration to the deterioriation and pollution of Hainan's environment and to the ambitious goals for Hainan's development. If at this time we do not discuss environmental issues we will have to take remedial measures in the future, and in many situations there will even be irretrievable losses to the water and soil and to the flora and fauna of the island. Even if remedial measures can be taken, their cost will far exceed estimates. When making policy decisions on investment, it is necessary to give priority consideration to the social effects of environmental pollution and to the implementation of specific plans.

He Kang [0149 1660], vice chairman of the China Science and Technology Association, vice chairman of the (?National Agricuture District Planning Commission) [Quanguo Nongye Qu Hua Weiyuanhui 0356 0948 6593 2814 0575 0487 1201 0765 2585], and chairman of the International Advisory Commission on Hainan's Economic Development and Environmental Protection:

Hainan Is an Ideal 'Experimental Zone'

He Kang said: Hainan is an unusually ideal experimental zone for the coordination of economic development and environmental protection. Hainan's land area is small and its population is not large. It is also a relatively independent island. The largest special economic zone, Hainan's geographical position is in the tropics, which have abundant natural resources, and it has a strong capacity for self-renewal. Generally speaking, it is also an area that awaits development. On the eve of its large-scale development, Hainan should be painted as a beautiful picture of coordination between economic development and environmental protection. Part of that picture has already been painted, and this part does not require much revision. How to complete this picture so that it is both beautiful and feasible is a job that our advisory commission must do in the future.

G. (Glynn), director of the (?Protection and Development Strategy Department) [Baohu Fazhan Zhanlue Bu 0202 6263 4099 1455 2069 3970 6752], (?International Nature Protection Federation) [Guoji Ziran Baohu Lianhehui 0948 7139 5261 3544 0202 6263 5114 0678 2585]:

Hainan Should Be Helped To Find the Way for Sustained Economic Development

G. (Glynn) said: I want to make some suggestions for the formulation and implementation of a strategy for Hainan's environmental protection: First, Hainan should be helped to find a way for the steady development of its economy in line with its own characteristics. Second, the obstacles to economic development caused by the lack of environmental protection measures must be surmounted. Third, Hainan's ecology and resources must be protected. Fourth, Hainan's cultural heritage must be protected. This strategy should give overall consideration to the interests of different departments, and should promote economic development under circumstances that do not harm manpower resources and natural resources. Fifth, every person, including the ordinary citizen, and some companies should be educated to recognize their responsibility to use resources rationally. Finally, all departments in Hainan must manage the entire developmental process so that the development is sustained.

Gan Shijun [3927 1597 0193], deputy director of the China Research Center for the Promotion and Development of Science and Technology:

The Old Path of Sacrificing the Environment in Blind Pursuit of Speed Cannot Be Taken

Gan Shijun said: We certainly cannot again take the path of development that, for the sake of the blind pursuit of speed, sacrifices the environment, because what would be sacrificed would be long-term, fundamental interests. Also, from an observation of a timespan that is a bit too long, we would really be sacrificing this speed itself.

Tso T'ien-chueh [1563 1131 6030], director of the America-based International Institute for Development and Education in Agricultural and Life Sciences:

Hunan Has Great Potential

Tso T'ien-chueh said: Someone has said that the hope for world economic development in the 21st century lies in China and that the hope for China's economic development lies in Hainan. This is not just polite talk. I feel that Hainan's potential is sufficient for the attainment of this hope, and even greater than Taiwan's potential. When I came to Taiwan in 1958 for the first time, Taiwan's foundation was poorer than Hainan's is now. Taiwan did not have a pure developed agriculture. Agriculture brought along industry, after which industry continued the process by developing agriculture. Agriculture is the foundation. No matter what country it is, it must make a large investment in agriculture.

Ma Shijun [7456 0113 7486], member of the Academics Department Committee of the Chinese Academy of Sciences and well-known ecologist:

Carefully Guard Against the Deterioration of Hainan's Environment as Was the Case in Regions of North Africa and the Middle East

In his speech Ma Shijun said: With regard to the issue of Hainan's forest resources, in some parts these resources have been turned into areas of sand, and the problem of indiscriminate felling of trees is fairly serious. In its geographical position Hainan has the same climate as the arid belt in North Africa and the Middle East. In other words, if Hainan Island, the photothermal conditions of which were originally very good, is mishandled, its environment will seriously deterioriate as did the environment in some areas of North Africa and the Middle East. These problems are not just Hainan's problems; they are also the problems of the entire Chinese nation.

Bao Keming [7637 0344 2494], permanent vice governor of Hainan Province:

We Hope To Obtain Cooperation and Support From the International Community

From the time of the founding of the province, the Hainan provincial government has paid much attention to the cause of environmental protection, and it has regarded the search for the coordination of economic development and environmental protection as a great, fundamental cause. Hainan was the first province in China to set up an environmental resources department. The provincial government promulgated and implemented the "Regulations on Environmental Protection in Hainan Province," and the relevant management methods and public notices for these regulations. Thus, given the rate of economic development in Hainan Province, some newly emerging source of pollution have been effectively controlled, and the quality of the environment in some areas has been improved. After the international seminar in March, the provincial government set up the Hainan Provincial Environmental Protection Committee, which allocated a special fund to be used for feasibility studies in the early stage of the development. For example, there are the "study of ways of planning and managing environmental protection in the Basuo and Yangpu sea areas," "feasibility study for the comprehensive improvement of the exploitation, use, and protection of Haikou's underground water," and "feasibility study for the management of environmental protection in the Yangpu economic development zone." These studies were incorporated in the province's Eighth Five-Year Plan for social and economic development, thereby insuring the existence of clear goals and feasible measures. Hainan is making its experiment in the coordinated development of economic construction and environmental protection from a "starting line" that is set fairly far back. Therefore, I hope that in this trail-blazing experiment there will be more extensive and effective cooperation with the interntional community. Hainan is not only one of the last few remaining pieces of virgin land in China, but also in the whole world. Therefore, as a common environmental resource of the whole world, it is willing to conduct an experiment of exemplary significance. The development of modern science and technology, as well as the international community's universal interest in environmental issues and its positive attitude of cooperation, provide us with the possiblity of successfully conducting this experiment.

REGIONAL AFFAIRS

First Asia-Pacific Global Warming Seminar Ends in Nagoya

OW2601042991 Tokyo KYODO in English 0410 GMT 26 Jan 91

[Text] Nagoya, Jan. 26 KYODO—Participants from 18 countries wound up the first Asia-Pacific seminar on climate change on Saturday by promising to strengthen measures to prevent global warming.

In a chairman's summary adopted at the end of the seminar they stressed the importance of creating antiglobal-warming strategies in each nation tailored for geographical and socioeconomic conditions.

The Environment Agency and local governments sponsored the four-day seminar, the first to study global warming from an Asia-Pacific perspective.

The participants also called on industrialized countries to provide financial and technological assistance to help developing nations promote their antiglobal-warming campaigns.

The summary noted that the Asia-Pacific region accounts for more than half of the world population and emits one third the world's carbon dioxide, the main cause of global warming.

Systems for observing the phenomenon, however, are insufficient in the region, according to the report.

BURMA

Soviet Delegation Addresses Environmental Seminar

BK1801115591 Rangoon Domestic Service in Burmese 1330 GMT 17 Jan 91

[Text] A seminar on environmental protection was held at 1400 today in the conference hall of the Directorate of Meteorology and Hydrology on Kaba Aye Road. The seminar was attended by the three-member Soviet delegation currently in Myanmar [Burma] to discuss implementation of projects under the Myanmar-Soviet cultural and science cooperation and exchange program. The delegation's leader, Mr. Y.V. Sedunov, deputy chairman of the USSR State Committee for Meteorology and Hydrology, addressed the seminar.

The seminar was attended by U Ba Thwe, director general of the Department of International Organizations and Economic Relations of the Ministry of Defense; U Ohn Maung, director general of the Directorate of the Meteorology and Hydrology of the Ministry of Transport and Communications; members of the National Commission for Environmental Protection; and responsible officials from other departments and enterprises.

CAMBODIA

Pol Pot Calls on Cambodians To Protect Wildlife

BK3101042991 Bangkok BANGKOK POST in English 31 Jan 91 p 8

[By James Pringle]

[Text] Phum Dong, Cambodia—Pol Pot, the infamous leader of the Khmer Rouge, has called on Cambodians to protect endangered species.

He means, of course, Cambodia's diminishing wildlife, though during the period of Khmer Rouge rule from 1975 to late 1978, the most endangered species here was the human species.

An estimated one million Cambodians died of starvation or murder at that time.

But now, Western intelligence sources along the Thai-Cambodian border say that Pol Pot recently issued a directive calling on Cambodians not to poach birds and animals, and to refrain from killing them for any reason.

The sources said that, in areas where poaching is most serious, the Khmer Rouge is fencing off animal sanctuaries. Pol Pot has said that wild birds and animals are an important part of Cambodia's heritage.

One of the Khmer Rouge leader's most trusted lieutenants, Ta Mok, who is known by Cambodians as "The Butcher" because of his extreme cruelty, is also now hot on ecology issues and the protection of endangered species, the sources said.

Anyone contravening Pol Pot's "green" directive along the northern border of Cambodia where Ta Mok operates is brought before a jungle court and is normally sentenced to four days' labour on constructing fencing for animal sanctuaries, the sources add.

Here in Phum Dong, a Cambodian village under the control of the Khmer Rouge, people seem to be honouring Pol Pot's "green" strictures—there are no animals for sale.

The situation is rather different at Psar Kandal, 24 km north of here, in an area controlled by the Vietnam-backed Phnom Penh regime.

While visiting this area recently, I was offered a live bear cub (for 13,000 baht), a pelican (for 350 baht), owls, hawks, monkeys, otters, mongooses, tortoises and a pangolin, which is a kind of scaly anteater.

Cambodians say they need animals for food or medicine or for selling to Thai traders to earn income.

When I asked the owner of the bear cub, a furry, friendly creature, if he would consider releasing it, he said: "But I am a poor man, Monsieur. I bought this cub from the forest people with my own funds. I need to sell it in order to feed my family."

During 21 years of war and repression, Cambodia's wildlife has been decimated, sometimes for food for an often hungry population, but often because of mines or unexploded bombs.

It would be particularly tragic—but perhaps symbolic of Cambodia's plight—if the kouprey was extinct here, for it is the country's national animal.

SOUTH KOREA

Ministry Prepares for New Global Environmental Laws

SK2901072791 Seoul YONHAP in English 0633 GMT 29 Jan 91

[Text] Seoul, Jan. 29 (YONHAP)—A committee is to be set up to help South Korean industry prepare for the enactment of global environmental regulations that will, among other things, ban chlorofluorocarbons (CFCs), the Environment Ministry said Tuesday.

The Ministry will also expand environmental evaluation to cover sports facilities and forests, and create a fund to pay for air and water cleanups using fines paid by polluters, it said in a briefing to President No Tae-u on the year's major policies.

Korea needs to prepare for environmental protection laws that will go into effect over the next few years, such as the Montreal Protocol and International Convention on Climate Change.

These worldwide rules will gradually phase out the use of CFCs, mainly freon and halon, and enforce standards for carbon dioxide emissions, Ministry officials said.

CFCs are commonly used in refrigerators, air conditioners and aerosols, and Korea's market for these products, including exports, is estimated at close to 4 trillion won (5.59 billion U.S. dollars), they said.

The new committee will focus on technological development and on finding alternatives to CFCs to minimize the impact of the regulations on Korean industry, the report said.

The Ministry will add four areas to the 11 that it is already evaluating for their impact on the environment—waterway development, sports facilities, forestry development and waste disposal.

Measures will be taken to make sure that industrial plans are given sufficient study of the possible environmental impact before they are submitted to the government for approval, it said.

TAIWAN

Government To Destroy Smuggled Wild Animal Products

OW3001010491 Taipei CNA in English 1535 GMT 29 Jan 91

[Text] Taipei, Jan. 29 (CNA)—The Council of Agriculture (COA) will destroy 300 kilograms of smuggled ivory, rhinoceros horns and leather goods Wednesday.

COA said this will be the third time smuggled goods made of banned animal parts had been publicly burned and is a sign that the government is determined to protect wildlife.

In May 1990, the Republic of China destroyed 700 kg of ivory and lion hide, the first Asian country to do so. In November, the government burned another 70 kg of ivory and furs.

COA Chairman Yu Yu-hsin will preside over the destruction Wednesday at Tamsui, suburban Taipei. Foreign diplomats and media representatives have been invited to witness the event.

THAILAND

Prime Minister Comments on Air, Water Pollution

BK2912012590 Bangkok THE NATION in English 29 Dec 90 p A2

[Excerpts] Prime Minister Chatchai Chunhawan's New Year wish for the country is probably very much the same as is in the mind of many Thai people—no war in the Middle East. [passage omitted]

On environmental and social fronts, Chatchai said the priority task was to tackle the problems of growing pollution which have become critical.

Air pollution has reached dangerous points in many areas in the city and the government would crack down on motorcycles and public buses emitting excessive black smoke next year. The lead content in gasoline will also be reduced, he said.

The government will also seriously tackle the problem of waste water in the city's canals which had become "garbage dumps", he said. "Environmental degradation is a critical problem in the metropolis which is supposed to house only one million people, and not eight million as is the case these days," he said.

REGIONAL AFFAIRS

Safety of Nuclear Plants Surveyed

91MI0088A Milan ITALIA OGGI in Italian 14 Nov 90 p 47

[Article by Giuseppe Pennisi: "East Europe, Nuclear Plants at Risk"]

[Text] Are all the nuclear power plants in East Europe at risk? The first reports of an inspection carried out in East and West Europe by the International Atomic Energy Agency (IAEA) and the University of Moscow's Kurchatov Institute, which specializes in nuclear engineering, furnish a picture that is anything but encouraging.

Here are the main points, nation by nation:

Germany:

The most important plant in the eastern Lands, located in Greifswald on the Baltic sea coast, had to be closed down. In fact, the four reactors (model VVER 230 of Soviet manufacture) had no containment system or emergency cooling mechanisms. Basically, the structure was more outdated and unsafer than the Chernobyl plant. Reactivating the plant by adopting standard West European safety measures would cost at least 2 trillion lire. It is, however, unlikely that the government of the united Germany wants to propose this.

Bulgaria:

The picture is even more serious. Since the country lacks mineral oils and adequate reneweable energy sources, it relies on the Kozloduy power plant whose structure is similar to the Greifswald plant: In particular, although the more powerful reactors (VVER 213) belong to a more recent (and safer) generation, the smaller reactors (VVER 230) are identical to those in Greifswald. Bulgaria, however, cannot afford to deactivate the power plant without bringing national industry to a halt, and 100,000 jobs have already been lost since last summer.

Czechoslovakia:

Czechoslovakia's two nuclear power plants, in Dukovany and Bohunice, supply 27 percent of its electricity. Both of these plants have potentially dangerous reactors. A reduction in energy production, however, would block new efforts to establish industrial cooperation with the West. Therefore, the government is considering the establishment of a network of small gas power plants that can also be connected to the EEC system.

Hungary and Poland:

Hungary has five power plants of Soviet manufacture but they are equipped with reactors of the most recent generation (VVER 213) and also have the necessary safety devices. Poland instead, has been planning on a electric-nuclear power plant near Danzig since 1981, but nothing has been done due to costs and safety.

Soviet Union:

Detailed information is lacking. A study by the Kurchatov Institute is, however, eloquent: "At least 14 of the reactors installed in the USSR and East Europe in recent years are already very outdated and do not meet the international safety regulations established by the IAEA."

Nuclear Power in Eastern Europe

Countries	Power available	Number of Power Plants	Current Status
Bulgaria	5760 Mw	8	6 active 2 closed
Czechoslovakia	4520 Mw	9	8 active 1 closed
Ex East Germany	2640 Mw	6	3 closed 1 being closed 1 under construction
Hungary	2760 Mw	5	4 active 1 under construction

CZECHOSLOVAKIA

Minister Vavrousek Interviewed on Environmental Issues

AU3101112391

[Editorial Report] Prague SVOBODNE SLOVO (SLOVO NA SOBOTU Supplement) in Czech on 26 January on page 2 carries a 2,200-word interview with Josef Vavrousek, federal minister of environment, by Radek Galis, entitled "Let Us Stay Tolerant." The interview, the place and date of which are not given, deals with Vavrousek's views on controversial energy projects and with his ministry's financial problems.

Speaking about the nuclear power plant in Jaslovske Bohunice, Vavrousek says that, from the viewpoint of seismicity, it is "in the second worst location" in Czechoslovakia (after Komarno in Southern Slovakia). Other shortcomings are the plant's "outdated technology" and the fact that "in designing it, one did not reckon with the possibility of the main pipeline bursting." Moreover, the reactor vessel of the V-1 plant in Jaslovske Bohunice is made "of material which is not suitable for this purpose." Another problem in Jaslovske Bohunice, according to the minister, is that the dismantling of the A-1 nuclear power station there, which broke down in 1977, proceeds very slowly and that radioactive waste from this decommissioned power station is stored in "containers that are not leakproof."

On the other hand Vavrousek stresses that the V-1 and V-2 units in Jaslovske Bohunice supply the entire southeastern part of Slovakia and that "the lights there would go out" if the two units were to be closed. Imports of electricity from elsewhere are out of the question because

of the inadequate capacity of transmission lines and transformer stations. Vavrousek continues: "In spite of this, I am determined to have the power station put out of operation as soon as it turns out that the reactors are in a condition that approaches, or already exceeds, the limit of an admissible risk. Of course, it is immensely difficult to determine where exactly the limit of the admissible risk runs. We are facing a dilemma. The first mistake would be to close a power station that could serve for a long time to come and then suffer from a severe disruption of the economy. The other mistake would be to allow an accident that might jeopardize human lives. These facts have existed for a long time but they have been kept deliberately under wraps—even by the Czechoslovak Atomic Energy Commission, which naturally knew what the real state of affairs was."

Asked about energy assistance offered by Austria in the event of closure of Jaslovske Bohunice, Vavrousek says that the Austrian offers are "unrealistic and not concrete." He points out that Austria itself must import energy and that the only time when Austria has surplus energy is July when Czechoslovakia does not need any additional electricity. Moreover, the Austrian electricity could not be supplied to eastern Slovakia where it is needed "as the Austrians know very well." Vavrousek sees the only solution in energy conservation, also by means of increasing its price. He believes that the government should have increased the price of energy before starting to increase the prices of anything else.

Commenting on the Gabcikovo-Nagymaros system of Danube dams, Vavrousek says that the original project was "an economic nonsense and an ecological crime." He regards both "extremes"—the completion of the project according to original plans and the abandonment of the project, which is the wish of the Hungarian side—as "bad, with the termination of work being possibly even the worse alternative." He points out that 14 billion korunas have been "drowned" in the project already and that 40 square kilometers of land in the area of Gabcikovo, some of the most fertile land in Czechoslovakia, are "completely ruined." As the minister adds, "95 percent of the damage is on our territory and it is therefore extremely irresponsible for the Hungarians to keep their hands off today." In Vavrousek's opinion, Czechoslovakia should hold roundtable discussions with the Hungarian side and find a solution to "complete the system, albeit with a completely changed philosophy of operation." One possibility of completing the project with modifications would be to refrain from the construction of the large reservoir at Hrusov and to limit the Nagymaros section to the construction of a low weir for navigation purposes.

In another reply, Vavrousek responds to criticism of the activity of the Federal Committee for the Environment. He admits that the Committee "does not work as it should," which he attributes to the fact that he has had to work with staff inherited from the former State Committee for Scientific-Technical Development. These people—"many of whom simply do not want to work or are unable to work"—are leaving only now, after the expiry of the legal period of notice. Vavrousek is confident that the work of the Committee will improve as, since the beginning of the year, he has been able to hire "foremost experts" for the vacated positions.

The minister also draws attention to the lack of funds with which the Committee must cope. He points out that the parliament allocated only 300 million korunas for his department (which was an improvement over the 100 million korunas in the original draft of the federal budget), which is desperately little if one considers that the desulfurization of a single coal-fired power plant unit costs 1 billion korunas. This means that his department will depend on financial assistance from other countries. He mentions that the EC has already given Czechoslovakia financial assistance of 30 million European Currency Units for environmental projects and that negotiations are underway with other foreign institutions and countries, such as the Nordic Investment Bank, "Americans and the Japanese."

Fire at Jaslovske Bohunice Nuclear Plant; No Radiation Leak

LD1601212791 Prague CTK in English 1521 GMT 16 Jan 91

[Text] Bratislava Jan 16 (CTK)—Director of the nuclear power plants at Jaslovske Bohunice, West Slovakia, Juraj Kmosena told CTK here today that a fire broke out in the second unit of the V-1 plant on Tuesday, but was put out soon.

According to the director, the fire erupted at a 0.4 kw switchboard which is now being repaired. At the same time the second unit of V-1 was shut down.

Kmosena said that no radioactivity leaked within the plant's complex or to its surroundings. It is envisaged to restart the second unit within four days.

The plant's director told CTK that by the scale of the International Atomic Energy Agency (IAEA), this occurrence is assessed as an accident of the first to the second degree of the seven-degree table of nuclear power plants' failures (the seventh degree being the highest)

Director of the nuclear power plants at Jaslovske Bohunice, West Slovakia, Juraj Kmosena also told CTK today that the plant's specialists ascribe the fire, which erupted at the V-1 plant yesterday, to damaged internal insulation of a Czechoslovak-made circuit breaker which caused a small short circuit that led to the ionization of the air. This caused development of the short circuit and the eventual fire.

A group of specialists has been engaged in definitive specification of the cause of the fire, Kmosena added.

His assurance that no radioactivity leaked during the accident to the plant's complex or to its surroundings was confirmed later today also by the secretariat of the

minister of the Czechoslovak Government, and chairman of the Federal Committee for the Environment, Josef Vavrousek.

The Jaslovske Bohunice Nuclear Power Plant is the oldest one in Czechoslovakia. Put into service in the 1970's, it has Soviet-made equipment.

Situated only some 50 kilometres from the Austrian border, it has been the target of an intensive anti-nuclear campaign in Austria for several months. At the end of last year, the Austrian side demanded its immediate closure for safety reasons. However, several foreign teams of specialists, including those of Siemens (FRG), Westinghouse (U.S.A.) and the Vienna-based International Atomic Energy Agency (IAEA), recently conducted inspections at Jaslovske Bohunice, finding no reason for an immediate shutdown.

The Czechoslovak Government recently said the plant would not be closed down, but recommendations to raise its safety, made by the foreign firms, will be carried out.

There is a another nuclear plant at Dukovany, South Moravia, and two more are being constructed: at Mochovce, West Slovakia, and Temelin, South Bohemia. The construction of others is being considered, since Czechoslovakia now heavily depends for electricity on thermal plants which burn low-quality brown coal causing serious damage to the environment. The new plants would be built by contemporary standards now applied in western countries which would also supply the equipment.

The nuclear power plants now account for 25 percent of all electric power generation in Czechoslovakia.

Recently, Czechoslovak Premier Marian Calfa invited Austrian Chancellor Franz Vranitzky to Czechoslovakia for talks on the issue, proposing the end of January or beginning of February as the date for the meeting.

Nuclear Plant's Director Dismisses Danger Threat

AU1801172191 Bratislava PRAVDA in Slovak 16 Jan 91 p 3

[Interview with Juraj Kmosena, director of CSFR Jaslovske Bohunice Nuclear Power Plant, by Lubo Rabay; place and date not given: "It Was Just a Commonplace Accident"—first paragraph is PRAVDA introduction]

[Text] In a news bulletin yesterday morning, Czechoslovak Radio carried a brief report on an accident in a V-1 block at the Jaslovske Bohunice Nuclear Power Plant. Although this was not a serious accident, we asked Engineer Juraj Kmosena, director of the Jaslovske Bohunice Nuclear Power Plant, to give us more information.

[Kmosena] A 0.4 kilovolt distributor in the second block of the V-1 power plant was damaged; several electronic appliances are connected to it. We noticed the problem on Tuesday [15 January] afternoon. A flawed circuit breaker in the distributor caused a short circuit and a fire in part of the equipment's cabling and connectors. After immediately examining the cause of the accident, the staff shut the block down.

[Rabay] How do you characterize the seriousness of the accident from the point of view of nuclear safety?

[Kmosena] This was a relatively commonplace distributor problem in the electronic equipment and has no connection with nuclear safety. Despite this, we evaluated the problem in accordance with the seven-grade international evaluating system. According to these grades, this was an accident between the first and second grades; that is, between the lowest danger levels which this system defines as a mere incident.

[Rabay] What does the accident mean as far at the plant's operation is concerned?

[Kmosena] The plant's second block will be closed down for about four days. Electronic maintenance staff have already removed the fire damaged cables and connectors and are installing new ones.

December Incident in Dukovany Nuclear Plant Hushed Up

AU2801142091 Vienna DER STANDARD in German 28 Jan 91 p 1

["bra" report: "Incident in Dukovany Nuclear Power Plant Hushed Up"]

[Text] Vienna—Even before the cable fires in the CSFR nuclear power plants of Bohunice and Dukovany, a very serious incident that was not reported to the Austrian authorities occurred in Dukovany last December.

On 4 December 1990, after a switchboard error in a transformer station, three blocs of the nuclear power plant that were in full-load operation were only saved with difficulty from a runaway. This was reported by the Brno newspaper LIDOVA DEMOCRACIE on 22 January.

Austrian Criticism of Dukovany Nuclear Plant Fire Handling Rejected

AU2401154691 Prague CTK in English 2247 GMT 22 Jan 91

[Text] Prague Jan 22 (CTK)— Czechoslovakia acted in the case of last night's fire at the nuclear power plant at Dukovany, South Moravia, strictly in tune with the Czechoslovak-Austrian agreement on nuclear safety and protection against radiation of 1989, CTK was told today by an Economics Ministry official.

Radomil Stepanek, director of the Czechoslovak Economics Minister Secretariat, reacted to a press conference in Vienna today at which the Austrian Green Alternative claimed that the belated announcement of the fire to appropriate Austrian authorities just as in the

case of an accident at Jaslovske Bohunice, West Slovakia, last week degraded once again the interstate agreement on the exchange of information to a worthless piece of paper.

Stepanek recalled that the Dukovany director immediately informed CTK, which transmitted the news through its network. The fire was clearly identified as an event by no means threatening operating safety at the plant, and the less so the population. Moreover, Czechoslovak authorities provided further information to the Austrian side this morning.

According to Stepanek, Austrian authorities have not indicated that they would lack adequate information or that the information would have been given to them belatedly.

The Czechoslovak side is ready at any time to reply possible questions from Austrian authorities, Stepanek added.

Both the fire at Jaslovske Bohunice and at Dukovany were soon put out and there were no radioactivity leaks.

Prime Minister Calfa on Power-Plant Dispute With Austria

AU3001121291 Vienna DIE PRESSE in German 26 Jan 91 p 3

[Interview with CSFR Premier Marian Calfa by Karl-Peter Schwarz in Prague; date not given: "The Limits of Decency Have Been Reached"]

[Text] [Schwarz] Mr. Prime Minister, during your meeting with Chancellor Vranitzky in Bratislava on Tuesday [29 January] you will again discuss nuclear power.

[Calfa] Austria apparently is not interested in anything else in relations with the CSFR.

[Schwarz] Why?

[Calfa] I would like to know that myself.

[Schwarz] Your government has decided to repair the Bohunice Nuclear Power Plant and to operate it until 1995. Vranitzky's five-point plan has been rejected. So what do you want to discuss with Vranitzky?

[Calfa] Vranitzky has shown enormous interest in this meeting. The problem is that relations between Austria and the CSFR are being narrowed down to the Bohunice issue. But we also have a lot of common interests. We are jointly establishing national parks in the Bohemian Forest and the Thaya Valley. We are interested in linking our country to the pipeline, highway, and railroad network in the south. We must deal with the question as to what is to be done at the borders once the peoples in Europe start migrating. About 38,000 Czech citizens are living in Austria, some of them illegally. We should discuss many issues....

[Schwarz] Do you think that the atmosphere will improve during your meeting?

[Calfa] I believe in personal contacts. I know Mr. Vranitzky very well. So far, we have held very good and useful talks.

[Schwarz] Vranitzky has made a specific proposal concerning the joint construction of the Wolfsthal II Power Plant.

[Calfa] Of course, we want to produce electricity under conditions that do not damage the environment. This is the case with hydroelectric power plants. We will gladly agree to such a plan if the preconditions are acceptable. The CSFR built the Gabcikovo plant over several years. It has almost been completed now. Austrian enterprises participated in the construction.

However, because of Hungarian resistance, construction work was stopped. Austrian companies also suffered enormous losses in this connection. Unfortunately, Austria did not support us in negotiations with Hungary. However, if Gabcikovo were in operation now, we would be able to solve our electricity problem and could discuss the closure of Bohunice.

In view of this comprehensive package, one would have expected a stronger commitment on the part of Austria for the completion of the Danube power plant. However, Austria was silent at the time and now suggests building another power plant, again on the Danube. I believe that it is about time to hold talks in a way that corresponds to the complexity of the situation.

[Schwarz] An agreement exists between Austria and the CSFR, which was concluded shortly before the democratic revolution and which provides for information in the case of nuclear accidents. Austria believes that the agreement is too inaccurate.

[Calfa] I do not know whether Chancellor Vranitzky will broach this issue. I certainly will not do that. We do not believe that we violated this agreement, if you are referring to the incidents in Jaroslavske Bohunice. The CSFR informed Austria within 24 hours about the fire. Since the fire did not affect the nuclear zone, I do not really know what Austria would have done if it had known about the fire 12 hours earlier. One must take into consideration the specific situation. I do not think that anyone was endangered through this incident. It only heated up emotions and strengthened irrational fears.

[Schwarz] Are you not worried when you hear about a fire at a nuclear power plant?

[Calfa] There were fires in the CSFR with much more fatal consequences. If I hear about a fire in the distribution chamber of a nuclear power plant outside the nuclear zone, I am much less worried than if a fire breaks out at a chemical plant or a refinery which endangers the whole plant.

[Schwarz] Shortly after the fire in Bohunice, there was a fire in Dukovany. This gave rise to the suspicion that sabotage was involved in both cases.

[Calfa] We had a suspicion, and therefore we carefully examined the two incidents. However, there is no evidence of sabotage. In addition, I ordered the strict control of all sensitive points of our reactors. Of course, one can also paint apocalyptic scenarios, but it is not very useful. If somebody blasts all dams on the Moldau, nobody in Prague will survive. One can only take the best possible safety measures and pray that such a disaster may never happen.

[Schwarz] If Bohunice is so safe, why do you plan to close it down in 1995?

[Calfa] The CSFR has been producing nuclear energy for the past 20 years. Bohunice was our first nuclear power plant. Every reactor has only a limited service life. You can rest assured that the CSFR does not improve its technology only because of Austrian complaints. We have always done that, but we did not talk about it in public in the past. However, the Austrian campaign has led to the paradoxical situation that our government is now confronted with the reproach of taking irresponsible risks.

I am sorry, but I have to tell you that the limits of decency have already been reached. You may rest assured that we are responsible enough to close down the plant immediately if peoples' lives are in danger!

For this reason, we have examined the condition of our reactors very carefully. However, people only talk about a report drafted by an Austrian commission, and not about three other reports that arrived at different conclusions.

[Schwarz] There were objections that the reports by the Siemens and Westinghouse companies were influenced by the hope to win orders.

[Calfa] If this were the case, they would have been interested in finding severe defects to win bigger orders. I am asking myself a much more fundamental question: Why does Austria believe it is a model concerning nuclear issues? There is also a French, a German, and a Japanese model. Strangely enough, Austria thinks it is a model for Europe.

[Schwarz] How do you see the CSFR's future energy policy?

[Calfa] The CSFR will not renounce the use of nuclear energy. We must restrict the generation of electricity through the burning of brown coal. First of all, one can no longer speak of coal, but rather of a mixture of coal and dirt. Second, our mines are nearly empty. Third, open pit mining is a violation of the landscape that can no longer be tolerated. As a matter of fact, we are trying to operate our coal mines as ecologically as possible, but coal mining has no future.

[Schwarz] The CSFR is covering 27 percent of its demand with nuclear energy. What will the percentage be in the future?

[Calfa] We will complete the Temelin 1 and Temelin 2 plants as well as the Dukovany and Mohovice plants. We have not yet made a decision what we will do then. Basically, there are only two possibilities: Nuclear power plants or power plants operated with gas or mineral oil.

Protests Against Possible East Slovak Nuclear Plant

AU2301113591 Bratislava NARODNA OBRODA in Slovak 16 Jan 91 pp 1-2

[Jan Fuele, Gabriel Beer, and CTK report: "Kecerovce—Another Gabcikovo?"]

[Excerpts] Kosice—The Slovak prime minister, accompanied by Interior Minister Ladislav Pittner, flew to East Slovakia yesterday morning. They were welcomed in Kosice by Jan Kopnicky, the city's mayor. In the assembly hall of the former Regional National Committee building they met with civic representatives from Kosice and Presov and also with environmental conservationists, representatives of power industry employees, and staff from the new municipal representative bodies.

Banners, with inscriptions such as, Kecerovce—a new hell, borne by several citizens from Kosice who had gathered in front of the building, gave an indication as to what the meeting was about. So, will a nuclear power plant be constructed 11 kilometers from Kosice? According to Prime Minister Meciar, the government has to make a decision about this; however, nothing will be done without the knowledge of the citizens of East Slovakia. He revealed that at the end of the month a delegation will travel to the FRG where there are companies willing to construct a nuclear power plant in our country. We would probably pay them by supplying electricity. [passage omitted]

During the meeting, its participants were informed about a petition signed by approximately 38,000 citizens from Kosice and by 15,000 from Presov who disagree with the construction of a nuclear power plant in Kecerovce. Despite this, those present—at the suggestion of Prime Minister Meciar—decided that within 14 days the composition of civic commissions, which will cooperate with specialists on the energy industry and environmental protection, will be announced. These commissions will participate in drafting new studies. The government has taken on the burden of the possible financial losses which will accrue with the continuation of preparatory work at the nuclear power plant site and during the drafting of new expert analyses. [passage omitted]

At the end of the meeting, Prime Minister Meciar gave a briefing on the state's security and domestic political situation. He reacted to some of the efforts issuing from Prague—but supported by certain circles in East Slovakia—to divide the Slovak Republic into two union [spolkove] countries. He expressed his support for the preservation of a single Slovakia.

He spoke in great detail about the measures which the Slovak Government is taking in connection with the development of the domestic political situation in the USSR. He reported that our soldiers will be redeployed in certain areas following the departure of the Soviet Army.

When the meeting was over, Prime Minister Meciar went to inspect some of the military sites being taken into consideration. This part of his working visit to East Slovakia was undertaken—for understandable reasons—without the participation of journalists.

The Green Party and the Slovak Union of Nature and Environmental Conservationists organized a demonstration in Kosice today in protest against the construction of a nuclear power plant in Kecerovce in the Kosice environs. They demanded that preparatory work be suspended and that an alternative, ecologically sound plan for the development of the power industry in Slovakia be drafted. Those present also heard a report on the discussions between representatives of the City of Kosice and the Kosice District state administrations and Slovak Prime Minister Vladimir Meciar. He promised that the government will respect the people's wishes in this matter.

Radioactive Waste Found in Cesky Kras

91CH0217B Prague ZEMEDELSKE NOVINY in Czech 4 Dec 90 p 1

[Unattributed article: "Chernobyl in Cesky Kras"]

[Text] Recently the public has been upset by a television news report on the discovery of a radioactive waste dump in the Kozel Mine in Cesky Kras. We received more detailed information from Eng. Petr Privetivy, editor in chief of the monthly magazine NASE PRIRODA, who had written an article six years ago on this matter.

"In February 1984 two readers came to me in the editorial offices and told me that in a gallery of the Kozel Mine, also known as Alkazar, on the left bank of the Berounka River near Srbska, there was clearly an unprotected radioactive waste dump. They said that children play there with glass capsules, throwing them at each other or against the rock face. The single warning sign is an amateurishly painted yellow disk, the international symbol for radioactivity."

Petr Privetivy at this point went with his two informants to the place. They discovered that one gallery had been sealed off, but that the wall had a hole in it, a half meter wide. Let Eng. Privetivy continue:

"One of my new friends was a spelunker who managed to get through the hole. We gave him a camera with a flash and he made a couple of photos. He estimated that the gallery contained about 2,500 metal barrels with radioactive waste, along with pieces of glass apparatus, some sealed in vats by concrete, other pieces lying around in the open. Water naturally made its way into the gallery and many of the barrels were quite corroded."

Petr Privetivy of course informed professional institutes of the existence of this radioactive waste dump. At Povodi Vltavy no one knew anything, even though the Kozel Mine is in the mining area of the Berounka. This meant that the dump was established without the proper construction permits. The editor in chief of NASE PRIDODA received his first concrete answer from the Government Water Resource Management Inspectorate, which began to investigate his claim.

As a result it was learned that between 1959 and 1963 the gallery was used as a radioactive waste dump for the Rez Nuclear Research Institute and, partially, for Prague Leciva, with the permission of the hygienic station of the Central Bohemian District. This, however, conflicts with the findings of Eng. Petr Privetivy, who asserts that based on their labels some of the barrels were deposited in the gallery in the 1970's. Based on the conditions established by the hygienic inspectorate in 1965 all such dumps were to be inspected at least once a year, which clearly had not been done. Even after removing some of the waste to the Richard Mine near Litomerice, a majority of the waste was to be stored permanently at the Kozel Mine. This includes materials such as Cobalt 60, Strontium 90, and Cesium 137. Analyses indicated significant contamination of the soil near the entry to the shaft. The radioactivity of the minerals and water in the area was many times the permissible norm.

That the article could not be published at that time should come as no surprise. This means that the radioactive waste dump at Kozel continues to be a threat today. This is practically in the middle of the protected Cesky Kras area, in close proximity to local sources of potable water for visitors to recreational cottages, and right next to a water sports camp, which is part of the water sports training course along the Berounka. We will inform our readers of later developments in the situation surrounding this ecological bomb.

The Czechoslovak Press Agency [CTK] issued the following information yesterday concerning the events described in the article. All entrances to the radioactive waste dump in the Kozel Mine will be secured immediately. By 31 January 1991 the regional hygienist will submit a proposal for dealing with radioactive waste dumps. This decision was made in accordance with applicable laws yesterday by the chief hygienist of the Central Bohemian District.

According to Eng. Irena Malatova, from the Radiation Hygiene center of the Prague Institute of Hygiene and Epidemiology, the spelunker who was in the Kozel mine with his colleagues is in good health. Eng. Malatova confirmed some internal contamination with nuclides of Strontium 90, but the amount was about equal to one year of exposure of someone working with ionizing radiation.

HUNGARY

Environment Minister on Threat of Radioactive Waste Importation

AU3101143091 Budapest NEPSZABADSAG in Hungarian 26 Jan 91 pp 1, 5

[Interview with Sandor K. Keresztes, Hungarian minister for environmental issues, by Ferenc Hajba on 25 January; place not given: "Search for Radioactive Waste"—first three paragraphs are NEPSZABADSAG introduction]

[Text] Following in the footsteps of Vienna and Bratislava, on 25 January, Gyor was the meeting place for the building experts who are discussing various planning and development ideas concerning the Hungarian-Austrian-Czechoslovak border.

Sandor K. Keresztes spoke about the ecological duties involved in border cooperation. Commissioner Gyorgy Samsondi Kiss outlined the future profile of the area surrounding the Nagymaros water dam project, and Etele Barath, commissioner in charge of the planned Budapest-Vienna world exhibition, gave details of the philosophy behind Expo 1995.

Our correspondent in Gyor interviewed Sandor K. Keresztes during one of the breaks of the meeting.

[Hajba] According to the Austrian daily DIE PRESSE, a Hungarian enterprise has offered to take over 5,400 barrels of radioactive waste. How could the Environment Ministry give permission for this?

[Keresztes] In no way could it have given permission for this. I was also informed about this incident through press service reports on the DIE PRESSE article. On Thursday, 24 January, I asked Hungary's ambassador to Vienna to gather some official information from the Austrian Health Ministry, which was also mentioned in the DIE PRESSE article. For our part, we immediately began investigating which Hungarian enterprise DIE PRESSE could be referring to. So far, our investigations have been fruitless, and we have not received any official information from Vienna, either.

[Hajba] Could radioactive waste already have been transported into the country, behind the back of the Environment Ministry?

[Keresztes] This is impossible, both from a theoretical and a legal point of view.

[Hajba] From a practical point of view, illegally?

[Keresztes] I do not think so. Even if the signing of such a contract had escaped our attention, in accordance with international agreements, our customs officials would not have allowed dangerous waste material into Hungary.

[Hajba] Where could radioactive waste be stored in Hungary?

[Keresztes] There are temporary storage units in Paks and Borzsony for radioactive waste of small and medium activity. In connection with the closure of the Mecsek coal mine, we are looking for possibilities to store radioactive waste of a larger amount and greater activity. This investigation will also let us know whether Hungary is in a position to set up a new nuclear power station from an environmental point of view.

[Hajba] Unfortunately, Hungary also produces its own radioactive waste. Environmentalists in Ajka are demanding stricter measures than ever before to protect their town from the pollution of a nearby thermal power station. What is your opinion on that?

[Keresztes] It is true that the refuse from the power station is mostly radioactive. The amount of refuse produced by this power station does not constitute a danger in the short term. However, the modern storage of this refuse is actually an unsolved problem. In the near future, the Environment Ministry will deal with the safe storage of waste material from power stations.

[Hajba] According to MAGYAR HIRLAP, your ministry is not in the hands of experts—the daily bases itself on talks with the parliamentary faction of the Hungarian Democratic Forum. How do you reply to that statement?

[Keresztes] I am slowly getting used to the fact that every week, rumors spread about my dismissal. It is a well known fact that I have had disputes with certain representatives of the green movements in this country. The main reason behind these disputes is the fact that the Greens fail to recognize that our ministry cannot work with the same methods as movements, and that goals can only be reached on the basis of compromise.

[Hajba] Has anybody officially told you that your ministerial position is in danger?

[Keresztes] No.

Contamination at Borsod Chemical Combine Reported

91WN0132A Budapest OTLET in Hungarian 13 Sep 90 p 12

[Article by S. M.: "The Mercury Scandal Continues"]

[Text] These are the facts. According to official data the BVK [Borsod Chemical Combine] actually lost 70-80 tons of mercury per year, up to 1985. They then replaced

the flooring and since then "only" 40 tons have gone into the soil every year. Prior to 1978 a plant using an even less modern process worked at Barcika for 15 years which presumably put at least as much mercury into the soil. In the area under the old plant the contamination may already be close to the deep karst (at 130-140 meters).

The mercury bomb exploded on 22 August. The Miskolc organization of the Hungarian Green Party and the Green Steel environmental protection group reported that the Borsod Chemical Combine had committed significant environmental pollution with mercury at Kazincbarcika. But according to the MZP [Hungarian Green Party] the authorities did not deal with the matter in accordance with its importance so they turned to the public again. And since then about 120 kilograms of mercury have been going into the environment every day.

The story began in 1976. It was established then that in the past four years several tons of mercury and other heavy metals had gone into the Sajo river. But nothing was done in the matter. Then, in 1984, the authorities were asked at an environmental protection seminar whether it was true that 70-80 tons of mercury disappeared every year at the BVK. The authorities only laughed at this.

The environment protectors began to investigate. The Keviterv report prepared in 1987 disclosed serious facts at Kazincbarcika. In the wake of this those concerned about nature turned to the Central Popular Control Committee—without result. The Ministry of Environmental Protection investigated the complaint and refuted it in a report which said nothing. Then the mercury case was taken to the street for the first time. Three reports on the Window TV program dealt with pollution also.

Last year the BVK was finally obliged to prepare a study about the missing mercury. In the summer of this year the VITUKI [Scientific Research Institute for Water Management] informed the leaders of the plant about the result of the survey, and the essence of this also reached the environment protectors. It was established unambiguously that by far the greatest part of the missing mercury was in the area under the BVK. The study did not indicate the magnitude, depth or form of the contamination.

At some time the waste stack was built directly on the drinking water base, so the contaminating material seeped from the sump cassettes practically to the gravel terrace providing drinking water. In nearby Dusnokpuszta, for example, they found in a well mercury values 180 times the permitted value. Later they abolished the old sump area but even since then the wind has been merrily carrying the ash out into the world.

The leaders of the BVK argued that the marl layer was holding the mercury. But this is not true; in the case of mercury marl behaves entirely differently than it does when affected by water.

Concerning mercury and heavy metals it must be understood that they are eliminated from living organisms very slowly. When they get into the body of a higher organism they accumulate so that by the time it reaches a human being one is talking about a significant quantity. There are general symptoms of chronic poisoning but they are difficult to detect, and the process is irreversible.

It is not only the above mentioned ash which threatens the air in Kazincbarcika and environs. This is the only place in the world where they openly transport phosgene, which is used as a poison gas in wars. There are extraordinarily strict prescriptions as to what sort of pipes can be used to transport it. But they ship it by train between Kazincbarcika and the Sajobabonyi Chemical Works, which is more than irregular. The highway crosses the track twice and the danger of this need not be emphasized.

A gas called isocyanide caused the famous Bopal catastrophe. The BVK recently started to operate a section which produces isocyanide. It is a nice little point that the plant was built as its own investment so it was not obliged to prepare an impact study prior to construction—and the factory "naturally" did not spend anything on one.

Other environment polluting gases also reach the air from the stacks of the BVK. The result—a curious forest destruction. The damage, affecting an area of about 4,000 hectares, is decimating the trees primarily of the Bukk National Park. Nitrogen has accumulated in the soil, as a result the flora has been transformed into types which like nitrogen, and the trees are dying off. The luxuriant foliage covers the surface so there is no way for the young trees to develop.

Representatives of the Green Party said, concerning the payment of damages, that according to their calculations the fine which the BVK should have to pay would be 25 billion forints. Naturally this cannot be enforced, but there should be an accounting. It may represent a problem that because of the lack of precision in the formulation the authorities are citing a legal gap: Did a fact of environmental contamination actually occur? According to the greens the irresponsibility of the leaders of the BVK could not be shown better than by the fact that in the recent past one of the full waste storage tanks caught fire—allegedly it was no accident—and since they did nothing to put it out it burned for two weeks, releasing large quantities of contaminating material into the air.

The MZP is also recommending a solution. Within a short time the environment contaminating technology should be replaced by a membrane cell process. The BVK was not inclined to do this, saying that it was

expensive. At this time only 30 percent of the chlorine in the world is produced by this method; so it is true that it is not a cheap technology. But the fact that the country has no money cannot justify delay because if the harm to the environment continues it will not even have as much later.

One word is worth a thousand. Changing the technology of the chlorine plant must begin immediately, and the large quantity of mercury under the BVK must be exploited. All this will cost substantially more than the profit from getting out the mercury, but the loss can still be estimated now. And since environment contaminating processes are used in many places in this country still the greens consider such studies and changes important.

Although the matter has political aspects, the mercury scandal points far beyond skirmishes of this character.

ROMANIA

IAEA To Help Fight Pollution in Copsa Mica

AU2901195091 Bucharest ROMPRES in English 1907 GMT 29 Jan 91

[Text] Bucharest ROMPRES, 29/1/1991—In reply to the Romanian Government's request that Romania be included among the countries which are beneficiaries of and participants in the programme for the identification and control of operating risks and the impact on public health and environmental pollution by industrial plants in the fields of chemistry, petrochemistry, power engineering, etc., a delegation of experts from the International Atomic Energy Agency (IAEA), headed by Dr. Sam Haddars, programme director, visited Romania over January 23-26, 1991.

The delegation met Premier Petre Roman and Anton Vatasescu, minister of state for industry and trade, and had talks with representatives of the Environment Ministry, of the Ministry of Resources and Industry, of the Department for Chemical and Petrochemical Industry and of the autonomous enterprise "Renel." Furthermore, the IAEA experts visited several chemical and petrochemical plants and refineries.

Upon consultations with representatives of the Romanian side, the decision was reached that the IAEA experts together with a team of Romanian specialists draw up a study regarding the evaluation of operation risks and the impact on public health and environmental pollution and find practical solutions for an appropriate retechnologization of the chemical plant in Rimnicu Vilcea. The secretariat of the programme will be provided by the Ecology Department of the Ministry of Resources and Industry.

The preliminary guidelines of the study have already been laid out, establishing the main fields where assistance from international agencies is required. The results of the study could be extended to other industrial areas.

The parties also decided that in the coming period an international team of experts travel to Copsa Mica to give technical assistance to the governmental team in taking measures apt to bring pollution in the area down to acceptable levels.

REGIONAL AFFAIRS

ECLAC Ties Caribbean Environmental Woes to Economic Factors

FL3001173091 Bridgetown CANA in English 1326 GMT 30 Jan 91

[Text] Port of Spain, Trinidad, Jan 30, CANA—Pressure on the environment by agriculture, tourism, and mining in the Caribbean can limit future living standards, according to an official of the Economic Commission for Latin America and the Caribbean (ECLAC).

ECLAC's economic affairs officer, Erik Blommestein, said the Caribbean remains dependent on the exploitation of its natural resources in the agriculture, tourism, and mining industries. The region stands to lose much of its achievements of the past four decades through environmental degradation, and must adopt measures to maintain productivity of renewable resources, he said at a two-day workshop here on the environment and development.

He said the region faces problems such as decreasing soil fertility, soil erosion, deforestation, beach erosion, reduced fisheries yields, and pollution. "The continued existence of these factors casts serious doubts on the long-term capability of the region's resources to continue to serve as economic resource bases in the future," Blommestein said. But appropriate economic and social changes could achieve sustainable development at higher output and quality of life, he said. "To maintain the productivity of the renewable resources on which agriculture and tourism depend is therefore of crucial importance for the long-term future of Caribbean economies," he asserted.

Blommestein said one consequence of economic adjustment measures in several regional countries has been increased poverty and a resultant increase in pressure on the environment. Adjustment was accompanied by a sharp reversal of external resource inflows, from U.S. $1.1 billion in 1981, to a net outflow of U.S. $96 million in 1986, he said.

"As a consequence, production stagnated or contracted, while future growth has been jeopardized as investment has been deferred." The immediate impact of the adjustment has been increased unemployment and a fall in real incomes, to the point where: "it may be inferred that the people in much of the region are worse off than ten years ago", he said.

"Increased poverty has raised the pressure on the region's resources, resulting in accelerated environmental degradation," Blommestein reported.

BELIZE

Oil Spill Causing Serious Environmental Damage

FL0102230091 Bridgetown CANA in English 2200 GMT 1 Feb 91

[Text] Belize City, Feb 1, CANA—An oil spill from an overturned road tanker is causing serious environmental damage in an unspoilt part of Belize's highlands. The tanker overturned two weeks ago but no clean up effort seems to have begun.

According to a press release put out by the village council of St. Margaret's village, oil is flowing into a creek which people use for drinking and bathing. The village lies about 25 miles along the Belmopan to Dangriga Hummingbird Highway on the northern edge of the Maya Mountains. The road is notorious for its potholes and poor surface.

The press release from the village says that the Mexican owned tanker was transporting 43,000 litres of oil for Texaco's Belizean subsidiary. A spokesman for Texaco Belize said that they were now mounting a clean-up operation on behalf of the Mexican transporters and the Mexicans would pay the costs.

Oil is said to have reached as far as 12 miles down a river called Dry Creek and it is affecting the delicate nesting beaches of the iguana.

Augustine Palacio, who runs a mountain retreat on the highway, says his rental cabanas are empty and his business is being ruined. The release says that villagers are having to walk two miles to another creek everyday to collect water supplies.

The hickatee turtle, water dogs, and gibnut are also being threatened and the limestone rocks along the rivers edge are being soiled black.

Villagers from St. Margaret's met Thursday with officials from the Ministry of the Environment and it is understood a delegation was visiting the affected area Friday to see the damage first hand. Conservation and protection of the environment are key concerns of the Belizean Government. They see their largely unspoilt land as a major earner of tourist dollars.

A commission of inquiry is already underway following a chemical fire at a northern sugar factory last November. It is charged with determining the environmental impact of chemicals used in sugar processing which some say are polluting water supplies.

BOLIVIA

Paz Zamora Creates Secretariat General for Environment

PY1701030091 La Paz Radio Fides in Spanish 2300 GMT 16 Jan 91

[Summary] Presidency Minister Gustavo Fernandez has announced that, on orders from President Jaime Paz Zamora, a Secretariat General for the Environment has been created. The secretariat will be directly under the Presidency of the Republic and will be responsible for drafting sector policies.

BRAZIL

Amazonia Deforestation Declines 65 Percent

IBAMA President Comments

91WN0202A Brasilia CORREIO BRAZILIENSE in Portuguese 27 Dec 90 p 12

[Text] The deforestation carried out this year in the Legal Amazonia declined by 65 percent from the figure for last year; the clearing of land by burning declined by approximately 30 percent nationwide; and the area of compulsory environmental protection is expected to increase from the current 50 percent of private property in Amazonia to 80 percent by 1991. These numbers were cited by Tania Munhoz, president of IBAMA [Brazilian Institute of the Environment and Renewable Natural Resources], as significant advances made during 1990 in the environmental sector.

According to Munhoz, inspection of the areas that have been deforested as a result of tree cutting and the clearing of land by burning continues to be actively carried out, with the aim of containing the environmental degradation that has resulted from the deforestation of 400 million hectares in Brazil. The creation of more extractive reserves will also receive special attention in connection with the allocation of funds, with a view to applying a modern concept of the economic viability of the production derived from these reserves.

In 1990 IBAMA created a commission to study the concept—and consider the introduction—of an environmental quality control stamp, with the aim of enhancing the environmental awareness and knowledge of consumers to enable them to identify those products that are less harmful to the environment. Tania Munhoz says that adoption of such a "green stamp" will automatically provide encouragement and recognition for nonpolluting industries that use environmentally clean technologies.

Munhoz emphasizes that the existing environmental legislation—which is currently limited to directives and decrees originating with the four governmental organs that were instrumental in establishing the current environmental sector—will be unified. The inspection division will in this way have the 90 types of infractions consolidated in a single document.

Last August IBAMA began to treat chain saws as if they were weapons, by requiring their owners to register them and obtain a permit for their transportation and use. As of 1 December more than 400,000 chain saws had already been registered with the Institute nationwide.

In November the president of IBAMA presented to the UNESCO "Man and the Biosphere" Program in Paris a proposal for converting two areas of the Atlantic Forest into the nation's first biosphere reserves.

IBRD Invests $117 Million

91WN0202B Brasilia CORREIO BRAZILIENSE in Portuguese 27 Dec 90 p 12

[Text] According to IBAMA President Tania Munhoz, the signing of the $117 million agreement between IBAMA and the World Bank (IBRD) to fund the activities of the National Environmental Plan (PNMA) in the ecosystems of the Mato Grosso lowlands and the Atlantic Forest; the zoning of the coastal regions; and institutional development was one of the major advances achieved during 1990 in the area of environmental policy.

Munhoz emphasized that although three years were required to conclude the agreement, it will fund many activities over a three-year period. Under the terms of the agreement, Brazil will contribute $33 million in counterpart funds. On 5 December of this year the World Bank released the first installment of $10 million, and it remains for Brazil to deposit its share in order for the program to be initiated next January.

These World Bank funds were lent to Brazil at an interest rate of 7.5 percent per annum and will be repaid within five years. According to Munhoz, they represent approximately 20 to 30 percent of IBAMA's budget.

An important agreement was also signed with the German Government to provide 150 million marks for the preservation of tropical forests and the development of research. Tania Munhoz emphasized that although a number of foreign governmental missions—including delegations from Japan, Germany, the United States, and Finland—have paid official visits to IBAMA, the prospects for conclusion of any short-term agreements are virtually nonexistent. Munhoz insisted, however, that Brazil will be concentrating its attention on environmental matters, not only in connection with the Amazon Region but also because it is the site of the 1992 World Conference on the Environment and Development.

Another achievement with respect to finances was the accreditation of the AMBACE [Brazilian Association of Commercial and State Banks] System as the agency for the collection—throughout the national territory—of all

sums payable to IBAMA. By taking this action IBAMA will speed up the collection of fines, fees for permits, and registration fees.

States Committing Infractions

91WN0202C Brasilia CORREIO BRAZILIENSE in Portuguese 26 Dec 90 p 11

[Text] As in previous years, the most serious infractions—mainly cases of burning to clear land, deforestation, and the illegal transportation of timber—were recorded in the states of Rondonia, Mato Grosso, and Para. IBAMA President Tinha Munhoz points out that there has been a sharp decline in the number of permits issued for these purposes in the state of Para—only 120 in 1990 compared to 1,500 in 1989. Only in Rondonia was there an increase in permits for legal deforestation.

"We have begun hearings with a view to revising the agreement signed by IBAMA with the Rondonia Forestry Institute, which is responsible for authorizing this excessive deforestation," Munhoz announced.

The IBAMA president also disclosed that she had rejected the allegations made by the Taboca mining company (a subsidiary of the Paranapanema company) and the Gertau Lumber Company, which were fined 130 million cruzeiros and 107 million cruzeiros respectively for having caused environmental damage in the areas where they operate in Amazonas State. The two companies will accordingly have to pay the fines, although they can still appeal to the courts. "The role that Professor Lutzenberger played was to open the doors of the entire world for us," Tania Munhoz said admiringly, noting that the environmental question in Brazil has begun to be approached differently, thereby gaining credibility for the Brazilian Government in the eyes of Brazilian civilian society.

Changes

Another of IBAMA's goals in 1991, Tania Munhoz says, is to amend Article 15 of the Brazilian Forestry Code. This article permits the deforestation of 50 percent of private lands, thereby encouraging disordered and abusive deforestation, principally in the Amazon Region. "We are trying to restrict these instances of deforestation by permitting no more than 30 percent of the forested areas on these lands to be cut over," the IBAMA president insists.

Measures To Stem Amazon Deforestation Assessed

91WN0222A Sao Paulo VEJA in Portuguese 9 Jan 91 pp 44-45

[Text] The occupation of the tropical forests of the Amazon region gave the world many sleepless nights and left the impression that the burnings and deforestation in the region were too big and complex a problem for the Brazilians to handle by themselves. Last week, the most recent data transmitted from space by the NOAA-9 satellite, a U.S. electronic observatory that periodically photographs the region, showed that, contrary to what the international crusaders in the ecological battle expected, Brazilians are successfully dealing with the issue. NOAA-9 reported that 25 percent fewer fires occurred in the Amazon region during the July-September period last year than in the same period of 1989. Deforestation has also diminished. A set of 226 photos sent by another American satellite—Landsat—and being processed by INPE, the National Institute of Space Research in Sao Jose dos Campos in the interior of Sao Paulo State, produced additional, and highly encouraging, evidence. The pace of deforestation slowed by about 50 percent last year almost everywhere in the Amazon region.

"We still do not have precise figures," said Tania Munhoz, president of IBAMA—Brazilian Institute of the Environment and Renewable Natural Resources—the federal organ in charge of protecting the region. "But, according to the estimates, about 10,000 sq km of virgin forest was destroyed last year. In 1989, more than double that area—about 21,000 sq km—was destroyed." Because of its dimensions and repercussions, the destruction of the Amazon Region seemed to be an insoluble problem. The world scientific and political community went so far as to suggest, three years ago, that only an intensive international team effort could save the region from disaster. However, the facts presented last week demonstrate that, although it has not been solved, the efforts are at least well underway. Simple, but effective, measures are all that is needed.

Caught in the Act

One of those measures is Operation Amazonia, designed to combat the burnings using a logistical scheme that presupposes perfect coordination between IBAMA and INPE. The partnership has been a model of efficiency. Every day, INPE passes along images from the NOAA-9 satellite that show where fires are occurring. Using that data, IBAMA, aided by helicopters from the Brazilian Air Force and the Federal Police, takes immediate action against those responsible for deforestation and fires. Last year, IBAMA reached an agreement with the nine states that comprise the so-called "legal Amazonia," to gain the use of state police cars and personnel in monitoring the region. In exchange, it agreed to pass on to the states 70 percent of the proceeds of the fines levied against those who start fires, and others who engage in all kinds of other ecologically destructive activity. This tactic enabled IBAMA to put more than 1,000 men on the project, three times the number on its own permanent staff. The army of inspectors made it possible to put $9 million into the institute's coffers, 60 percent more than in the previous year.

In order to be able to find out about sites of illegal deforestation, IBAMA also set up a telephone "hot line" so that the public could call in, collect, to make anonymous reports. People could also complain by mail, with the institute paying the postage. That system led to some

remarkable operations. For example, the biggest "raid" in the history of the Amazon Region occurred last September. IBAMA was tipped off by an anonymous letter that 1,800 hectares of native forest were being cleared in Rondonia. The guilty party, rancher Joao Arantes Junior, had to pay the institute the equivalent of 2.5 million cruzeiros in today's money. The fine itself was also a record. Another simple and effective strategy adopted by the institute was to reduce the number of deforestation permits issued; the law authorizes these permits when someone can prove that trees must be cleared for a colonization project. In Para State alone, for example, the number of permits issued fell from 1,150 in 1989 to only 150 last year. With this sort of results, IBAMA may earn the right to be called one of the very few creatures of the Sarney administration that turned out well. "At the time, we were not receiving any significant international assistance, but even so, we accomplished our mission," said Fernando Cesar Mesquita, the "father" of IBAMA and its president during the Sarney government. Now Globo TV's advisor on ecology, Mesquita conceived the system of heavy fines and implacable inspectors which brought good results.

Brazil Nuts

Two circumstantial factors helped IBAMA last year to deal with the Amazon deforestation. The first of these was the retention of new cruzado deposits under the Collor Plan. "The shortage of money in the economy suppressed investments in general," said Philip Fearnside, an American ecologist who has settled in Brazil. "Lots of business projects involve deforestation." St. Peter provided the second helping hand. "We had quite a rainy winter, and a very mild summer, which was also rainy," says ecologist Camilo Viana of the Society for the Preservation of the Natural Resources of the Amazon Region. There is proof that the reduction in the number of fires is beginning to have concrete benefits. After five years in crisis, last year's Brazil nut crop was a record-high 38,000 tons, 35 percent more than in 1989. In the area known as "Poligono dos Castanhais," one of the zones most affected by fires in previous years, production jumped from 300 tons in 1989 to 10,000 tons last year. One of the explanations for the surge was precisely that—fewer fires. This makes sense. The smoke from the fires drives away the insect that is responsible for pollinating the Brazil-nut trees, so the trees do not produce. "This proves that, in the Amazon Region, the standing forest is more profitable than any other activity," argues Delio Mutran, president of the Association of Brazil Nut Exporters. "The thing is, although many say otherwise, the Amazon Region can be saved."

CUBA

Water Testing Laboratory Set Up With Swedish Aid

FL1901131391 Havana Tele Rebelde Network in Spanish 1200 GMT 19 Jan 91

[Text] A laboratory to test for environmental contaminants began operating [words indistinct] in Cienfuegos as part of the scientific and technical cooperation projects between Cuba and Sweden. The first Cuban project connected with the Swedish agency (Sarek) for the protection of water resources began in 1981, and the work was carried out in the southern basin of the Jatibonico River in southern Sancti Spiritus Province. The new laboratory has eight plastic pools in which the precise environment prevailing in the Bay of Cienfuegos can be created in order to study each of the substances poured into those waters, their effects on the marine species living there, and the right ways of eliminating their negative effects.

DOMINICAN REPUBLIC

Deforestation Drying Up Moca River

91WN0170A Santo Domingo EL SIGLO in Spanish 9 Nov 90 p 5-D

[Text] Moca—The indiscriminate felling of trees that is occurring in this municipality's wooded area has resulted in the virtual disappearance of the Moca River.

At a distance of about 15 km from the locality of Cabilma, until one reaches this town, there is appreciable deforestation or extraction of materials along its shores. This has caused the inflow of water to become almost nonexistent at a time when an acute water shortage is being experienced.

Similarly, the large volume of waste deposited by the sewerage systems into the small "brook" currently comprising the Moca River is a determining factor in making a "town dump" out of what in previous years had been a water supply source.

During the water crisis of the 1970's in the Juan Lopito district, located precisely at the bridge crossing the Moca River, equipment was installed to purify water extracted from its tributary. Today it is impossible to carry out this activity.

A few years ago a study was made, aimed at supplying Moca with potable water from an intake in the community of Villa Trina on the Jamao River, with positive results. Several years later, when it was brought up again for the purpose of making the project a reality, it was no longer practicable.

This situation stemmed from the felling of trees occurring in the municipal district of Jose Contreras (Villa Trina), where furniture manufacturers were using coffee trees, fruit trees, and other wood not suited for making furniture.

The results have shown that, at present, an avocado, orange, or other fruit is sold on the Moca market cheaper than in the countryside. On many occasions there is a situation whereby these products have to be transported from the urban to the rural areas, because they are by now nonexistent in many localities.

In an attempt to resolve the predicament, the Association for the Development of Espaillat Province devised a project to reforest the upper section of Espaillat and Salcedo Provinces.

After more than eight years of knocking on the doors of various state agencies, the project began to be implemented, but in less than two months' time it came to a standstill.

According to the technicians who prepared the project to preserve the area, which includes, among other areas, El Mogote peak, with the highest altitude in Espaillat Province, this constitutes an important step toward having rainfall on a national level, and not only in the region.

The authorities have refused to understand the situation, and the tree nurseries which are installed in the community of Los Aracenes (between Espaillat and Salcedo Provinces) expect to be responsible for the revival of the region's flora and fauna.

Similarly, the large number of official and private trucks hauling materials out of riparian areas and the Moca River bed, which passes through the community of San Victor, has made it possible for any child to cross the river's flow in the area without getting wet.

The Moca River is dying at a time when this town and those along its route are suffering a severe water supply crisis.

The river's shore currently serves as a habitat for goats, horses, and donkeys, among other animals trying to quench their thirst in the meager amount of water carried by its small channel.

NICARAGUA

National Parks To Be Created

91P40124A

[Editorial Report] The 22 December 1990 issue of the Managua Spanish-language newspaper LA PRENSA reports on page 18 that during the Puntarenas summit the presidents of Nicaragua and Costa Rica signed an agreement to establish national parks on both sides of the San Juan River to be used for scientific research and tourism. The project, called Si-a-paz [Integrated System of Protected Areas for Peace], includes on the Nicaraguan side the Solentiname Islands, the marsh area of Los Guatusos on the southern coast of Lake Nicaragua, the El Castillo Fort, the San Juan Delta, the historic port of San Juan del Norte, and the biological reserve between the Indio and Maiz Rivers. On the Costa Rican side it includes the Tortuguero National Park and the Barra del Colorado and Cano Negro Reserves.

Government Bans Tree Felling in Las Maderas

91P40124B

[Editorial Report] The 22 December 1990 issue of the Managua Spanish-language newspaper LA PRENSA reports on page 6 that Irena [Institute of National Resources] has prohibited wood cutting in Las Maderas, in the department of Managua, because the lack of trees is turning the area into a desert. Jose Ruben Rojas, chairman of the Las Maderas Community Council, stated that Irena is developing a reforestation project to fill the void left by the loss of jobs in an area where people earned their living as wood cutters. He explains that each household will be given ten trees to plant and cultivate. In the project's second stage the program will be extended to 35 nearby communities.

PANAMA

Vice President Urges Creditors To Consider Debt-for-Nature Swap

PA1801150391 Panama City LA ESTRELLA DE PANAMA in Spanish 15 Jan 91 pp A-1, A-10

[Text] "The exchange of debt for nature programs" is a possibility that must be considered by creditor countries to face the scourge of ecological problems in the 1990's, said Guillermo Ford, vice president and planning and political policy minister, speaking on behalf of President Guillermo Endara before representatives of countries and international organizations attending the International Donors' Roundtable of the Forest Action Plan of Panama.

Minister Ford pointed out that such study could open new possibilities for the efforts of Panama and 20 other Latin American and Caribbean countries to preserve national forest resources.

Ford said that one of the government's main goals is to attain accelerated, but sustainable development while maximizing the use of natural resources and at the same time maintaining and protecting our environment to ensure a dignified and decorous life for all Panamanians.

The International Donors' Roundtable, which is comprised of ecologists, investors, representatives of the EEC, the United States, The Netherlands, and Canada, among others, over the next four days will discuss 53 projects that are part of the forest action plan intended to protect and apply scientific management to wildlife and national parks, promote the integral management of hydrographic basins, rehabilitate eroded soil, and establish the concept of sustained production in forested areas.

Minister Ford, in his capacity as INRENARE [Institute of Renewable Natural Resources] president, pointed out that this effort is intended to obtain the technical and financial support of friendly countries and governments represented at this roundtable, but carrying it out is the responsibility of the government, the private sector, peasant and Indian associations, and non- governmental organizations.

It is important to underscore that implementing this plan over the short term is intended to create 7,300 new jobs, slow down the flight of foreign currency abroad, increase forest production and the revenue of more than 7,000 farmers, stabilize the rural population in the Azuero and Bayano regions, and reforest 50,000 hectares of unproductive land.

Vice President Ford recognized the important role played by the Indians in the efforts to preserve our "ecological wealth" and develop tropical forest resources. Others who made important statements at the inaugural meeting, besides Ford, included Dr. Josefina de Baquero, permanent representative of the UN Development Program; Dr. Carlos Marx, representative of the UN Food and Agriculture Organization; and INRENARE Director Dr. Stanley Heckadon. The prayer was led by Reverend Crestar Duran.

EGYPT

National Water Needs, Current Supply Assessed

91WN0143A Cairo AL-JUMHURIYAH in Arabic
22 Nov 90 p 4

[Article by Badawi Mahmud]

[Excerpts] Once again, the floods this year were less than average, urgently raising the issue of the shortage of Nile water, which represents the most serious challenge facing us in the coming years.

Reports by the Ministry of Public Works and Water Resources indicate that the amount of water reaching the High Dam this water year did not exceed 51.737 billion cubic meters, whereas last year it was 88.429 billion.

The seriousness of the dimensions of the situation is clear from a quick reading of our annual water needs:

Agriculture alone consumes about 49.7 billion, and 97 percent of farm land depends on Nile water for irrigation.

Farm land in Upper Egypt and the Delta is 100 percent dependent on Nile water. In other words, the Nile grows 6 million feddans and irrigates 88 percent of that area by flood irrigation; seven percent from drainage water whose ultimate source is Nile water; and five percent from underground water percolating from the Nile as well.

Thanks to the Nile, agriculture in Egypt has [one of] the highest rates of water consumption per feddan, with an irrigation rate of between 8-9 thousand cubic meters a year.

The river supplies about 3.3 billion cubic meters of drinking water per year.

Figures in the report of the services committee in the Consultative Assembly on environmental and development issues indicate that 90 percent of the fresh water used in the cities and most of the villages comes from the Nile.

Certain industries, such as spinning and weaving, sugar, oils, and soap, consume about 2.5 billion.

The sector involving shipping, electricity, and water level regulation for barrages set up along the course of the Nile takes about 3 billion.

In short, we need a minimum of about 60 billion cubic meters every year to meet vital needs, not to mention future considerations.

The Share and the Circumstances

It is known that Egypt's share of Nile water, according to ratified agreements with the Sudan and Ethiopia, which regulate its use, is 55.5 billion a year.

But the problem is that the supply of the Nile is not fixed, for it goes up in some years to more than 80 billion, as happened in 1975-76 and last year, and it might drop close to disaster levels, as happened in 1982-83, when its supply was about 40 billion. Were it not for the water stored in Lake Nasser behind the High Dam, and for the measures taken to reduce daily output, the country would be threatened with drought and famine.

In general the average annual supply during this century has not exceeded 84 billion [passage omitted].

This brings upon us the need to confront the problem, to eliminate the negative effects of the water shortage on agriculture, and to use it judiciously, especially since the efficiency of the use of our water resources does not exceed 50 percent.

Ever year about 14 billion cubic meters of Nile water used for agriculture are lost in the Mediterranean Sea, Qarun Lake, and the northern lakes as a result of agricultural drainage. In other words, almost 30 percent of the water used in agriculture is considered lost.

Moreover, the systems currently used in irrigation, such as flood irrigation, are responsible for the waste and loss of 42 percent of the water used in agriculture, and the average water consumption of a feddan in a year is still considered to be one of the highest rates of consumption in the world, for there are many states whose rate of consumption does not exceed 1,000 cubic meters a year per feddan.

About one and a half billion cubic meters are lost a year, either because of the age of the drinking water networks, or as a result of waste in water usage.

Aside from that, many efforts are being made to reduce the volume of lost water, including agricultural research which is being done on some crops to reduce their water requirements. In fact it has been discovered that the productivity of some crops went up by 50 percent after being deprived of water for a specific period of time, and consequently, the water withdrawn from behind the High Dam dropped from around 60 billion to almost 54 billion this year.

Also, water lost from the winter dam [al-saddah al-Shitawiyah], which is needed to allow for the movement of tourist boats, was saved, and the volume of lost water dropped from 4 billion to 1.5 billion, with an increase in the dam's period [of usage] from 21 to 25 days.

More importantly, there is a one to one ratio between drainage water for irrigation and water conveyed by canals built in newly-developed agricultural land. In order to irrigate [an additional] 150,000 feddans of agricultural land per year, with a single feddan requiring about 5,200 cubic meters, we need an additional 750 million meters a year.

In spite of all these efforts, the crisis is too deep and serious to be left to the efforts of the Ministry of Public Works alone, or to a group of ministries. The issue relates to the life of the individual Egyptian on the land of the Nile. The time has come for every one of us to participate in looking for appropriate solutions, so that judicious consumption of water, whether for agriculture or for drinking, will become a national duty and a national issue, and not just a problem of momentary concern.

UNEP Director Tolba Views Soviet Ecology Concerns

91WN0194A Moscow PRAVDA in Russian 26 Dec 90 Second Edition p 5

[Interview with UNEP Executive Director Mostafa Kamal Tolba by PRAVDA correspondent R. Fedorov: "All the Colors of Life"; date, place not specified]

[Text] **Mostafa Kamal Tolba is the executive director of the UN Environment Program, abbreviated UNEP. This organization, the central link of environmental protection work within the UN system, was created in 1972 to develop the foundation of the comprehensive scientific management of the biosphere's resources, to preserve it from destructive influences, and to disseminate ecological knowledge. Since 1976, the activity of UNEP has been headed by M. Tolba, a citizen of the Arab Republic of Egypt, a prominent scholar known for a number of works on plant diseases and the physiology of microorganisms who has continually shown an interest in ecological problems. At the invitation of the USSR MID [Ministry of Foreign Affairs], he was recently in our country for a regular visit.**

"As always with Soviet scientists, as well as with official figures, we conversed in the same language, finding complete mutual understanding," he said, sharing at a meeting with journalists his impressions of his conversations in the Soviet Union.

PRAVDA Correspondent R. Fedorov asked UNEP Executive Director M. Tolba to respond to certain questions on the current international cooperation in solving ecological problems.

[Fedorov] In your speech to journalists, you said that not one of the ecological problems in our country is unique. Apparently, contacts and efforts through UNEP can be all the more effective. The international project for the restoration of the Aral Sea is being implemented under its auspices; within the framework of this project an international group of experts conducted a field expedition in the Aral area last fall, and the international symposium: "The Aral Sea Crisis: the causes of its origin and paths to a solution" was held. Yet the Aral Sea is not our only hot spot. There is one no less painful—Chernobyl. There is the problem of Lake Baykal, the problem of the Black Sea, encompassing an enormous region and the vital interests not only of our country alone, but those of a number of other countries as well. What are the prospects for development of international joint action in solving these problems?

[Tolba] As far as Chernobyl is concerned, then perhaps here we should speak not of prospects, but of deeds accomplished. There has been created the International Committee for Chernobyl Issues, and, I think, the entire UN system is prepared to participate in attempting to render the appropriate assistance. Here the plans for further activity should be divided into short-term and long-term plans. Among the former, the main task remains the establishment of the maximum boundaries of the regions for occupation in those oblasts contiguous with the site of the accident; the maximum permissible levels of radiation under which the population could stay in place and continue agricultural activity should be determined.

Concerning Lake Baykal. I would like to note that the Baykal International Center for Ecological Research has already been created. We are now trying to determine what direct role UNEP could play in its activity. We have agreed that the appropriate Soviet organs will inform us of what they would like that role to be by the middle of next year.

By the very nature of its geography, the problems of the Black Sea are international. The preparation of the Convention for cooperation of the Black Sea countries resolving these problems is now drawing to a close. It is expected to be signed in early 1991. It will be supplemented by three protocols on cooperation. Immediately after the signing of these important documents, UNEP intends to get involved in implementing the plan of concrete actions for preserving the Black Sea.

[Fedorov] The first question concerned the ecological problems of the Soviet Union and UNEP's participation in solving them. Yet, first of all, these problems, as you have already noted, are not unique. Secondly, there are global problems. What contribution to the cause of preserving the environment of the entire planet could Soviet scientists make? In which fields of science and in which regions of the Earth can their knowledge and experience be used for the greatest return?

[Tolba] There are very, very many areas of science in whose development Soviet scientists can assist the international community. I can cite the following off the top of my head: atmospheric research, problems of climatic change, global warming, the depletion of the atmosphere's ozone layer, work in protecting the ocean. There is the problem of defining the interconnections existing between the atmosphere and the Earth; you have first-rate scientists in this area. Another problem is the preservation of the planet's biological diversity. I met with State Environmental Protection Committee Chairman N.N. Vorontsov, a scientist himself, and I was convinced that he will lend great support to work in this area.

Additionally, I would like to cite the global problem of desertification. Your scientists are not merely making a scientific contribution in this area. Over the course of many years, they have lent invaluable assistance in training specialists from developing countries.

And more. I met with Academician N.P. Laverov, deputy chairman of the USSR Council of Ministers and chairman of the State Committee for Science and Technology. We discussed issues such as the creation of ecologically safe technologies, new ecological types of

transportation, new materials, and the search for ecologically clean types of energy. In all this, the participation of Soviet scientists and their aid to the world community may be quite ponderable.

[Fedorov] In general, the planet's ecological problems are known; solving them requires both deep study and effective, ceaseless efforts taken on its basis. Yet there exist and may appear regions of ecological disasters of a catastrophic nature, in which immediate reaction is needed. In the UN General Assembly in December 1988, M.S. Gorbachev proposed the creation of a center for emergency ecological aid under the UN. What is being done to realize this proposal?

[Tolba] In 1989, the UNEP Board of Directors asked me to learn the opinions of the governments and organizations of the UN system regarding the idea of such a center. We were convinced that the proposal is very widely supported. Nevertheless, a fairly large number of differing opinions are being expressed as to how this center should be created, what its activity must be. There is a need to recall that there is also a Regional European Center for Emergency Ecological Aid being created at the initiative of the Soviet Union. Here we are also taking part in that. We hope that in the near future concrete plans for the creation and functioning of these centers will be developed, with consideration for what Soviet President M.S. Gorbachev has proposed. I intend to present these plans at the upcoming session of the UNEP Board of Directors in May 1991.

[Fedorov] An event important to the fate of the planet is not so far off: The convocation of the UN Conference on the Environment and Development is planned for May 1992 in Brazil. In particular, proposed for the conference is the adoption of an international convention on the preservation of biological diversity in nature—all the currently existing species of living organisms. What is UNEP's role in preparing for it and what principles must be laid in the foundation of such a draft law? After all, if you look through the pessimist's eyes, there is no room for wild animals—the world's population is growing, demanding ever greater areas for agricultural land, cities, industrial hubs, and transport communications.

[Tolba] A great deal has been done within the framework of UNEP in the process of preparing for the most important 1992 conference. In particular, as early as February 1991 we plan to begin negotiations on the defense of biological diversity. We hope that there will be prepared by June 1992 a quite well-grounded document that will permit governments to agree to the list of measures mandatory for all to preserve the diversity of the living inhabitants of the planet, and ensure the allocation of the financial resources necessary for this.

Now concerning the actual problem of protecting all biological resources. Is it possible to preserve the biological diversity of the Earth? I consider this a problem that can be solved. Of course, it is hardly expedient to speak of protecting all regions with genetic resources or of the universal preservation of all living species. I think that it is important to set aside and protect a sufficient quantity of areas of the planet in which dwell the maximum number of diverse species, in which the planet's genetic resources are represented as richly as possible. Having solved that problem, we will manage to preserve the living polychromatic nature of the Earth.

Plan for State Environmental Protection Funding Proposed

91WN0194B Moscow IZVESTIYA in Russian 9 Jan 91 Union Edition p 2

[Article by Professor K. Gofman, department head, Central Economic-Mathematics Institute, USSR Academy of Sciences: "Where To Get the Billions To Save Nature"]

[Text] It is no longer a secret that the ecological situation in our country is significantly worse than that in countries with a developed market economy—with lower per capita volumes of useful production and per hectare of economically assimilated territory. The market mechanism of price formation is incompatible with the artificial "cheapness" of natural resources. But according to the "laws" of administrative price formation, the price of ten pairs of panty hose is about the same price of a metric ton of the raw petroleum material of which they are made. Quite different proportions are characteristic of a market economy.

Does this mean that the transition to a market will ensure the solution of our ecological problems in and of itself? Of course not.

What must we do in order to achieve ecological recovery even during the transition to a market economy?

First of all, the time has come to reject utopian, hence dangerous, methods of assessing ecological safety. We have just single sanitary-hygienic norms for the entire country, supposedly guaranteeing the safety of the environment for people. Practically nowhere are these norms being met completely. However, in some cases, we may speak of levels exceeding norms two-three-fold, and in other cases, tens- to hundred-fold. We will be realists; a simultaneous and immediate ecological recovery for the entire country is impossible, and a gradation of levels of ecological danger throughout the territory of the country is needed, beginning with conditions absolutely impermissible even today (ecological disaster zones). Single minimum ecological safety standards must be established and guaranteed on an all-union level, becoming more stringent with time. Each republic must set for itself even stricter standards than the all-union ones, but their oversight must be provided by the republics' own resources, with complete compensation for possible economic losses in other republics (for example, in the event of cessation of inter-republic deliveries in light of shutting down ecologically harmful enterprises).

The transition to a market will include a wide-scale diversion of economic resources to the use to production lines working directly for man. Yet somehow the manufacture of environment-conserving equipment, materials, reagents and means of controlling the environment and ecological services of construction do not fall into the spectrum of such production lines, ranging from agriculture to consumer electronics. But surely it is the lack of such equipment today that limits ecological recovery.

If, during the transition to a market, the designated allocation of resources for environmental protection needs is not ensured (tripled in the next two-three years, as a minimum), all other stipulated measures of social defense (in the area of the subsistence minimum, guaranteed employment, etc.) will prove fruitless. A reminder that according to the data from a sociological opinion poll of the RSFSR urban population in 1989, 52 percent of those polled gave priority to ecological problems, 42 percent to the housing problem, and 38 percent to the quality of medical services. Only the shortages of consumer goods and the growth of prices worry people more than ecological problems.

Our country's existing system of state control and standardization of the state of the environment has not justified itself, despite the attempts to reorganize it over many years. And here it is not only a matter so much of poor technological provision, and duplicating the functions of various departments, which is usually stressed. The lessons of Chernobyl, and not it alone, indicate that state control over economic activity cannot be objective (and accordingly, effective) when this activity is itself monopolized by the state. And here our system of state ecological control gets a truly unique chance for self-rehabilitation, on the basis of the denationalization of economic activity. Yet in our opinion, it is necessary even today to implement a range of measures to strengthen the social status and independence of workers in ecological control, standardization, and examination. Among these measures is increasing payment for their work to the level of the leading personnel of the military industrial complex and state security.

In accordance with a decision by the USSR Council of Ministers State Commission for Economic Reform, in 1990 an economic experiment of introducing a system of payment by enterprises for polluting the air, water, and stored wastes was conducted in 49 regions (cities, oblasts, and autonomous republics). The purpose of this system, developed by the USSR State Committee for Environmental Protection and the USSR Academy of Sciences in conjunction with a number of other departments, is to ensure enterprises' economic interest in environmental protection activity and to regulate the sources of its financing.

Payments for polluting the environment are one form of recompense for enterprises' utilization of inherently limited natural resources. Other forms of payment are envisioned as well, for land, its mineral wealth, water, etc. However, according to the Law on Taxes, these forms of compensation must be included in the cost price of production, while payment for pollution is taken from the enterprises' profit. This is hardly a inoffensive distinction for environmental protection. The revenues from payments calculated as cost price do not depend upon the enterprise's profitability. State budget organizations will be maintained on these revenues—geological exploration, land reclamation, and the suchlike. Approximately R6 billion annually is planned for collection in the form of payments for the needs of geological exploration, twice as much as during the "pre-reform" time. How can the temptation to explore deposits that the economy will need in the middle of the next century be avoided here?

The matter of forming the financial resources for environmental protection will be completely the opposite. According to the Law on Taxes, the resources will be limited by the size of the enterprises' profit, the maximum amount of the tax deduction from this profit. Thus, already programmed into the law is a deficit of centralized financial resources for the purposes of ecological recovery, as well as insurance against ecological accidents. Nor is reserving these resources at the enterprise level stipulated. As a result, the rights and responsibilities of the republics and regions for the ecological situation remain unsupported by funding.

The authors of the new tax system were also stingy with creating financial advantages for environmental protection activity. Instead of the complete exemption from taxation for profits used by enterprises for environmental protection needs, only a 30 percent reduction is stipulated. Advantageous taxation of profit from the utilization of production wastes is for some reason permitted only for consumer cooperative enterprises. They say that broader-scale tax advantages for environmental protection activity will break the bank. But after all, concurrent with such advantages is also proposed the imposition of an ecological tax within the cost of ecologically harmful products (for example, highly toxic pesticides, agricultural equipment that destroys the soil) and products made with ecologically harmful technology (open-hearth steel). The imposition of such a tax would promote the exclusion from the market of ecologically harmful goods and simultaneously compensate the budgetary losses from the tax advantages for environmental protection activity.

As global experience indicates, the tax system combined with strict penalty sanctions for violating environmental protection norms is capable of providing a powerful stimulus for the formation of a market of environmental services, from the market for environmental protection equipment to a market for quotas (limits) for polluting the natural environment. The latter form of market of environmental services is just getting started in the world practice of ecological-economic regulation, and seems extremely promising for reducing public expenditures for ecological recovery. Recently 11 American scientists, winners of the Nobel Prize for economics, appealled to

the U.S. Congress to support the Government's plan to establish this form of market for ecological services.

And seen in the long term are the formation of international markets of ecological services, the creation of international ecological banks and insurance institutions, and the coordination of national systems of ecological taxation.

We can and must become active participants in the formation of an economic basis for international ecological safety.

Ukraine Determines Compensation Procedures for Chernobyl

LD2401094591 Moscow TASS International Service in Russian 1800 GMT 23 Jan 91

[By UKRINFORM-TASS correspondent Aleksey Petrunya]

[Text] Kiev, 23 Jan (TASS)—A concept for living on territory on which radioactive contamination is higher than average due to the accident at the Chernobyl Nuclear Electric Power Station was adopted at the joint sitting of the Commission on Issues of the Chernobyl Catastrophe of the Ukrainian Supreme Soviet, the Presidium of the National Academy of Science, and the collegium of the republic's Ministry of Health.

It was noted that 1.5 million people live on territory within the republic which was subjected to a degree radiation contamination.

The concept is based on principles adopted by the world community concerning the protection of people against radiation. It says that a person who lives on contaminated territory or has been living there for not less than a fixed period of time has a right to claim compensation for the damage caused in the form of a medical system and a system for social protection determined by legislation, and in the form of benefits and guarantees. The document also contains the clear-cut renunciation of the so called 35 REM concept which has been criticized over the years and which determines the total irradiation limit for living in the contaminated area. Nowadays this limit is equal to 0.1 REM per year.

Social, Ecological Newspaper on Chernobyl Issues To Be Published

LD2201181191 Moscow Domestic Service in Russian 1630 GMT 22 Jan 91

[Text] The first appearance of the NABAT [Alarm bell] interrepubican socio-ecological newspaper is being prepared. The Belorussian Chernobyl Socio-Ecological Union, the Gomel Oblast Executive Committee, the Japanese-Belorussian Chernobyl-Hiroshima Society, and a number of public organizations of the Ukraine and Russia have become its co-founders. The new weekly will report on the everyday work to overcome the consequences of the Chernobyl Nuclear Electric Power Station accident, issues of cultural and economic activities in the disaster zone, and questions of the resettlement of and social protection for the victims. There are plans to publish NABAT in English as well.

'Unique' Chernobyl Sightseeing Tours Planned

LD0202211591 Moscow TASS in English 2044 GMT 2 Feb 91

[Text] Moscow February 2 TASS—The tourist and excursion association Kievturist intends to open a new tourist route—to the contaminated areas of the Ukraine.

The route is really unique, KOMSOMOLSKAYA PRAVDA wrote today. It includes the dead city of Chernobyl, the village of Kopachi with a radioactive waste burial, a construction site of the former third stage of the Chernobyl Nuclear Power Plant with a panorama of the power plant, the sarcophagus and Slavutich, a town for power engineering workers where, according to a local saying, "life is good, but too short". Thorough dosimetric control is envisaged before and after the trip. If necessary, a tourist will be sent to a radiological centre without additional payment. Daily trips that cost not very much—only 25 rubles per person, have already been tested by guides.

According to the newspaper, it is probably an original way to observe the fifth anniversary of the Chernobyl accident that falls due on April 26.

'Radioactive Cloud' Reported in Ukraine

LD0202180191 Berlin ADN in German 1655 GMT 2 Feb 91

[Text] Moscow (ADN)—In the Ukrainian area of the Carpathian mountains, a considerable increase in the radioactivity in the air and a passage of short-lived isotopes four meters above the ground was registered today, the independent Moscow news agency INTERFAX reported. The origins of the radioactive cloud are unknown. The local authorities responsible have called in scientists to investigate the situation.

Cabinet Resolution on Nuclear Plants Issued

PM2901132591 Moscow PRAVDA in Russian 26 Jan 91 Second Edition p 2

[Unattributed report under the rubric "Official": "In the USSR Cabinet of Ministers"]

[Text] The USSR Cabinet of Ministers has adopted a resolution on measures to enhance the interest of local organs and the population in the siting of nuclear power projects on their territory.

The USSR Ministry of Atomic Power Engineering and Industry is entrusted, effective 1991, with including in the cost of constructing new AES's [nuclear power stations] and enlarging existing ones up to 10 percent of the capital investments allocated to this for the construction

of projects in the social sphere inside 30km zones around AES's (according to the lists, volumes, and times agreed with the corresponding local soviets).

Plans for the construction of new AES's and the enlargement of existing ones must provide for the construction of individual farmstead-type dwelling houses with heating, a central water supply, and sewer system for their workers in population centers located around AES's. Up to 10 percent of the funds earmarked for civilian housing construction are allocated for these purposes. Up to 20 percent of such houses will be transferred to local soviets.

It is also planned to include in the plans the construction of health camps for schoolchildren and preschoolchildren, based on providing all children living in a 10km zone around an AES with passes, and to set up diagnostic centers attached to medical treatment establishments in AES settlements, where citizens living within the 30km zone of AES's will be screened on referral by rayon health care departments in addition to the workers of these stations.

It has been decided, effective 1 January 1991, to grant the population living in 30km zones around existing AES's a 50-percent discount on the set charge for using electricity for domestic needs (except rural consumers).

The USSR Ministry of Finance together with the USSR Ministry of Atomic Power Engineering and Industry is entrusted with drawing up proposals in the first half of 1991 for introducing compulsory state insurance covering the person and the movable and immovable property of citizens living around existing AES's against the risk of the effects of radiation, with compensation for those who have suffered possible harm occasioned by such effects.

For the purpose of funding the work to be done in regions where existing nuclear power generation projects are sited on constructing and modernizing health care, cultural, and public education projects and public consumer service and municipal service enterprises, as well as developing the material and technical base for the production of consumer goods during 1991-1995, the profit tax liable to be entered in the union budget is reduced by up to 30 percent for AES's.

The governments of union republics which are divided into oblasts are recommended to leave at the disposal of kray and oblast soviets most of the tax on the operating profits of AES's located on their territory that is liable to be entered in the republic budget.

The USSR Ministry of Atomic Power Engineering and Industry has been charged with setting up automated information centers in all population centers located in the 30km zones around existing AES's and other nuclear power generation projects during 1991-1995, so as to keep the population constantly informed about the radiation situation, and providing local sanitation services and the inhabitants of such zones with dosimetric and radiometric apparatus to monitor the radiation situation and the radioactive contamination of agricultural produce, as well as ensuring technical servicing and checking of this apparatus.

Civilian Inspectors Oversee Some Defense Plants

PM3101133191 Moscow IZVESTIYA in Russian 28 Jan 91 Union Edition p 6

[V. Reshetnikov article under the "Details for IZVESTIYA" rubric: "Are Catastrophes Really Necessary?"]

[Text] The USSR Ministry of the Defense Industry has placed 27 explosives-producing enterprises under civilian control.

It took a series of accidents and dozens of deaths before the civilian inspector was finally able to set foot inside these top-secret installations. The tragedy in Gorlovka, when some miners came across a defense plant's chemical waste tank, is a quite typical example. One side did not know that the tank was there, the other side did not know that the miners were there. This would be a completely unacceptable occurrence with properly organized supervision when the numerous aspects of it are merged into an integrated system.

In conversation with your correspondent, workers of the State Committee for Supervision of Safe Working Practices in Industry [Gospromatomnadzor] and the Atomic Power Industry gave their impressions of the technical condition of the closed production unit in Gorlovka—the cause of the tragedy. The departmental chaos was glaringly obvious.

Specialists explain the situation in these terms: All the resources allocated to defense plants are being used to improve the end product. There is a shortage of money for ensuring production safety. The enterprises have inspectors of their own but they are subordinate to the administration and, of course, do not have the power to change anything.

Now the Gospromatomnadzor is introducing its own very rigorous production safety regulations at enterprises under its control. The administration must now develop new technology, introduce new equipment, and retrain its workers. Where the plants are to find the money for all this is a problem for the sector. The administration must provide "compensation measures" for the transitional period to ensure that production is not halted, that is, they must use every means to ensure maximum safety. If the measures are approved by the state inspectors, the Gospromatomnadzor and the Defense Ministry bear the responsibility for ensuring the accident-free running of the site.

The Gospromatomnadzor is establishing its own supervision at the 27 defense complex installations, which are mainly general chemical installations. But how many installations remain under departmental supervision?

Six people died in an accident in Ust-Kamenogorsk at an enterprise belonging to the Ministry of Atomic Power Engineering and Industry (formerly the Ministry of Medium Machine Building). Now this department and the Ministry of General Machine Building are expressing a readiness to place part of their "chemical facilities" under civilian supervision. But which part? All our nuclear stations are under state supervision and the "closed" enterprises in the so-called "external [vneshnyy] fuel cycle" which manufacture and reprocess nuclear fuel are still under departmental supervision. However, their operation involves no less risk than operating a nuclear power station. The state inspectorate today has no idea how many military installations there are in the country and what production safety is like there. It will probably take more catastrophes for us to find out...

Deputy on Safety of Reactor at Moscow Nuclear Energy Institute

91WN0197A Moscow MOSKOVSKAYA PRAVDA in Russian 20 Nov 90 p 3

[Interview with Doctor of Physical-Mathematical Sciences Andrey Yuryevich Gagarinskiy, deputy director of the Atomic Energy Institute imeni I.V. Kurchatov, conducted by P. Kiselev: "Red Signs Against a Yellow Background"; date and place of interview not given]

[Text] **The explosion of public indignation caused by the accident at Chernobyl turned nuclear-industry personnel from national heroes into practically the enemies of humanity. Among other questions, the question of nuclear reactors in the capital was urgently raised. MOSKOVSKAYA PRAVDA has addressed the topic twice recently ("Should There Be Nuclear Reactors in Moscow," 12/7/90, and "Calm Amid the Storm," 9/9/90). The Atomic Energy Institute imeni I.V. Kurchatov and its symbol, red signs against a yellow background, which warn of the presence of a reactor, have found themselves the target of criticism.**

Notwithstanding all today's mistrust in the arguments of an interested party, we believe that a view from inside, the position of the people working at the institute, will still be interesting to our readers. With this in mind the editors turned to Doctor of Physical-Mathematical Sciences A.Yu. Gagarinskiy, the institute's deputy director. We offer our interview with him.

[Kiselev] Andrey Yuryevich, first of all we should probably give our readers at least a general picture of the institute, which was at one time established to develop Soviet nuclear weapons and presently occupies 90 hectares of land in Moscow.

[Gagarinskiy] When I.V. Kurchatov was trying to choose a spot for a supersecret scientific laboratory, which subsequently received the modest code name MILAS (Measuring Instruments Laboratory of the Academy of Sciences), Oktyabrskoye Field was on the remote outskirts of Moscow; it had previously been an artillery firing range. On a deserted bank of the Moscow River, plots of ground for planting potatoes were carved out for the laboratory staff members, who were not overly well fed. The problem of the public attitude toward that institution simply did not exist at that time. And in December 1946 who besides a relatively small group of scientists and several other people in the country could have known that the world's second "atomic boiler" (the first was assembled under the stands of Chicago Stadium in 1942) had started operating on the previously vacant land?!

Not until the time of the Khrushchev thaw did the public first learn about MILAS's offspring, the Atomic Energy Institute (AEI).

Today this center is known to physicists the world over, and not only, or even primarily, for its work in the field of the utilization of energy from the fission of heavy nuclei. The eminent scientists I.V. Kurchatov, A.P. Aleksandrov, L.A. Artsimovich, I.K. Kikoin and the institute's other founding fathers strove to create a center of modern physics by uniting three general areas in it: the fundamental properties of matter, fission energy, and controlled thermonuclear synthesis.

Work of a medical nature occupies an important place among the institute's topics. The institute cyclotron, which was built in 1947 under a program for the development of atomic weapons, has assumed the most peaceful occupation today. Radioactive nuclides for Moscow clinics are produced on it. In 1984 we produced the first lot of thallium-201 on it. This preparation is truly invaluable; after all, it has given physicians the capability of making diagnoses with hitherto unheard of precision. It is urgently needed by patients suffering from cardiac ischemia and myocardial infarctions.

In order to diagnose diseases of the thyroid gland, liver, kidneys, heart and other organs, the production of iodine-123 was recently begun on the cyclotron. The radiation dosage on the organism from its use is one-hundredth the dosage from the iodine-131 that is used today. One of the most important areas in nuclear medicine is positron-emission tomography, or PET for short, which is based on the use of ultra-short- lived radionuclides. They are capable of being incorporated in all organic molecules without changing their chemical and functional properties. PET has been used abroad to obtain unique diagnostic information, and methods employing it have been developed for the treatment of schizophrenia, dementia, epilepsy, Parkinson's disease and other ailments previously considered incurable.

At present there are several dozens of successfully operating PET centers in the world. As far as I know, there is not yet one in the USSR. Our institute is presently working intensively on the development of such a center, which would incorporate a small-scale cyclotron, automated radiochemical collectors, and a positron-emission

tomographic device. The center is slated to begin operating in 1992, if, of course, the public will allow us to do so.

[Kiselev] Indeed, it is impossible to imagine modern medicine without radiochemical devices for diagnosis and treatment, but the Atomic Energy Institute is not a clinic, and its reactors are not x-ray units. And from that standpoint the demands that are being heard to close down the institute as a potentially dangerous facility are perfectly understandable.

[Gagarinskiy] Life is arranged in such a way that there is a price for everything. Just what the price is for the benefits of scientific and technological progress is another matter. A large amount of scientific knowledge is being obtained by a large collective of people using extremely costly experimental facilities. The people has invested billions of rubles in them and, of course, has the right to demand that this national property produce full-fledged scientific and technological "revenues." But that right should not enter into conflict with the right to safety of the residents of the town surrounding the institute.

Let me try, "going beyond the wall," to provide that sort of assessment of the Atomic Energy Institute.

It must be said that the forefront of science today demands extreme values for the physical parameters of experimental facilities. Temperatures close to absolute zero and in the millions of degrees, electrical currents of hundreds of millions of amps, superpowerful magnetic fields, vacuums comparable to that in outer space. Unquestionably, all that creates an additional risk. But only for those—and this must be taken into account—who have decided to work at such facilities. However, our institute has units whose designers have managed to create flows of many billions of neutrons within a relatively small, enclosed volume. Those are nuclear reactors. In them sources of radioactive radiation are also created, of the danger of which the Moscow press so persistently reminds us.

[Kiselev] And what is the physicists' own attitude toward that problem?

[Gagarinskiy] Only a few of them dismiss the "latest intrigues of the Greens" out of hand. Most of them take a normal critical view of the work of their own hands. And since those times when the results of safety calculations sat idly on shelves bearing a "secret" classification, as the reactors have become surrounded by the city, increasingly strict analyses have been made of whether there is any measurable danger to the nearby population from the research reactors. It must be said right off that for most of the institute's small reactors a strict and unequivocal answer has been obtained: they represent no danger. Nothing happening to them will in any way change the ambient radiation "beyond the wall."

[Kiselev] All that is true for the "small fry." But what is the story as to the large (albeit one-hundredth the power of an ordinary power-generating reactor) MR [?small reactor] unit? Muscovites would like to have a 100-percent guarantee of its safety.

[Gagarinskiy] It is true that the power of the MR reactor reaches 40 megawatts, and that a fairly substantial amount of long-lived radionuclides is formed during its operation. But under any conceivable situation, radioactivity cannot go beyond the bounds of the reactor premises.

An analysis has also been made of the "inconceivable" situations wherein that radioactivity might leave the nine-meter underground canyon made of thick concrete and stainless steel. The results obtained in the course of these studies arouse no fears. Nonetheless, no matter how improbable might seem the set of events that must occur simultaneously to make it necessary, on account of an increase in ambient radiation, to disturb the inhabitants of our neighboring buildings (and that set includes such inherently unpleasant phenomena as the explosion of a large land mine or an earthquake practically the size of the Armenian one), that probability is still not equal to zero.

[Kiselev] That means that the problem of a large reactor in a big city does objectively exist. And it is practically impossible to persuade Muscovites of the need for its operation. Everyone is interested in the question—when?

[Gagarinskiy] At first glance, it might seem that there is a simple course that has been tested repeatedly in our country: close it promptly! And the fact that in our "green drabness" we have left ourselves without medicines and come to the verge of an energy crisis, is hardly an argument in this case. Let me try to answer the question on the basis of the official recommendations of independent monitoring agencies.

For six months an authoritative commission of experts of the State Industrial Atomic Energy Inspectorate, reinforced with specialists from the USSR Ministry of Health and the International Atomic Energy Agency, worked at the Atomic Energy Institute. On the basis of the results of the commission's work, an expert finding was prepared, the eighth point of which states, in part: "Despite the fact that a normal radiation situation is achieved in the operation of the MR reactor, the commission, taking the reactor's considerable power into account, has proposed that specific dates be set for the removal of that reactor from Moscow."

Specialists understand that the immediate closing of the institute's research reactors would do substantial damage to the safety of operating nuclear power stations and result in a considerable lag in the development of new-generation power-engineering reactors, and in the slowing of scientific and technological progress in nuclear physics and technology, and that that would entail substantial economic and environmental losses. And how, say, can one compensate for the increased risk

to existing nuclear power engineering from terminating research that is extremely essential to it?

If we do not want to repeat the mistake of our fathers, who left us without computer technology, and deprive our children and grandchildren of an inexpensive and dependable source of energy, where can research be carried out in order to develop safe reactors of the future? Where are we to get isotopes for treating tens of thousands of patients in Moscow clinics? And finally, what is to be done with the reactor's radioactive structurals, which it would be dangerous to leave on the site? After all, a radioactive "legacy" was already buried in the Kurchatov Institute's ground during remote postwar years, and the safety of that buried waste requires serious and constant work.

But the main thing is that a reactor is not an electric range, and it cannot be turned off by pulling a plug. Taking one out of service is a complex problem, the solution of which requires time and considerable financial, material and human resources.

It is not easy to develop a rational program of action amid these numerous, contradictory factors. But the Kurchatov Institute's rich life experience suggests an optimal line of action—the establishment, as physical science develops, of new research centers. That is what previously led to the establishment of the Combined Institute of Nuclear Research in Dubna, the Institute of Nuclear Reactors in Dmitrovograd, the Scientific Research and Technology Institute in Leningrad Oblast, the Nuclear Physics Institute in Novosibirsk, and a number of others. That same course must be followed for the creation of a new base of research reactors.

Nonetheless, specialists at the Atomic Energy Institute have developed and turned over to the Moscow City Soviet a program for taking the reactors out of operation; that program indicates specific dates:

the Gamma reactor—1993;

the MR reactor—1996;

the IR-8 reactor—1999.

[Kiselev] And what accounts for precisely those dates?

[Gagarinskiy] Primarily the fact that under no pretext must major power engineering be left without an experimental base. And until research reactors are built outside of Moscow, there can be no talk of taking ours out of service. After all, I repeat, a broad program of research is being carried out on them that is directly connected with ensuring and enhancing the operating safety of the nuclear power plants operating in the country.

Nonetheless, the problem of the institute's reactors is being seriously examined by our collective. A proposal for new experimental research facilities was presented to the government several years ago. And for the time being, for all of our economic difficulties, we are steadily following a line of enhancing the safety of the institute's experimental units.

We are open to any independent expert review. The Atomic Energy Institute's Public Information Center, which is located at 9 Gamaleya Street, invites Muscovites to visit the Atomic Energy Institute. We hope that you will see that there is something in the country that we can take pride in.

Moldovan Ecological Movement Holds Founding Congress

Meeting Summarized

91WN0198A Kishinev MOLDOVA SUVERANA in Russian 24 Nov 90 p 7

[Report by G. Lupushor, under the heading: "Founding Congress of the Ecological Movement of Moldova": "Moldova, Ecological Disaster Area: Where Is the Danger Coming From?"]

[Text] Moldova is on the threshold of destruction. One or two more hasty steps and it will cease to exist not only as a sovereign and integral state structure, but as a community of people who live, work, and create together and ensure the continuity of the people on this land, formerly a corner of paradise. The threat stems not only from the separatist ambitions of the Tiraspol and Komrat leaders, but from our society as well (regardless of nationality, faith, residence, or political convictions), an indifferent attitude toward all surroundings, toward nature, Mother Earth, the water we drink, the air we breathe, and toward ourselves as well. Danger threatens us all, and no one will come from another country or another planet to save us and our descendants. The only way out of the situation is for us to set aside groundless political ambitions and to move all together against the ecological disaster that already actually threatens us.

It was under just such a slogan that the founding congress of the new public organization uniting all the ecological forces of the republic opened its work. This proposal was expressed by Professor Ion Dedyu, doctor of sciences, chairman of the SSR Moldova State Department for Environmental Protection, and George Malarchuk, writer, cinematographer, and publicist, chairman of the ecological movement AVE [Aktsiunya verde] of Moldova; they informed delegates gathered at the congress of the ecological situation in the republic.

Heated debates unfolded over certain articles of the new organization's draft charter, particularly those that concerned finances. The thing is that certain functionaries of the former society for environmental protection proposed reducing the portion of the dues that must be transferred to the centralized fund of the new organization. A decision was adopted after repeated balloting: One-half of the income from the primary organizations will remain at their disposal, and the other half will comprise the society's centralized fund.

Certain delegates expressed the opinion that the new ecological organization does not need significant numbers of passive members who do nothing to promote the ecological movement other than paying membership dues. The society may have fewer members, but they should be dedicated body and soul to their sacred cause, struggling furiously for a "clean person in a clean country, in a clean world," as specified in the slogan of the Ecological Movement of Moldova [EDM]. It was also proposed that the future membership dues be set at 50 kopecks or even 1 ruble annually. Unfortunately, this proposal was not adopted. The functionaries of that same society for environmental protection rejected it, probably feeling that their duty is simply to collect dues. For, as some of them asserted, it is very hard to wheedle 30 kopecks out of the average person's pockets, but it would be even harder to get a whole ruble out of him.

Thus, in accordance with the resolution of the congress, joined with EDM were the society for environmental protection, the AVE ecological movement, the society for animal protection, the ecological sections of the Journalists Union and the Cinematographers Union, the "EKO" Club, as well as other republic and rayon societies of the corresponding profile.

The congress elected a leading organ headed by George Malarchuk, as well as a review commission. The congress delegates appealed to the republic parliament and government with a demand to declare Moldova an "Ecological Disaster Area," and appealed to the entire population of SSR Moldova.

Thus, a new ecological organization has been formed. It is still young, but its members' desire to act decisively and sternly can be felt. We will hope that the Ecological Movement of Moldova will enjoy the support of the parliament and the government, and that it will not suffer the fate of the former voluntary society for environmental protection fulfilling a Cinderella role, or that of a fifth wheel on the cart of reckless technological progress.

Address by Ecological Activist

91WN0198B Kishinev MOLDOVA SUVERANA in Russian 24 Nov 90 p 8

[Address of George Malarchuk to the founding congress of the Ecological Movement of Moldova: "...We Must Sound the Alarm!"]

[Text] Esteemed colleagues!

Your knowledge of the state of affairs here in Moldova spares me the need to present you with an extensive panorama of the our ecological problems at this moment. We all know what we have happening in this or that rayon, and even in our villages. There is illness, infection, asthma and heart diseases everywhere; there are ever more children with mutations, deteriorating kidneys, and cancer. Moldova holds last place in the country for average life expectancy, and in the Slobodzeyskiy Rayon, for example, the morbidity, disability, and mortality rate is two-three times higher than the republic average.

The "Aktsiunya Verde" ecological movement arose in June 1983 as a section of the republic Journalists Union. In February of last year, we attempted to turn the section into a movement, but we did not succeed; bureaucratic forces stood in the way of our initiative. And in October, after certain shifts in the republic leadership, we were formed as the republic ecological movement.

Our activity after that was hardly a victory parade: an intentionally slowed process of getting official status, and our resulting exclusion from the pre-election campaign; we obtained our own bank account with great difficulty, and again, with delay. However, we are not offended. And not because we lack a sense of our own worth or we are forgoing our own honor, but because we know that the ecology is a conflicting problem in and of itself. Defending nature means seeking out those who scoff at it. And otherwise, why protect it? And someone determined in this noble cause must be either a little touched, or a true citizen.

In the year since our founding, we got more than cuts and bruises. Our colleagues took an active part in the Dnestr expedition, and particularly in the "Prut-90" expedition. The popular television program "Ave Natura" is aired regularly. The newspaper NATURA has been already been published for a year, with two issues per month. We are actively promoting the establishment of a state department for environmental protection, subordinate to the parliament. We have achieved the creation of two student-ecologist groups at the technical school in Tsaul and support re-profiling the Kishinev Industrial-Pedagogical College into an ecological educational institution. The important documents addressed to parliament, Marshal Akhromeyev, and to other offices were approved at the meeting of 8 April of this year.

Certain of our proposals have been implemented; we return to others again and again. When Ukrainian colleagues appealed to us to support their activities for closing down the Khmelnitskaya AES [Nuclear Electric Power Station], we mounted an active campaign to collect signatures in support of the appeal. This is how we understand internationalism...

Today, after more than seven years of unselfish labor in the field of ecology, I am emboldened to utter two or three thoughts, perhaps axioms.

First of all, idle talk and demagoguery are the most awful polluters of nature and man, even more dangerous than all known chemical compounds, and more terrifying than the Chernobyl disaster.

Even in the decree of the SSR Moldova Supreme Soviet adopted 31 July 1987 I read with naive satisfaction: "To begin the publication of a popular-science magazine NATURA MOLDOVEY starting in 1988." 1989 passed;

1990 is drawing to a close. All the administrators covered their heads in mounds of paper, but the ecology got a leaflet with one foot in the grave. The promises of the Council of Ministers and the city soviet about our being granted some sort of building for work remain unfulfilled. Cooperatives, clubs, casinos, and many dubious societies have found shelter. They are already saying that great buildings are being presented to the embassies of some countries, and the black marketeers and speculators have occupied the best rooms in hotels. Buildings have been found for everyone, but not for "Aktsiunya Verde."

They are already saying that the agrarians from parliament have formed a common front against the ecologists. This should not surprise anyone. They seek supporters in chemicalization, specialization, concentration and in many other ill-considered initiatives that have brought our country to the wooden plow.

At the last republic writers' congress, Ion Drutse proposed bringing criminal charges against those who made possible the stagnation in Moldova and those who support it now. I think that it is our duty that the names of all the barbarians who destroyed and poisoned our land, our waters, who feed our people nitrates, and who sell the Dnestr, along with the gravel dredged from its bed to anyone should ring out at that trial.

"The muses are silent when weapons clang," they said in olden days. The nymphs and spirits of nature are silent along with the muses. Sense and everything that constitutes the beauty of this world is also silent... Nor can they sing in a house engulfed in flames. They can only call for help from there. But if the neighbors' houses are burning too, who can help them?

The word "eko" means "house," "household" in translation from the Greek. It is impossible to extinguish the fire in one room when the flames are consuming they entire house. That is what we have today in our Moldova. We have a big fire and it must be extinguished as quickly as possible by the common efforts of all its occupants.

After all, it is impossible to maintain the purity of the Dnestr waters just to the middle of the current, for one bank to be clean and for the other to be polluted, for the water at one river bank to be pure, and for the water at the opposite bank to be polluted. We cannot place a barrier around the air we breathe. Ecology has no boundaries. It is a single faith for all, like a religion: The clergy prays in the name of the salvation of the souls of the faithful and the unbelievers alike, the healthy and the ill. Our colleagues and I struggle from all corners for overall health, even the health of those whose vision is clouded by hostility.

Good reviews are coming in about the Transdnestr ecologists, about our colleagues from the south of the republic. Many of them are in this hall with us today. And I want to say to them, "Welcome, brothers and sisters!" Human folly is transitory, but the air, water, and earth are eternal. The concerns that united and brought us here demand of us pure hearts, clean hands and genuine wisdom. Our slogan is "a clean person in a clean country, in a clean world." Our movement does not recognize force in any form. Our work methods are conviction, propaganda of ecological ideas, appealing to the masses to get involved in common causes, to reveal and peacefully roll back the ecological threat. For over seven years, we, the AVE movement, have worked completely unselfishly, often spending the resources of children and grandchildren to cover the expenses of our activity. But nevertheless, we want our society to also have at its disposal some sort of funds to do good deeds in the name of Moldova.

And if today we strive for unification, we are doing so only in the name of joint actions, in the name of the struggle of an entire people against the common ecological danger that threatens Moldova, the whole world. Acid rains, ozone holes, the Chernobyl sarcophagus, these are just a few of the aspects of ecological disaster.

The recent sad news about Chernobyl is that the bottom of the sarcophagus is disintegrating and the radiation is penetrating the bed of underground waters, perhaps even deeper, causing a new, enormous danger for all of Europe. And mankind does not yet have any methods to eliminate the results of nuclear disasters.

In August we learned that in Sverdlovsk Oblast many students and trainees who came for farm work were poisoned, as it turned out, by chemicals from the soil. Recall as well the terrible virus in the Tashkent Metro... Recall the wells of Teleneshskiy Rayon, two-thirds of which are contaminated with ammonol. This rayon was recently declared an "ecological disaster zone."

I think we have sufficient grounds to assert that we are dealing with a real, burgeoning, cruel genocide. The methodical bark-stripping of trees in the Dnestr valley, the expansion of tobacco farms on chernozem, stock breeding complexes that have filled even people's souls with filth. Not to mention the brilliant epopee of chemicalization, the preoccupation with the gargantuan—all this and much more cruelty has struck the vital points of our organism and our souls, of our entire people. We stand today before the catastrophe that until quite recently was pompously entitled the "bright future."

We have data showing that by March of this year 331 ecological movements and organizations had been registered. Of course, since that time, their number has grown even more. Yet instead of receding, the ecological threat has become even more visible.

Based upon the principle that the world is one and indivisible for all living on the Earth, we note that growth of a tendency toward cooperation, toward the unification of all forces pursuing one and the same goal. There is even talk of the need to create a "Green International."

Very many times before, we Moldovans, true to our autochthonous axiom, "the quieter you go the further you get," have not been in much of a hurry. Now we are required to be Europeans and to work more intensively than those 330 other possible competitors. We have no more time to "go slow."

It is for this reason that I consider it necessary to propose to parliament that it declare the entire territory of the Moldova Republic an "ecological disaster area." This would not only attract attention to the state we are in, but would become a condition for the allocation of special financial resources, new human, technological, and scientific means to provide a way out of the ecological impasse. Under these conditions, it would be possible to develop a broad program entitled the "Survival Program." A necessary and natural consequence would be the firm demand for the demilitarization of both banks of the Prut, that is, cleaning from our land the harmful elements that are unavoidably discharged into the environment by military bases, modern technology, and weapons. The "Dnestr," the "Budzhak, and possibly even the "Prut" could become other concrete projects.

For example, the Dnestr gives life to 10 million people living on both its banks; only 4 million of these are citizens of Moldova. The terrible catastrophe at the Shtebnitskiy Potassium Plant happened beyond the borders of our republic in 1983, in Lvov Oblast. Now the Khmelnitskaya AES is threatening our river. I want to say to everyone that all 10 million people would have to participate proportionally to save the Dnestr. This would be the brotherly, just way.

The new, restructured, fortified ecological movement could mobilize public opinion, the head and heart of the people to solve the everyday problems of concrete life, rather than mutter pseudo-scientific truths. Truly the peel of bells does not put out fires; it tears people from their warm beds and saves their lives. And we leave it to ourselves to sound the alarm!

Appeal to Citizenry

91WN0198C Kishinev MOLDOVA SUVERANA in Russian 24 Nov 90 p 8

[Report of the Founding Conference of the Ecological Movement of Moldova: "We Breathe the Same Air: An Appeal to All Moldovan Citizens of Good Will"]

[Text] Kishinev, 15 November 1990. Esteemed fellow citizens!

Adventurers are attempting to recarve our small, much-suffering, oft-recarved country. All 4 million inhabitants of our republic have been drawn into political discussions and numerous anti-constitutional actions. All of this is being done in order to distract Moldovans, Ukrainians, Russians, Bulgarians, and Gagauz from solving economic and ecological problems. We feel that the time has come to return to work places, to get to work, to get to solving the problems that the Moldovan SSR is coming up against today.

The catastrophic situation in which the environment has found itself toward the end of this century urgently demands the unification of all forces and all human efforts in the name of saving nature in Moldova. We appeal to all republic citizens, regardless of their nationality, to bring their heads and hearts back to the important problem of the entire planet, all human civilization. Our very life, especially that of our descendants, has been threatened. Interethnic discord, as well as discord of another type, accompanied by political ambitions, worsens even more the ecological situation of the Moldovan land.

We must be aware that water, air, and all of nature know no boundaries. Whatever happens in the political sphere, we all, regardless of national or social affiliation, will breathe the same air, drink the same water, and live on the same earth. Illness and death, the cause of which is the sick environment, do not distinguish people by national affiliation.

The republic's ecologists appeal to all people of good will to unite in a single front for saving nature in Moldova, for creating the conditions for life together in peace and harmony on the principle of "a clean person in a clean country, in a clean world."

Academician Views Moldovan Land Degradation, Drought Conditions

91WN0211A Kishinev SOVETSKAYA MOLDOVA in Russian 17 Nov 90 p 3

[Article by M. Lupashku, vice president of the Moldovan SSR Academy of Sciences and academician of the Moldovan SSR and All-Union Academy of Agricultural Sciences imeni V.I. Lenin, under the rubric: "Ecology and Agriculture": "Solutions to the Crisis"]

[Text] The most dangerous and multifaceted misfortune for Moldovan SSR [Soviet Socialist Republic] agriculture is drought. It has brought and brings incalculable troubles to agriculture, the environment, and the economy of the republic.

The prolonged drought of 1891-1892 was followed by individual summer droughts when the rain would not fall for an entire summer and the crops in the field almost completely died. As a consequence of these droughts people were doomed to famine and the entire community lagged behind in its development for many years.

Across the 100 years from 1890 to 1990 droughts, very severe ones, were observed 28 times. They were especially frequent in the southern zone of Moldova. There, in essence, every other year for the last 30 years has been dry.

In the majority of cases droughts are also accompanied by strong hot winds, and this is especially disastrous for the vegetation.

The hot, dry weather also favors the mass appearance of pests.

This year, 1990, turned out to be unprecedentedly dry for the southern and in part for the central zone of Moldova. Taking into account the existing situation, the Moldovan SSR Academy of Sciences, jointly with specialists of the Ministry of Agriculture and the Food Industry, the Environmental Protection Department, and others, organized two comprehensive expeditions to that zone (the first took place 23-25 May, the second, 14-20 August).

It was established that in the southern zone of Moldova the current drought was preceded by dry periods—the winter of 1988-1989 and a rather severe spring drought.

From January to September of this year weather conditions in the republic, especially in the southern region, were even more severe. From January to July in Shtefan-Vode, Leovskiy, Kakhulskiy, and Komratskiy Rayons precipitation was only one-third of normal levels, and what did fall was of little use because it did not fall when the vegetation needed it most. In the south of the republic the drought has lasted almost two years in succession.

Under these critical conditions, even on the fields where the demands of agricultural technology were, for the most part, observed, winter wheat and winter barley had scarcely reached 30-35 cm by the time it was supposed to be forming ears, and many crops did not form ears and grain and shrivelled to the roots. The pea harvest was only 10.2 quintals/hectare, and in Keinarskiy and Leovskiy Rayons it was seven-eight quintals. The drought, which continued in July and August accompanied by unprecedentedly high air temperatures, also had a disastrous effect on corn, sunflower, and other late crops. The natural grazing lands had no vegetative cover, even in the flood plains of rivers.

As a result of the severe drought and the consumption of water for irrigation, the lower reaches of the small rivers Kogylnik, Yalpug, Yalpuzhel, Lunga, Lungutsa, Larga, and others had sharply reduced levels and even were completely dried up in some places, and their flood plains were covered with a salty coating and turned into a lifeless expanse. A white salt deposit also covered many tracts of grazing lands where the farmers had not refrained from using the water with its high mineral content to water them. Now the soil of the flood plains in the south is in need of drainage and chemical and phytotechnical reclamation.

The sewage of animal breeding complexes is also causing great harm to the environment. The collection ponds in the region of Chadyr-Lunga are an especial danger, as the materials of the expeditionary investigation showed.

As a result of the long drought, as well as intensive water usage, many reservoirs are unfit for personal and farming use. Lake Kakhul, for example, has lost about half of its volume of water, and Lake Beleu has completely dried up. The situation is also worsened by the fact that water facilities are being intensively fouled by consumer and agricultural drainage. As a result of increased evaporation and other processes in the remaining ponds, reservoirs, and small rivers, the mineral level of the water has increased sharply (from 2.5-4 or more grams per liter).

In many villages and rayon centers and at animal breeding farms and complexes there is not even enough water for drinking and daily needs. A genuine catastrophe is impending. It has been forming for years and even decades as a consequence not only of drought but of a deep disregard for the laws of nature, agriculture, crop production, and man's influence on the main links of the kray's ecosystem.

Nature, as we know, does not suffer voluntarism, stupidity, and incompetence in regard to it and severely punishes these things.

Depredation of the forests in the past and present centuries has changed not only the appearance of the region and the agricultural landscape of the ecological microzones, but it has led to a severe deterioration in the territory's hydrological system. Under the pressure of voluntaristic methods of leadership (especially after the sixties and seventies), the last plots of natural lands, forest groves, and woodland belts are being pulled into the agricultural revolution. The level of cleared land in the southern zone has reached 85-87 percent. The so-called interfarm crop rotations were created during these years and the fields were consolidated without regard for the contour of the locality, the character of the topsoil, and other ecological factors. Violation of the structure of crops continued during those same years and later, and the proportion of row crops increased sharply. With the goal of increasing the area under perennial crops, the soil was prepared using deep plowing on a frequent and universal basis. These and many other violations of the agricultural system led to an unbelievable scale of water and wind erosion of the soil, formation of gullies, loss of humus, and destruction of the structure of the topsoil. The destructive processes continue today as well.

After the harvest of the winter crops, the barbaric practice of burning the straw and stubble is widely pursued. The fields, without cultivation with a disk harrow which would permit the preservation on the surface of a type of mulga from the vegetative remains, is immediately plowed up. Then over the two-three months of the summer-fall period (especially under conditions of high temperatures), the process of mineralization of the organic chemistry in the soil gathers momentum on the field that has been plowed up.

In August 1990, about 70 percent of the fields in the southern zone were plowed up, which undoubtedly

increased the danger of erosion significantly. The passivity and indifference of many specialists and leaders in this critical and, in essence, catastrophic situation evokes bewilderment. After all, the problems connected with drought and the ecology in the zone are well-known, and the appropriate recommendations and scientific studies exist. However, for the most part they are violated.

Summarizing and analyzing the materials accumulated by the two expeditions, we consider it necessary to propose the following measures for solving this crisis.

First and foremost it is necessary to resolve the problem of filling the small and large rivers, the ponds, and the reservoirs in order to provide water (for drinking, daily, and industrial needs) to the villages, cities, and rayons centers.

As previously, we devote very great significance to irrigation, albeit with water of good quality. It is necessary to irrigate 20-25 percent of the agricultural lands (there is not enough moisture to irrigate more), primarily vegetable and fodder crops.

The production association of Moldovan Water Management deserves strong reproach for delaying a resolution to the problem of irrigating the south of the republic. The creation of the Tarakliyskiy irrigation system was begun not with the installation of powerful water works on the Danube and equipment for supplying water, but with the immediate construction of an irrigation system and a reservoir and canal, that is, with the end. As a result, more than 100 million rubles went down the drain, as they say.

Today scholars are proposing various ways to supply water to Lake Kakhul and to the Tarakliyskiy reservoir, to use the waters along the Prut, and to carry out other measures. In our view, other means of supplying water should also be used for a final solution of this problem. It is possible to set up small water works, even if only temporary ones, to provide water to the farms near the Prut and the Danube. Otherwise we will see paradoxes of the following sort: The corn and other crops are dying of drought on the "Sovetskiy Danube" Kolkhoz [collective farm] (in the village of Dzhurdzhuleshty), and the Danube flows by at a distance of 300-400 meters. Or another example: Lake Beleu, which is located on an international preserve, is completely dried up and nearby... flows the Prut.

Ponds should be constructed out of the large and small gullies and valleys of the rivers. We cannot permit these waters to leave the territory of the republic carrying off millions of tons of fertile earth.

We consider it necessary to make fundamental changes to the structure of livestock breeding in the zone. The breeding of sheep is one of the most profitable sectors here. Sheep possess high adaptability to this zone, are able to make good use of almost all the byproducts of agriculture, and even contribute to an improvement in the ecological situation.

In the past, this was the republic's leading sector, especially in the southern zone. It is enough to say that in 1864 there were 240 sheep per 100 people in Bessarabia. As a result of concentrated clearing of the land and poor treatment of the sector, by 1940 the number had gone down to 14 head per 100 residents. And two more figures: In 1961, there were 1.738 million sheep and goats on all types of farms; in 1987, only 1.253 million remained.

In our view dairy farming, in both the public and private sector in the south of the republic, should be developed only within a framework permitting the local population to be provided with goods. Fattening of cattle can only take place on those farms where there is irrigation or on overflow lands.

In conjunction with the complicated ecological situation in the southern zone, there must be a universal transition from spray-cleaning to a dry method of removing dung. In addition, it is necessary to halt the construction of large animal breeding plants and to break those that exist down into smaller units where possible. Swine and poultry production in the zone may be designated commodity production, but they should develop in accordance with the presence of mixed fodders.

The same decisiveness and insistence with which all the plots of natural lands on slopes were cleared should now be used to turn them to the breeding of sheep. From 10 to 20 percent of the cleared land, especially on slopes, should be grassed over with perennial and annual grasses.

In the southern zone of the republic it is also advisable to change the structure of acreage for field crops—to significantly decrease the proportion of row crops, expanding the winter field in the process. Together with wheat, winter barley and triticale are of significant value. Modern varieties of these crops are distinguished by high productivity and resilience to frost, more fully and rationally use the precipitation of the first half of the year, and offer high-quality fodder.

Peas are of significant interest for the zone. Such drought-resistant crops as grain sorghum and millet, Sudan-grass, weedy Sudan-grass hybrids, sainfoin, sweet clover, and others have been undeservedly forgotten. They are all able to offer high yields. For example at the Kaushany crop testing station Sudan-grass and weedy Sudan-grass hybrids gave on the average 108 and 106 quintals of dry weight per hectare respectively over the years 1987-1989.

Special attention in this zone should be devoted to alfalfa and the production of its seeds. On overflow lands, in recessed areas, and with irrigation alfalfa does not have any equal for productivity. It should also be remembered that industrial production of alfalfa seeds in the zone creates real conditions for reducing processes of erosion and increasing the soil's productivity.

Viniculture should not be forgotten here; first-class wine grapes and table grapes can be obtained every year. Horticulture of stone pit crops offers goods results, primarily peaches, apricots, and nectarines.

It is advisable to do everything to develop processing of agricultural and livestock production. Construction of small workshops and processing lines should be encouraged directly on the farms.

Fundamental changes in organization of land use on the zone's farms in regard to the contour of the land and other elements of agricultural landscaping are of decisive significance for halting processes of erosion and minimizing the negative influence of the drought. It is necessary to reforest the steep slopes and gullies that are most dangerous from the point of view of erosion. All the regions of the zone already have rich experience from that point of view. It is necessary to create a so-called "forest latticework" on all agricultural lands more than anywhere else in the zone. Fields bordered by forest strips are not as affected by water and wind erosion, and the crops suffer less from drought.

World practice as well as numerous examples from our republic show that an important means of fighting erosion and wind damage to the soil is minimal plowless and energy-saving means of tilling the soil in combination with the use of optimized doses of organic and commercial fertilizers.

A whole complex of organized and technological measures in agriculture should be part of scientifically-based crop rotations that encompass perennial and annual leguminous crops. Only such crop rotations can save the soil from the progressive loss of productivity, raise the stability of agriculture, and minimize the negative influence of the drought.

Implementation of these and other measures will significantly change the ecological situation in the south of the republic and to a great degree resolve the economic and social problems of the countryside.

Draft Azerbaijan Plan for Environmental Action Projected to Year 2005

91WN0193A Baku BAKINSKIY RABOCHIY in Russian 14 Oct 90 pp 1-2

[Draft: "Long-Term State Program for Environmental Protection and Optimal Utilization of Natural Resources of the Azerbaijan SSR During the 13th Five-Year Plan and Until the Year 2005 (Basic Positions)"]

[Text]

I. The Present-Day Ecological Situation

The Azerbaijan SSR, which is a modest-sized republic having a territory of 86,400 square kilometers and a population of 7.3 million persons (data as of the end of 1988), may be characterized as a region with a high degree of industrial concentration and a well-developed territory. Complexes of ecological problems have evolved here historically. With regard to origin, as well as the level of consequences for the national economy and public health, many of these problems are of an interrepublic and All-Union nature and acuteness, and, in part, the condition of the Caspian ecosystem is international in its nature.

From the viewpoint of environmental conditions, the most unfavorable parts are the following:

- the Apsheron region, which includes the Baku and Sumgait industrial regions with their high concentrations of oil-drilling, oil-refining and chemical sectors, along with metallurgy and the construction industry, all of which pollute the environment. And this is accompanied by a tangible worsening of the public health;
- the aquatorium of the Caspian Sea in the regions of offshore oil drilling, which has an overall effect on the condition of the water resources and the sea's living organisms;
- the Bolshaya Kura Basin, where pollution and exhaustion of the water resources is taking place, along with a reduction of the areas of the large forests along the Kura River, and there is a negative influence of hydroelectric-power engineering on fish stocks;
- regions of intensive cotton growing and other monocultures, i.e., one-crop systems, where the lands have become considerably degraded, and the excessive application of chemical herbicides and pesticides, as well as mineral fertilizers, has led to various types of diseases among the population;
- the cities of Gyandzha, Mingechaur, and Ali-Bayramly, which have been characterized by the unsatisfactory condition of the air basin;
- the Yalama-Nabran recreational zone, which is of All-Union importance, and where a violation of the ecological equilibrium has occurred;
- this republic's western regions, which have experienced most strongly the effect of the polluted transit rivers from the territories of the Georgian SSR and the Armenian SSR.

Recently, as a result of intensifying our environmental protection work, we have succeeded in achieving a stabilization and reduction of the negative, anthropogenic influence on the natural environment. Emissions of harmful substances into the atmosphere have been reduced by 80,000 tons a year, and discharges of polluted wastewater or sewage into natural bodies of water have been reduced by 50 million cubic meters a year. Some 3,520.4 hectares of lands have been recultivated and returned to the national-economic budget. By-products and secondary resources have been drawn into production more actively. For the first time, the area under forest has begun to increase. A number of rare and previously threatened animal species, recorded in the "Red Book of the Azerbaijan SSR," have been restored.

Safeguarded on reservation territories are representatives of 97 species of mammals, 350 species of birds, eight species of amphbians, 40 species of reptiles, 90 species of fish, and more than 3,000 species of plants.

The annual number of young fish [fry] released into bodies of water by fish hatcheries amounts to more than 400 million.

Nevertheless, there has been no radical turnabout in matters in the field of environmental protection, and the situation remains tense.

The qualitative condition of thr land resources is unsatisfactory. As much as 40 percent of the territories has been subjected to water or wind erosion; 1,190,000 ha [hectares] (13 percent of the total area) has been salinized; 17,000 ha of lands, including 7,400 ha of lands on the Apsheron Peninsula, have been ruined as a result of oil drilling and refining; and 11.6 percent are dangerously wind-eroded. As a result of washouts and wind erosion, the annual losses of fertile top-soil layers in this republic amounts to as much as 100 tons per hectare. Of 1,350,000 ha of lands being irrigated, 18 percent require reconstruction and modernization of their irrigational, collecting, and drainage networks, while 8.5 percent require major planning and laying out.

The large industrial complexes (Baku, Sumgait, Gyandzha, Ali-Bayramly, Mingechaur, and others) are marked by flooding of their territories. Azerbaijan's portion of the Caspian Sea's coastal zone has suffered destruction along a length of 250 km; and in connection with this, some 3500 ha of fertile lands have dropped out of circulation.

The annual damage inflicted on this republic by mud-laden torrents amounts to approximately 17 million rubles. The excessive application of chemical preparations and the insufficient use of biological methods for protecting plants have led to the accumulation of high concentrations of toxic substances in the soils.

Serious problems remain in the area of utilizing and safeguarding water resources. Being located in an arid zone, Azerbaijan is one of the most water-short republics in the entire country. The average annual water flow does not exceed 29 cubic km, including the merely 10 cubic km which is formed on this republic's territory. On a per capita basis, our own river waters are less than the country as a whole by a factor of 9.6, less than those in Georgia by a factor of 6, and less than those in Armenia by a factor of 7.7. The operational reserve supplies of underground fresh water amount to 4.4 cubic km and are distributed very unevenly as to territory.

With the total annual water resources amounting to 33 cubic km, the maximum, ecologically allowable intake of water from surface sources, according to the estimates, is no more than 20 billion cubic meters a year, while the ecologically allowable intake of underground water is 4 billion cubic meters a year.

According to calculations, at the present time the actual intake of water from surface sources amounts to 15.3 billion cubic meters, while that from underground sources comes to 1.47 billion cubic meters a year.

The volume of polluted wastewater discharged into bodies of water, according to accounting data, amounts to 351.7 million cubic meters a year, not counting cooling flows and highly mineralized drainage water.

The principal sources of polluting bodies of water are the municipal systems of Baku and other cities—80 percent of the total discharge of wastewater—the Azneftekhim, Khimprom, Aztsvetmet, Sintezkauchuk, Azneft, Azerrybprom, Baku Iodine, Neftechalinsk Iodine-Bromine, Sumgait Superphosphate and Pipe-Rolling plants, Gosagroprom [State Agroindustrial Committee] enterprises, and others. Great harm has been inflicted on the Caspian Sea as a result of failure to observe the regulations concerning the exploration for and exploitation of oil-and-gas fields by the facilities of Kaspmorneftegaz. Considerable pollutants have been poured into the sea along with the drainage flow.

As a result of the still-existing discharges into this republic's bodies of water, the condition of many of them is unsatisfactory. The amounts of petroleum products and phenols exceed the PDK [maximum allowable concentration] in Baku Bay by factors of 18 and three respectively, and in the coastal waters off Sumgait—by factors of three and 11 respectively. The concentration of pollutants in the water of several other sections of the Caspian aquatorium also remains above the appropriate norms. The Kura and Araks rivers, as well as several of their tributaries, are polluted. So too are other interrepublic rivers which flow onto Azerbaijan's territory—the Okhchuchay, Akstafachay, Tauzchay, and others. A tendency of the quality of underground water to become worse has been observed.

A tense, i.e., stressful, situation has evolved in the polluted part of the atmospheric basin. Last year stationary sources of pollution emitted 0.8 million tons of pollutants, including 0.21 million tons of solids as well as 0.6 million tons of gaseous and liquid pollutants. The principal pollutants were as follows: sulfurous anhydride (16 percent), nitric acids (nine percent), hydrocarbons (35 percent), and carbon monoxide (12 percent). Their largest amounts occur at enterprises of the metallurgical industry (7 percent), natural gas and petroleum (25 percent), power engineering (16 percent), chemical and petrochemical (18.3 percent), and building materials (25 percent) industries.

Motor-vehicle emissions are estimated at 1.2 million tons, i.e., they constitute approximately 57 percent of the total volume of emissions.

The highest level of atmospheric pollution is to be observed in Baku, Gyandzha, Sumgait, Mingechaur, and Ali-Bayramly.

Noted in Baku has been an increased level of atmospheric pollution by sulfurous anhydride, nitrogen peroxide, soot, i.e., carbon black, formaldehyde, and hydrogen sulfide; in Sumgait—by sulfur dioxide, nitrogen peroxide, hydrogen sulfide, dust, benzopyrene, and chlorine; in Mingechaur—by formaldehyde, phenol, carbon monoxide, and nitric acid; in Ali-Bayramly—by sulfurous anhydride and nitric acid.

The utilization of mineral resources has not remained at the level that it should. This republic now has 51 oil-and-gas fields in operation. There are reserves of iron ore, limestone, and clay, as well as deposits of nonferrous metals and chemical raw materials. The distribution of mineral resources is favorable for developing subsectors of the building materials industry.

Nevertheless, at the present time almost 60 percent of the non-ore raw material being extracted proceeds to various dumps. In extracting and enriching iron ore, the losses have reached 35-38 percent. Every year at enterprises engaged in metallurgical processing approximately 360,000-420,000 tons of by-products are formed—by-products which remain virtually unused. Even rare-earth elements are thrown onto the dumps as by-products. The utilization of by-products does not exceed 8-10 percent.

The use of mineral-water reserves for health-care needs does not amount to more than seven percent, and for the food industry it is only 1.5 percent of the known or confirmed reserves.

The condition of our forests is unsatisfactory. Forests cover only 11.2 percent of the territory, but we should take into account the fact that forests perform water-preserving, protective, sanitary-hygienic, and health-restoring functions, and they belong to the first group. The low-growth forests are gradually being cut down; the tugaic forests along the Kura River have been almost completely destroyed. On a per capita basis, there is 0.19 ha covered by forest and 18.9 cubic meters of timber.

On an annual average, reforestation is carried out on an area amounting to only 6,000-6,500 ha, and protecting forests from harmful pests and diseases by biological methods comprises only one-fifth of the total volume of extermination work.

Insufficient use is being made of resources from the animal world. The product yield from 1,000 ha of land suitable for hunting amounts to only slightly more than 100 rubles. We need further development of specially safeguarded territories, which at present comprise 2 percent of this republic's territory.

II. Measures for Restoring the Health of the Ecological Situation and Improving the Use of Nature

The principal goals which must be gradually achieved as a result of environmental protection work in this republic during the 1991-2005 period are as follows:

- reducing atmospheric pollution to an allowable level according to sanitary norms in the cities of Baku, Sumgait, Kirovabad, Ali-Bayramly, and Mingachaur by the year 2000;
- reducing by 60 percent by 1996, by 95 percent by 2000, and completely stopping by 2005 the discharge of polluted industrial and municipal wastewater, i.e., sewage, into surface-type bodies of water, ensuring the restoration of normative levels of water purity in rivers, lakes, and other bodies of water, as well as the waters along the seacoast, and providing for a beneficial hydro system for small rivers by the year 2005;
- a gradual or stage-by-stage reduction of the specific water consumption used for industrial, muncipal-everyday, and agricultural needs, ensuring stabilization by the year 2005 with regard to the intake of fresh water from natural sources at a level below the maximum, ecologically allowable amount;
- ensuring the complete elimination by the year 2005 of the degradation of agricultural lands, the loss of their characteristic features, and the reduction of their areas, the restoration of the fertility and hydrophysical (hydrogeological) soil characteristics;
- preserving the general fund, increasing the forestation of the territory, particularly in the forest-steppe and steppe regions, restoring the tugaic forests in the Kura River region, as well as the resources of commercially profitable animals;
- increasing the degree of extracting minerals from mineral resources;
- adopting all measures to implement the policy of resource conservation, introducing small-scale, by-product technologies and creating waste-free, territorial, industrial complexes, making maximum use of by-products.

Environmental-protection measures have been specified on the basis of the: "Comprehensive Scheme for the Environmental Protection of the Azerbaijan SSR for the Period Until the Year 2005," which was developed in this republic, in tandem with the Concept of Economic and Social Development and the General Scheme for the Development and Deployment of This Republic's Production Forces During the 13th Five-Year Plan and Until the Year 2005, and by proceeding on the assumption that the newly created enterprises, as well as those to be expanded and modernized, must fully implement the environmental-protection measures, introduce resource-conserving, small-scale, by-product, and wastefree engineering processes and production facilities.

Land Resources

Particular attention must be paid to increasing the productivity of lands, expanding the stocks of suitable and convenient lands by means of recultivation, reclamation, building anti-erosion, hydraulic-engineering, anti-mudslide, anti-creep, and shore-reinforcement structures, creating protective forest plantings, including field-protection plantings, and other measures.

The Gosagroprom [State Agroindustrial Committee], Ministry of Land Reclamation and Water Resources,

SSO [Student Construction Detachment], Azervodstroy, and the Ministry of Housing and Municipal Services must carry out the construction of anti-erosion, hydraulic-engineering, anti-mudslide, anti-creep, and shore-reinforcement facilities in an amount worth 568 million rubles. From these funds the above-mentioned organizations, along with the executive committees of the Soviets of People's Deputies of the appropriate rayons must ensure that projects are carried out on reinforcing the shores of the Caspian Sea in the regions of the Lenkorano-Astarinsk Zone—projects which will cost 60 million rubles, whereas the Baku City Gorispolkom is to spend 50 million rubles for analogous purposes in the city of Baku.

The creation of protective forest plantings must be carried out on an area of 24,500 ha, including an area of 18,200 ha by the Gosagroprom in order to protect agricultural lands from erosion, an area of 450 ha along highways and railroads by the Ministry of Highway Construction and the Azerbaijan Railroad Administration, and an area of 4,700 ha along irrigation canals by the Ministry of Land Reclamation and Water Resources.

The recultivation of lands must be accomplished on an area of more than 17,000 ha. Special efforts are required for recultivation projects on the Apsheron Peninsula. Azneft will have to restore 1500 ha and return them to the national economy, the Baku Gorispolkom—1,000 ha, the Azerbaijan SSR Ministry of Building Materials—375 ha, Kaspmorneftegaz—275 ha, and Avtodor—70 ha.

By the year 2005 the Gosagroprom and Azerselkhozkhimiya will have to bring up to 700,000 ha the area for protecting farm crops from pests and diseases by the biological method. This amounts to approximately 50 percent of all lands being irrigated and under farm crops.

For measures to protect and make optimal use of lands we must allocate 1514.7 million rubles, including 994.9 million rubles of capital investments. Of these amounts, 474 million rubles and 326 million rubles respectively must be earmarked for the 1991-1995 period.

Water Resources

In order to protect and make optimal use of this republic's water resources, we must do the following:

in industry primarily cover the increase in water consumption by means of increasing the volume of circulated water and bring the level of the circulated water supply by the year 2005 up to 82-85 percent (without power engineering or thermal engineering); increase the volume of utilizing seawater, mineralized (stratal, drainage, and other water), as well as purified, municipal wastewater, for cooling heat exchangers and for other needs; reduce the specific consumption of fresh water per unit of output by 1995 by 18-20 percent, and subsequently—by five-six percent for each five-year plan;

The Azerbaijan SSR Ministry of Land Reclamation and Water Resources, Gosagroprom, and Azervodtroy must carry out by the year 2005 the comprehensive modernization of irrigation systems on an area of about 800,000 ha, construct and lay out a collecting-and-draining network on an area of 500,000 ha, complete by 1995 the reconstruction of the Main Shirvanskiy and Main Milsko-Muganskiy collectors; they must achieve an efficiency of the irrigation systems of 0.64 by 1995, 0.69 by the year 2000, and 0.74 by the year 2005, by means of reconstructing the irrigation systems, reduce the specific expenditure of water per ha of area to be irrigated by 20-25 percent, including by 13 percent by 1995;

The Ministry of Housing and Municipal Services, along with the ispolkoms of the urban and rayon Soviets of People's Deputies, must carry out by the year 2005 construction of systems of centralized water supply and sewerage in all cities and urban-type settlements; by the year 2005 they must provide this republic's rural population with potable water, construct 8,400 km of main water pipelines, bring the level of centralized water supply up to 85 percent, and, by means of upgrading the engineering level of operating the water-supply systems, as well as by outfitting them with progressive types of equipment, reduce the specific water consumption within the municipal and communal systems by 15 percent.

The Caspian Sea Basin

Here we must put a complete stop to the discharge of untreated, unpurified wastewater into the Caspian Sea and the bodies of water in its basin by the year 2005, including work on the principal sources of pollution—by the year 2000.

With these goals in mind we must accomplish the following tasks:

- the Baku Gorispolkom must complete by the end of 1992 construction of the Gousaninskiy purification facilities to have a capacity for treating 840,000 cubic meters a day with a deep-sea discharge outlet. It must also accomplish during the 13th Five-Year Plan creation of the southwestern purification facilities for the city of Baku, shore-reinforcement projects in Baku Bay, and the purification, level regulation, and comprehensive utilization of the lakes located on the Apsheron Peninsula.

Prior to the year 2000 all the populated points of the Apsheron must have sewer systems installed, including the resort area, with the creation of a collecting and autonomous purification facilities. A regional drainage system must be installed on this peninsula, and other measures should be taken to lower the groundwater level;

- the Azneftkhim Production Association must speed up the retooling of the oil refineries and eliminate all obsolete and physically worn-out production units. By the year 1993 it must introduce Phase II of the integrated, biological purification facilities at Zykha,

with a complete cessation of wastewater discharges into Baku Bay and their utilization in plant circulating systems;

- the Azneft Association must carry out the reconstruction of the systems used for collecting and utilizing stratal water and wastewater with a complete cessation of their discharge into the sea and lakes. It must convert throught its system to enclosed methods of drilling, extracting, collecting, storing, and transporting petroleum so as to prevent the washout of pollutants from this territory. It must also eliminate 2000 flooded, technically unsuitable wells in order to reduce the amount of wastewater being formed;
- the Baku Iodine Plant must convert to the wastefree, non-drainage method of extracting iodine from stratal water, which involves pumping such water back into the underground levels;
- the Sumgait Gorispolkom, along with the associations and enterprises of the Sumgait industrial complex, must ensure by 1995 the expansion and modernization of the Sumgait rayon purification facilities, utilizing the purified wastewater for this industrial region's technical needs and for irrigating the plantings of greenery;
- the Khimprom, Sintezkauchuk, Orgsintez, and Sumgaitbytkhim Associations, along with the superphosphate, pipe-rolling, and aluminum plants, must implement water-conservation measures with regard to building and ensuring the normal operation of purification facilities and water-circulation systems; they must also put an and to the discharge of polluted wastewater and production by-products into the sea and the Sumgaitchay River;
- the Ministry of Land Reclamation and Water Resources, plus enterprises and organizations, must eliminate the sources of polluting the mainline drainage canals for industrial, municipal, and communal wastewater and pesticides in order to prevent them from flowing ino the sea;
- Kaspmorneftegaz must radically upgrade its standards for developing, drilling for, and extracting oil and gas in the Caspian Sea. It must prevent accidents in and oil leaks from its offshore facilities. For this purpose, we must allocate as much as one-third of this sector's capital investments for reconstructing the offshore oil fields. We must fully outfit the wells in order to prevent oil discharges under unforeseen circumstances. A precise schedule must be kept for hauling away to the shore those waste products which form during the drilling process.

The services must be fully equipped with up-to-date means for eliminating oil springs, for effectively localizing and collecting oil pollution from the surface, for dismantling technically unsuitable and nonoperating foundations and towers. By 1995 they should completely clear this aquatorium from such foundations and towers;

- Kaspar must ensure the constant readiness on the special basin service for eliminating accidental oil spills into the sea. By 1992 the construction of a shore base for this service should be completed. The State Committee for Environmental Protection and Kaspar must implement the "Basin Plan for Eliminating Oil Spills in the Caspian" and draw up a map which would divide into ecological regions the Azerbaijan portion of the Caspian Sea aquatorium.

We need to examine and consider the matter of further improving the basin's emergency service, of tranforming it into a "rapid reaction force" in case of ecological disasters in the Caspian;

- this republic's Academy of Sciences should set up a Caspian Sea Institute along scientific and practical lines; such an institute would encompass all aspects of environmental protection and economic activity on the sea and along its shoreline.

The Bolshaya Kura River Basin

We must prevent any increase in polluting the waters of the Kura, the Araks, and their tributaries. And we must see to it that the river again plays the role of Transcaucasia's main water artery, as well as a body of water for use by the fishing industry.

We would stipulate the following as top-priority measures:

- During the 13th Five-Year Plan the Ministry of Housing and Municipal Services, along with the appropriate ispolkoms of urban and rayon Soviets of People's Deputies, must construct sewer systems and municipal purification facilities in the cities of Nakhichevan, Stepanakert, Shusha, Gyandzha, Mingechaur, Ali-Bayramly, Tauz, Sabirabad, Udzhary, Zardob, Dashkesan, Barda, Kubatly, Saatly, Kakhi, Kutkashen, Fizuli, Agdzhabedy, Agdam, Geokchay, Zangelan, and several others. And during the 14th Five-Year Plan they must complete sewer systems and provide purification facilities for all cities, rayon centers, and other populated points situated in the Bolshaya Kura River Basin;
- the Ministry of Housing and Municipal Services, Gosagroprom, the institutes of Azgiprovodkhoz, AzNIIGiM [Azerbaijan Scientific Research Institute for Hydraulic Engineering and Land Reclamation], water problems, and other concerned organizations must develop the scientific groundwork and carry out, wherever possible, measures for utilizing purified, i.e., treated, municipal wastewater to irrigate farm crops;
- by 1995 the Aztsvetmet Association must modernize and "seal off" the rear-line storage dumps of mining enterprises located along the rivers which are tributaries of the Kura and the Araks. This must be done in order to completely halt the partial dumping and filtration of wastes into the Arpachey, Paragachay, etc.;
- no later than 1991 Azerrybprom must complete and put into operation the purification facilities of the fishing combine in the city of Neftechala;

- no later than 1995 Azneft, Azenergo, the Ministry of Light Industry, Azrezinotekhnika, and other associations operating in the basin of the Kura and its tributaries must outfit their facilities with purification structures and circulation systems. And they must carry out other measures to eliminate or prevent the flow of industrial pollutants into bodies of water;
- in order to prevent the inadmissable flow of pesticides into the Kura by 1995, Gosagroprom must prevent the use of chemical means for protecting plants within the bounds of reservoir zones along the rivers. In other places their utilization is to be gradually reduced. By 1995 the use of airplanes for the above-indicated purposes will have to be abandoned in the Kura Basin. Measures must be taken to prohibit the discharge into rivers of wastewater and by-products from livestock-raising complexes, canneries, and wineries; such enterprises will have to be provided with efficient purification facilities.

In toto, this republic's ministries, departments, associations, enterprises, and organizations will require about 2.1 billion rubles to protect and make optimal use of water resources for the three five-year plans involved. In certain cases the Union will need to earmark centralized capital investments.

Air in the Atmosphere

Restoring the health of the air basin where this republic's industrial centers are located must be predetermined by reducing the emissions of pollutants at enterprises of the petrochemical, oil-and-gas extraction, and metallurgical sectors, as well as those of the power-engineering and construction industries. Lowering the level of atmospheric pollution by means of reducing emissions to the maximum allowable values must be accomplished by removing from operation those production units which are too old, obsolete, or physically worn and by introducing resource-conserving and low-waste technologies, as well as by constructing scrubbers, i.e., gas-purifying and dust-catching units.

By the end of the 13th Five-Year Plan emissions of pollutants from stationary sources must be reduced to 0.6 million tons per year; and by the end of the 15th Five-Year Plan they are scheduled to be reduced to 0.33 million tons per year. This includes a reduction in the emissions of nitrogen peroxide by a factor of two; by the end of the 13th Five-Year Plan they should be 62,500 tons per year, by the end of the 14th Five-Year Plan—34,000 tons per year, and by the end of 2005—32,000 tons per year.

Emissions of carbon monoxide must be reduced by a factor of 1.6—to a level of 82,000 tons per year by the end of the 13th Five-Year Plan, to 69,000 tons per year by the end of the 14th Five-Year Plan, and to 59,000 tons per year by the end of 2005.

Provisions have been made to reduce the emissions of sulfur dioxide by a factor of 2.3 to a level of 124,000 tons per year by the end of the 13th Five-Year Plan, to 83,000 tons per year by the end of the 14th Five-Year Plan, and to 54,000 tons per year by the end of 2005.

Emissions of solids must be reduced by the end of the 13th Five-Year Plan to 137,000 tons per year, by the end of the 14th Five-Year Plan—to 97,000 tons per year, and by the end of 2005—to 33,000 tons per year, thus achieving a reduction by a factor of virtually seven as compared with the level of emissions in 1986.

Emissions of hydrocarbons must be reduced by a factor of three—to a level of 147,000 by the end of the 13th Five-Year Plan, to 126,000 tons per year by the end of the 14th Five-Year Plan, and to 102,000 tons per year by the end of 2005.

The normative volume of emissions of pollutants into the atmosphere must be attained by 1995 by 301 enterprises (88 percent of the total volume of emissions for this republic), by the year 2000—by 560 enterprises (91 percent of the total volume of emissions), and by the year 2005—by all enterprises emitting pollutants into the atmosphere.

The amount of capital investments in air-protection measures will total 315 million rubles, including 132 million rubles in the 13th Five-Year Plan, 113 million rubles in the 14th Five-Year Plan, and 70 million rubles in the 15th Five-Year Plan.

The City of Baku

The following tasks must be accomplished here:

- over a period of two or three years the Azneftekhim Production Association, by means of reconstructing the flare-torch units, eliminating the catalytic cracking units, sulfuric-acid alkylation, and other elements at the NBNZ [New Baku Oil Refinery] imeni Vladimir Ilich, replacing obsolete and worn-out equipment, and withdrawing several units from the BNZ [Baku Oil Refinery] imeni 22nd CPSU Congress, must reduce emissions of hydrocarbons and other harmful substances by 25-30 percent. It must gradually reduce or phase out—with complete elimination by the period 1994-1995—the processing of sulfurous petroleums at its oil refineries. In conjunction with the Baku Gorispolkom, it must begin during the 13th Five-Year Plan the practical creation of sanitary-proective zones around the plants, and during the 14th Five-Year Plan it should proceed to promulgate a complex of measures for the phased relocation of the oil refineries beyond the limits of the city of Baku's densely populated [?] zone;
- we must carry out the renovation of the production facilities and equip with high-efficiency filters the sources of pollution at the Karadagskiy Cement Plant; by this means we will be able to reduce the plant's presently existing emissions by a factor of at least 3. At the same time we must solve the problem of building a plant at a new site, distant from populated area, and shutting down the old production line;

- by the beginning of the 13th Five-Year Plan the Baku Tire Plant must complete the transfer of its preparatory production facility at the Karadagskiy site and the shutdown of its old shop in the Narimanovskiy Rayon;
- not later than 1992-1993 the Bakneftemash Association, plus the associations and enterprises of the electric-equipment industry and other sectors which have made "contributions" to the pollution of the air basin, must outfit their sources of emissions with scrubbers, i.e., gas-and-dust-catching units.

The City of Sumgait

Here the following tasks must be carried out:

- by the end of 1991 the Sintezkauchuk PO [Production Association] must complete the renovation of its butadene-styrol-rubber production facility with a reduction of emissions to the PDV [Maximum Allowable Emission] norms. It must introduce the technology of using ethylene, which is now emitted to the flare-torches. They must take isopropyl alcohol and styrol out of production;
- by the beginning of the 13th Five-Year Plan the Khimprom PO must carry out measures to stabilize the operation of producing chlorine and caustic soda, and during the course of the five-year plan it must convert it to the ecologically "clean," i.e., pure, membrane-type technology. It must cease operating the production lines turning out chloroparaffin [?], Phase I sulfanols, and sulfurous anhydride;
- the Orgsintez PO must shut down its harmful production lines turning out divinyl and propylene oxide. The shop must be equipped with milk of lime in order to prevent dust;
- the Sumgaitbytkhim PO must complete retooling the SMS-30 with an improved technology and the replacement of the scrubbing equipment; it must also take other measures to reduce dust emissions into the atmosphere;
- in 1994 the Sumgait Superphosphate Plant must convert its production of granulized superphosphate to the chamber-assembly-line method;
- at the Sumgait Aluminum Plant they must renovate the electrolytic production line with a conversion to calcined anodes. Other environmental-protection measures must also be taken;
- at the Azerbayzhansk Pipe-Rolling Plant imeni V.I. Lenin they must construct a scrubber, i.e., gas purifier, behind the open-hearth furnaces and carry out a number of other measures which are supposed to reduce emissions by at least 8,000 tons a year.

Moreover, measures to reduce emissions into the atmosphere must also be conducted at other enterprises in this city.

The City of Gyandzha

Here the aluminum combine must renovate the three presently operating lines of the sulfuric-acid shop, converting them to a double-contact scheme and absorption, which is supposed to noticeably reduce emissions. A great deal depends upon the production standards at this enterprise. Air-protection measures will likewise be undertaken at the Gyandzha TETs [Heat and Power Station], as well as at combines producing building materials, bakery products, and at other facilities in this city.

The Cities of Mingechaur and Ali-Bayramly

Here the problem of reducing emissions into the atmosphere will be solved primarily by converting the power-engineering facilities located here to an ecologically "clean" fuel—natural gas, as well as by observing the schedule for fuel combustion and implementing measures to increase smokestack height (for the city of Ali-Bayramly). Air-protection measures must also be implemented at the fiberglass plants and at Azerelektroizolit in Mingechaur and at certain enterprises in Ali-Bayramly.

* * *

A great deal of work remains to be done in the field of reducing the harmful effect of motor-vehicle transport on the environment. With the considerable increase of the motor-vehicle fleet (to an average Union level of sufficiency) we must stabilize the emissions of pollutants by motor-vehicles at the level of 1995 [sic]. The Ministry of Motor-Vehicle Transportation, Azneft, Kaspmorneftegaz, Gosagroprom, and other organizations having transport subdivisions must adopt measures to outfit them with diagnostic posts or stations; they must not allow poorly adjusted, badly tuned vehicles to go out onto the road. The Baku, Sumgait, Gyandzha, and other gorispolkoms must improve the distribution of transportation flows and improve the network of highways and roads.

It will be necessary to maintain the position already achieved in this republic , when the overwhelming majority of motor vehicles begin using high-octane, unleaded gasolines.

Protecting Our Interior and the Optimal Utilization of Our Mineral Resources

At the present stage the raw-material sectors will remain an important base in the cause of restoring the health of and developing this republic's economy. Moreover, the basic directions for protecting and optimally utilizing the mineral and raw material resources in our republic will be to improve the equipment and technology for extracting minerals, reducing their losses during the processes of mining, enrichment, and processing, the comprehensive utilization of mineral raw materials on the basis of developing and putting resource-conserving technologies into practice, as well as converting to low-waste production.

In line with this, Azneft and Kaspmorneftegaz must make widespread use of secondary and tertiary methods of extracting oil, particularly in the old oil fields.

The percentage of extracting iron ore during mining (by the open-pit method) will amount to 97.3; the extraction of valuable components from mineral raw materials when the iron is being enriched, i.e., concentrated, will be brought up to 69.8 percent, including magnetite—up to 92 percent.

In accordance with the concept provided for developing the food industry until the year 2005, Gosagroprom must bring the production volume of mineral waters in the Azerbaijan SSR up to 850 million half-liters a year. With this goal in mind, during the period 1991-1995 we must provide for the additional introduction of capacities for producing 600 million half-liters a year, including 200 million in 1991-1995, 200 million in 1996-2000, and 200 million in 2001-2005 on an annual basis. The amount of capital investments for these purpose will come to 45 million rubles, or 15 million rubles in each five-year plan of the period being planned. The utilization of the average-annual production capacities of the facilities involved will amount to 74.2 percent by the year 1995, 82.2 percent by 2000, and 88 percent by 2005.

In toto, 621 million rubles will be earmarked for protecting our interior wealth and the optimal utilization of our mineral resources, including 612.8 million rubles of capital investments. Of these sums, 191.5 million and 189.3 million rubles respectively will be invested during the years 1991-1995.

One of the general directions in environmental protection and reducing the expenditure of natural raw materials will be drawing into production the by-products which are formed. By the end of the 14th Five-Year Plan we must achieve the full utilization of the by-products of agricultural production and closely allied processing sectors, by 92-95 percent for the by-products of petrochemistry, and by 85 percent for industrial rubber items, including steel-belted tires.

On the Apsheron Peninsula and in other places we must create electric-smelting production facilities for the complete utilization of scrap metal.

Forest Resources

Taking into consideration the fact that this republic's forests belong to the first group and basically perform water-preserving, protective, sanitary-hygienic, and restorative functions, the principal efforts must be directed at their reproduction and protection. The Azerbles PO must reforest an area of 97,000 ha, including 30,000 ha during the year 1991-1995. It must protect forests from pests and diseases by the biological method on an area of 230,000 ha or 80 percent of the total volume of forest-protection operations.

The organization of green zones in and around cities (recreational areas) must be carried out on an area of 14,100 ha. For this purpose we must allocate 59.1 million rubles, including 19.6 million rubles during the years 1991-1995. In the city of Baku alone the area of green plantings must increase by 4,160 ha at a total estimated cost of 51,6 million rubles.

In order to put a stop to cutting down forests for fuel, prior to the end of the 14th Five-Year Plan we must complete the gasification of this republic's populated points. We must carry out the construction of gas pipelines having a total length of 250 km, including 180 km during the years 1991-1995. A total amount of 59 million rubles is to be allocated for work on preserving and restoring forest resources throughout the entire period, including 19.8 million rubles for the period 1991-1995.

Resources of the Plant and Animal World

Some 9,250,000 rubles will be earmarked for the protection and reproduction of wild animals during the years 1992-2005, including bio-engineering methods.

The State Committee for Environmental Protection, in conjunction with the concerned ministries and departments, as well as the appropriate rayispolkoms of Soviets of People's Deputies, will organize three reservations on an area of 49,000 ha, including the Pirkulinskiy (10,000 ha), the Tutgunskiy (22,000 ha), and Ordubadskiy (17,00 ha) Reservations.

In order to provide a purposeful tourism, camping facilities, rest and recreation for working people, as well as to preserve natural complexes, provisions have been made to create four national parks having a total area of 502,000 ha: the Muravdagskiy (168,000 ha), Shakhdagskiy (136,000 ha), Babadagskiy (130,000 ha), and Talyshskiy (68,000 ha) National Parks.

By the year 2005 the total area of specially protected territories will reach eight percent of this republic's territory.

The reproduction of fish stocks will amount in each five-year plan to 2.8 billion units, primarily the young fish of valuable species or breeds. During the 13th Five-Year Plan the Maritime Fish Hatchery at the mouth of the Kura River will be put into operation; it will have a capacity of producing 440,000 young fish a year.

In toto, 114.6 million rubles, including 97.7 million rubles during the years 1991-1995, will be channeled into the protection and reproduction of wild animals and the organization of territories where nature is protected.

* * *

Expenditures on environmental-protection measures are slated to be increased from 460 million rubles during the 12th Five-Year Plan to 1.1 billion during the 15th Five-Year Plan. Their proportionate share in this republic's national income during the 13th Five-Year Plan is scheduled to increase to 6.8 percent or twice as much as the presently existing level.

Implementation of the provided-for program of measures will allow us to achieve a basic restoration of health

to the sanitary-ecological situation in this republic's cities and other populated centers, to improve living conditions, and to reduce the level of disease among the population. The estimated prevention of damage and harm from lowering the level of environmental pollution is supposed to amount to 2.36-2.45 billion rubles for each five-year plan.

There will be a substantial improvement in the use of natural resources. The volume of additional output due to the more complete and comprehensive utilization of natural and secondary resources will reach more than 100 million rubles a year.

More on 1957 Chelyabinsk Nuclear Accident

914E0049A Moscow TRUD in Russian 24 Jan 91 p 3

[Report on the 1957 Chelyabinsk nuclear accident by I. Tsarev: "The Hostages of Secrecy"]

[Text] **On a September morning in 1957, the courtyard of the Bauman Rayon enlistment office was filled with excited boys with shaved heads. The conscription was in progress. The music played and the military commissar made a solemn speech. Mothers, who came to see their sons off, were crying. None of them knew that this Moscow unit—which received the designation Number 360—was being sent towards a disaster...**

Says V. Popov, now a senior engineer at the CPSU Central Committee "Pravda" Publishers:

"The train brought us to the vicinity of Chelyabinsk and stopped at some unnamed platform. Then we were transported by trucks to the barracks, washed up in the baths, and received military uniforms... The weather was warm and calm. We were in an elevated mood. But the first day of service already held a surprise.

"I was looking with interest at the surrounding area through the barracks window. I saw a sports grounds, a wooden fence, and a yellowing wood grove... Suddenly a dark gray mound rose over the trees. The deafening thunder shattered the glass in the windows into small bits. I was thrown back into the corridor by a bouncy air wave. Then it was quiet again. Meanwhile black flakes that looked like pieces of burned paper started to fall on the barracks from the sky. We were catching them and examining them with curiosity...

"Then we were given dinner and loaded back into the trucks, together with the suitcases that contained our civilian clothes; this time the trip was quite long. To be honest, at that time I had no idea that I had become an unwitting witness to a very dangerous accident—a powerful blowout on one of the secret projects. Nor was I alarmed by the fact that the same day we were put through a scrubbing in the baths again, while our suitcases with civilian clothes were being burned.

"The understanding came half a year later, when I began to suffer from lightheadedness, nausea, ringing in the ears, and a constant sensation of being hungry, as well as many other symptoms of radiation poisoning.

"As a result, I found myself in a military hospital in Sverdlovsk, where they ran some tests on me and... let me go. Ever since then, and up to this day, every once in a while the skin on my hands and feet cracks and then oozes blood, taking a long time to heal. I have a permanent peeling red spot on my chest. I suffer from muscle, liver, and back pain...

"Now I understand that, just like many other soldiers who served in that area, I had become a victim of the seal that says: "Secret." It is only recently that the world has learned about the existence of a mysterious city—Chelyabinsk-40—where work on the "nuclear safety shield" had been conducted. Only recently have we learned about a powerful accidental discharge at the nuclear waste site in 1957. As a result of this disaster, a large territory—known to the specialists under the code name of VURS, which means East-Urals Radioactive Trail—had been poisoned. The sad statistics of this zone, poisoned by the radioactive dirt, are still foggy.

"In those years, however, the incident was covered by an impenetrable curtain of secrecy. Nobody even mentioned potential contamination to us.

"I honestly served my term, did not goof off, went where my commander ordered me to go. Now I am 52. I am very ill. Therefore, I recently took a chance and wrote a letter to the USSR minister of defense, asking for early retirement pension as a Soviet Army invalid. In return, I got a variety of formal replies. I was informed that there was no discharge, that I could not be subject to that discharge because I was not still in the military service... From the military unit in Chelyabinsk area I even got a letter saying 'You registered 23.54 Roentgen external radiation in May 1958,' although I had clearly stated that I happened to be near the nuclear discharge on the first day of my arrival, in September 1957...

"Most important, I still did not get any help. And the sad thing is that I am not alone in this. In 1957, tens of Muscovites from Unit 360 and other military people were in the area of nuclear catastrophe. I believe that the state has not taken care of them, either."

Alas, it is true that much has been forgotten, and sealed in secrecy for an extra measure of protection. Or perhaps Vladimir Pavlovich Popov exaggerated? But here in front of us is his medical history. There is a description of a bouquet of all kinds of ills; there is not a word, however, about the main source of his ills—radiation.

We found another participant of those old events of 1957.

Says B. Komarov, an artist who now works at OGONEK magazine:

"I also served near Chelyabinsk during the same year. On that particular day I was where Popov was. I felt the 'nuclear discharge' with my own body. I still have oozing

sores that never heal. No, I have never appealed for any help because I figured that it was useless. What rights can I talk about if the accident itself did not even exist for many years? Only recently was it mentioned publicly. Independent experts and representatives of major U.S. nuclear defense centers visited the site... But still nobody is talking about compensations for the people who suffered from this discharge. Have you been there? There is a cemetery there that makes your hair stand up: When you read the dates on the gravestones, you see that there are only young people buried there..."

The shroud of secrecy gradually slips off old events, sometimes revealing a frightening picture. Are there similar incidents that have been left "out of the picture" in locked and sealed safes? How many: one, two, ten? And who should help the people who have suffered from what had never happened? Today, when the events in Chelyabinsk-40 are no longer a secret, the conclusion is obvious: The USSR Ministry of Defense must reply in substance to V. Popov's inquiry. It is also obvious that this ministry and other related government departments must make an effort to locate former servicemen and civilians who were exposed to radiation, and provide the necessary help, late as it is. This should not be an act of charity—the state has an obligation to pay these people back what it has borrowed from them.

Environmental Problems Hit Gusinoozersk Electric Power Station

PM2301115391 Moscow Central Television Vostok Program and Orbita Networks in Russian 1530 GMT 17 Jan 91

[From the "Vremya" newscast: Report by Ya. Nikolayev, Yu. Svechinov, identified by caption]

[Text] [Announcer] Severe frosts have set in in the Transbaykal region and therefore reliable supplies of heat and electricity in the region are of utmost importance.

[Nikolayev] A large group of Ministry of Power and Electrification leaders and specialists have arrived in Buryatiya in connection with the prevailing problematic situation. In their opinion, an especially alarming state of affairs has developed at the Gusinoozersk GRES [State Regional Electric Power Station]. The smooth functioning of both Buryat and Chita Oblast national economic complexes depends on this station. The four power units of the station's first stage have been unable to maintain rated capacity for a long time. They require radical reconstruction. A serious accident occurred at the No. 5 power unit. The elimination of the consequences of this accident cost a great deal of effort and resources. The No. 6 power unit is under construction. The prospect of the planned commissioning of a further five power units is causing justified concern among local green movements.

After all, the GRES is located on the shores of the unique Gusinoye Ozero [Lake], which is suffering degradation as a result of the station's discharges of hot effluent. And then there is the problem of the discharge of sulphur-containing gases. Baykal is located only 100 km from here. In order to ensure reliable electricity supplies in the region, at least one more power unit is urgently needed, the seventh in number. However, the Buryat Committee for Environmental Protection has so far failed to sanction its construction. It is an impossible situation. Construction is banned, yet it is difficult to live in the low temperatures.

[Yu.N. Korsun,, USSR first deputy minister of power and electrification, identified by caption] It is necessary to keep expanding the station until rated capacity is achieved.

There is the ecological question, of course. Provision for a sulphur-purification system should be made on the next, the seventh, power unit. Bearing in mind that we are using relatively high-grade types of coal as regards sulphur content—the fuel contains only 0.3 percent sulphur—the seventh power unit could be built as a replacement unit. As a result of repairs, of repair periods, one of the units at the station is always going to be out of action.

[Nikolayev] What about the temperature in the lake?

[Korsun] Heat pollution, in my opinion, presents a more serious threat in the future than sulphur discharges.

[Nikolayev] The process of removing sulphur from the gases being discharged into the atmosphere has not yet been mastered in our country. Importing purification equipment from abroad would cost more than the power unit itself. It remains to be hoped that the sulphur discharges into the atmosphere will remain below the permissible level.

As for the discharges of effluent into the lake, specialists have proposed a solution—a closed-circuit water supply system. However, this issue is yet to be discussed in earnest.

Nikolayevsk Ore-Dressing Plant Pollution Causes State of Emergency

LD0202174491 Moscow World Service in English 1600 GMT 2 Feb 91

[Text] The city council of Nikolayevsk-on-the-Amur has announced a state of emergency in the area in connection with the forthcoming commissioning of an ecologically dirty ore-dressing plant in the lower reaches of the Amur River. Studies have found that the plant's cleaning facilities failed to neutralize many hazardous agents, including cyanide, the strongest of the known poisons. The city authorities have ordered that if the plant is commissioned in bypass of their ban, power supply will be cut off.

Strontium-90 Levels Rise in Issyk-Kul Lake

PM2501095591 Moscow IZVESTIYA in Russian 22 Jan 91 Union Edition p 6

[Report by Aleksandr Ryabushkin: "Strontium-90 in Issyk-Kul"]

[Text] Frunze—V. Yudakov, leader of the Kirghiz Hydrometeorological Center radiation monitoring laboratory, has made a sensational statement in the local press: Over the past two years the strontium-90 content has increased in Lake Issyk-Kul.

So far the content of this radioactive substance remains within permissible concentration levels.

Instruments were used to survey the shore and everything was checked right up to the dumping grounds of the former Kadzhi-Say mines, but the source of pollution was not found. Is it not the subject for a large-scale ecological investigation? the specialist concludes.

Who will help solve this mystery, which threatens unpredictable consequences?

'Brief Existence' of Mangyshlak Nuclear Test Site Reported

PM2401152591 Moscow IZVESTIYA in Russian 23 Jan 91 Union Edition p 2

[Correspondent Oleg Stefashin report under the "Direct Line" rubric: "Unknown Nuclear Test Site"]

[Text] Shevchenko—A special commission of the Mangistau Oblast Soviet Executive Committee has made a sensational announcement confirming the brief existence of yet another nuclear test site in the republic.

As one might expect, this had a bombshell effect in Kazakhstan. The population is alarmed and wants to know who decided to turn Mangyshlak into a dangerous nulcear weapons testing zone which destroys all living things, and why. What secret experiments were carried out there and what might the ultimate consequences be? Unfortunately, official circles have so far remained absolutely silent.

It has been ascertained that secret operations to create a nuclear test site were actually carried out in the late sixties in the Ustyurt Plateau, which is only 230 km from the city of Shevchenko. However, following three explosions at a depth of one km, the operation had to be suspended. The hypothesis is that this was due to local conditions, which turned out to be unsuitable for testing powerful weapons.

Having inspected the test site that is no more, the commission concluded that the background radiation in the locality was entirely safe. A higher level of radiation was recorded only in the vicinity of the casing of one of the shafts. It will soon be safely buried.

Certainly, the local commission failed to find answers to many of the questions that concern the population. In view of this, the Mangistau Oblast Soviet Executive Committee sent a note to the USSR Ministry of Atomic Power Engineering and Industry and the USSR Defense Ministry demanding the whole truth about the secret test site and the implementation of a range of extensive and meticulous checks at it.

East Kazakhstan Oblast Plans Ecological Damage Repair

PM1601160591 Moscow Central Television Vostok Program and Orbita Networks in Russian 1530 GMT 13 Jan 91

[From the "Vremya" newscast: Report by An. Laptev, A. Andreyev, identified by caption]

[Text] [Announcer] We have already reported about the dire ecological situation which has taken shape as a result of the activities of the Ministry of Metallurgy, Ministry of Nuclear Power Generation, and Ministry of the Electrical Equipment Industry and Instrument Making in Rudnyy Altay in cities and workers settlements overcrowded with harmful production facilities. The worst afflicted of them all, Ust-Kamenogorsk city, has even been registered at the United Nations as an ecological disaster city.

What is being done to save the doomed region?

[Laptev] About one billion tonnes of toxic industrial waste is being discharged within a radius of a mere 100 km. This is the disastrous result of the thoughtless, not to say criminal, policy of the ministries and departments which provide the local population with a livelihood. A result which qualifies for the Guinness Book of Records. Quite understandably, deputies at a recent session of the East Kazakhstan Oblast Soviet, which met mainly to adopt an ecological program, advocated taking legal action against the enterprises which are causing the pollution and obtaining reparations from them for the arable land and water they have poisoned and for agricultural produce which is no longer fit for consumption.

Thanks to the efforts of deputies and the public, a prosecutor's office department for ecological issues has been set up in the oblast, and people from the worst-polluted areas are being resettled and provided with good housing.

A local-level modern diagnostic center is being set up. What is worrying is the slow assimilation of capital investments for nature protection installations. Despite the fact that as long as two years ago the country's State Planning Committee issued a protocol which gave the green light to the construction of such installations.

The session was attended by union and republic representatives.

[Andreyev] Aleksandr Pavlovich, what is your view, please, of the oblast ecological program which has been drawn up. And how does it fit in with the union-wide, or rather the republic-and-union, ecological program?

[A.P. Tsygankov, deputy chairman of the USSR Council of Ministers Commission for Emergency Situations, identified by caption] I believe that the chapter which deals specifically with this oblast should be one of the sections of that program, since the nature of pollution in this oblast is unique. There is an excess of heavy metals and other components, which are having a negative effect on both the state of the environment and, most importantly, the population's health.

[Andreyev] Can you add anything?

[V.F. Kostin, deputy chairman of the USSR State Committee for Environmental Protection, identified by caption] I would like to say that our presence here is an expression of our desire to concretize this program by means of indicators such as the ecological efficiency of the planned measures. The effect on the environment. There is no need to incorporate it in some kind of major state document. It can best be concretized here at the level of the oblast, the level of the city, and the level of individual enterprises.

Pace of Space Debris Clean Up in Kazakhstan Criticized

PM0402113591 Moscow PRAVDA in Russian 30 Jan 91 First Edition p 8

[PRAVDA correspondent V. Ryzhkov report under "Tickertape" rubric: "Payment for 'Rain'"]

[Text] Metal falls from the skies in these parts, and the pastures of many farms in Dzhezkazgan Oblast are littered with space "refuse." With a view to maintaining secrecy the spent stages of booster rockets were for many years blown up here and the fragments scattered over the fields, contaminating the land with toxic substances. But who at that time could make military departments pay damages?

A year ago there were finally signs of progress. Representatives of Glavkosmos [Main Administration for the Creation and Utilization of Space Technology] went to Dzhezkazgan. They gave their word that they would restrict the areas where the "metal" falls from the sky, alter the method of blowing up the stages, and clear pastures of the fragments. A special subunit was even organized for these purposes.

The set date has passed. But the major department has not entirely kept its word. Only 8,000 tonnes of space "refuse" have been collected in the intervening period. At this rate the "harvest" will drag on for many years. So Glavkosmos is being sued for 1.7 million rubles. But will it be able to pay?

REGIONAL AFFAIRS

EC, EFTA Agree To Stabilize Carbon Dioxide Emissions

91AN0100A Brussels EUROPE in English
7 Nov 90 p 14

[Article: "EEC/EFTA/Greenhouse Effect: The '18' Agree To Stabilise CO_2 Emissions by the Year 2000"]

[Text] Geneva—During their meeting of Monday 5 November, the environment ministers of the EEC and the six EFTA [European Free Trade Association] countries agreed to stabilise carbon dioxide (CO_2) emissions by the year 2000, this gas being one of the main causes of the greenhouse effect. On this occasion, Commissioner Carlo Ripa di Meana stated: "The decisions taken will strengthen Europe's position." EUROPE notes that the joint "Environment/Energy" Council of last week had adopted an identical position for the EEC. Although the EEC's decision provided for some flexibility for the United Kingdom (stabilisation of CO_2 by the year 2005), the Swiss Minister of the Interior, Mr. Flavio Cotti, who chaired Monday's meeting, stated that all the EFTA member countries had adhered fully to the commitment to limit these emissions.

EC Hosts Solar Energy Seminar in Nicosia

91WN0151D Paris AFP SCIENCES in French
15 Nov 90 p 27

[Unattributed article: "Solar Energy Seminar in the Mediterranean"]

[Text] Nicosia—A solar energy seminar, held recently under the auspices of the EC, has concluded that it is both desirable and technically possible to increase the solar energy portion of total energy consumption in the countries of the Mediterranean basin to five percent between now and the end of the century. Held in Nicosia, the three-day solar energy seminar brought together 120 professionals and government officials from 21 countries of the EC and the Mediterranean basin.

Solar energy currently accounts for two percent of EC energy consumption. Only a few countries, such as Cyprus (4.3 percent), Israel, and Greece come close to the five percent objective, according to documents published at the close of the seminar.

"The solar energy field lends itself fully to cooperation among technical centers and small and mid-sized industrial firms in the countries of the Mediterranean and the EC," the seminar's conclusions state. They also advocate "developing contacts in order to promote technology transfer in the form of joint ventures and industrial and trade agreements."

The seminar's conclusions, which will be transmitted to the governments of the countries of the EC and the Mediterranean basin, recommend "implementation by the Mediterranean countries of appropriate mechanisms designed to increase the solar energy portion of energy consumption," specifically through "the adoption of legislative and regulatory measures aimed at developing the use of thermodynamic solar energy technologies through financial and tax incentives and deterrents."

FRANCE

Environment, Energy Control Agency Created

91WN0151A Paris AFP SCIENCES in French
22 Nov 90 p 35

[Unattributed article: "France: Senate Passes Bill Establishing Environment and Energy Control Agency"]

[Text] Paris—During the night of 15-16 November, the French Senate passed the first reading of the bill establishing the Environment and Energy Control Agency, introduced by Mr. Roger Fauroux, minister of industry and land management, and Mr. Brice Lalonde, minister delegate of environment. The object of the bill is to exploit and develop synergies between the Agency for Energy Economies, the Agency for Wastes, and the Agency for Air Quality.

The economic affairs committee pushed through adoption of amendments that preserve the specificity of each branch of the new agency—thereby avoiding the elimination of technical specialties—and establish independent control of proceeds from the envisaged special taxes. An additional article specifies the makeup and duties of a commission overseeing the activities of the agency.

A Senate amendment provides equal representation for the various categories of representatives or persons on the agency's board of governors. Mr. Philippe Francois (RPR) [Rally for the Republic] obtained the inclusion of trade representation for the industrial, commercial, and service sectors. At the initiative of Mr. Roland Grimaldi (Socialist), the title of the bill was amended to read "Environment and Energy Control Agency" instead of "Environment and Energy Economies Agency."

Pollution Cleanup Firm Launched

91WN0151B Paris AFP SCIENCES in French
22 Nov 90 p 36

[Unattributed article: "Geoclean: A Company Specializing in the Rehabilitation of Contaminated Sites"]

[Text] Paris—On 16 November, the formation of Geoclean, the first French company specializing in the decontamination and rehabilitation of industrial "problem spots" and dump sites contaminated by improper chemical storage, was announced.

According to president and general manager Jacques Demblans-Dechans, the new company, a 50-percent

subsidiary of Genie Chimique Applique and France Dechets, wants to carve a niche for itself in France in "a brand new market in which almost everything remains to be done." (France Dechets is a subsidiary of the Lyonnaise des Eaux-Dumez group.)

Geoclean recalls that, unlike other countries, France has neither specific regulations on the treatment of seriously contaminated sites nor a definition of contamination levels. Nevertheless, 500 "problem spots," a heritage of old industrial practices, have been identified by the official services of the National Agency for Treatment and Elimination of Wastes. Geoclean believes that "thousands of others have yet to be discovered."

The new company, which will also target foreign markets, has responded to the request for proposals for the treatment of the Montchanin dump site (Saone-et-Loire Department), the cost of which is already estimated at several tens of millions of francs.

National Environmental Coordination Organization Formed

91WN0151C Paris AFP SCIENCES in French 31 Oct 90 p 44

[Unattributed article: "Birth of the Organization National Environment and Waste Coordination (CNED)"]

[Text] Pibrac—The organization National Environment and Waste Coordination (CNED) has been founded following the third national "Environment and Waste Days," held during the weekend of 27 October in Pibrac, near Toulouse.

CNED, the culminating step of the coordination movement launched in November 1989 in the wake of the public dump "affair" in Montchanin (Saone-et-Loire Department), will have a temporary board of nine regional representatives, chaired by Pierre Barrellon, who heads of the Montchanin Association for the Defense of the Environment (ADEM).

CNED is an umbrella organization for 102 associations of from 50 to 4,000 members. Its function will be "to inform, support, coordinate, and assist budding associations," according to its new chairman. "The purpose is to give an official character and concrete structures to a movement whose number one objective is still health," Mr. Barrellon added.

Some 350 people representing around 30 associations were present at the invitation of the local association, which succeeded in May in preventing the creation of a proposed household waste dump near the village.

Minister of the Environment Brice Lalonde, who had been invited, was represented by his head of cabinet.

Politics of Lalonde's Ecology Generation Examined

91ES0287X Paris LE QUOTIDIEN DE PARIS in French 17 Dec 90 p 8

[Article by Stephane Rak: "Ecology Generation: Lalonde President in His Own House"—first paragraph is LE QUOTIDIEN DE PARIS introduction]

[Text] This weekend Ecology Generation held its first general meeting. During it, Brice Lalonde underscored his independence while reaffirming his loyalty to the presidential majority.

Bravo! Brice Lalonde was elected president of Ecology Generation this weekend. It was hardly a surprise, since he is after all its founder and, most important, the only candidate to seek the position. Mr. Lalonde must be a happy man: He was recently made a full minister, has been embraced by the 400 members of Ecology Generation (gathered for the first time in a general meeting), and is esteemed by the French.

According to a CSA poll taken from 23 to 30 November, 54 percent of those questioned think Lalonde is a good minister of the environment. And if presidential elections were held, he would get eight percent of the votes, compared to 32 percent for Michel Rocard, 23 percent for Valery Giscard d'Estaing, 17 percent for Jacques Chirac, 11 percent for Jean-Marie Le Pen, 9 percent for Antoine Waechter, and 7.5 percent for Georges Marchais. Oddly though, the French, who seem to appreciate Brice Lalonde, know little about him. Judge for yourself.

Eighty-four percent of those polled believe Lalonde is a member of a political party (he belongs to the presidential majority). Forty-four percent assign him to the Socialist Party and 12 percent to the Greens. That last mistake probably does not thrill him. Brice Lalonde has never been a member of the Green party. Apparently the many criticisms he levels against it are not virulent enough to underscore the fact of his difference. In any case, is he right to criticize? Still according to the same poll, 30 percent of respondents approve the autonomous line taken by the Greens, while only 12 percent think the "ecolos" (environmental political activists) should belong to the presidential majority.

Nonetheless, Brice Lalonde enjoys a better image than Antoine Waechter. Forty percent of those polled think the first would make the better ecological spokesman in an electoral campaign, while 22 percent prefer the second. The fraticidal struggle between the two enemy "ecolos" is far from over. Brice Lalonde dug up the hatchet when he created Ecology Generation six months ago. And there is no longer a week that goes without one of the two making some "amiable remark" directed at the other.

Realistic Ecological Politics

Yet the two movements are not fishing in exactly the same waters. On environmental questions, there is an

excellent chance that voters will be unable to distinguish between the Greens and Ecology Generation, despite Lalonde's assertion that he is practicing "realistic" ecological politics while his competitor is "idealistic, sulky, and oriented toward the past." On the other hand, those who have turned to Waechter because of his independence and refusal to ally himself with either the Right or the Left will probably not come running to Lalonde's camp.

The minister of the environment knows this very well. He underscored his independence from the presidential majority this weekend, while affirming his loyalty to it. "We are not prisoners," he said, "and we will not allow others to lay down the political rules. Our movement is independent, which does not mean isolated. We want, in fact, to be a laboratory for future political life in France." Lalonde even praised the RPR (Rally for the Republic) members who walked out and the attitude of the Socialist 'quadras.' "I invite them to come, they will be welcome among us," said the minister of the environment.

Mauroy Irritated

These remarks will irritate anew the first secretary of the PS [Socialist Party], Pierre Mauroy. He takes a dim view of the emergence of Ecology Generation which, although it may help reclaim a few green votes, could also take away a few pink ones. Already, despite Mauroy's instructions to socialist militants that they not join Brice Lalonde's movement, three PS elected officials have hopped on board anyway: Marie-Noelle Liennemann, Essone deputy, Jean-Michel Belorgey, Allier deputy, and Franck Serusclat, Rhone senator.

Brice Lalonde is disturbing. He is a minister who refuses to keep his mouth shut when he does not agree, an ecological activist who will not leave environmental questions solely to the Greens, and a "presidential majority" member who is not accountable to anyone and who will "propose candidates when there are no others we like." The question is whether he will do this even at the expense of his political allies, as he did in Vierzon. There the candidate supported by Brice Lalonde—Jean Rousseau, an PS dissident—won over the leftist-union communist candidate.

GERMANY

Government Adopts Carbon Dioxide Reduction Program

91MI0078A Bonn WISSENSCHAFT WIRTSCHAFT POLITIK in German 14 Nov 90 p 3

[Text] Following a recommendation by Federal Environment Minister Professor Klaus Toepfer, the cabinet decided last week to set up a national CO_2 reduction program to protect the environment. The aim is a 25 percent decrease in CO_2 emissions by the year 2005. The Federal Government will apply a comprehensive list of measures to achieve the desired reduction of carbon dioxide emissions in the Federal Republic of Germany. This is an addendum to the cabinet's decision in June this year. While the reduction target of 25 percent for the previous federal area will still stand, the goal for the new federal lands will be to achieve a considerably higher percentage of CO_2 reduction by the year 2005. At present, the Federal Republic of Germany produces some one billion metric tons of CO_2 emissions annually. Of this 716 metric tons come from the new lands. According to the Federal Environment Ministry, the per capita CO_2 emission for Germany as a whole is 13.7 metric tons per year (former FRG: 11.7 metric tons, former GDR: 22.4 metric tons). The program drawn up by the cabinet is designed to reduce CO_2 emissions in the Federal Republic by some 300 million metric tons over the next 15 years. In Bonn, Federal Environment Minister Teopfer called on all citizens to help reduce CO_2 emissions: "Achieving this ambitious target demands efforts from industry, the energy sector, motorists, and consumers."

Land Reclamation Technology Development Project Launched

91MI0066A Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German 29 Oct 90 pp 14-15

[Text] The reclamation of polluted soils and the search for appropriate technologies for soil decontamination are the topics of the Dortmund joint research and development project on "Further Development and Testing of Reclamation Technologies." The following topics will be examined:

- How a modular, low-emission extraction system with various technical components would look;
- How thermal processing could be optimized;
- How physical and chemical methods would be used to complement thermal soil decontamination;
- How thermally decontaminated soil could be tested and recycled, and
- How to deal satisfactorily with environmental compatibility, technology impact and risks, hazard assessment, social acceptability, integration of urban development and the natural landscape, and administrative management.

This joint R&D project involves not only finding technical solutions, but also grasping all their marginal conditions so that the solution subsequently proposed will be accepted by the public.

The project is therefore divided into three specific fields of operation: the technical work packages, the interdisciplinary support network, including project management, and the basic research on recycling decontaminated soil.

Six firms are participating. Kloeckner-Becorit (Recklinghausen) is developing and testing an encapsulated

extraction device and transport and extraction technology for low-emission extraction in restricted spaces.

ETR (Technology Park) is engaged on developing pollutant sensors that detect the pollutant content at the point of emission and pass the information on to the operator. A top cover structure by Hoesch that has proved itself in excavation work will be modified to spare nearby residents disturbance during the reclamation work. Low-emission excavation is also the goal of the temporary halls contributed by Neuro. Zueblin (Stuttgart) is also providing additional safety measures for low-emission excavation. In addition, this firm is examining ways to optimize thermal cleansing equipment.

Finally, Hoelter is working on the development of a modified partial exhaust gas purification system.

This technical work package will cost more than 15 million German marks [DM]. Half of this will come from the Federal Ministry of Research and Technology (BMFT) and the rest will be contributed by the six participating companies.

Specialists from various fields are involved in the interdisciplinary support network. Fresenius Consult GmbH, Taunusstein, is working on a coordination strategy, the Battelle Institute, Frankfurt, is studying the social acceptability of polluted site reclamation, and the Department of Civil Engineering and Water Conservation at the Faculty of Development Planning at Dortmund University is examining area compatibility.

Intersubjective risk assessment for polluted site reclamation technologies is the topic assigned to the Department of Foundation Engineering and Soil Mechanics at Bochum University. A team formed by Fresenius Consult GmbH and Focon Engineering Company mbH, Aachen, are developing an evaluation model to assess the hazards that polluted sites represent, and the Institute of Environmental Protection (INFU) at Dortmund University is working on the harmonization of processes and licensing procedures for contaminated soil reclamation methods.

The DM2.8 million required will be provided by the Federal Ministry of the Environment, Nature Protection, and Reactor Safety.

Finally, six institutes of higher education are involved in projects on decontamination recycling soil: the Institute of Pedology at Hamburg University, the Geological Institute at Cologne University, the Biology Department at Dortmund University, the Faculty of Life Sciences and Earth Sciences at Essen University, and the Institute of Highway and Railroad Construction and the Department of Foundation Engineering and Soil Mechanics, both at the Ruhr University, Bochum.

The project management team for the joint project is made up of employees from the Trade Promotion Office and the Environment Office of the city of Dortmund. The project management and the tests as to the reusability of decontaminated soil are expected to be funded by the BMFT. The city of Dortmund will contribute DM600,000.

Morsleben Nuclear Waste Dump Defended as Safe

91WN0173A Magdeburg VOLKSSTIMME in German 6 Dec 90 p 3

[Article by Uwe Ahlert: "A Journey to the Center of the Earth at the End of the World: 507 Meters Under Morsleben—A Secure Tomb or the Beginning of the End?"]

[Text] Safety chief Hartmut Schulze's opinionated interpretation: "Citizen initiatives always criticize how little of GDR history was rescued and transferred to the United Germany. But Morsleben would, after all, be a positive case. And we are proud of it."

You can hear the dull echo of the metallic bangs as a signal that you can come in. The people who slide down into the mountain maintain breathless silence and deadpan faces. Down you move, half a kilometer at a rate of six m per second. Again, the banging sound: you have reached the fourth and deepest bottom level. Now you are moving in a long corridor that makes a rather mystical impression. It is bumpy and dark and the light from the flashlights casts shadows upon the hard-hatted shapes. Then, at last, after a slight rise, glaring light appears in the white salt on the ceiling and the walls. And there they are: the barrels, stacked in rows of five, with the ominous black symbol indicating radioactivity. This is atomic waste and you have reached the terminal station.

Morsleben, located in the Haldensleben Corner, is so far Europe's only terminal dump for radioactive waste. Located just a year ago in the GDR border strip, it was far away from the demonstration-threatened population centers. Here, at the end of the Earth, the dangerous refuse of civilization was hidden from the suspicious eye of the citizen. Not a word came out of the depths of what once upon a time was a salt mine. The bigwigs in the government had ordered a total news blackout because of the necessity of converting the Rheinsberg nuclear power plant of the GDR, which was opened in 1966, to a permanent atomic dump in 1978. Says Hartmut Schulze, safety and publicity department head: "SED [Socialist Unity Party of Germany] policy was a crazyquilt of sentiments intended to address consciousness. There was little room for technical comprehension and scientific facts. This is why they made a big secret out of Morsleben, out of fear of possible human emotions that might spring up from here."

Now, the 260 employees of the permanent dump want to come out of the dark, with their barrels and all. "There are far greater evils that we human beings have to cope with," says Hartmut Schulze once again. "For example, the growing hothouse effect coming from the coal-fired

power plants." Still, the people here and those from the Federal Radiation Protection Office, as the current operators, do display due respect for the radioactive residues. But they are not going along with this anxiety psychosis.

Presently, 1,4200 cubic meters of atomic waste are stored in several chambers. There is room here for as many as 75,000 cubic meters and 96 percent of these substances have been labeled as having low radioactivity; the remaining four percent reportedly possess a medium degree of radioactivity. From irradiated work suits from Greifswald all the way to the contaminated scrap, from used laboratory utensils to liquid substances that today, of course, may no longer be stored. The magnitude of the radioactivity of these substances is five times 10^{14} Becquerels. If Gorleben should after all some day get an operating license, then plans call for storing highly radioactive, heat-generating waste up to 10^{21} Becquerels. In other words, in this numbers game and, looking at the type of atomic waste involved, there is no comparison, thinks Dr. Eckhart Viel, of the Radiation Protection Office.

The Morsleben site is as sure and reliable as the word "Amen" in the church, it is said further. But our descendants would have to move proverbial mountains to get at the barrels. However, even that is not dangerous, because in spite of a required insulation time of 1,000 years, to be on the safe side, the stored substances allegedly decay in just a few decades. The operators also dismiss suspicions as to any influence on the water table. How could that possibly happen at a depth of more than 500 m since the springs run dry much farther up? Here is what the people from the Radiation Protection Office go by: Morsleben is a coffin and not a hell on earth.

Is the atomic waste dangerous or is it not today—and what about tomorrow? This is a question that the operators and scientific advocates of terminal dumps answer for themselves. With facts and not with feelings. Using attacks upon the competence of those scientists who nag and grumble as they issue their warnings, such as, for example, Hamburg geologist Grimmel or researchers from the Darmstadt Institute of Economics, who frown thoughtfully in matters of safety. "The most critical scientists are in our camp and this is also why terminal storage is so safe and why the residual risk is so calculable," says Dr. Viel.

But safety is a relative term. However, the layman does not know just exactly how relative a term it is—and that of course includes most people. Still, they just simply have to live with this relativity. Do we really have to?

Environmental protectionists are afraid that the Reactor Safety Company, which got a contract from Toepfer's ministry, will simply give the atomic waste dump a "clean bill of health." Morsleben must not become a bottomless barrel, a terminal deposit with endlessly arriving radioactivity. Using the Morsleben example—they ask—should not every effort be made to provide reliable evidence that the proper decontamination measures are being taken so that no nuclear power plant will have to be closed down and so that the construction of new nuclear power plants will not be obstructed? Is it not high time to look around very intensively for alternatives to atomic power and to push energy savings forcefully so that the barrels with the black lettering will not completely bar our way on our further journey to the center of the Earth in decades or even centuries?

Water Seepage Causes Problems at Waste Disposal Sites

91WN0003D Duesseldorf VDI NACHRICHTEN in German 7 Sep 90 p 41

[Text] Duesseldorf 7 Sep—After decades of water seepage at waste disposal sites, heavy metals and chlorous substances have entered the soil and ground water. A new regulation stipulates that effective immediately discharges from landfills must undergo a preliminary purification process since the local water treatment facilities are no longer capable of handling the chemical zoo contained in the seepage water.

Most of the 320 or so household landfills are not covered allowing precipitation unencumbered access to the sites. About one fourth of the rain seeps through the landfill, absorbing pollutants in the process, and exits in the form of seepage water. In an open refuse dump, 1 hectare of garbage produces five cubic meters seepage water per day.

Almost all household waste disposal sites contain solid household refuse plus industrial wastes and sewage sludge. The interior of a landfill resembles a chemical factory spun out of control. Countless substances are released in physical and biological reactions—in addition to biologically degradable substances and high saline concentration, the water seepage unearths heavy metals, ammonium compounds and non-degradable compounds. Furthermore, the dump acts like a sponge: "In hazardous waste sites it can take up to 20 years before the water seeps out," says Dr. Friedrich Schoder of the Zweckverband Sondermuell-Entsorgung Mittelfranken (ZVSMM) in Schwabach.

In the past, surveying and cleaning seepage water was not everyone's priority by any stretch of the imagination. According to information released by the Berlin Office of the Environment, 10 percent of the waste disposal sites still in operation do not have a catchment basin for seepage water and most of the landfills are not sealed adequately at the base, to say nothing of the old waste disposal sites. "From an economical perspective, supplementary repairs are pointless in most cases," stresses Professor Joachim Drescher of the Office for Soil Research for the state of Niedersachsen. Only at 43 refuse sites is seepage water treated directly on-site. In most cases, it is irrigated across the landfill or it is transported in tanks to the next sewage treatment facility. Part of the seepage water trickles into the soil and ends up in the ground water.

Yet, even at waste disposal sites where seepage water is caught and treated, the results are not always satisfactory. Local sewage treatment facilities are often overburdened by the chemical zoo from the garbage dumps releasing pollutants into bodies of water. According to the water resources management law, seepage water contains "hazardous substances" and, since 1987, is supposed to undergo preliminary treatment before it is allowed to enter the sewage treatment facilities. But appropriate official enforcement standards were not introduced until January of this year.

"Managers of waste disposal sites, planning engineers and not least the authorities breathed a sigh of relief when this long-awaited regulation finally took effect," says Richard Damiecki of the Society for Environmental Technologies in Viersen. Even if, in his opinion, they produce distortions relative to practical applications. Against the backdrop that in the future local sewage treatment plants will be equipped with nitrogen and phosphate eliminators he finds it incomprehensible that the ammonium concentration in seepage water must be reduced to below 50 mg/l during the preliminary treatment process when "the enlarged treatment plants, by all means, are capable of treating ammonium concentrations of 200 mg/l."

Yet, such facilities still constitute an exception. Out of roughly 8,000 local sewage treatment plants in the Federal Republic of Germany, only several hundred are equipped to eliminate phosphates and nitrogens.

The new regulation is encouraging the development of alternative methods for treating seepage water. At the University of Stuttgart, a working group is investigating the possibility of treating pollutants with UV radiation. In a newly developed "Fallfilm Photoreactor," a thin film of water is led to pass by UV lights very closely. The radiation decomposes hydrogen peroxide into radicals. This highly reactive compounds subsequently oxidize organic pollutants into carbon monoxide and water, chlorous substances are turned into nontoxic chlorides.

Those substances unsuitable for such treatment undergo a process developed by the Hofstetter company in Hindelbank, Switzerland. In a first step, the seepage water is separated into 95 percent pure water and five percent concentrated pollutants in what is called the "Autoflash-Multistep Evaporation Machine." Following a thickening treatment, the pollutant concentrate is disposed of at a hazardous waste site. Ammonium and other volatile substances are separated from the distillate.

To achieve true decontamination seepage water often must be subjected to a combination of several treatments. Furthermore, depending on the degree of pollution of the seepage water, different methods are required. For instance, highly polluted water from hazardous waste sites is evaporated on the surfaces of heating elements by the ZVSMM in Schwabach. Pollutant deposits on the heating elements are avoided by a fluid bed in the heat regenerator. However, high energy and material costs drive the price up to 120 German marks per cubic meter—this treatment is still too expensive for household refuse disposal sites.

Schering's Decontamination Research Outlined

91WN0003C Duesseldorf HANDELSBLATT in German 12 Sep 90 p B2

[Text] Handelsblatt 11 Sep 90—Many companies are currently grappling with the problem of polluted waste sites. The Schering Pharmaceutical Company in Berlin is one of them. Solvents have been detected in the soil and ground water of Schering's plant, including dichloromethane, acetone, benzene, and toluol. To test their effectiveness, natural bacteria will be employed to decontaminate this unusually complex pollutant "cocktail."

When at the behest of Berlin's new city government Schering submitted its report on environmental pollution over the past 15 years, officials at the Bureau of the Environment had to plough through a thick file of documents.

Years of working with chemicals in Berlin's district of Wedding has left its mark on the environment. Analyses of soil samples revealed that the ground water and soil contained anywhere between five and ten solvents, including dichloromethane, acetone, benzene, and toluol. The ground water contained a total concentration of 50 and 100 milligrams of solvents per liter. "Certain plant areas proved to be huge waste sites," said a spokesman for the city government.

To test their effectiveness, natural bacteria will be employed to decontaminate this unusually complex pollutant "cocktail. As Dr. Rolf Ludwig, Schering's expert on environmental issues, put it: "During the process of decontaminating the ground water, we do not intend to shift the problem to another area. Therefore, we are looking at a process that will tackle the problems right where they are—on-site."

In the pursuit of this goal, one of the most interesting procedures is the application of microbiology. When analyzing test samples, pseudomonad bacteria were found to be present in contaminated soil and ground water. These microorganisms are capable of utilizing organic pollutants for their metabolism and breaking them down into carbon dioxide and water.

After these little helpers had provided proof of their capacity to decompose these solvents in the laboratory, Schering decided to conduct a microbiological-technical experiment. In collaboration with Argus, an environmental company in Berlin, they installed an apparatus which currently treats 200 liters of ground water per hour.

The contaminated water is pumped to the surface from a depth of 37 meters and transferred into a tank with a capacity of 2.5 cubic meters. In this holding tank, the

contaminated water is apportioned into doses and is subsequently decontaminated by the microorganisms in the controlled environment of a microbiological reactor.

Following the microbiological procedure, the water is led to pass over an active charcoal filter to prevent pollutants from escaping into the atmosphere. Since some of the solvents in question are light solvents, the air which is to enter the bioreactor is led to pass over an active charcoal filter populated with microorganisms which intercept and decompose the pollutants.

Finally, the air is led to pass once more over an active charcoal filter to ensure that no solvents escape into the atmosphere.

Even though air and water have been cleansed during the aforementioned treatment, Schering representatives are not certain to which degree the microorganisms have contributed to the decontamination process. Consequently, they plan to optimize the system so as to measure constant water and air currents exiting the reactor and, based on these measurements, to calculate balances.

The commissioner for the environment believes, however, that microorganism are capable of decomposing organic pollutants stating that each case must be treated separately. "There are no ready-made solutions to this," he said. "You must deal with each separate mix of pollutants. And the difficulties lie in the details which must identified carefully. We are currently in a learning phase and we need more time."

During the coming months, however, two conventional apparatuses will be installed to move ahead the decontamination efforts in the meantime. The machinery will pump between five and 25 cubic meter ground water, strip it into columns and cleanse both air and water currents with the aid of active charcoal filters.

The German Federal Office of the Environment is observing the efforts by Schering with great interest lest they provide further information on the effectiveness of microorganisms in the clean-up of the environment.

Although the developments in the area of bacterial clean-up of the environment are far from being completed, the Office of the Environment already attaches great importance to the role of biotechnology for the future decontamination of waste sites. Dr. Volker Franzius, the Office's expert on waste sites views this procedure as "a silver lining with respect to the problem of waste sites," not least because he hopes that microbiology will make a "contribution to the cost-effective solution" of the problem of cleaning up waste sites.

Despite the fact that decontamination by biological means are subject to price fluctuations, depending on the process, overall they are more cost-effective than conventional methods. Furthermore, the use of microorganisms does not alter the entire soil structure and biology, as does the thermal approach for example, thus rendering renaturation measures unnecessary.

However, Volker Franzius warns against premature "euphoria" about the effectiveness of bacterial clean-up because it is already becoming evident that microorganisms are not a pat solution to the problem of contamination. In such cases where short-term clean-ups are required to prevent environmental disasters, microbiological decontamination is not suitable since the little helpers require too much time for the decomposition of pollutants. Similarly, the bacteria were not able to effectively and satisfactorily deal with contamination caused by anorganic pollutants. It is anticipated that in the future, these little helpers will be used in lightly or and medium-heavily contaminated waste sites.

Transparent Insulation for Solar Energy Systems Developed

91WN0003B Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 19 Sep 90 p 8

[Text] Frankfurt, 18 Sep—For some time now, the Fraunhofer Institute for Solar Energy Systems has concentrated its efforts on the use of solar power and the development of transparent insulation solar systems. Supported by the Federal Ministry of Research and Technology with roughly 10 million German marks [DM], their research has placed a major emphasis on heating buildings with solar energy. During the past few years, transparent insulation solar systems were developed for use in new buildings as well as in old buildings undergoing renovation.

Since a high percentage of the end users of energy are buildings, accounting for approximately 35 percent, transparent insulation offers interesting perspectives of application. As a result of newly developed transparent insulation materials it was possible to improve solar power systems so as to make solar energy practical also in the winter time.

The transparent insulation is attached, in combination with a window pane serving as the outer shield against weather exposure, to a facade painted in a dark color. Solar radiation is absorbed by the facade, stored by the brickwork and emitted to the interior rooms. The brickwork does not cool off significantly owing to the excellent insulating properties of the system. A shading device facilitates control of radiation intensity and prevents overheating during the summer. For the first time ever, an old multi-family apartment unit built in the 1950s was renovated utilizing transparent insulation in a cooperative operation between the Institute and the Siedlungsgesellschaft Freiburg, represented by the Freiburger Stadtbau GmbH and the utility company Freiburger Energie- und Wasserversorgungs AG. Of the total cost of the research effort amounting to approximately DM1.1 million (excluding conventional construction costs) the Federal Ministry for Research and Technology covers roughly DM700,000, the Freiburger Energie- und

Wasserversorgungs-AG approximately DM300,000, and the Freiburger Stadtbau DM105,000. Within the framework of this project, transparent insulation measuring approximately 120 square meters was installed on the southeast and southwest-facing facades of an eight-unit apartment building on Sonnenaeckerweg in Freiburg. In addition, countersash windows with special insulation blinds developed by the Institute were put in place. When the blinds are closed, heat loss through the windows is reduced by more than one half. The blinds are operated individually by the residents with the operating mechanism consisting of solar cells integrated into the window and built-in storage units. Such mechanisms render elaborate cable hook-ups redundant. Any additional heating requirements in this building are provided by individual gas or electric furnaces.

A second building was equipped, in accordance with Swedish insulation standards, with insulation measuring 10 centimeters, insulated windows and a heat recycling system, far exceeding the FRG government's regulations for thermal insulation. In this case, the additional heating needs are satisfied through a central gas heating system. The buildings were completed at the end of 1989.

A central aspect of the Institute's research work is a direct comparison between these two building. To that end, a comprehensive analysis scheme was developed for evaluation of the solar facade's thermal performance, including for the comparison house. In addition to providing answers to the heating requirements of both houses, the analysis is also designed to furnish information on the use of different heating systems used in connection with, and in addition to, the transparent insulation system.

During the preparatory phases of the project, elaborate preliminary calculations were made in collaboration with the Fraunhofer Institute for Construction Physics in Stuttgart. Based on these calculations, the heating requirements for the entire building of 400 square meters before renovation was 90,000 kilowatt-hours per annum.

Heating data collected during the period January to May 1990 allowed for a determination of initial energy consumption patterns. The heating needs for the building with transparent insulation were 19,000 kilowatt-hours per annum, results that nicely correspond to the precalculated 17,000 kilowatt-hours.

In comparison to the calculated annual heating requirements of 40,000 kilowatt-hours for the same building presently operating with conventional insulation standards, this constitutes a reduction by more than 50 percent. Assuming that the conventional heating requirements were satisfied by fossil fuel heating systems, this constitutes a savings in heating oil of approximately 3,000 liters per year. The "super-insulated" comparison house with the heat recycling system had an annual heating requirement of 31,000 kilowatt-hours.

A final evaluation of the technologies is not expected until after the completion of the measuring period at the end of the heating season 90/91. For questions and further information, please contact Dr. Zastro at the Fraunhofer Institute, Oltmannstrasse 22, 7800 Freiburg, Telephone (0761) 40147.

New Systems Detect, Measure Pollution in Sea

91WN0003A Duesseldorf HANDELSBLATT in German 19 Sep 90 p 29

[Text] Duesseldorf, 18 Sep 90—For the past three-and-a-half years, Kiel-based navy pilots have flown hundreds of hours with two Dornier Do 28 D2 airplanes in missions on behalf of the environment. Using first generation surveillance equipment—radar, optical measuring instruments, evaluation and storage systems, as well as photo and video cameras—they detected more than 500 incidences of sea pollution in the North Sea and the Baltic and identified the polluters.

Under contract with the Federal Ministry for Research and Technology, the Kiel-based company Krupp MaK Maschinenbau GmbH, in cooperation with scientists, is developing sophisticated surveillance sensors for an improved second generation system. Its primary tasks will include enhancing accuracy in surveillance results for detecting oil spills; ascertaining even low concentration of pollutants; and finding additional hazardous chemicals. Among the new features of the second generation system will be its improved night and weather capabilities, facilitation of the operator's tasks through improved handling of the controls as well as extended ranges and durations of the missions. Furthermore, the noise level of the new DO 228 ship plane will be reduced.

Air-to-ground communications will be handled through a new "Data Down Link" apparatus. It transmits data to land or sea-based ground receiving units. The purpose is to make all sensory images immediately and readily available on the ground so as to facilitate prompt assessments of the situations and speedy coordination of necessary steps to combat pollution. Upon completion of a flight mission, the staff at the ground evaluation station prepares a documentation based on the surveillance data obtained during the mission.

It is expected that as early as end-1990 an airborne surveillance system featuring some of the components of the mission equipment will be in the air. The equipment is estimated to be completed by spring 1992. The objective is to communicate the data gathered on-board to the "Central Control Office" in Cuxhaven and to the German Hydrographic Institute. There, procedures to fight the pollution will be initiated and coordinated and polluters will be nabbed and brought to justice. With yesterday's expansion of Germany's marine area in the Baltic Sea, the ability to perform these tasks has gained even greater significance.

IRELAND

Content of New Environment Bill Summarized

91WN0207A Dublin IRISH INDEPENDENT in English 5 Dec 90 p 10

[Article by Tony O'Brien, environment correspondent: "Environment Bill: Polluters Face Fines of £2M-Plus"]

[Excerpt] Polluters face penalties of more than £2m under the long-awaited Bill establishing the new Environment Protection Agency (EPA), due to be published next Tuesday, it has been learned.

The Bill, containing 100 different sections, will be unveiled jointly next week by the Environment Minister Padraig Flynn and Environmental Protection Minister Mary Harney.

It will set out the functions of the powerful new Agency, which will have a core of about 25 staff headed by a specially-appointed Director General.

The EPA—first promised when the Coalition Government was formed—will control the monitoring of air, water and waste; carry out environmental research; provide advice and have a range of important powers.

Penalties under the new legislation will be amongst the stiffest ever enshrined in law, with some sources last night saying fines for the most serious pollution incidents could run to £1m or £2m and possibly higher.

"When you consider that one oil spill off the coast could cost several millions of pounds to clean up, you can see why such high penalties are needed," one Environment Department source explained.

It is expected that in its first full year, the EPA will cost about £7.5m to run. However, fees from licences, etc., could reduce this Bill by as much as £4m.

The staff will come from the Environmental Research Unit of the Department—set up following the abolition of An Foras Forbartha—and from other State agencies.

The two Ministers see the EPA as "a milestone in environmental legislation." It will bring together all the licensing systems and monitoring functions, which they see as necessary to allow "sustainable growth" in the economy.

Meanwhile, Mr. Flynn yesterday issued an appeal to shoppers to "buy green" this Christmas. The Environmental Information Service has produced a special information leaflet for consumers.

The Minister said; "As consumers we have enormous power to do the right thing for the environment, such as buying unleaded petrol, products made from recycled/recycable materials, low energy consuming and long life products etc." [passage omitted]

ITALY

Government Plans for Energy Efficiency Outlined

91P60070A Milan ITALIA OGGI in Italian 27 Nov 90 p 46

[Text] Rome—Energy efficiency is possible; it is even a good economic value. And although we are decades behind, Italy intends to set a good example: At the international negotiations on the greenhouse effect to begin next February in Washington (and to conclude in Rio de Janeiro in June of 1992) our country plans to make solid technical and scientific contributions.

This at least is the intention of Environment Minister Giorgio Ruffolo, who adds: "During 1991 we will host seminars with the leading experts from 80 countries as participants. It will be an important opportunity to examine different strategies and to offer valid scientific support to the American negotiators."

The Environment League is also working with the ministry on drafting the *Made in Italy* proposals: A study is being coordinated by CNR [National Research Council] physicist Gianni Silvestrini, who yesterday released to the press some preliminary findings: "Our aim is to examine the options that would make it possible to reduce the emission of carbon dioxide in Italy. Early results show that the feasibility and the economic advantages of our target are already emerging: a 20-percent reduction of carbon dioxide emissions by the year 2000." These emissions currently amount to around 400 million tons yearly, divided equally among transportation, industry, and public and private use. There are some things that can be done without imposing sacrifices and yet provide economic benefits to all.

Electricity: Begin by aiming at the introduction of more efficient household appliances. "The availability of low energy-consumption washing machines and refrigerators," maintains Silvestrini, "would make it possible to achieve a reduction in CO_2 emissions equal to 10.5 million tons a year by the year 2000."

In the lighting sector, the availability of fluorescent lamps would cut another 12.8 million. "The average cost of these measures does not exceed 40 lire per kilowatt hour, less than the cost of operating a thermoelectric power plant."

Who Pollutes the Atmosphere

Gas	Polluting Source	Millions of Tons Per Year
Carbon Dioxide	Fossil fuels	533-8
—	Deforestation and other changes in land use	1,000-2,600
Methane	Ruminants	10-110
—	Biomass combustion	30-110
—	Rice fields	40-100
—	Dumps	30-70
—	Gas leaks, mines	25-75
Nitrogen Dioxide	Fossil fuels	0-4.7
—	Fertilization	1.0-1.6
—	Soil treatment	1.6-3.2
—	Biomass combustion	0.8-1.4
CFCs	Lathers, aerosols, refrigerators, air conditioners, other	770

Figures refer to 1970-87 except for CO_2 and CFC which are for 1985

In other words, for every ton of carbon dioxide not emitted, there would be a saving of about 100,000 lire. In the area of transportation, a reduction of the percentage of goods transported by road from the current 75 percent to 65 percent would result in a reduction of 3.4 million tons. Reforestation measures would contribute to the absorption of 9 million tons of CO_2 a year, at a cost of 350,000 lire a ton.

NORWAY

Representative Suggests Less Stringent Carbon Dioxide Policy

91WN0190A Oslo AFTENPOSTEN in Norwegian 20 Dec 90 p 2

[Article by Ole Mathismoen: "Ueland Said What Many Do Not Dare To Say"—first paragraph is AFTENPOSTEN introduction]

[Text] Storting representative Ole Gabriel Ueland (Center Party) has gotten a scolding. Environmentalists have fumed and colleagues have secretly laughed in contempt. But the angry man from Rogaland has, in fact, only said what many think, but do not dare to say.

He has spoken in direct opposition to the party and the environmental elite. Ueland says that Norway no longer ought to have national targets for CO_2 reductions. He pointed to Norway's very low emissions (0.02 percent of the world's total), and was of the opinion that the Storting's stabilization targets will hinder Norwegian industrial development in an extremely unfortunate way. And he indicated that Norway can make a far better contribution against climatic changes by producing clean energy for export and for domestic energy-intensive industry, which otherwise would be situated elsewhere in the world and would use extremely contaminating energy. In his defense of Ueland, Center Party leader Johan J. Jakobsen yesterday referred to the Syse government's decision regarding environmental efforts to reduce sulfur emissions on the Kola Peninsula. The environmental benefits there are far greater, for Norway as well, than further, extremely expensive cuts on Norwegian soil.

Out Too Early

There are hardly any who disagree with Ueland that international coordination is now more important than strengthening Norwegian environmental targets. The really important threat of climatic changes lies elsewhere. It lies in the coal-fed power plants in the old East Europe, in the enormous automobile fleet of the United States, in the low energy efficiency of industry around the world, and, not least, in deforestation (nature's ability to tie up CO_2 is reduced when the forest disappears).

Ueland has given new life to an important debate, but his angle of incidence was rather clumsy. Norway stands on the barricades internationally. Our bureaucrats and politicians are fighting like lions, together with a handful of other nations, for the world community to accept the threat of an increased greenhouse effect and its possible consequences. And the world is getting going. Constantly, new countries are approving targets for lower CO_2 growth and stabilization. This is only a start, but it is a start.

If Norway should now proclaim that we could not care less about our own gosls, this would strike the climate process extremely unfortunately. Other nations and, not the least, the skeptics within them, would get a good argument. Look, Norway itself, Mrs. Bruntland's homeland, thinks its own growth is most important. When negotiations on a climate convention and associated protocols are further along, perhaps approved, then is the time to bring Ueland out again. In five or six years, the world will perhaps see that Norway can make a far more important contribution to the climate by exporting clean energy to Poland, Czechoslovakia, Denmark, etc., and in this way replace coal power. The gain for the greenhouse effect will be significantly greater than if gigantic amounts are spent in order to cut Norway's minimal emissions.

Environmental Psychosis

Norwegian politicians are now experiencing a formidable blue Monday. In the spring of 1989, when the Brundtland Commission's report (Storting Report 46) was taken up for consideration in the Storting along with the Norwegian follow-up to it, the politicians went into an environmental psychosis. The parties' goals for reductions became higher every day. In a stupendous auction, they outbid each other. Ole Gabriel Ueland's own Center Party was among those which went the furthest. The party did not stop before it had fixed in its program a fifty-percent reduction in Norwegian emissions by the year 2000. As is known, the decision was for a stabilization at the 1989 level by the year 2000. But even this will require high environmental taxes, strict rules, and high discipline to get accomplished.

Perhaps the popularly elected representatives did not believe that this was serious. Perhaps they believed that this was a new show, which they so often before performed in the "service" of environmental protection. Big goals could be set, one could bask in a half-green profile and get away with it. But the world has grown different. Most people and the press have the goals at their fingertips and demand that they be pursued. One can no longer get away with arguments that workplaces and district policy must in this or that case count the most. This reality, to be sure, has come as a surprise to both Mr. Ueland and many of his colleagues in the Storting.

Gunpowder Reinvented

Norwegian industry has in recent times reinvented gunpowder. It has launched the idea of negotiable emission permits. For example, that Norwegian concerns can purchase permits from industry on the continent. The development of such a system has long been discussed in the climate negotiations, and will be a part of the convention. But the problems with such an enticing system are many. One of them is that rich industry and rich nations will buy up permits from poor nations. These need money and will gladly sell, but at the same time they have no resources to reduce themselves, which they are obligated to do when they have sold their own permits.

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