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Environmental Issues

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Environmental Issues

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**Jakarta Nonaligned Movement Summit Issues
Declarations**

*BK0609164692 Delhi All India Radio Network
in English 1530 GMT 6 Sep 92*

[Text] The 10th summit of the Nonaligned Movement [NAM] concluded in Jakarta today with a call for restructuring, revitalizing, and democratizing of the United Nations. It also urged a review of the Security Council membership and balanced relationship between the General Assembly, the Security Council, and the secretary general of the world body.

The final declaration calls for greater solidarity among member-nations in facing the constraints and challenges before the movement. Our Southeast Asia correspondent Nallamuthu reports that minutes before the close, the summit patched up sharp differences among some of its members over its assessment of the ground situation in Yugoslavia. They accepted a compromise draft hammered out by host Indonesia, the current chairman, and Ghana expressing grave concern over the tragic situation in Bosnia-Herzegovina and strongly condemning the ethnic cleansing by the Serbs.

The summit emphasized the need for a global and comprehensive approach to disarmament, including nuclear, and urged access to nuclear materials, equipment, and technology for peaceful purposes on a non-discriminatory, predictable, and long-term basis.

The NAM leaders condemned international terrorism and said it endangers territorial integrity and security of states and destabilizes legitimately constituted governments. The summit called upon all member-states to fulfill their international obligations and refrain from organizing, instigating, assisting or participating in terrorist activities in other states or abetting terrorist activities directed toward other countries. Expressing concern over the increasing trend in extremism and intolerance, exploiting the social and cultural differences of people,

the summit urged member-states not to interfere in the internal affairs of other states.

Our correspondent reports that the summit called for peaceful resolution of disputes between member-states to make the movement united and strong. The summit asked the Coordination Bureau to study further the question of a mechanism for the peaceful settlement of disputes among member-states.

Expressing deep concern on the continued deadlock in the Uruguay round of GATT negotiations, the summit called for a more open multilateral trading system and improvement in external economic environment for promoting development in developing countries and for enabling their economic liberalization program to succeed. The summit called for increased financial flows to the developing countries through direct foreign investment and strengthening of international financial institutions. Pointing out that the debt burden of developing countries has doubled to \$1,400 billion in the last 10 years, the summit called for comprehensive debt relief measures to promote recovery, growth, and development of these countries. The summit condemned efforts to prevent transfer of technology and pointed out that any framework on intellectual property rights protection should provide access to technology to developing countries on fair and reasonable terms.

Opposing interference in affairs of developing countries in the guise of environmental concerns, it called upon developed countries and international institutions not to impose conditionalities in aid, trade, or development financing. The summit ratified India's call for a global fund for developing and transferring environment-friendly technologies.

Calling for an early and effective North-South dialogue, the summit authorized Chairman Indonesia to initiate steps in this direction. Highly commending the role played by India in mobilizing international support for the AFRICA [Aid for Resisting Invasion, Colonialism, and Apartheid] Fund, the summit called for continued NAM assistance for the liberation movements in South Africa.

REGIONAL AFFAIRS

'Megapark' Awaiting Peace in Mozambique

92WN0736A Cape Town *THE ARGUS* in English
25 Jul 92 p 17

[Article by John Yeld, environment reporter]

[Text] Plans for the world's biggest conservation area, over four southern African countries, are on the drawing board. But this exciting project, which will also demonstrate how to reconcile the development needs of poor rural communities with wildlife protection, hinges on a peaceful settlement in Mozambique.

A vast "megapark" incorporating nature reserves, national parks and wildlife sanctuaries in four states could soon become a reality—if the civil war in Mozambique is brought to an end.

A crescent of land, stretching over millions of hectares and including the Kruger National Park, has been identified for this ambitious conservation project which environmentalists believe could provide a model for the rest of the world.

The proposed megapark consists of core areas of proclaimed reserves or national parks, linked by thinly populated corridors of largely unspoiled "wildlands" where small numbers of rural people use natural resources and practise sustainable forms of wildlife uses.

The concept could provide a conservation blueprint by demonstrating how wildlife and ecosystems can be protected in harmony with the economic upliftment of rural people through activities like eco-tourism, safaris, hunting, fishing and outdoor adventure tours.

The area incorporates the Barazuto archipelago, most of northwest Mozambique, parts of Zimbabwe, the Kruger National Park in Transvaal, the Lebombo mountain watershed, reserves in Swaziland and protected areas in Natal such as Mkuzi and St Lucia.

Ecologists have already started preliminary planning and the head of Mozambique's wildlife service has been sent to the United States for a three-year training programme.

The World Bank has committed \$12 million (R33 million) for the project, with another \$12 million in the pipeline.

All that's missing is peace in the region.

Conceptual proposals for what is formally known as the "Kruger-Banhine trans-frontier natural resource area" have been drawn up by ecologist Dr Ken Tinley and landscape architect Professor Willem van Riet.

Commissioned by the SA Nature Foundation and Mozambique's Directorate of Forestry and Wildlife, their proposal has five main components:

—The creation of a huge new national park or resource area in Mozambique between the east boundary of the Kruger National Park and the Limpopo River. If fences between the two are taken down, the effective size of South Africa's premier national park, which has already reached saturation point, could be doubled. The new park could also be extended north across the Limpopo to link with the Banhine National Park.

—A core area consisting of the Gona-Re-Zhoa National Park in Zimbabwe, linked via new natural resource areas with the Zinave National Park in north Mozambique, the Banhine National Park farther south and the Kruger National Park. The link between Gona-Re-Zhoa and Banhine national parks would protect the important catchment basin of the delta within Banhine.

—Linking the Zinave National Park with the controlled hunting area north of the Save River and along the north Mozambican coast to include the Bazaruto National Park and Pomene Game Reserve.

—Creating a huge new resource area in south Mozambique/north Natal by linking four core areas: the Ndumu nature reserve, Tembe Elephant Park and Coastal Forest Reserve in Natal, and the Maputo Elephant Reserve in Mozambique.

—Creating a Lebombo Watershed Reserve, linking the Kruger National Park via the Swaziland nature and game reserves of Hlane, Mlawula and Ndzindza with the north Natal reserves of Mkuzi and St Lucia and the Phinda Nyala Resource Reserve.

The report points out that extensive areas adjoining many political boundaries between the four countries are sparsely populated, with large parts empty except for seasonal pastoral or hunting/gathering use.

The Mozambican conflict has made many of these border regions no-go areas, coupled with the huge displacement of rural people.

Planning should continue in spite of the conflict, the authors say.

"Due to the fact that the prospects for peace are improving and the potential for people to return to their ancestral lands, it is important that the planning instruments and strategies for their return be completed as soon as possible ...

"The intrinsic wilderness qualities of the natural areas will be the values which attract specialist or exclusive tourism—adventure, exploring, hunting, fishing—the profit from which should be shared with the rural community whose lands and resources are used ...

"Wildlands will thus contain core areas of the highest ecological value which may be water catchments, forest resources or national parks, surrounded by zones of decreasing protection and increasing modification by human activities."

The authors warn that any realisation of this "vast concept" is dependent on co-ordination and co-operation between governments and conservation authorities.

Dr. Robbie Robinson, head of South Africa's National Parks Board, said he was "really thrilled" at the proposal, although it was unlikely to get off the ground before the end of the civil war in Mozambique.

The board had learnt that Renamo, the Mozambican resistance group, was "upset and worried" by the concept, Dr. Robinson added.

"Their headquarters is slap-bang in the middle of the northern area of the proposed conservation area."

"The politicians have to sort out the aggression and political problems before anything can be done.

"I'm very pleased the World Bank is moving on the issue and doing proper planning so it can kick off on a pro-active system once there's peace in the area."

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Effects of Drought on Continent Reviewed

92WN0742A Johannesburg THE STAR in English 12
Aug 92 p 13

[Article by Hans-Peter Bakker: "El Nino's Devastating Legacy"]

[Text] The worst drought in 100 years may cripple southern Africa's economies for years to come, even if good rains fall.

Rains may be not far off now, but southern Africa will need more than one normal season to recover from what is proving to be one of the most destructive droughts ever to hit the region.

A spokesman for the Weather Bureau in Pretoria said the winter had so far been "normal" and indications were that the dreaded El Nino, a heating of the Pacific Ocean believed to be responsible for periodic droughts in the subcontinent, was subsiding.

That could mean a summer with good, normal rainfall. But then again, according to the spokesman, "El Nino only makes itself felt in November and until then I cannot put my head on a block that the region will get good rains".

As it is, much of southern and east Africa is heavily bowed under what has been described as the worst drought in a century and nobody wants to countenance the catastrophe of yet another rainless summer.

Many people have already died as a result of the drought and in some areas, villagers are eating animal skins and the bark from trees to stay alive. Apart from deaths from starvation following massive crop failures, many have

died from malnutrition and from diseases such as cholera and typhoid brought about by the drought conditions.

Eleven south and east African countries have been especially badly hit by the drought: South Africa, Lesotho, Swaziland, Botswana, Namibia, Zimbabwe, Zambia, Mozambique, Tanzania, Malawi and Madagascar. The long-term effects of the drought on the region's fragile economies will be severe.

South Africa has the economic strength and infrastructure to recover relatively quickly. Other, less fortunate countries like Mozambique, Zambia and Zimbabwe will take many years to emerge from the effects of the drought.

A giant international relief effort that is now well under way may save the lives of many millions of hungry people, but the prognosis for the longer-term recovery of the region is not good.

Large numbers of rural people are expected to migrate to towns as food sources disappear. Whether they will be able to return after the rains and resume their old life is problematical, for in some areas seed grain and breeding livestock have been lost, leaving them nothing with which to make a fresh start.

When the rains do come, they are likely to cause severe erosion and loss of topsoil, as much ground cover has died or been eaten by livestock.

Zimbabwe, Zambia, Tanzania and Mozambique are all undergoing IMF and World Bank-led economic structural adjustment programmes which require drastic cuts in government spending. These programmes are now in jeopardy as governments are forced to pay for food and emergency measures.

About 12 million tons of grain have to be imported this year to feed more than 18 million people. In June the United Nations appealed for R2,4 billion for the giant relief effort. So far about R1,7 billion has been pledged by the developed nations. The grain is available, but problems have arisen with its distribution to outlying communities.

Zimbabwe is one of the worst hit. It lost 74 percent of its grain harvest and now needs more than 2 million tons of food aid to survive. About 140,000 head of cattle and many thousand wild animals have died. At least 40 children have died from drought-related causes.

Zambia lost two-thirds of its crops and expects to have to import a million tons of maize.

The Limpopo has been reduced to a trickle along much of its length and has dried up altogether in Mozambique.

The official Mozambican news agency AIM reports that this year 146 people have died from the drought in the southern province of Gaza.

In Swaziland 350,000 out of its 800,000 people will need emergency aid. The death of 10 people has raised the question about the effectiveness of Swaziland's drought relief committee. So far only 1,200 tons of an estimated 45,000 has been distributed.

In Lesotho, farmers could produce only about 25 percent of the maize required and a famine is threatening the lives of 200,000 people.

President Quett Masire of Botswana has declared his entire country drought stricken after it lost almost its entire maize crop. It is rapidly losing its cattle breeding stock and indications are that it will take 10 years to rebuild its herds.

Namibia's grain production is down by 71 percent. Cattle are dying and, according to President Sam Nujoma, it needs 123,000 tons of grain for the 1992-93 year.

In Malawi the drought meant a 54 percent loss of its harvest and 4.7 million people now need emergency relief aid.

In Tanzania's southern regions an estimated 800,000 people need food aid.

In southern Madagascar more than half a million people are facing starvation.

For now, millions of people in southern Africa are waiting anxiously for the summer rains to begin reviving the parched subcontinent—but how many more people will die and how much longer will it take to recover if the rains stay away for yet another year?

ANGOLA

EEC To Finance Census of Elephants

92P40257A Luanda JORNAL DE ANGOLA
in Portuguese 5 Aug 92 p 10

[Text] ANGOP reports from an official source that a project to count elephants existing in the country will be implemented during the first half of 1993. The project is estimated at 110,300 Ecus [European Currency Units] and will be financed by the European Economic Community. According to the chief of the Forestry Department of the Ministry of Agriculture and Rural Development, Manuel Enock, the project will focus on the Quissama (Bengo) and Iona (Namibe) national parks.

The project will also cover Angola's southwest (Kundo-Kubango), the Dembos forests (Bengo and Kwanza-Norte), and the forests of Uije and Zaire Provinces.

Manuel Enock explained that the African Elephant Conservation Coordination Group (AECCG) would be responsible for the project and would depend on the cooperation of Angolan technicians.

SOMALIA

UN Official Alleges Italian Dumping of Toxic Waste in Somalia

AB0609213592 Paris AFP in English 1432 GMT
6 Sep 92

[Text] Nairobi, Sept 6 (AFP)—Italian companies have dumped one million tonnes of lethal toxic wastes in war-torn Somalia, according to a senior United Nations official.

United Nations Environment Programme (UNEP) Executive Director Mostapha Tolba said on Saturday [5 September] the Italian mafia was involved in the illegal trade, according to the SUNDAY NATION newspaper.

Tolba said Italian companies had taken advantage of the lack of a stable government in Somalia to illegally dump dangerous chemicals which could add to loss of life in the already devastated country, and damage its ecosystem.

The shipment of toxic waste from Italy cost one million U.S. dollars and earned a company which ships the waste between two and three million U.S. dollars, Tolba said.

However, he declined to name the companies involved or give details of the dumping sites saying he needed to protect the confidentiality of his sources.

"We are dealing with Mafia and some of my colleagues fear for their lives," the SUNDAY NATION quoted Tolba as saying at a seminar at the International Centre for Research in Agroforestry here.

"I do not want to go into details because these people are getting a lot of profit and can kill anybody who wants to spoil their business."

The waste, he said, threatened human lives and the eco-system in a country where factional fighting and famine had already killed thousands of people and seen others flee as refugees to neighbouring countries.

SOUTH AFRICA

Natal Parks Board To Receive Funding for 'Ecotourism'

92WN0719A Johannesburg SUNDAY TIMES
in English 5 Jul 92 p 4

[Article by Mandy Jean Woods]

[Text] The Natal Parks Board (NPB) is to become the first beneficiary of some of the R600-million set aside by the Government to help ecotourism development.

The Industrial Development Corporation (IDC) has been given responsibility for allocating the funds.

The IDC confirms that the NPB applied for an R18-million loan to upgrade its Hilltop camp in Hluhluwe nature reserve. Approval of the loan is expected to be given on 13 July by the IDC board.

IDC senior general manager Jan de Bruin says six other applications for a total of R150-million are being processed and 300 inquiries have been received since the Government announced its plan.

Mr. De Bruin says: "Most of the inquiries are from private and public game parks near the Kruger National Park."

IDC rules say projects have to be either the development or the upgrading of accommodation with the specific intention of attracting foreign tourists.

Funding for new parks or reserves will be considered only if they cover more than 10,000 hectares. In addition, new projects must cost more than R3-million. Owners or shareholders have to put up at least 30 percent of the money.

The 30 percent provision falls if the money is for projects which are being upgraded. No money will be lent for the purchase of land or game.

Mr. De Bruin says that although he expects most of the money will go to national parks, applications from private reserves are also being considered.

NPB administration head Phil Evans says the development at Hilltop—the NPB's oldest camp—will increase the number of beds available from 68 to 220. The upgrading will include the construction of restaurant facilities, self-contained units, simplexes and improvements to existing rondavel and ablution facilities.

The project will cost R22-million and is expected to be completed by the middle of next year.

Happy

Mr. Evans says that with dwindling funds from the Government it has become necessary for the NPB to explore other avenues of revenue. Because of growing enthusiasm internationally for ecotourism, the development of tourist facilities in the parks seems the best way to earn money.

"Last year we made R1,3-million from tourism in our parks and this year we expect R1,6-million."

With improved facilities to attract not only the lucrative foreign tourist trade but increase domestic trade, this figure could improve.

Mr. Evans says the NPB is not aiming to attract the top level of foreign tourist as do private reserves like Londolozi and Mala Mala.

"We believe that many tourists will be happy with something a little less glamorous and expensive. Those are the tourists we hope to attract."

Hilltop is the NPB's second development project to be undertaken in the past year.

Last year, the Ntshondwe camp in Itala nature reserve was completed. It includes restaurant and conference facilities.

Traditionally, NPB camps do not have restaurant facilities and accommodation ranges from rustic to comfortable camping. The move to upgrading accommodation to include en-suite ablutions, self-contained units and restaurant facilities is an indication the NPB hopes to capture a large slice of the foreign tourist trade.

Hazardous Waste Disposal Study Completed

92WN0719B Johannesburg *ENGINEERING NEWS*
in English 17 Jul 92 p 7

[Text] A study which will form the basis of a strategy for the disposal of South Africa's hazardous waste has been concluded and handed to the Department of Environment Affairs for evaluation, refining and legislation. THE ENGINEERING NEWS staff writer Kim Trollip looks at the details of the report compiled under the leadership of the CSIR's [Council for Scientific & Industrial Research] Dr. Graham Noble.

Two million tons of industrial hazardous waste are produced by South Africa annually and yet in the environmentally conscious 1990s, the methods used to manage and handle this waste remain primitive.

These are the findings of the "Hazardous Waste in South Africa" report commissioned by the Department of Environment Affairs.

The investigation team was drawn from industry, the waste industry, private consultants, universities and research institutions.

The report covers five main areas: a situation analysis, technologies available for hazardous waste treatment and disposal, a proposed strategy, legislative options and an impact assessment of the different policy options.

It proposes an integrated waste management (IWM) approach to deal with the problem by planning ahead and managing all waste and the processes that generate it, as one system.

The Present Situation

Of all environmental problems, hazardous waste has been the slowest to develop direction or regulatory mechanisms, despite the fact that it threatens both human health and the environment.

But this is not endemic to South Africa; it is a global phenomenon.

In order to define the present situation in South Africa the team conducted interviews with management involved in various sectors of industry and collected information on 542 waste disposal sites.

Conditions of contamination exist at more than half these landfill sites.

The investigating team found that very few industries have waste management strategies or plan waste management before start up.

There is a lack of awareness of the hazards, but most industries are aware that existing facilities and practices are inadequate.

Significant quantities of paper, glass, plastics and metals are recycled in South Africa but only a few companies practise hazardous waste avoidance.

Only a few operators of waste facilities and transporters of waste have detailed knowledge of the wastes they handle.

There is almost no control of the transport of waste, and malpractice is common.

The few waste treatment facilities which exist are mostly primitive.

There is a lack of landfill sites suitable for receiving hazardous waste and some unsuitable sites are currently receiving hazardous waste.

Standards practised range from responsible to unsatisfactory and it is the general opinion that those with unsatisfactory operations are the result of the present lack of legislation and control.

The long term outcome of such neglect will lead to a loss of resources and a backlog of costly clean up that will be left for future generations.

Source	Total waste	Hazardous waste
<i>Estimates from this study</i>		
Gold mining	191.7	1.00
Coal	45.6	0.00
Other mining	139.9	0.05
Nonmetallurgical manufacturing industries	15.4	0.45
Metals and metallurgical industries	4.9	0.33
Power generation	20.0	
Other services industries	1.2	0.03
<i>Other sources</i>		
Agriculture and forestry	-20	Not known
Domestic and trade refuse	8 - 15	Not known
Smoke	0.5	Not known
Vehicle emissions	-0.2	Not known
Sewage sludge	-12	Not known
Total	-460	-2

Table 1: The total South African waste stream (millions of tons per annum, excluding water). This table includes the industrial sectors studied during the investigation as well as other sectors.

The Need for Regulation

Industry generally has put insufficient effort into waste avoidance and generates large amounts of waste needing upgraded treatment and disposal.

Integrated pollution control is still in its infancy.

Transport and disposal are weakly controlled and the structures and processes which do exist are inadequate to ensure maximum environmental safety in the event of an accident. Without a formal regulatory system, South Africa does not meet the requirements of the Basel Convention.

Industrial sector groups	Total	Air emissions	Waste water	Solid/liquid waste
Nonmetallurgical manufacturing industries	15,373,009	323,358	602,027	14,447,624
Metallurgical and metals industries	4,901,539	12,611	14,460	4,872,468
Services industries	21,891,399	1,609,240	6,759	20,275,400
Mining	376,639,051	27,000	1,556,297	375,055,754
Total	418,804,998	1,972,209	2,181,543	414,651,246

Table 2: Industrial and mining waste in air emissions, in waste water and as solid-liquid waste (t/a excluding water). The greatest proportion of the waste stream comprises solids, semi-solids and organic liquids. Air emissions (excluding smoke, methane, carbon dioxide and water vapour) and waste water (excluding suspended sediment, sewage and water) together make up only 10 percent of the total waste stream.

It is foreseen that similar international agreements will follow and if South Africa does not develop a regulatory system, it will be difficult to play a role in such developments.

Certain South African industries have already lost business as they were unable to meet the requirements of overseas clients for environmental and waste policies.

Advantages of a regulatory system include the creation of a possible basis for cooperation within southern Africa in protecting its common biosphere; a framework for other strategic planning ventures and a chance to nip in the bud a growing problem which will leave a legacy for generations to come.

Proposed Policy

The overall purpose of the proposed policy is to develop and implement a regulatory system for hazardous waste.

It must: protect human health/safety, the environment and its natural resources; be affordable; leave no unnecessary bad legacy of community health problems or contaminated sites as a result of poor management and it must allow South Africa to participate in international regulatory programmes.

The policy proposed to achieve these objectives is based on several aims.

These are self sufficiency, information, sustainability, private initiative, the polluter pays, integrated waste management (IWM), cradle-to-grave control, integrated pollution control (IPC), integrated environmental management (IEM) and best practicable environmental option technology.

The plan of action will be prioritised, so that the real and most urgent needs are met as soon as possible within the affordable cost structure.

Progress in waste avoidance on a commercial basis, driven by market forces, will be promoted.

The comprehensive regulatory system will include a well staffed regulatory authority, a legislative base, policy, regulations, guidelines, standards and supporting sources of data and information.

Community safety, environmental protection and contaminated site rehabilitation will be enforced.

Society involvement and industry involvement will be encouraged through information and education programmes.

Green Party Launched in Cape Town

92WN0734B Cape Town THE ARGUS in English
31 Jul 92 p 3

[Article by John Yeld, environment reporter: "'Green Party' Launched"]

[Text] A South African Green Party is being launched in Cape Town today.

The move has come as a surprise to some of the region's prominent environmentalists and it is not clear at this stage who is involved in the new political party.

Planning is believed to have taken place over the past few months.

It will be the second attempt to launch a "green" party in South Africa.

In November, 1989, the Ecology Party was launched in Johannesburg and reached a maximum of about 1,800 paid-up members before going into decline.

The Ecology Party did not contest elections at any level.

Environmentalists have pointed out that unless a green party can attract the support of black South Africans, it is doomed to failure.

And as democracy, justice and freedom of information are cornerstones of green politics, many South African "green" activists have been closely involved in supporting the "liberation struggle"—particularly the ANC—and are unlikely to switch allegiance at this stage.

Eskom To Extend Electricity Network to Neighbors

MB2708170992 Johannesburg Radio South Africa
Network in English 1100 GMT 27 Aug 92

[Text] Eskom [Electricity Supply Commission] has decided to extend existing power networks between South Africa, Botswana and Zimbabwe at a cost of about 470 million rands. Eskom's chief executive, Dr. Ian McRae, told a news conference in Sandton that the Kariba Dam on the border between Zimbabwe and Zambia was only 30 percent full, and that almost no water was flowing into the dam. Zambia and Zimbabwe could be without hydroelectric power by the end of the year if the devastating drought in southern Africa continued.

TANZANIA

Green Party Provisionally Registered

EA3008152592 Dar es Salaam Radio Tanzania
Network in Swahili 0330 GMT 28 Aug 92

[Text] Dar es Salaam—The Green Party has been granted provisional registration by the registrar of political parties.

The party, which is based in Moshi, brings the number of political parties registered in the country to 16 since the registration of parties began on 1 July this year.

The vice president of the party, Brother Liunga Sole, has told SHIHATA that one of the policies of his party was to revive the national economy. He also said that the

party would put more emphasis on the question of protecting the environment and ensuring better use of natural resources.

ZIMBABWE

Game Park Animals Culled; Fed to Villagers

92WN0735A Johannesburg THE STAR in English
27 Jul 92 p 6

[SAPA report: "Zimbabweans Fed Culled Animals as Drought Bites"]

[Text] Benji Wier—Swaying unevenly, a starving bull elephant heads for a drying water hole reduced to glutinous black mud. Another elephant, too weak to drag itself free, has died knee-deep in the mire.

As southern Africa suffers its worst drought this century, thousands of animals have died and officials are shooting many more to feed the increasingly desperate population.

About 10,000 hungry villagers near the Gona-Re-Zhou National Park in south-eastern Zimbabwe are fed meat from animals which have been herded into corrals and slaughtered with assault rifles.

Colin Saunders, head of the animal culling operation, said 5,000 impala, 2,000 elephant and 1,500 buffalo need to be killed before November, when the next rainy season should begin.

The meat from the culled animals has been targeted for children with malnutrition.

Mavis Ndofu, who lives near the park, said 70 cattle had died in her five-family village, typical of the plight faced by small rural communities in Zimbabwe.

Subsistence farmers and their families are now dependent on food aid, mainly imported corn meal, distributed in nearby towns. But Mrs. Ndofu said she had not seen meat since a National Parks truck came four weeks earlier.

Rivers and water holes here have dried up for the first time anyone can remember, killing some 400 hippopotami through starvation and sunburn. Of less than 50 survivors counted by park rangers, some 20 hippos will be lured into giant pens for shipment to a private dam.

Conservationist Tommy Warth said adult hippos had recently been foraging for grass 16 km from water pools—more than twice the maximum distance the nocturnal grazers usually cover.

National Parks warden Headman Sibanda said large areas of the wilderness reserve have received no rainfall at all in the past two years. Overall average annual rainfall has dropped to 13 cm, about 25 percent of normal.

On patrol a few hours earlier, Mr. Sibanda fired a heavy caliber shot into the brain of a dying elephant, "to put it out of its misery."

He said several hundred buffalo and antelope were among animals targeted for a rescue and breeding programme on commercial game ranches in parts of Zimbabwe that have not been so hard hit by the drought.

Ray Sparrow, whose 75,000-acre (30,375-hectare) game ranch lies adjacent to Gona-Re-Zhou, said the drought's damage will be felt for years to come.

Dead birds have dropped out of shriveled trees, tortoises, snakes, rodents and insects have disappeared and predators are killing more animals than they can eat.

At night, Mr. Sparrow builds fires around his isolated homestead to keep lions away from his animal pens.

"The lions are killing with wild abandon," he said. "I'd rather not think about what will happen if we get another drought next season."

Baiyangdian Lake Pollution Control Measures Noted

OW2308170492 Beijing XINHUA Domestic Service
in Chinese 0332 GMT 23 Jun 92

[By RENMIN RIBAO reporter Li Hongwei (2621 1347 0251) and XINHUA reporter Zhu Youdi (2612 1635 2769)]

[Text] Shijiazhuang, 23 August (XINHUA)—To solve the pollution problem of Baiyangdian Lake and to make this "bright pearl of north China" even more dazzlingly brilliant, the Environmental Protection Committee under the State Council recently called an on-the-spot work conference on controlling the pollution in Baiyangdian Lake. Song Jian, state councillor and chairman of the Environmental Protection Committee under the State Council, noted: We must step up the pace of controlling the pollution in Baiyangdian Lake and fundamentally reverse the serious pollution situation there in three to five years. We shall never leave this problem to the next generation.

Song Jian, responsible comrades of 24 departments and committees under the State Council attending the conference, and experts and scholars concerned went right to each drainage canal, sewage discharge scuttle, and sewage treatment plant in Baiyangdian Lake area to learn the situations there. They carefully checked water samples taken from various parts of Baiyangdian Lake and heard a report on the program for comprehensively controlling pollution. Song Jian said: The CPC Central Committee and the State Council have attached great importance to and are very concerned about pollution in Baiyangdian Lake. As early as 1972, Premier Zhou Enlai had concerned himself with this problem and affirmed the 16-character policy of "easing the flooding and stopping waterlogging, storing water for irrigation, encouraging reed production, and promoting comprehensive utilization." Comrades Deng Xiaoping, Li Xian-nian, and Zou Jiahua had also given instructions after learning of the situation in Baiyangdian Lake. This time, Premier Li Peng also has given instructions to earmark funds to control Baiyangdian Lake. The aggregate funds for controlling pollution in Baiyangdian Lake, collected from the state, Hebei Province, and Baoding, have come to 130 million yuan.

Baiyangdian is the only large natural lake in north China. It plays an important role in regulating the climate in some areas, improving the ecosystem in north China, alleviating water shortages in central Hebei, developing production, and revitalizing the economy. In our future project of diverting either the Huang He or Chang Jiang to north China, Baiyangdian Lake will be included in the diversion course. Song Jian said: Baiyangdian Lake belongs not only to the people in Baoding and north China, but also to the people of the whole country. Baiyangdian Lake is richly endowed by nature with reeds and tourist resources; however, if pollution continues to worsen, not only economic development and people's

livelihoods from the lake area will be affected, but also the "bright pearl of north China" will lose its former charm. We should never allow Baiyangdian Lake to disappear. If it is running out of water, we must refill it by diverting water from other places. This is of importance to current economic construction, as well as to coming generations. Controlling pollution in Baiyangdian Lake is a project that falls in with the people's wishes.

Song Jian said: Our current and future tasks are to raise productive forces, beef up national strength, and improve people's living standards, with economic construction as the center; everything must serve this center. Any industries or businesses that do not conform to this center should be readjusted. Some of them should be removed, switched to manufacture other products, or reorganized to become new and environmentally friendly industries. The practice of working recklessly and blindly must be changed, and the sooner the better. To control pollution in Baiyangdian Lake, we must unswervingly carry out the principles and policies concerning environmental protection. Enterprises that fail to achieve pollution control targets within a scheduled period of time must be closed down, have their operations suspended, be merged with other enterprises, or be switched to manufacturing other products. They must be treated so even if the toughest problems are encountered. In the Baiyangdian Lake area in the future, enterprises with heavy waste discharge will not be allowed to be established. Also, the construction of enterprises that consume large amounts of resources and energy, produce serious pollution, or are not efficient will not be approved. Increasing sewage discharge by expanding a project is also prohibited. We should achieve an increase in production without increasing sewage or with sewage being reduced. All new projects must be constructed after they are appraised, and sewage discharge should be strictly controlled in three aspects in accordance with state stipulations. Those who fail to meet discharge standards will not be allowed to operate. We should regard pollution control in Baiyangdian Lake as a second-step strategic objective of China's economic and social development. We should create a clean, comfortable, and beautiful environment for people in the Baiyangdian Lake area; 200,000 people in the immediate area and 400,000 people surrounding the area have their livelihoods there. The lake's conditions directly affect their lives. We should make everybody in the lake area clearly understand that protecting Baiyangdian is not only the responsibility of governments at various levels, but also the responsibility of the people there.

To alleviate pollution in Baiyangdian Lake, the Hebei Provincial Government has completed 53 control projects and has collected some 30 million yuan in funds to construct a number of control projects that should be completed within a certain period of time. Two big polluters in Baoding have started to prepare for suspending operations or switching to manufacturing other

products. During the on-the-spot work conference, members of the Environmental Protection Committee conscientiously discussed the Hebei Provincial Government's program for comprehensively controlling Baiyangdian Lake, submitted some opinions and suggestions, and unified their thinking on allocating and using funds as well as on other issues, so as to carry out the program as soon as possible.

Government To Take Measures on Wildlife Protection

*OW2208060392 Beijing XINHUA in English
0217 GMT 22 Aug 92*

[Text] Dalian, August 22 (XINHUA)—China will further improve wildlife protection and take measures to stop illegal activities against wildlife, said Liu Guangyun, vice minister of forestry, at a meeting on wildlife protection and natural reservations work held here recently.

China started to establish natural reservations in the late '50s in order to protect wildlife. The work became systematic in the '60s. It was suspended during the "Cultural Revolution" (1966—76).

Since the late '70s, governments and concerned departments at all levels restored wildlife protection work.

Now 23 provinces and autonomous regions have set up special departments in charge of wildlife protection and natural reservations. The Ministry of Forestry founded the National Bird Ringing Center and more than 60 bird ringing stations around the country.

There are 420 natural reservations of all kinds in China, which cover an area totalling 44 million hectares, accounting for 4.5 percent of the territory of the country. They include 52 natural reservations at the state level. Six of the natural reservations joined the international human being and biosphere protection network. Another six were listed in the world key protection programs.

Many treasured species have been saved through establishing wildlife raising and breeding centers or rescuing bases such as the crested ibis, Chinese alligator, north-east tiger and giant panda. Since the rescuing campaign of the giant panda was carried out in 1983, 131 giant pandas have been saved and 95 of them are still living. Now there are about 1,000 giant pandas living in China.

According to sources, China is rich in wildlife resources and there are more than 4,400 species of wild vertebrate, over 10 percent of the world total. About 100 kinds of them which are in danger or near extinction such as the giant panda, golden monkey and Chinese alligator live only or mostly in China.

Meanwhile the wildlife is under the threat of illegal hunting, killing, selling and smuggling.

According to statistics, there were more than 580 such cases in east China's Fujian Province from 1989 to 1991 and the losses reached millions of U.S. dollars.

Due to illegal hunting, the amount of red deer in the Xinjiang Uygur Autonomous Region was reduced from 80,000 to 10,000 at present.

In addition damages to natural reservations, forests and resources are still occurring from time to time so that wildlife's living space is reduced continuously which is endangering some species. For instance, the living space for the giant panda is half that of 40 years ago.

China's Ministry of Forestry called on all departments to strengthen administration work of natural reservations and crack down all illegal activities. Foreign investors are encouraged to invest in the protection of wildlife and the development of natural reservations.

Fishermen Attack Chemical Plant Polluting Sea

*HK2908063692 Beijing CHINA DAILY in English
29 Aug 92 p 3*

[By staff reporter: "Fishermen Storm Filth Factory"]

[Text] A mob of 100 angry fishermen attacked a chemical plant after it kept discharging untreated waste water into the sea.

The fishermen from Wenling County, Zhejiang Province who specialize in breeding seafood, broke the factory's water jars and boilers and damaged its workshops and pipelines after their repeated complaints were ignored by the plant and local government.

The plant had to halt production.

According to the latest edition of CHINA OCEAN JOURNAL, the fishermen suffered more than 1 million yuan (\$180,000) losses because the untreated waste water killed large quantities of the fishermen's seaweed, kelp, clam and other seafoods.

The Wugan Chemical Plant is a township enterprise and situated about 100 metres from the sea.

It reached an agreement last year with a local pharmaceutical plant to produce medicines to treat psychosis. The materials include toluene, sulphuric acid and nitric acid.

The plant began to discharge the poisonous waste into the sea last November.

The farmers immediately reported the pollution to the county government, environmental protection agency and the chemical plant.

But there was no response until March.

The local government helped them reach a compromise in March—compensating the fishermen 4,000 yuan (\$740) and ordering the plant to treat its waste according to the State-set standard.

But the factory continued to dump waste which did not meet State requirements into the sea.

In early June, the farmers saw that a lot of seafood was killed again, and they could not hold their anger any more.

They tried to reason it with the plant director but they could not find the director for days.

The fishermen said they had no choice but to storm the plant, the journal quoted them as saying.

Only after the June 15 incident did the local government begin to realize the urgency of the dispute.

China has been implementing its ocean environmental protection law for 10 years and a lot of enterprises are still discharging untreated and under-treated industrial wastes into the sea.

Enterprises should never neglect the importance of environmental protection while trying to make profits, the journal said.

600 New 'Forest Parks' Planned

HK0309051192 *Beijing CHINA DAILY in English*
3 Sep 92 p 3

[By staff reporter Wang Yonghong: "State Announces Scheme To Plant 600 Forest Parks"]

[Text] As part of the effort to make best use of its forest resources, China plans to set up 600 new forest parks over the coming years, China Daily was told yesterday.

Beijing and Guangzhou, capital of Guangdong Province, have been chosen as the leading cities for the construction of forest parks and several forest tour routes will be established nationwide, linking forests popular with tourists, according to Cheng Zhengnu, an official from the Ministry of Forestry.

The forest parks will be established by more than 4,200 state-owned forest farms, which were set up during the 1960s afforestation drive to cover barren hills. Most of these farms have valuable tourism resources since they are located near cities and scenic spots.

Some 160 forest parks have been established by central and local government since Zhangjiajie State Forest Park, the first of its kind in China, was set up in 1982.

By the end of last year, more than 100 million tourists from home and abroad visited forest parks nationwide, which has not only brought wealth to residents around the parks but has greatly boosted the domestic economy.

China expects to attract some 500 million tourists from home and more than 9 million from overseas by the year 2000.

"The establishment of forest parks, which are very popular in the world but underdeveloped in China, will meet the increase in demand following the upsurge in the number of tourists," said the official.

It is also one of the reforms mapped out by the Ministry of Forestry to tap the potential of forest resources. This is designed to develop forests in line with social, economic and ecological efficiency, said Cheng.

In addition, limited hunting, the mass raising and breeding of wildlife for commercial use and the development of food and medicinal herbs in forests will also be promoted.

But it must be strictly controlled according to natural and wildlife protection laws and relevant regulations.

No-one will be allowed to raise, breed or tame wild animals under protection without a licence approved by the administrative authorities of wildlife protection bodies, according to Liu Guangyun, Vice-Minister of Forestry.

While encouraging the legal trade of wild animals and their products, departments at all levels are being urged to take further measures to improve wildlife protection and to crack down on the illicit hunting, killing and selling of wildlife, said Liu. His comments were made at a meeting on wildlife protection and natural reservations work, held in Dalian, Liaoning Province, recently.

"No natural reservation and hunting-free zone will be permitted to be developed for tourism purposes into a forest park or for any other use," said Liu.

Foreign investors are being encouraged to set up joint ventures to ensure the protection of wildlife and the development of natural reservations, according to Liu.

There are 420 natural reservations of all kinds in China, which cover an area of 44 million hectares. This accounts for 4.5 percent of the territory of the country.

REGIONAL AFFAIRS

Asia-Pacific Countries Urged To Reject Japanese Plutonium Ship*BK0109072292 Jakarta Radio Republik Indonesia Network in Indonesian 1500 GMT 31 Aug 92*

[Text] Emil Salim, minister of state for population and environment, says that Indonesia, Malaysia, Singapore, and the Philippines must take the risk factor into account in dealing with the shipment of plutonium by the Japanese ship Akashi Maru from France to Japan. Speaking after a plenary session of the House of Representatives regarding a draft bill on building design in Jakarta today, the minister of state for population and environment that Indonesia, Malaysia, Singapore, and the Philippines were discussing the matter in order to adopt a united stand.

Meanwhile, the Indonesian Environment Group said in a news release that the plutonium transported by the old Akashi Maru ship contains very dangerous and poisonous radioactive substances. In view of the danger, Asia-Pacific countries should decide to reject the presence of the ship.

Northeast Asia Forum Urges Joint Efforts on Pollution*SK0409094792 Seoul YONHAP in English 0512 GMT 4 Sep 92*

[Text] Seoul, Sept. 4 (YONHAP)—South Korea, Japan and China should join forces to combat worsening pollution in Northeast Asia and establish a joint mechanism for the preservation of the environment, officials of the three countries told an international forum Friday.

Pollution in Northeast Asia was feared to accelerate due to the long-range movement of airborne pollutants and the flow of contaminated water into the region, Kim Hyong-chol, Korean assistant environment minister for planning, said in a three-day conference closed here Friday.

Countries in Northeast Asia needed to conduct a joint study on regional pollution problems, exchange environment preservation skills, and work out anti-pollution regulations, sharing a sense of unity, Kim said.

Joint restrictions on regional movement of toxic waste were needed and environmental pacts should be concluded as part of efforts to establish a cooperative network in Northeast Asia, he said.

Saburo Gato, director-general of the Japanese Environment Agency's Global Department, and Kun Baosha, director of the Chinese National Environment Protection Agency's International Affairs Department, both said that Northeast Asia faced a common environmental problem and called for joint measures by the three countries to solve it.

If international environmental cooperation went well in Northeast Asia, it would be a model for country-to-country cooperation around the world, Gato said.

He said that Japan has held three environmental technology seminars with Korea and has been conducting joint oceanic research in the Sea of Japan with Korea since 1990. Joint researches have also begun on international cooperation to combat acid rain and climate changes in Siberia, Gato said.

Stressing "a forum for discussions" was needed for regional cooperation, Gato said a Northeast Asia conference on environmental cooperation would be held in Niigata in Japan Oct. 13-16.

He also proposed as devices for cooperation a "Northeast Asia environment facsimile network" and a "Northeast Asia environment personnel directory."

Kun said that China had grave ecological and environmental problems, including deterioration of greens, shortage of forestry resources, decrease and extinction of rare species in addition to the widespread air and water contamination.

He proposed creating a nonofficial mechanism for effective cooperation and easy exchange of views among regional countries.

Korean environmentalists have often cited air pollutants and toxic gases blowing from China as causing acid rain over the Korean peninsula.

Pollution has worsened in China over the last 10 years due to rapid industrialization and urbanization under the nation's open-door policy, they say.

Six of China's 14 special economic zones border the Yellow Sea and an enormous amount of waste from their factories flows into the sea without being treated, they say.

North Korea, oblivious to environmental concerns, should be encouraged to participate in regional cooperative meetings to work out measures for environmental preservation in Northeast Asia, they say.

AUSTRALIA

French Decision on Toxic Waste Poses Problem for Western Australia*BK0709085492 Melbourne Radio Australia in English 0500 GMT 7 Sep 92*

[Text] The west Australian state government says it is facing problems because of a decision by the French government to refuse to accept any more toxic waste from Australia.

The state environment minister, Bob Pierce, says Western Australia has a large stockpile of toxic waste and its biggest problem is how to get rid of it. Mr. Pierce said

companies can export toxic waste provided they adhere to strict guidelines set down by international conventions and by his department. His comments follow an international controversy over a shipment of toxic waste from Western Australia which was unloaded in France amid protest by the Greenpeace environmental organization. The controversy resulted in France cancelling an import contract for further toxic shipments from Australia.

INDONESIA

Some ASEAN Countries To Oppose Tropical Wood Boycott

BK2408143492 Jakarta ANTARA in English 1236 GMT 24 Aug 92

[Text] Jakarta, Aug 24 (Earth Wire/ANTARA)—Indonesia and some other ASEAN countries will always strive for mitigating a boycott campaign on the use of tropical forest products launched by some developed countries, said director general of forest exploitation Jamaludin here Monday.

"The efforts to mitigate such a boycott campaign have been made through bilateral cooperation. Indonesia together with the Philippines, Thailand, and Malaysia have also made some concrete actions for such an issue," Jamaludin told journalist after opening Indonesia-Malaysia bilateral meeting on forestry.

Some developed countries and nongovernmental organisations (NGO's) overseas have often criticized Indonesia, Malaysia, and Brazil over what they called a forest devastation. In search of a better understanding of the forest exploitation programme, Jamaludin revealed that Indonesia has made some approaches to the United States, some European countries, and Australia.

"We have explained them about Indonesian policy on forest management and exploitation as well as its renovation programmes," he said.

In every meeting on forestry, ASEAN wood producer countries have always strengthened a commitment to preserve the tropical forests.

Indonesia urged developed countries not just to criticize but also give a more active assistance on preserving the forest. According to Jamaludin, the bilateral meeting between Indonesia and Malaysia will discuss how to maximize the use of tropical wood and to reduce waste of timber industries.

Head of Malaysian delegation Chew Lye Teng said that his country wished to share experiences and information with Indonesia, particularly on how to manage teak wood forest in Java. For these reasons, the Malaysian delegation is scheduled to visit teakwood industries in Central and East Java as well as rattan industry in Banjarmasin, South Kalimantan.

Minister Details Country's Forestry Projects

BK0309084792 Jakarta ANTARA in English 0800 GMT 3 Sep 92

[Text] Jakarta, Sept 3 (OANA/ANTARA)—Minister for Forestry Hasrul Harahap said here on Wednesday that his ministry is keen to assist foreign journalists to learn more about the country's forestry projects.

Speaking to journalists covering the 10th Non-Aligned Movement summit he said that his ministry will provide additional information on various forestry projects here including agroforestry, land conservation and reforestation.

He said that the preservation of Indonesia's vast forests is a major concern of the Indonesian Government.

To secure a sustainable balance between commercial harvesting and preservation of one of Indonesia's greatest assets, the government has established specific regulations restricting the location, number and size of trees cut, he added.

Indonesia has 143 million hectares of forests which is comprised of 30 million hectares of protected forests, 19 million hectares of natural forests, 30 million hectares of limited production forests, 34 million hectares of permanent timber-producing forests and 30 million hectares of conversion forests, he said.

Indonesia has the second largest amount of forest area in the world after Brazil. Indonesia forests make up of 60 percent of the total tropical forests in Asia which in turn is around 10 percent of the world's tropical forests.

Indonesia has allocated US\$300 million annually to prevent forest destruction, Hasrul said.

The country will also continue to develop 300 thousand hectares of new forests annually, he said.

The Indonesian Government welcomes the U.S offer to set aside U.S \$1.5 million annually to support reforestation projects in several countries.

JAPAN

Burial of Highly Radioactive Waste To Begin in 2030

OW2808072892 Tokyo KYODO in English 0631 GMT 28 Aug 92

[Text] Tokyo, August 28 (KYODO)—The Atomic Energy Commission plans to begin underground disposal of highly radioactive nuclear waste between the year 2030 and the mid-2040s, commission officials said Friday.

The advisory panel to the prime minister also agreed at a meeting to set up an organization around 2000 to dispose of the waste from spent nuclear fuel, the officials said.

They said the government, electric companies, and the government-affiliated Power Reactor and Nuclear Fuel Development Corporation will launch a group next year to work on establishing the disposal management organization.

That organization will choose a site for burying the waste early in the 21st century, the commission officials said.

The panel suggested changing the waste into a glass-like substance and burying it more than 100 meters deep.

Plans call for temporary storage of high-level radioactive waste from spent nuclear fuel in the village of Rokkasho in Aomori Prefecture, and Horonobe, Hokkaido.

But the final disposal plan had been ambiguous until now.

Trade Group To Help PRC Cope With Environmental Issues

OW0309092692 Tokyo KYODO in English 0643 GMT 3 Sep 92

[Text] Tokyo, Sept. 3 (KYODO)—The Japan-China Association of Economy and Trade will set up a panel September 10 to help China cope with its environmental pollution, association officials said Thursday.

The panel will consist of representatives from some 20 environmental protection equipment manufacturers and will be headed by Hiroyuki Fujimura, president of Ebara Corp., the officials told KYODO NEWS SERVICE.

The panel will survey areas suffering from environmental pollution in China and its impact on Japan, and arrange technical support to develop equipment in China geared toward saving the environment, they said.

The association's mission, which is scheduled to visit China from September 16, plans to ask China to form a similar panel within the government.

The association hopes the two panels can exchange views on environmental issues as early as October.

China's environmental pollution is reported to have worsened over the years, and massive emissions of sulfur dioxide in China are said to be the cause of acid rain in Japan.

MITI To Draw Up Guidelines for 'Eco-Design'

OW0409131492 Tokyo KYODO in English 1206 GMT 4 Sep 92

[Text] Tokyo, Sept. 4 (KYODO)—The Ministry of International Trade and Industry will start studies on "eco-design" from next fiscal year with a view to developing more environment-friendly products, ministry officials said Friday.

The ministry plans to set up a committee consisting of government, industry, and academic representatives to

study cases at home and abroad in which products are designed from the viewpoint of the environmental protection, the officials said.

The committee is expected to draw up guidelines for manufacturing goods friendly to the global environment by the end of the fiscal 1993, which ends March 1994, they said.

As one successful example of "eco-design," they cited "disposable" or rather recyclable cameras, 100 percent of which makers take back when film is developed.

With parts of those cameras being used in further production, the cycle from production through distribution, collection, and recycling has worked well, they said.

The ministry will seek directions for future product development by reviewing corporate management and organization among other things, especially in the area of industrial design, they said.

Some car and electric appliance makers, as well as business groups, have already started designing and using materials with the collection and recycling of products in mind, they said.

Tax Breaks Urged for Vehicles Meeting Emission Standards

OW1009093892 Tokyo KYODO in English 0835 GMT 10 Sep 92

[Text] Tokyo, Sept. 10 (KYODO)—The Transport Ministry on Thursday proposed tax breaks for businesses using vehicles meeting nitrogen oxide emission standards and for those that install elevators and escalators for people with physical disabilities at public facilities as part of a fiscal 1993 tax reform.

The 59-point proposal covers a transport-related tax reform for the year starting next April 1, ministry officials said.

It calls for tax breaks for businesses in designated areas switching from conventional vehicles to those meeting the special law for reducing nitrogen oxide emissions and those introducing electric, methanol-powered, and other low-emission vehicles.

The ministry also proposed tax breaks for businesses introducing elevators, escalators, and vehicles with lifts for the physically handicapped at train stations, airports, and other public facilities.

Report Says Businesses Still Put Profits Before Environment

OW1009091392 Tokyo KYODO in English 0813 GMT 10 Sep 92

[Text] Tokyo, Sept. 10 (KYODO)—Japan continues to give business profits priority over environmental conservation, according to a new report on environmental policies in the Asia-Pacific region.

"Conservation at a national level is simply not considered of significant importance by Japanese officialdom to merit serious attention: economic policy remains firmly in the driving seat," it says.

The report, "Asia/Pacific and the Environment: Investing in the Future," details environmental policies and regulations and analyzes the impact of environmental issues on business in 13 countries in the Asia-Pacific region.

While Japan has made significant progress in controlling industrial pollution, "obvious problems such as groundwater and soil pollution have been largely neglected," it says.

The conclusions are in contrast to international kudos Japan received from Maurice Strong, secretary general of the Earth Summit held in Rio de Janeiro in June, who dubbed Japan's environmental achievements its "second miracle" after its economic successes.

"Although there is a high level of concern about the effects of pollution on public health, little official protection is offered the natural environment," the report says.

The report, written by free-lance environmental journalist Jamie Allen, cites the government's promotion of resort development, which has been blamed for damaging nature parks, as an example of how Japan has failed to adopt an integrated national policy to resolve the conflict between conserving nature and development.

"Ministries responsible for (implementing conservation laws) are typically too weak to oppose their more powerful economic counterparts," the report says. These counterparts are in some cases charged with protecting the environment as well as protecting the industry that causes the damage, it says.

"Corporations are generally uninterested in environmental problems that lack a technical solution and from which they cannot make money, such as nature conservation," it says.

The report paints a dim picture for foreign businesses that wish to compete in the pollution control market.

Japan already owns most pollution control technology, and interlocking business relations often pose an obstacle for overseas companies seeking to gain market access, according to the report.

It cites advanced technology for waste recycling and environmental audits of industrial facilities before they are purchased as possible entry points for foreign companies.

The 400-page report, published by Business International, a subsidiary of the Economist group, was financed by Du Pont Asia-Pacific and the public relations company Burson-Marsteller.

SOUTH KOREA

Earth Environment Ministers Conference Sets Future Tasks

SK3108135592 Seoul YONHAP in English 1200 GMT
31 Aug 92

[Text] Seoul, Aug. 31 (YONHAP)—Monday the government held the first meeting of the Earth Environment Ministers Conference to adopt 44 projects in three areas as earth environmental tasks to be undertaken in the days ahead.

The meeting chaired by Prime Minister Chong Won-sik also decided on a tentative basis to ratify within the first half of next year the two treaties—biodiversity convention and global warming convention—which Premier Chong signed at the UN conference on environment and development held in last June in Brazil.

In another measure, the meeting decided to try to make the "developing country clause" of the Montreal Protocol be applied to Korea with respect to the restricted use of ozone-layer-destroying materials.

The Montreal Protocol shelves until 2003 the application of the restricted use to those developing countries where yearly consumption of ozone-layer-destroying materials is less than 0.3 kg per person.

In 1986, the country informed the UN Environmental Program that Korea's per-capita annual use of such materials was 0.28 kg.

UNDP Offers To Help ROK Form Asian Environment Cooperative

SK0209090992 Seoul YONHAP in English 0508 GMT
2 Sep 92

[Text] Seoul, September 2 (YONHAP)—The United Nations Development Program (UNDP) is ready to help South Korea set up an environmental cooperative entity in Northeast Asia, a senior UNDP official told an international symposium on the environment here Wednesday.

The idea was proposed during the Rio Earth Summit in June by South Korean Premier Chong Won-sik.

Michael Gucovsky, senior adviser to the UNDP administrator on the environment, said that South Korea was in the position of becoming a leader nation between the advanced and developing countries, which are at odds over such issues as technology transfer and funding for environmental preservation.

The environment could be preserved through united action on a global level, not by individual nations, the U.N. official said.

Korea would be able to contribute to carrying out Agenda 21, adopted at the Earth Summit, through its high technological industrial capacity, he said.

UNDP had started the "Capacity 21" project to develop the scientific, technological and managing systems necessary to carry out Agenda 21, Gucovsky added.

Meanwhile, Chong Chin-song of Korea Development Institute said that pollution in Korea had worsened during the last 30 years due to restructuring from primary to tertiary industry, changes in energy consumption patterns and concentration of the population in urban areas.

Korea should pursue technology-oriented, energy-saving and value-adding industries to continue sustainable development, Chong said.

Some 20 dignitaries from the United States, Britain and six other nations, and three international environment organizations are taking part in the three-day meeting to discuss global issues on the environment after the Rio Earth Summit.

Symposium Sets Up Northeast Asian Environmental Network

SK0809055892 *Seoul THE KOREA TIMES in English* 8 Sep 92 p 3

[Text] Participants in the '92 Seoul (Environmental) Symposium ended four days of discussions last weekend, agreeing to set up an informal network for environmental cooperation among Northeast Asian countries with South Korea playing the leading role.

The international forum was participated in by leading environmental experts and ranking government officials from China, Japan, Mongolia, Russia, South Korea and the United States.

They concurred that cooperation is vital to promote the exchange of information, experts, and joint research and surveys related to the environment both at governmental and nongovernmental levels.

Consequently, the conferees unanimously agreed to promote the establishment of a new regional environmental network with the interim secretariat being the Korea Research Council on Environmental Science, the organizer of the symposium.

THAILAND

Prime Minister Calls for ASEAN Cooperation on Environmental Efforts

BK2208031792 *Bangkok BANGKOK POST in English* 22 Aug 92 p 13

[Text] Prime Minister Anan Panyarachun yesterday called for cooperation between ASEAN member countries to protect the environment.

Opening the ASEAN Travel Show 1992, an international tourism event aimed at supporting the Visit ASEAN Year 1992 and celebrating Her Majesty the Queen's 60th

birthday, Mr. Anan said world attention had increasingly turned to the crucial issue of environmental protection.

The show is being held at the Queen Sirikit National Convention Center.

"The dangers to our future survival and that of the planet are well known. For the tourism industry, the issue has a particular relevance, in that we must safeguard the natural attractions which draw visitors to our beautiful countries," he said.

These attractions ranged from unspoiled beaches and clean water to the natural habitats in which flora and fauna can flourish, he said. ASEAN nations, as guardians of many of the earth's rare and dwindling tropical rain forests and coral seas, had a particular responsibility in this area.

While it could be difficult to balance the conflicting demands of man and nature, it was in all ASEAN nations' longterm interests to ensure they retained the clean, natural beauty for which they were renowned.

"Eco-tourism" was becoming a more widely-understood concept in the region, he said.

"Both the government and the private sectors must strive to achieve that sustainable balance between development of ASEAN tourism facilities and ensuring the natural world remains undamaged.

"Our beautiful countries in ASEAN have so much to offer in terms of varied and rich cultural traditions, beautiful beaches and forests, some of the best shopping in the world, vibrant cities, and top-class sporting and recreation facilities. Whether the traveller wants to relax, see the sights or try a new adventure, the six nations of ASEAN offer a unique range of holiday choices."

The Premier said he was proud of the cooperation between ASEAN nations, particularly on tourism.

ASEAN countries welcomed over 20 million tourists last year. Since 1981, visitor arrivals to this region had grown by 121.5 percent, the highest growth rate in the world. Of the 20 million visitor arrivals to ASEAN last year, about eight million or 40 percent came from other ASEAN member nations.

"So it makes good sense to further strengthen our joint efforts to develop and promote our countries as holiday destinations, and this ASEAN Travel Show is one strong demonstration of the way in which our countries are working together to enhance our region's tourism industry," he said.

"In addition to several activities jointly launched by ASEAN nations, another event, which will link several of the ASEAN nations together, will be the start of the new Orient Express deluxe train, scheduled to begin service early next year."

The ASEAN Travel Show continues until Sunday. On Saturday and Sunday, the public would be able to glimpse the colourful cultures of the region and plan their next holidays in one or more of Thailand's ASEAN neighbours.

Pulp Operators Opposed to Commercial Reforestation Ban

BK0209053392 Bangkok *THE NATION* in English
2 Sep 92 p B12

[Text] Pulp operators expressed their opposition to Agriculture and Cooperatives Minister Khosit Panpiamrat's initiative to ban the private sector from engaging in commercial reforestation permanently.

They said the government should find another alternative or wait for the feasibility study being done by the Finnish government that aims to conserve forests and support certain industries at the same time. If the plan is implemented, pulp operators said they would ask the next government to amend the law.

Khosit plans to ask the outgoing Anan Cabinet to amend the old Cabinet order which temporarily suspended commercial reforestation. The proposal will be submitted to the Cabinet on September 8, the last working session of the outgoing Anan administration. Khosit said his initiative aims to conserve existing forests.

But a source from the pulp operators said the government should rather come up with another alternative so as to benefit both farmers and the industrial sector.

The same source cited the pulp industry's need for large plantations where they can grow a particular specie.

"The government should wait for the feasibility study which is expected to be completed next year before making such an announcement. The Finnish government is studying ways of increasing the forest area from 28 percent to 40 percent nationwide. Its plan will use an additional area of 12 percent, or 38 million rai, to grow trees that will support certain industries," the source stressed.

The source also claimed that the plan would help offset pulp imports.

Additionally, it would be difficult to allow small farmers to operate the forest gardens since it would lead instead to forest encroachment. The source said that at least 60-70 percent of the area should be managed by potential investors in the private sector.

Within the next 10 years, the source said the total plantation area allotted to the pulp industry will be less than 2 million rai compared with the denuded portions of forest reserves which cover a total of about 38 million rai nationwide. "I don't understand why the government plans to leave such a large area unused," the source added.

A source from the Sahaviriya Group, which has undertaken a massive forest reforestation programme, said that the initiative reflects an inconsistency in the government's plans.

ALBANIA

Environmental Pollution Presents National Problem*AU0309155092 Tirana ATA in English 0821 GMT
3 Sep 92*

[Text] Tirana, September 3 (ATA)—In most of the industrial objects built in Albania, environmental protection is not taken into account. Especially over the 60s and 80s, factories, plants, and combines were built up with an outdated technology, and, generally, without pollution control installations. As a result in certain regions or cities, problems emerged especially due to gas waste. In Kukes, Rubik, Lac, Fier, and Elbasan, the spectre of pollution of the surface waters was expanded and deepened, especially the pollution of rivers due to industrial waste.

A similar situation is noted also in the treatment of the flora and fauna in general, as well as of the forests in particular. Considering that timber material is a priority fire wood for heating in the cities and countryside, over 1.5 million cubic metres are used every day. Hence woods are systematically overexploited heading to a negative ratio in view of cutting and growing which is 3:1. The breaking of virgin lands, the massive deforestation, terracing, and devastation of pastures not only damaged the fauna but they were doubled also with the land's erosion. In general the Albanian coast is pure, with trifling exceptions in the Bay of Durres and Vlore and some river outfall. Now, in the conditions of the market economy, new economic and social activities are carried out. Perspectives are opened to tourism, light and food industry, the sea oil and gas drillings. But, is the environmental administration controlled in this development?

Proceeding from the problems our country is faced with today and in order to precede the new economic and social developments, the chairman of the Committee for Environmental Protection, Lirim Selfo said to ATA reporter, we have engaged in preparing the general law on protecting the environment and studying to draft the respective administrative structures from the center to the base. To this end we bear in mind the particularity of our country as well as legislations of some European countries. We intend to harmonize the economic developments with the environmental preservation and protection.

BULGARIA

Commission Issues Report on Vratsa Petrochemical Plant Accident*AU2808202992 Sofia BTA in English 1959 GMT
28 Aug 92*

[Text] Sofia, August 28 (BTA)—A specially appointed labour protection commission today came up with its conclusion on the accident which occurred at the Vratsa-based Chimco Petrochemical Plant on August 17, 1992. It was said to coincide with the conclusions made by a departmental commission announced two days after the accident.

The company has aided the families of the two workers who died in the accident. Four other have been wounded and are recovering after a medical treatment.

The Chimco Petrochemical Works based in Vratsa (northwestern Bulgaria) will invest over 1,000 million leva (about 40 million U.S. dollars under the current exchange rate) for the implementation of its environmental projects, BTA's local correspondent reported today. About 400 million leva (about 18 million U.S. dollars) have been allocated to this end so far. Following the plant's reconstruction, health hazardous gas emissions will be reduced below the permissible limits and will abide to European standards, the company's director, Mr. Kiril Petkov believes. The company, which is the main pollutant of the air and water in the region, makes Vratsa one of the most heavily polluted Bulgarian towns. The town's residents insist that the chemical plant be closed down, which will be however unprofitable both from an economic and social point of view.

The company has exported production worth 45 million U.S. dollars in the first six months of 1992 alone. Last year it contributed about 23 million U.S. dollars to the national budget and over 2 million dollars to the municipal budget. The company subsidizes the local health care establishments, education, culture, public transport, heat and water supply. Experts express diverging opinions as to the level to which noxious gas emissions affect the health of the local people.

CZECHOSLOVAKIA

UN Aid Focuses on Food Chain Safety*AU2808102692 Prague CSTK in English 2040 GMT
26 Aug 92*

[Text] Prague Aug 26 (CSTK)—The exchange of information, farming policy and technical assistance are the main priorities of a scheme for Europe in 1994-1999, U.N. Food and Agriculture Organization (FAO) Deputy Director-General V.J. Shah told the 18th FAO regional conference here today.

He said the FAO will continue aid to agriculture and forestry in Central and East European countries and that it can help resolve urgent problems in the transport, storage, processing and control of food.

The Czechoslovak representative in the FAO, Arpad Szabo, today told CSTK that the FAO and Czechoslovakia started cooperation last year on a project of monitoring the safety of the Czechoslovak food chain which included the drafting of a Czechoslovak food bill.

Also important is a project of removing PCB-contaminated animal products and a project of constructing a center for the diagnosis of freshwater fish diseases which is financed by Japan.

Szabo said that all projects are worth from \$45,000 to \$300,000.

He went on to say that Czechoslovakia does not need food aid but needs assistance in reviving its environment and in restructuring its economic development.

BRAZIL

Government Lauds France's Ratification of Tlatelolco Treaty

PY2808151292 Brasilia Radio Nacional da Amazonia Network in Portuguese 1000 GMT 28 Aug 92

[Text] The Brazilian Government has conveyed its great satisfaction over France's ratification of the Additional Protocol No. 1 to the Tlatelolco Treaty, which bans nuclear weapons in Latin America.

The protocol includes provisions on the nuclear powers which, despite being outside Latin America, have territories under their jurisdiction in the region. For instance, France has French Guyana.

According to Itamaraty, the French ratification of the protocol will make it possible for the Tlatelolco Treaty to go into effect soon in the entire Latin American region.

COLOMBIA

Minister Addresses Nonaligned Summit on Drugs, Environment

PA0809191792 Santa Fe de Bogota EL TIEMPO in Spanish 4 Sep 92 p 6a

[Text] Colombia has stated at the Nonaligned Countries Movement that drug-trafficking money has not benefited its economy or that of any underdeveloped country. Colombia has no interest in resources resulting from that criminal industry.

During her address to the 10th Nonaligned Conference in Jakarta, Foreign Minister Noemi Sanin said the economy cannot receive the benefits of money which undermines society, destroys young people's values, and threatens democracy.

She said Colombia continues to wage this unequal struggle and has assumed the costs of a task that surpasses the possibilities of a single country.

"The scourge's capacity for corruption and destabilization cannot be countered in a solitary way. International solidarity and cooperation are still essential," she said.

Sanin invited nonaligned countries to sponsor actions to allow a reduction in the demand among drug consumers, control the trade of chemicals used to manufacture drugs, and increase efficient measures against money-laundering activities.

Likewise, she said it is essential to strengthen judicial systems and provide them with appropriate mechanisms that guarantee their continuity, protect sovereignty, discourage interventionist plans, and help settle the problem.

The minister invited the summit to decide to prioritize topics in each state's agenda; to revitalize development;

to eradicate poverty, hunger, and malnutrition; and to improve health levels and actions against illiteracy.

She said these goals must be sought in a favorable international atmosphere characterized by the elimination of protectionism; the increase in financial resources for investments in developing nations; and access to new and ecologically safe technologies.

She said it is a contradiction that developing nations are striving to modernize their markets and sponsor economic reforms "while industrialized nations seem to be bent on a withdrawal, creating protectionist barriers and advocating trade wars."

Sanin also referred to the role the Nonaligned Countries Movement must play in the future: "Given that bipolarity and alignment with great centers of power has disappeared, the movement must dispel doubts and answer questions about its reason for existence."

In her opinion, the group must insist on its demands for a much more equitable and safe world, based on abidance by international laws and UN Charter principles, and a essential condition: The nations' welfare must be guaranteed through cooperation without conditions and respect for sovereignty and territorial integrity.

The foreign minister warned Colombia views with concern the dominance achieved by the UN Security Council in the Nonaligned Countries Movement. "We are alarmed by the frequency with which nations have recently chosen to implement the UN Charter's seventh article, which authorizes the use of force to solve conflicts."

She requested that the Security Council's actions be more clear, careful, and impartial.

"That is why we cannot accept the tendency to justify the world powers' intervention in developing countries' affairs. We must protect the international organization from attempts to turn it into means for an intervention."

Moreover, she advocated the protection of natural resources and said that—although the demand is for developing countries to stop the degradation process caused by the exploitation and unplanned use of their natural riches—industrialized nations must understand that their production and consumption models do the worst damage to the world's ecology in most of the cases.

She also proposed a revision of immigration policies due to the worrisome present and future of innumerable groups which, in their search for better conditions, have become neglected minorities whose social, economic, and political rights are frequently violated.

GUATEMALA

'Total' Water Shortage Predicted by Year 2000

92WN0708A Guatemala City SIGLO VEINTIUNO
in Spanish 16 Jul 92 p 11

[Commentary by Mario Carpio Nicolle]

[Excerpt] [Passage omitted] By the year 2000 or 2010 there will be an almost total shortage of water in the Department of Guatemala and other regions of the country because the sources are drying up or becoming exhausted, according to research on the subject. A recent monograph from ASIES [Association for Social Research and Studies] tells us only the following:

"Water resources are running out in the metropolitan area as a result of the contamination of rivers and lakes and a drop in the level of underground water. Studies of underground water in the southern basin of Guatemala City show constant declines in the level of the water table (0.70 meters per year) that are not replaced during the rainy season, which shows a tendency toward the exhaustion of this resource.... The best areas for the resupply of underground springs have been deforested and urbanized, which reduces infiltration considerably.

"Underground waters in some areas are found to be contaminated by chemicals and residues from standard sanitary landfills," it continues, citing SIGLO 21. "Examples of this are the private wells that supply Roosevelt and San Vicente Hospitals, which were reported to be contaminated by fecal matter." According to a report by PRENSA LIBRE, it was reported in 1991 that water from the Las Ilusiones treatment plant, Zone 18, was contaminated by industrial waste from factories located within city limits".

According to other sources, in 1978 the Villalobos and Pinula Rivers already had considerable levels of contamination: large quantities of suspended solids, high concentrations of phosphorus, potassium, sodium, chlorine, and nitrates (higher than the maximum levels accepted by the World Health Organization), and heavy fecal contamination, as shown by the presence of coliform bacteria. Furthermore, according to a study of the Pinula River at Hincapie, even after being treated, the water has unacceptable color, odor, and turbidity, a concentration of chloride inappropriate for irrigation, and a low level of sodium.

Amatitlan Lake receives 75 percent of the wastewater from domestic and agroindustrial use in the capital and its peripheral towns, especially from the Villalobos River, which is its principal affluent. There are 341 factories and 125 settlements and colonies located at the city's periphery whose wastes reach the lake.

These are only some of the factors. The sanitization of Empagua [Water Company] is of the utmost importance, and perhaps its privatization is the best option. However, privatization will not solve any of the problems

described above, particularly two of the greatest problems: the total impunity with which industrialists dump their wastes into rivers and lakes and the poverty that affects more than a half million residents of the capital, whose organic wastes contaminate those waters that are now carriers of cholera.

Nor will the privatization of Empagua deal with the flow of the hundreds of unemployed who emigrate to the city each day in an illusory search for opportunities that their home villages do not offer. To say that privatization will solve the problem of water in Guatemala is, in fact, to confuse public opinion with what is, from any point of view, a great fallacy.

PERU

Oil Companies Contaminate Amazon River Tributaries

PY0809162292

[Editorial Report] Lima LA REPUBLICA in Spanish on 21 August publishes on pages 13 through 15 a 1,300-word article by Francisco Mattos entitled "Contamination of Amazon Rivers Increases Day by Day."

In the article, Mattos says that "two laboratory tests conducted after the spill of 1,234 Ecuadoran oil barrels" into the Napo River "showed an increasing amount of toxic materials in river waters."

The test made on 8 August "registered the presence of 3.08 ppm of metallic mercury" while the permissible limit is only 0.002 ppm; "0.119 ppm of lead while the acceptable limit is only 0.030 ppm;" and a total of "0.73 ppm of cadmium" and "6.32 ppm of manganese" while the limits for both substances are "0.004 ppm and 0.1 ppm respectively."

The report says that Peruvian Amazon Region Research Institute officials explained that the extraneous materials "were caused by the oil spill, but also by the solvents" used to disperse the oil. The report adds that Loreto Regional government has documents proving that rivers Tigre and Corrientes, as well as the Yanayacu and Pastaza, are also contaminated. The report says that a test on 20 March of Tigre River waters confirmed that "lead and chloride levels are 100 times above normal."

The report says that "contamination is basically produced by waste eliminated by the 16 Ecuadoran and foreign firms operating near the Peruvian border" as well as by "two companies that operate on the Peruvian side of the border: the Oxy and Petroperu [State Petroleum Agency]."

The report says that the regional government "has ordered some measures to protect the environment" such as "a requirement to all oil companies operating in the zone to present studies on the environmental impact of their operations and plans to minimize or eliminate

contamination" produced by them. The local government has also ordered "the suspension of all timber-cutting contracts" and "the use of large nets" for fishing in the region.

ST LUCIA

German Experts Advise on Solid Waste Disposal

*FL0109154692 Bridgetown CANA in English
1356 GMT 1 Sep 92*

[Text] Castries, St. Lucia, Sept 1 (CANA)—A team of German solid waste experts is carrying out a study of St. Lucia's solid waste disposal problems, Health Minister Stephenson King said.

King said the team's report would include "recommendations for the kind of equipment which should be used for garbage disposal in the towns and villages."

"They are looking at every town, every village, and the city to see exactly what volume of garbage we generate," he said.

The team is here under a technical cooperation agreement between St. Lucia and Germany and is working in a collaborative effort with the Ministry of Health and the Caribbean Environmental Health Institute (CEHI).

EGYPT

U.S. Said Bargaining With Government To Supply Sinai Water to Israel

NC2208184792 Cairo AL-SHA'B in Arabic 18 Aug 92
p 1

[Report by Salah Bidiwi]

[Text] The U.S. Administration is bargaining with the Egyptian Government over a project to supply the Israeli enemy with water from the al-Salam Canal. The Zionist lobby in the U.S. Congress applied pressure so that canal would be diverted from northern Sinai to central Sinai to facilitate the transport of water to occupied Negev.

The subject was raised during terrorist Yitzhaq Rabin's recent visit to Cairo. The U.S. ambassador and officials of the U.S. Agency for International Development in Cairo also held contacts with Egyptian officials and informed them that Saudi Arabia is prepared to finance a new al-Salam Canal stream running to central Sinai to supply occupied Negev with water.

The Egyptian Government continues to insist on digging along the current canal line toward the north amid complete rejection from the people of Sinai. The government fears that if it changes the direction toward central Sinai, the enemy may demand that the Camp David commitments be met. Minister of Housing Engineer Hasaballah al-Kafrawi told AL-SHA'B that his ministry will study and consider demands by the people of Sinai that the canal be diverted to the center, which contains millions of fedans of muddy [tiniyah] land. [as published]

INDIA

National Conservation, Development Strategy Outlined

92WN0720A Madras INDIAN EXPRESS in English
23 Jul 92 p 9

[Text] New Delhi—The government on Thursday set out an ambitious national conservation strategy on environment and development, laying down the guidelines that would help to weave environmental considerations into the fabric of the country's developmental process.

The strategy and policy statement on environment and development, tabled in Parliament, said environmental problems in India emanate from the very process of development and from conditions of poverty and underdevelopment.

In a foreword to the document, the Minister of State for Environment Mr. Kamal Nath said India today has enough guarantees to protect its ecological system and said the government was now working towards "a unique compatibility between the development and the environment."

The statement said though technological progress would add to the capabilities for sustaining a large number of population, the need for a vigorous drive for population control could hardly be overemphasised in view of the linkage between poverty, population growth and the environment.

It said out of a total area of 329 million hectares, 175 million hectares of land require special treatment to be restored to productive and profitable use.

The degradation was caused by water and wind erosion (150 million ha), salinity and alkalinity (8 million ha) and river action and other factors (7 million ha).

It said unless there is a curb on population growth and even a reduction of such populations and a corresponding improvement in land use policies, the current trend of over-exploitation and ecological degradation is not likely to improve.

The statement dealt at length action taken so far in the form of legislations and institutions built up to protect the environment and ensure sustainable development and said the modest gains by the steps taken during the past few years leave "no room for complacency" when viewed in the context of enormous challenges. It said framing a conservation strategy is an imperative first step, which would serve as a management guide for integrating environmental concerns with developmental imperatives.

The agenda for action include steps to ensure sustainable and equitable use of resources without detriment to the environment, to prevent and control future deterioration in land, water and air, to take steps for restoration of ecologically degraded areas and to ensure that the environment and productivity of coastal areas and marine ecosystems were protected.

The statement said that to address the stated agenda the instruments for action would cover carrying out environmental impact assessment of all development projects right from the planning stage and integrate it with their cost-benefit considerations and compulsory prior environmental clearance for all projects above a certain size.

The statement said that along with the development programmes to improve the living conditions, launching a time-bound National campaign for population stabilization with the small family as a socially responsible objective, easier access to the means of family planning and health care facilities and adoption of decentralised renewable energy devices that enhance quality of life in remote areas while taking special care of the health needs of women.

The statement also spelt out detailed strategy for atmospheric pollution including noise pollution, preservation of biodiversity, biomass utilisation and development policies from environmental perspective.

On forestry, it called for concerted efforts to raise the forest cover and for conservation of existing forests

which constitute an essential life support system and a vital source of food, fodder, fibre, fuel and medicines.

Referring to global cooperation, it unequivocally said India's economic development could not be hampered in the name of the global environment, which India did nothing to damage and could do little to save.

Stating that regulatory global regimes could be useful in some areas such as ozone depletion or even climate change, it said in other sectors such as forestry it was neither workable nor acceptable.

The statement emphasised the need for the contribution of women and the non-governmental organisations (NGOs) in bringing the environmental issues to the fore and finding a solution that would ensure sustainable development without sacrificing the well-being of millions of people.

Mandatory Environmental Checks for Projects Postponed

*BK0209114792 Delhi INDIAN EXPRESS in English
25 Aug 92 p 10*

[Text] New Delhi—At the behest of Prime Minister Narasimh Rao, the notification for mandatory environmental impact assessment (EIA) for all major development projects of the country has been postponed by another month.

The notification was issued on January 29 under the Environment Protection Act of 1986 and was to have been gazetted by the end of May.

So far, there is no legal mechanism to ensure that development projects and activities are subjected to a comprehensive environmental impact assessment before being initiated.

In the absence of a legal instrument, India was not able to stand by its commitment that it will take a lead in ensuring that development is sustainable and socially and environmentally just.

However, there has been a veritable revolt against the notification by State chief ministers who feel their pace of development will either be curtailed or slowed down.

Mr. Rao feels there is no point in thrusting the EIA on reluctant chief ministers who could continue to flout it. He has therefore sought another meeting of chief ministers to win them over before gazetting the notification.

The EIA would not only protect the environment but prevent enormous expenditure and delay in subsequent rectification of half-finished projects not assessed in advance.

Longterm Radioactive Leak Detected at Bombay Atomic Plant

*BK0609151292 Hong Kong AFP in English 1503 GMT
6 Sep 92*

[Text] NEW DELHI, Sept 6 (AFP)—A Bombay atomic energy plant has been leaking radioactivity, possibly for several years, a New Delhi newspaper reported Sunday.

A leak of radioactive contaminants was detected around the Bhabha Atomic Energy Centre (BARC) located some 15 kilometres (nine miles) from the center of Bombay last December, according to The Sunday Observer.

Traces of radioactive isotope caesium-137 were detected in soil and seawater samples near the BARC, the paper said.

The leak was first noticed December 13, 1991 when a fountain of water erupted from the lawn separating the complex from the sea.

A subsequent test of the water by experts from the Radiation Health Inspectorate showed traces of radioactivity, the report said.

The newspaper, quoting unnamed sources, called the leak "a disaster of significant magnitude," adding that "evidence also points to the possibility of the leakage having taken place for a number of years."

The newspaper report followed a BBC documentary broadcast Tuesday alleging lapses in nuclear safety procedures at various Indian atomic projects.

IRAN

Germany To Help Iran Solve Traffic, Pollution Problems

*LD0709113292 Tehran IRNA in English 1026 GMT
7 Sep 92*

[Text] Tehran, Sept. 7, IRNA—The visiting German deputy minister of environment, Clemes Sproetmnn, voiced his country's readiness to help Iran solve traffic problems, fight air pollution and build a modern sewer system.

Sproetmnn made the remark in a meeting with Tehran's Mayor Gholam-Husayn Karbaschi here Sunday.

Karbaschi said that a major part of Tehran's air pollution is partly produced by fumes from motor vehicles, adding that buses and minibuses of the city bus company formed a considerable part of them.

Some 50 percent of these vehicles are made by the German Benz company which have become instruments for polluting Tehran's air due to technical disorder or because the necessary technical know-how has not been transferred, pointed out the mayor.

Recalling the German partner's words to send experts to Iran to help solve the traffic problems, Karbaschi expressed hope that cooperation would lead to transfer of technical know-how on repair and maintenance of Benz buses and minibuses.

He warned that Tehran's air pollution in some places was ten times more than the safety standard and called for serious cooperation at experts level to eliminate the problem.

ISRAEL

Environmentalists To Resume 'Battle' Against VOA Project

TA2208140392 Jerusalem Qol Yisra'el in Hebrew
1100 GMT 22 Aug 92

[Text] The Nature Protection Society has set up a team of top leading activists to resume the battle against the establishment of the VOA relay station in the 'Arava. This decision comes in the wake of the prime minister's declaration that he intends to expedite the construction of the American superstation.

Our correspondent Shulamit Schmerling reports that already at the beginning of next week, the interior minister, acting on Mr. Rabin's request, will set up a subcommittee at the National Commission for Planning and Construction to discuss expediting construction work on the VOA station.

Environment Minister Ora Namir will also chair a ministerial committee on the same matter, after expressing her support for the establishment of the station. The Nature Protection Society's decision to resume the fight was also timed to coincide with the convening of the U.S. Congress' Appropriations Committee, which is supposed to decide within a few weeks whether to approve additional funds for the establishment of the superstation in the 'Arava or cancel the project, as was a public advisory committee in the United States recently recommended as part of a general cutback in propaganda broadcasts abroad.

Accord Sought With Jordan on Oil Spills in Gulf of Elat

TA2908110692 Jerusalem Qol Yisra'el in Hebrew
1000 GMT 29 Aug 92

[Text] In view of the large oil spill in the Gulf of Elat yesterday and on other occasions, Israel's representatives to the multilateral talks are intent on reaching cooperation with Jordan on the issue. Authoritative sources told our correspondent Shulamit Schmerling that in the meeting of the environmental committee Israel will seek the establishment of a joint Israeli-Jordanian early warning and mutual assistance mechanism to treat oil spills with the help of the appropriate equipment.

Meanwhile, yesterday's oil spill in the port of Elat reached Jordanian shores overnight. The coral reef reservation which was contaminated yesterday reopened this morning.

Approval Likely on Jordan Water Allotment Request

TA3108112892 Tel Aviv MA'ARIV in Hebrew
31 Aug 92 pp 1, 2

[Report by 'Oded Shorer]

[Text] This week Jordan will seek to arrive at an agreement with Israel on increasing its water quota from the al-Yarmuk River. Amman is asking Israel to make a onetime gesture, and senior sources told MA'ARIV that the gesture will probably be approved.

In talks with members of the Israeli working team on the water issue, headed by Dr. Eliyahu Rosenthal, senior Jordanian delegate Dr. Haddadin asked that Israel grant Jordan an additional allotment of some 60 to 70 million square meters a year from the al-Yarmuk waters. Haddadin said that because of the great water shortage in Amman and its environs, Jordan is asking for a onetime allotment beyond that stipulated in the Johnston Agreement of 1957. The Israelis explained that this is a onetime gesture, but they have not given the Jordanian Government a final reply as yet.

NEPAL

Prime Minister Calls for Changes in Nonaligned Movement Concept

BK3108010392 Hong Kong AFP in English 1704 GMT
30 Aug 92

[Text] Kathmandu, Aug 30 (AFP)—Nepal Prime Minister Girija Prasad Koirala has called for the Nonaligned Movement (NAM) to address economic and environmental issues, the state run Nepal Television (NTV) reported Sunday.

In response to a question on participating in the tenth NAM summit underway in Jakarta September 1-6, Koirala said: "I am going to attend the summit in the changed context in the world politics.

"The concept of nonalignment originated during the cold period," he said.

"Instead of political power, the nonaligned movement today needs to be changed into a forum for discussion on economic problems of the NAM countries."

He stressed the need for the NAM to come up with a concrete policy on the preservation of the environment.

Underlining the need on the part of NAM to help strengthen the role of the United Nations, he said: "NAM will not reach its goal unless it can contribute to poverty alleviation."

REGIONAL AFFAIRS

Formerly Secret Report Warned of Pesticide-Tainted Food

92WN0713A Moscow ROSSIYSKAYA GAZETA
in Russian 8 Aug 92 p 2

[Article by Yelena Dmitriyeva under the rubric "The Day's Events: Facts, Evaluations, Commentaries": "Published for the First Time: Poisons... for Your Table"]

[Text] My interlocutors—Yuriy Veretennikov, Yelena Alekperova, Anatoliy Lysov, Gennadiy Kablukov—are well-known specialists in their own field. They work in various organizations and even in different cities (in the association Agros, in the VNII [All-Union Scientific Research Institute] for the Protection of Plants, the VNII for Agricultural Machine Building, and also in the Biometod association), but they unanimously subscribe to each line of the information that they report. They are like-minded, and, therefore, there were not four interlocutors in front of me, but one.

The notion of "ecological catastrophe" constantly figures in their system of evidence, with whose help they have defended our land and your health and my health. So, what is behind this notion?

The question of pesticides, a term that has already become boring to us, is what they had in mind when talking about trouble.

Did they write a lot about these chemical weed and pest killers?—they were surprised by my question. Misery. It is necessary to raise the alarm. This kind of intervention against nature threatens civilization with destruction.

No more, no less?

The question you ask, my interlocutors said angrily, precisely speaks to the point that the danger is not recognized. After all, pesticides hold third place in the scale of pollution of the environment we inhabit. Everyone knows that the first two places are held by the destructive effects of our industrial enterprises and by transportation.

But while transportation and industry pollute the inhabited environment, nonetheless, on limited territories (although this is conditional), the range for pesticides is the 102 million hectares of arable land of the former Soviet Union that give us grain. But this is not all—chemical weed and pest killers are used on all crops. "Thanks" to this, the world production of pesticides has already reached two million tonnes a year, and their variety—500 designations.

It is difficult to show in a newspaper the table that they outlined for me—according to it, it can be seen, starting in 1951, how much pesticide was poured and sprayed onto the land every five years. The increase is impressive, but I cannot resist citing one figure that stands

behind the dull line "per capita expenditure." On the average during his lifetime a 40-year-old man has already eaten 28 kilograms of chemical weed and pest killers! This is being published for the first time.

Results of analysis indicate a significant contamination of food products by residual amounts of chemical substances. On the whole, a trend has been noted in recent years in the country toward an increase by a factor of two to three in the indices of both the general detectability of pesticides and the number of contaminated samples. The content of two or more substances is sometimes observed in some of the samples (up to 15.5 percent), which indicates the possibility of dangerous combinations of various compounds entering the human body.

A large nomenclature of products contaminated by pesticides has been noted. Their broad assortment includes potatoes, cabbage, tomatoes, cucumbers, red beets, carrots, and apples. The amount of pesticides found in milk and in the food in infant feeding centers is increasing.

There has been an increase by a factor of two to three in the frequency of finding pesticides in the class of products that comprises the main food ration of the country's population—vegetables, milk-poultry-egg, leguminous, and fruit-berry products, and also fish and vegetable oils. Feed crops and hay are especially contaminated...

Pesticides whose use has been either prohibited or sharply restricted are found in food products year in and year out. Most frequently encountered is the presence of DDT and hexachlorocyclohexane in berry crops and leaf vegetables, and heptachlor in beef, milk, eggs, garlic, dill...

Perhaps there is no need to quote this full bureaucratic document further—it makes me ill. I will note only one thing: This document is a "gift" of the collapsed USSR Ministry of Health that was stored in the first department, which was top secret.

But do we now have a way out of the situation? After letting the poisons out of the test tube at one time (many of them were produced at first in military toxic agent plants), will we really be unable to get this monstrous genie back into the bottle?

It is necessary first of all to change the correlation in agriculture of chemistry, biology, and agricultural equipment in favor of the latter. Today, pesticide's share amounts to 90 percent! In the meantime, the experience is that biological methods of protecting plants from pests and diseases are better developed in this country than in many Western countries. This concerns the employment of useful insects, viruses, fungi, and preparations based on microorganisms.

It is true that another counterbalance has appeared "behind the curtain"—the production of ecologically pure products grown without biology and chemistry. To a significant extent this is a myth, claim Veretennikov, Alekperova, Kablukov, and Lysov; the atmosphere,

land, and water are so polluted that it is practically impossible now to avoid contaminated food products.

On the other hand, they are ardent supporters of a sharp reduction in the dosages of introduced chemical weed and pest killers, which can be done with the help of special equipment. And, after all, it has been developed in our amazing country—a long time ago, moreover. It makes it possible to reduce the norms of introduced chemical weed and pest killers by a factor of 10.

The equipment has come into the field, but it did not get far, which is quite explicable. After all, this was a movement of enthusiastic specialists, rebellious loners, even if they were backed up by entire institutional collectives. In a socialist economy it does not pay to move too far "from the base."

But what about today? Will we thus remain fixed to a policy, forgetting about the health of the populated environment? And let the genetic catastrophe approach, and let deformed babies be born?

Advice received in the Supreme Soviet Committee on Questions of Ecology and Rational Use of Natural Resources:

The Law on the Protection of the Natural Environment has been adopted. In its implementation, a program has been developed to prepare other legal acts; for example, the Ministry of Ecology and the Goskomsanepidnadzor must prepare a very important resolution on the procedure for applying ecologically sanitary requirements for production and consumption products. A special law on pesticides that will compel moderation in their excessively liberal and superficial application is in the committee's plan. Moreover, a lot of benefit is already being brought by the law on the sanitary-epidemiologic well-being of the population.

...On departing, the four specialists noted unanimously: We do not have a law on the production and sale of contaminated products.

Yes, the method of managing without masters brought our land a lot of trouble. There is even more trouble from concealing the true extent of the disaster. And for the time being, in view of the political discord, it is the "greens" who essentially are creating a fuss over the ecological catastrophe. But at the state level, anything that already today could weaken the chemical weed and pest killer offensive on the human body, and on the health of the nation as a whole, is being worked on listlessly. Help, asked the editorial guests, who are individual enthusiasts as well as inventors of ecologically acceptable technologies in cultivating fields. Let us help! We will not expose the health of our children to this unpredictable threat.

Experts Dispute Extent of Soviet Troop Damage in Former GDR

*92WN0731A Moscow IZVESTIYA in Russian
18 Aug 92 Morning Edition p 7*

[Article by Sergey Vlasov, journalist: "The Germans Are Raising the Price for the Damage to Their Ecology Inflicted by the Troops of the Former USSR"]

[Text] Independent experts dispute the reliability of the sum of DM10-50] billion, which was the initial estimate put by the German side on the damages inflicted on nature in Germany by our troops.

What calculations are at issue? By 1994 the withdrawal of our troops from Germany should be completed. And what will be the sum of compensation for immovable military property that is being left there by us? There are about 30 airports alone at the disposal of our troops. The Germans, however, are in no hurry to lay out any money. Ecology is becoming almost the main trump in their arguments.

According to preliminary assessments of the German side, the damage inflicted by our army to nature in Germany varies from DM10 billion to DM50 billion. For the time being, no official suit has been brought, but the logic is the following: Let us abandon our mutual claims, you will leave sooner, and we will compensate ourselves for the damage you have inflicted at the expense of the property left by you.

In May 1992, in Buendsdorf, at the headquarters of the German group of forces, a protocol on intentions was signed, according to which the Russian-American firm ICF/EKO undertook the realization of a program of international ecological-economic expert appraisal of the damage inflicted on nature as the result of the stay of Soviet troops on the territory of Germany.

Why was precisely this firm shown a high degree of trust? You know, the involvement of a private company in a project of such a scale is an unprecedented case. Its founder on the American side, the corporation ICF International, is the largest company in the United States in the sphere of environmental protection. The official consultant of the American government, 110 divisions in the United States, Europe and Asia. In 1991 its turnover came to almost \$700 million. The authority of the corporation in the world is so high that it can successfully come forward as the third judge in the drawn-out dispute between Russia and Germany.

The vice-president of the firm ICF/EKO, B. Bechuk, has twice been at our firing grounds in German and he believes that the state of the environment in the places where our troops have been stationed cannot in any way be called an ecological disaster.

Whence such astronomical sums? Tens of millions of German marks. . . .

In their estimates, the Germans proceed from the fact that the damage inflicted on the environment should be equal to the expenditures for the elimination of pollution and subsequent monitoring lasting many years. That is the approach they wanted to take in Hungary and Czechoslovakia. But the in the slightest literate specialist in the sphere of the economics of the use and preservation of nature knows that expenditures for the prevention of pollution, as a rule, are significantly greater than the damage. When our military in Hungary and in Czechoslovakia were presented with figures of ecological damage clearly overstated by that method, they simply gave up our property for lost. Do we need to repeat our mistakes?

Already in mid-May in the Ministry of Defense, in the Committee for Social Security of Servicemen, and in the Ministry of Ecology and Natural Resources of Russia, an instruction of the government was circulated—"to involve the ICF/EKO Company in the work on the optimization of the damage of the Western Group of Troops in Germany." There is an original formula developed by the firm for estimating the magnitude of ecological damage. An agreement was reached with our military in Germany on a program of studies. There is support in the government at the highest level. The rarest case of unity among different departments. And it is understandable—the expert findings that are being carried out in German can save billions of marks for Russia.

But. . . . In order to receive billions tomorrow, it is necessary to spend today. . . .

According to preliminary estimates of ICF/EKO, expert appraisals based on the use of the most modern aerospace methods will cost DM20 million. But no one wants to find this money. Although, in order to pay for the entire expert appraisal, it is sufficient to sell, at world market prices, all in all. . . one tank.

Meanwhile the year 1994—the year of the final withdrawal of our troops from Germany—is approaching. If the program of ecological-economic appraisal proposed by the firm of ICF/EKO would have been implemented, the elimination of pollution could already now be carried out with our military manpower and our equipment, as they say, free of charge. But when the troops will leave Germany, then German firms will take up the solution of environmental protection problems for very large sums of money. And a suit will be brought against Russia. For example, to dig out of the ground a reservoir for the storage of kerosene, a foreign firm has asked DM300,000. For a platoon of soldiers, this is work for 3 days.

And, you know, Germany is not the last country from which our troops will have to leave. An analogous situation is taking shape in Poland and in the Baltics, and in the future is possible in Mongolia and Cuba.

On 3 September the next session of the joint Russian-German group for the protection of the environment

within the framework of the inter-governmental agreement for the withdrawal of our troops from Germany. If by this date the Russian side will not have a position, we can "squander" our next billions the next time. And then we will again go through the world with our hand held out.

RUSSIA

Yablokov Sees Ongoing Hazards in Nuclear Industry

92WN0726A St. Petersburg NEVSKOYE VREMYA
in Russian 29 Jul 92 p 1

[Article by Russian Presidential Adviser for Ecology
Aleksey Yablokov: "First-hand From Russian Presidential Adviser for Ecology Aleksey Yablokov: Our Reactors Are 100 Times More Dangerous"]

[Text] Academician A.P. Aleksandrov once said that our nuclear reactors are so safe that they could even be placed on Red Square. He later admitted his mistake. For our reactors are 100 to 200 times more dangerous than Western ones. But that's only part of the truth. Most accidents occur on account of mistakes by personnel. For example, that is the cause of three-fourths of all accidents on nuclear powered submarines.

Despite the demands of the times, pathological secrecy reigns in our nuclear agency. The official announcement of the fire at the second generating unit at the Chernobyl Nuclear Power Plant said that nothing special had happened. In reality, the roof of the machinery room had collapsed. After the March 24 incident, the management of the Leningrad Nuclear Power Plant also assured everyone that there was no danger to people. But it was later learned that background radiation in the vicinity of the station had been found to have risen to up to 300 microroentgens per hour.

Our nuclear power stations are extremely dangerous installations even in a "calm" state. Eight years ago, studies showed that in the outwardly fine water reservoirs at the Leningrad and Ignalino nuclear power plants, fish were noticeably different from ordinary ones in terms of a number of important indices. There are sizable concentrations of tritium in ground waters for many kilometers around the Yuzhnoukrainskaya Nuclear Power Plant. Significant radioactive contamination has been found in the five square kilometers surrounding the Beloyarskaya Nuclear Power Plant.

The problem of burying radioactive wastes has yet to be solved throughout the world. No one knows what to do with them, and we will be forced to set aside enormous areas of land for nuclear burial sites. The problem of mothballing nuclear power stations that have reached the end of their service lives remains acute. And it is already necessary to shut down four generating units in Russia—at the Novovoronezhskaya and Beloyarskaya plants.

The financial aspect of the problem is no less important: The construction of a nuclear power plant consumes up to 20 percent of all the energy that it generates during its existence. There is every reason to believe that mothballing with require no less energy.

Needless to say, we cannot close down all nuclear stations today—they provide 13 percent of all our energy. However, it is essential to urgently redirect financial and material resources toward the development of other energy sources.

In the meantime, Germany and Japan have expressed a desire to help us improve our nuclear power stations. There is suspicion that these countries are merely looking for markets for their nuclear technologies. In any event, this dovetails quite well with the provisions of the recently adopted All-European Energy Charter, under which Russia is to continue to supply Europe with oil and gas for many years to come, while meeting its own needs through new nuclear generating units.

Mikhaylov Lauds Achievements of Atomic Energy Ministry

MK2908144092 Moscow MOSKOVSKIYE NOVOSTI in Russian No 35, 30 Aug 92 (signed to press 25 Aug) pp 14, 15

[Interview with Russia's Atomic Energy Minister Viktor Mikhaylov by Vladimir Orlov; date, place not given: "I Am Considered a 'Hawk'... Conversation With 'The Man From the Military-Industrial Complex'"]

[Text] What is the military-industrial complex? Everyone acknowledges that it is undoubtedly a powerful force today, capable of affecting Russia's entire political climate. But beyond that, as a rule, there are abstract arguments.

It is not surprising that the military-industrial complex leaders themselves prefer not to acknowledge that this abbreviation bears no direct relation to them. Some say that they are just the industrial complex and others that they are just the military complex...

My interlocutor is a military-industrial complex man through and through. Minister Viktor Mikhaylov has concentrated the control of all the country's nuclear power potential in his hands. A theoretical physicist, one of the creators of nuclear weapons, and a guardian of their secrets, he has headed since March 1992 a key, elite industrial sector. Almost 2 million employees of the Atomic Energy Ministry concentrate uranium, construct AES's [nuclear electric power stations], produce filling for mass destruction weapons, prepare nuclear explosions...

'I Am That Very Same Military-Industrial Complex!'

Viktor Nikitovich, whom I have heard described as one of the "unsinkable aircraft carriers of the past," greets me with a cigarette in his mouth. He looks intently: "Yes, I am that very same military-industrial complex!"

[MOSKOVSKIYE NOVOSTI] *The very same one from which, according to the widely used expression, a threat to the present authority emanates? Are you a threat?*

[Mikhaylov] I am a support for authority. And what is more, I say to you that the revival of industry, and that also means the restoration of Russia's greatness, will proceed from my ministry.

What have we come to: The military-industrial complex has virtually become a dirty word. People are afraid to acknowledge that they work here. The attempt to destroy the military-industrial complex is on Gorbachev's conscience. He virtually called for our plants' directors to be crushed. Talented scientists and organizers—just like bugs!.. He should have crushed the party functionaries—most of them were rogues and incompetents. But the party elite simply did not worm its way into our sector or take root—it was afraid.

[MOSKOVSKIYE NOVOSTI] *Was it afraid of your power?*

[Mikhaylov] Of its own incompetence. They found the word "atom" frightening.

[MOSKOVSKIYE NOVOSTI] *But even today, to most people what your sector does is a closely guarded secret.*

[Mikhaylov] In actual fact only 15 percent in the Atomic Energy Ministry work on "defense": This is the whole nuclear weapons complex, which I, incidentally, was in charge of in recent years.

[MOSKOVSKIYE NOVOSTI] *And the remainder?*

[Mikhaylov] Sixteen percent of the ministry's capacity work on science and advanced technologies. We have 7,000 doctors of science alone.

Showpiece Ministry

[Mikhaylov continues] Or take construction. We have constructed such cities as Navoi, Protivno, and Podolsk. We produce one in 15 bricks in Russia, but ours are twice as cheap. And what finishing materials we have! What are you talking about? [Da chto tam...] And our plots of land in the Urals, in Siberia? And the cycling track in Krylatsky? And the quality video recorders and compact discs? All this is our doing.

The Atomic Energy Ministry extracts the purest gold in the world. We have the cheapest zirconium production, the best isotope separation technology, and our energy consumption is 20 times lower than in the United States...

[MOSKOVSKIYE NOVOSTI] *A real picture of paradise. And your workers have probably gotten used to their specially privileged living conditions?*

[Mikhaylov] Who told you that? I have been in the sector since 1957 and have not seen any privileges. The virtue is that we develop comprehensively: Attached to every

uranium combine is a state farm with a harvest yield, as a rule, about 150 percent higher than the average.

[MOSKOVSKIYE NOVOSTI] *And the medical aspect?*

[Mikhaylov] The cancer rate in the sector is half that of the country as a whole. Life expectancy is seven years higher. Last year we allowed a group of clergymen headed by a patriarch to visit the desert where St. Serafim Sarovskiy spent five years in solitude; Arzamas-16 is now there. They were staggered by our city: the cleanliness, the order, people's civilized nature.

And Yeltsin, when he came to Arzamas-16, was struck by the fact that we had managed to preserve the entire forest tract.

'Two to Three Nuclear Explosions a Year Are Needed'

[MOSKOVSKIYE NOVOSTI] *A strange combination, you will agree... Such care about ecology—and the continuation of nuclear tests in Novaya Zemlya, which are provoking a resolute protest from ecologists.*

[Mikhaylov] I told Yeltsin the same as I am telling you now: If we want to remain a nuclear power, tests are necessary. Two to three a year; that is enough.

Where can they be held? In Novaya Zemlya, of course. There is no other place. Not a single person in the world will understand if we start to construct another test site. Novaya Zemlya is the optimum place, if safety measures are to be observed during the tests. I am a scientist who knows these things. And I cannot do without tests. Nobody can. The scrapping of tests is being called for by those who know nothing about the construction of a nuclear bomb.

[MOSKOVSKIYE NOVOSTI] *Of course, you are an expert on nuclear energy. It is clear that you stand up for its advantages. But can it be that you never fear for the possible tragic consequences?*

[Mikhaylov] You have to choose the lesser of two evils. Today, surplus radiation ranks between 10th and 15th among the influences which lower the life expectancy of Russians. The activity of the oil and gas complex, for instance, is far more dangerous for your health.

Over the last 20 years, I have spent two or three months a year in Novaya Zemlya. Everything's fine: Today, the effect of radiation is actually being brought down to a minimum. Although many people want to make political capital from discussions on the threat of radiation. Because people abroad are watching very closely: On the one hand they are afraid of catastrophes, and on the other they know that this complex is our strength, and they are trying to shatter and destroy it.

Private Business Is Paying for Projects

[Mikhaylov] Take Chernobyl, even... Of course, it was a catastrophe. But I see something else here too. Hundreds of thousands of people were resettled thoughtlessly, and

they suffered colossal psychological damage, which will send a person to his grave far quicker than the dose of radiation received there. International organizations have already begun to smirk at our incompetence.

[MOSKOVSKIYE NOVOSTI] *But it is without any kind of smirk that the international organizations are keeping an eye on the appearance in Russia of private companies which are starting to finance the not always incontrovertible plans of your ministry. I'm thinking in particular of the firm Chetek, which you actively supported.*

[Mikhaylov] The issue concerns the project for destroying chemical weapons in large quantities. In my opinion, a quite reasonable and attractive piece of technology was proposed: by means of a subterranean nuclear explosion, the weapons are broken up and fused into the mass of soil. In this way, tens of thousands of tonnes of arms can be buried for many years with one explosion.

This idea has its supporters and its opponents. So it is vital not to stop here, but to carry out experiments. The whole project costs 100 million rubles [R]. Chetek gave 10 million, expecting to cover the expenditure in the event of commercial application.

We didn't have any money, so we turned to private capital! But now Chekek has financial difficulties, and it is withdrawing further and further away from this problem. We did not even need to renew the contract with them, the state found the money...

[MOSKOVSKIYE NOVOSTI] *In Chetek's case, discussions about a "commercial application" prompted many questions, but in the case of exporting uranium everything, in my view, is clear. Russia wants to and can become a leader, but the uranium market has already been divided up without us, and the United States is tripping us up...*

'Nothing Will Stop Us Exporting Uranium'

[Mikhaylov] The Americans assure us faithfully that they will help to set up a market economy. But in fact they are conducting a savage trade war against Russia. They accused us of setting dumping prices for uranium. I gave my answer to representatives of the U.S. administration: Stop talking rot! Our prices are low not because we are dumping our product, but because we have the very best technologies in the world.

Nothing will stop us from selling uranium abroad. It will be difficult for us. But we have sufficient forces. Already, the French company "Kozhema" [as transliterated] as well as Italian and American firms are straining at the leash to cooperate with us in the sale of uranium.

Serious people in the West know that the Russian Atomic Energy Ministry has to be reckoned with. We have moved five or 10 years ahead of the West in a number of modern technologies. That is why the Japanese, South Koreans, Chinese, and Australians are

requesting to go into partnership with us... I have only just signed a contract in the Republic of South Africa to sell this country technology for extracting gold from open cast mines.

I have every reason to look at this sector's future with confidence and optimism. It is possible that the revival of all Russian industry is on the horizon. The Americans can feel this, and it does not suit them: We are only necessary to them as an additional source of raw materials.

[MOSKOVSKIYE NOVOSTI] *You risk violating an unwritten rule: You know, now everybody is looking to the future pessimistically. What's more, it has virtually become the fashion to curse the government.*

[Mikhaylov] I am sometimes called the "hawk from the military industrial complex." Judge for yourselves what kind of "hawk" I can be if, on the whole, I sympathize with the steps being taken by the reformers from the government. They are called "a team of theoreticians." But you know, this is by no means the worst thing that you could have.

Moreover, there is another aspect. Right now, our attitude to the development of science is disgraceful.

If this continues, I will forget about my optimism, and in five years time we will turn into a regular workshop which Western business will not even want to come near. The West will merely pump our brains and resources. And then there will be no "elite" Atomic Energy Ministry to come to the rescue.

Government Seeks To Improve Use of Weather, Pollution Data in the Economy

925D0667B Moscow ROSSIYSKIYE VESTI in Russian 29 Aug 92 p 4

[Russian Federation Government Resolution No. 532 "On Greater Effectiveness in the Use of Meteorological Information and Pollution Data in the Economy, issued 3 August 1992]

[Text] In order to increase the effectiveness with which meteorological information and pollution data are utilized in the economy, the Government of the Russian Federation hereby resolves:

1. To accept a proposal by the Russian Federation Ministry of Ecology and Natural Resources and the Russian Federation Ministry of Finance concerning provision by enterprises and organizations of the Committee for Hydrometeorology and Environmental Monitoring, a part of the Russian Federation Ministry of Ecology and Natural Resources, of specialized meteorological information and pollution data to commercial structures, enterprises and organizations engaged in civil aviation, maritime transport and rail transport for a fee on a contractual basis.

2. The Committee for Hydrometeorology and Environmental Monitoring under the Russian Federation Ministry of Ecology and Natural Resources shall use centralized allocations from the Russian Federation republic budget to:

a. provide the public and commercial structures with warnings (announcements) of emerging hydrometeorological and heliogeophysical phenomena, information concerning the background state of environmental pollution and general-information weather forecasts for a period of up to three days throughout the territory of and for each administrative center of the Russian Federation's constituent republics, krays, oblasts and autonomous territories;

b. maintain state data banks (data archives) in the field of hydrometeorology and pollution monitoring;

c. perform the Russian Federation's international obligations with regard to the transfer (exchange) of meteorological information and pollution data.

3. The current procedure for provision of hydrometeorological and heliogeophysical information and pollution data to the Russian Federation Supreme Soviet, the Government of the Russian Federation, Russian Federation ministries and agencies and organs of legislative and executive authority in the Russian Federation's constituent republics, krays, oblasts and autonomous territories and the cities of Moscow and St. Petersburg shall remain in effect.

[Signed] Ye. Gaydar

Government Establishes Environmental Pollution Penalties

MK0709121592 Moscow MOSKOVSKAYA PRAVDA in Russian 4 Sep 92 p 1

[Unattributed report under the "What's New in Russia" column]

[Text] The Russian Federation Government has adopted a decree which establishes the procedure for defining the penalty and its maximum scale for polluting the environment. The document will come into force as of 1 January 1993, and it will be distributed to enterprises, organizations, foreign juridical and natural persons, who are carrying out any kind of activity on Russian Federation territory.

Government Strengthens Protective Measures Against Forest Fires

925D0667A Moscow ROSSIYSKIYE VESTI in Russian 29 Aug 92 p 4

[Russian Federation Government Resolution No. 524 "On Measures To Strengthen Protection Against Forest Fires," issued 28 July 1992]

[Text] In order to strengthen the protection of forests against fires the Government of the Russian Federation hereby resolves:

1. The Committee on Forests under the Russian Federation Ministry of Ecology and Natural Resources, the Russian Federation Ministry of Industry, the Russian Federation Ministry of Agriculture, the Russian Federation Ministry of Internal Affairs, the Russian Federation Ministry of Transportation, the Russian Federation Ministry of Fuel and Energy and other interested ministries and agencies, the governments of the Russian Federation's constituent republics and organs of executive authority in krais, oblasts and autonomous territories shall take necessary measures to improve measures designed to protect forests against fire, with a view toward stepping up state and agency monitoring of compliance with the requirements of fire safety regulations in forests, raising standards for the administrators of enterprises, organizations and institutions which perform work in forests for the state of fire safety, and severely prosecuting individuals guilty of causing forest fires, as well as officials who are to blame for firefighting equipment being in a state of disrepair or not being used properly.

2. The Russian Federation Ministry of Fuel and Energy, the Rosnefteprodukt Concern and the Russian Federation Ministry of Transportation shall ensure the supply of aviation fuel B-91/115 throughout the entire 1992 fire-hazard season to civil aviation enterprises which have assigned aircraft to fight forest fires, and shall also create aviation fuel reserves at civil aviation enterprises for the purpose of performing aviation jobs involved in the protection of forests against fires.

3. The Russian Federation Ministry of Internal Affairs shall take steps to increase the speed with which persons guilty of forest arson are caught and prosecuted pursuant to law.

4. The Russian Federation Ministry of Industry shall:

- ensure centralization of funds allocated for air-based protection of forests against fires and timely conclusion of contracts with the Avialesookhrana Association to perform such work;

- take steps to speed up transfer of forest lands to state forestry organs in accordance with RSFSR Council of Ministers Decree No. 26, issued on 17 January 1991.

5. The Russian Federation Ministry of Finance shall:

- in the third quarter of 1992 allocate to the Committee on Forests under the Russian Federation Ministry of Ecology and Natural Resources directed budgetary allocations in the amount of R400 million [rubles] out of the Russian Federation Government Reserve Fund specially for the financing of additional fire-prevention measures;

- carry out in the third quarter of 1992 budgetary financing of forestry on a priority basis, based upon

the amounts set aside for those purposes in the 1992 Russian Federation republic budget.

6. The Russian Federation Ministry of the Economy shall in conjunction with the Russian Federation Ministry of Finance seek opportunities in 1992 for the Committee on Forests under the Russian Federation Ministry of Ecology and Natural Resources to set aside centralized capital investment funds for the acquisition of firefighting equipment.

7. The Russian Federation Ministry of Finance in conjunction with the Committee on Forests under the Russian Federation Ministry of Ecology and Natural Resources shall draw up proposals regarding the keeping of accounts with forestry enterprises and organizations for conducting work and rendering services in connection with firefighting efforts, based on actual expenditures and without advance payment, and also regarding an exemption from value-added tax for forest protection air bases within the system of the Committee on Forests (Russian Federation Ministry of Ecology and Natural Resources).

8. The Russian Federation Ministry of Ecology and Natural Resources shall within one month's time draw up, with participation by interested ministries and agencies, proposals regarding financing of a portion of expenditures to protect forests against fires using funds from nonbudgetary sources and present those proposals to the Government of the Russian Federation.

The governments of the Russian Federation's constituent republics and organs of executive authority in krais, oblasts and autonomous territories shall consider the possibility of allocating appropriate budget funds for the financing of expenditures to protect forests against fires, including through the use of a portion of funds received from forestry operations.

9. The Committee on Forests under the Russian Federation Ministry of Ecology and Natural Resources, the Russian Federation Ministry of the Economy, the Russian Federation Ministry of Industry, the Russian Federation Ministry of Internal Affairs, the Russian Federation Ministry of Agriculture, the Russian Federation Ministry of Transportation and the Russian Federation Ministry of Finance shall within a two-month period draw up, with participation by interested ministries and agencies, the governments of the Russian Federation's constituent republics and organs of executive authority in krais, oblasts and autonomous territories, a draft State Program for the Protection of Forests Against Fires and submit it to the Government of the Russian Federation. The program should contain, specifically, measures to accelerate the development of airplanes and other aircraft and equipment to be used for firefighting purposes, highly effective firefighting technology, and a unified radio communications system, with consideration given to the possibility of utilizing military-to-civilian conversion.

10. It shall be deemed essential to create a government commission on the struggle against forest fires under the direction of V. I. Danilov-Danilyan, Russian Federation minister of ecology and natural resources, and to instruct him to submit to the Government of the Russian Federation within one week's time his recommendations concerning the composition of that commission.

[Signed] V. Shumeyko, first deputy chairman, Government of the Russian Federation

Greens' Co-Chairman Defines Party's Goals

92WN0745A St. Petersburg
SANKT-PETERBURGSKIYE VEDOMOSTI
in Russian 8 Aug 92 p 2

[Interview with V. A. Panov, co-chairman of the party and deputy of the city soviet, by Correspondent Ye. Dolgopyatova: "The 'Greens' From Petersburg by Origin"]

[Text] Recently a congress of the Russian Greens Party took place in St. Petersburg. In our city the problems of ecology are especially acute. For this reason, the most active and numerous organization of Greens is precisely in St. Petersburg, where the headquarters of the party is also located. It is co-chaired on the basis of equal rights by V. A. Gushchin, I. P. Blokov, and V. A. Panov. For the time being, the Greens Party of St Petersburg and Leningrad Oblast has legal status. Now, after the second congress, documents for the registration of the Russian [Greens] Party have been submitted to the Ministry of Justice of Russia. What the Greens movement represents today, what goals it is pursuing—this is the subject of today's discussion with the co-chairman of the party and deputy of the city soviet, V. A. Panov:

[Panov] In our city, the Greens Party has 350 members. But we have many sympathizers and people who share our views. The members of the party pay small dues, but the full-time apparatus consists of only two persons. At the present congress, which took place within the framework of the international ecological forum "The Environment," a council of co-chairmen consisting of seven persons of the Russian Greens Party was elected. How ponderable the situation of the representatives of St. Petersburg is today in the party can be judged by the following fact: All three of our co-chairmen became members of the Russian Council.

The Russian Greens Party is built on a confederative basis. This means that every party of any other region is completely free and independent of the center.

[Correspondent] *Valentin Aleksandrovich, in spite of the fact that today there is not a single person who would not be concerned with the questions of survival and the preservation of our planet, your party is not very numerous. How can you explain this?*

[Panov] We do not set ourselves the task of expanding our ranks as was done by the CPSU, whose membership

by no means included the most active fighters for its ideas. We believe that the party is the brain center where progressive intellectual ideas and scientific projects must be developed. The most important thing for us is the establishment of contacts with specialists in ecology and cooperation with the state structures and the organs of legitimate power. Now the country is ruled by a complete lack of ecological limits. We are fighting to get officials, industrialists, and ordinary city dwellers to try to look at the world through the eyes of the Greens. We are by no means a party advocating the closing of plants, but people who actively fight for the creation of ecologically clean production, for the preservation of harmony on the earth and for man himself.

[Correspondent] *It is no secret that abroad the Greens today have strong representation in the legislative organs of power, and their opinion, for example in Germany, is heeded in deciding the most diverse questions. But what have you succeeded in doing in the city? What, besides education and conviction, has been accomplished?*

[Panov] For example, we succeeded in convincing city authorities that in Kirovskiy Rayon there is no place for an accumulator plant which poisons St. Petersburg residents with lead waste and acids. By the end of 1992, this poisonous production must be curtailed. Our opinion was also taken into account in the discussion of the possibility of the creation, in Tsarskoye Selo, of a high-capacity cargo airport, which Leninet's associations wanted to equip on an experimental basis. True, one does not have to be a Green to understand that there is no place for such a project right next to a historical and cultural pearl.

The Greens were also the first to take upon themselves the problem of submerged poisonous substances in the Baltic. We made an inquiry in the KGB, we tried with all our might to rivet the attention of the public, scientists, and the mayor's office, on this postwar tragedy of delayed action. It was precisely our attempts to preserve the Baltic coast for our descendants that allowed rear-admiral, now vice-mayor, V. N. Shcherbakov to painstakingly investigate this problem. As is well known, under the direct leadership of Vyacheslav Nikolayevich the Ekobaros Program for the Rescue of the Baltic has been developed. And now the attention of the President of Russia and the international community has been riveted on it.

[Correspondent] *Will you succeed as deputy of the St. Petersburg City Soviet in carrying out the ideas of the Greens among your colleagues?*

[Panov] This is a difficult question. As far as the dike is concerned, naturally, there are more among the deputies who consider its creation a great mistake. But not long ago, I proposed at the session to make a medical-ecological map of the city with a division by deputies' districts in order for everyone to realize clearly the mortality among his voters from industrial pollution, the birthrate prospects....Now the final variant of such a

map is already being developed. I think that, after having received it into their hands, the deputies will reconsider, for example, the cost of rent in some districts depending on the ecological situation. There is the idea of issuing shares "for pollution of the environment," which will be sold to the enterprises by the city soviet. If you want to cause emissions into the atmosphere, pay enormous amounts of money, which the city will then use for the creation of ecologically clean factories. If you did not use the share "for pollution," sell it to someone else.

If we talk about the future, then I, as a representative of the Greens Party, would like to see in the power structure an independent monitoring organ, which could veto any decisions of the soviet, parliament, or government if they contradict nature or threaten the cultural and historical legacy. This could be a kind of fifth power, but the kind of power that depends only on the conscience and competence of the people representing it.

Ecology Leader Calls for Breakup of Fishing Industry Committee

92WN0737B Moscow ROSSIYSKAYA GAZETA
in Russian 21 Aug 92 p 6

[Article by Anatoliy Kolenchenko, general director of the Far East and Eastern Siberia Ecological Initiative Association: "Ecology: No Herring, and No Cod Either"]

[Text] Recently articles have appeared that, to all appearances, are inspired by the Fishing Industry Committee and are aimed at promoting the idea of keeping state oversight and fish-conservation efforts within that agency. The assertions of some authors that stocks are best conserved when fishing operations, oversight functions, and reproduction efforts are all concentrated in the same set of hands are erroneous, to say the least.

The reason efforts to safeguard fish resources in our country are going badly is that this work has traditionally been carried out by the same agency that is in charge of catching fish.

Even an elementary systems analysis will show that oversight functions should be separate from the agency they monitor. But this isn't even a theoretical question. The raw material stocks of the Barents Sea have been undermined before our very eyes in a short span of time. The Sea of Okhotsk is in crisis. The Alaska Gulf and the eastern part of the Bering Sea have been ravaged. The pollock population is in poor condition. Do you remember cod? Is there any need to say what happened to it?

If we want to conserve stocks of fish resources for our grandchildren, we need to immediately separate fishing and oversight functions by removing the latter from the jurisdiction of the Fishing Industry Committee. Nature conservation should at last be concentrated in a single nature protection agency that is accountable to the state. Otherwise, ecological catastrophe inevitably awaits us.

EC Providing Little Technical Aid on Environment

92WN0728B Moscow ZELENYY MIR in Russian
No 23-24, Jun 92 [Signed to press 25 Jun 92] p 2

[Article by Kim Smirnov: "ZM Digest: Why Is Aid Taking So Long?"]

[Text] Neither last year's program for technical aid from the European Communities to the Soviet Union nor this year's analogous program for Russia contains a single ecologically oriented project.

When, at a press conference, I put this question to K. Ripa di Meana, the EC commissar for the environment, nuclear safety, and civil defense, Russian Minister of Ecology and Nature Use V. Danilov-Danilyan took the blame on himself—or, to be more precise, on the Russian Federation government.

The lack of ecological proposals from our side had a depressing effect on EC specialists as they put the aid programs together. A few days ago, they spoke about this with Russian First Deputy Prime Minister Ye. Gaydar. The latter, agreeing that the government had paid insufficient attention to ecological problems, promised that considerably greater attention would be devoted to them. Time will tell.

In the meantime, in the activities of government agencies, public opinion and the mass media, these problems, which in reality are urgent and of paramount importance, have been relegated to secondary and even tertiary importance on the political (in a direct sense) agenda.

And this at a time when industrial emissions of hazardous substances exceed normatives in 350 cities in our country. While transport accounted for half of all air pollution in Moscow a few years ago, today the figure is 70 percent. And do you think that the proportion of hazardous production facilities has declined? Hardly. A list drawn up 15 years ago of 50 ecologically hazardous enterprises in the capital that have to be moved out of the city has been reduced literally by a mere handful of plants.

To use the words of a poet, the "notices in the morning papers do not promise us an easy life," and Russia's environment is going to deteriorate in the near future. In the meantime, the Russian Federation's economy has neither the manpower nor the funding to bring about a sharp improvement in this illness.

Government To Sign Environmental Agreement With Norway

OW2408161192 Moscow INTERFAX in English
1450 GMT 24 Aug 92

[Report by Andrey Borodin; from the "Diplomatic Panorama" feature—item transmitted via KYODO]

[Text] Russia's government has accepted the proposal of its Ministry of Ecology and Natural Resources to sign with Norway an agreement on cooperation in environmental protection.

The draft agreement stipulates that scientists and environmental protection agencies in the two countries will work together to protect air space against pollution as well as safeguard sea water and sea fauna in the region.

The draft agreement has special clauses which provide for preventing ecological disasters, jointly monitoring the state of the environment and assessing the impact of human activity on the environment.

The two sides intend to exchange the results of research and documents relating to the methods, norms and measures in the area of purifying waste gases and water used by plants and municipal facilities and recycling industrial and household waste.

A bilateral commission on cooperation in environmental protection will be set up to monitor and coordinate joint work under the agreement.

DP [Diplomatic Panorama] interviewed a member of Russia's Foreign Ministry who monitors relations with Scandinavian countries. In comments on the draft agreement he said that lately high priority has been given to environmental protection issues in relations with Norway. According to him, there are several industrial facilities, including a nuclear-power plant, on the Kola Peninsula where the border between Russia and Norway lies. Their work has attracted the attention of environmentalists in both countries, and pointed to the need to closely coordinate the endeavours to protect the environment.

The proposed Russian-Norwegian agreement is expected to be signed in early September in Kirkenes, Norway, where environmental protection ministers from North European countries gather for a meeting. On behalf of the Russian government the document will be signed by Victor Danilov-Danilyan, Minister of Ecology and Natural Resources.

Reports of Radioactive Waste Dumping in Arctic Denied

*LD0309181692 Moscow ITAR-TASS in English
1137 GMT 3 Sep 92*

[By ITAR-TASS correspondent Vasilii Belousov]

[Text] Murmansk, September 3 (TASS)—The local newspaper SOVETSKIY MURMANSK today denied reports by the Norwegian press that the ship "Serebryanka," servicing Russian atomic-propelled vessels, has left Murmansk for Novaya Zemlya to dump liquid radioactive wastes there.

"The "Serebryanka" has, indeed, left for Novaya Zemlya, but for quite another purpose: It will deliver equipment to a geological prospecting expedition, which is

conducting surveys to site there an enterprise for burying radioactive wastes, accumulated in Murmansk and Archangel regions," the newspaper says. "As to liquid wastes from nuclear-powered icebreakers of the local shipping administration, their dumping into the sea was stopped back in 1986."

The correctness of the Murmansk newspaper's report was confirmed to ITAR-TASS by officials of the local authorities.

Nordic, Russian Ministers Meet on Problems of Russian North

*LD0409183792 Moscow ITAR-TASS in English
1700 GMT 4 Sep 92*

[By ITAR-TASS correspondent Vladimir Anufriyev]

[Text] Arkhangelsk, September 4 (TASS)—Ministers of ecology of Nordic countries and Russia arrived today in the protected Solovetski Islands in the White Sea. Here they will resume discussions on environmental problems of the Russian North, in particular, of the Arkhangelsk and Murmansk regions, which they had begun in Norway.

Government delegations of Norway, Finland, Sweden, Iceland, Greenland, the Faeroe and the Aland Islands and Russia are to meet here for two days. A special environmental protection of Northern Europe treaty is expected to be signed at the conclusion of the conference.

Soil, Plant Tests Set for Novaya Zemlya Nuclear Test Ground Region

*LD0709170292 Moscow ITAR-TASS World Service
in Russian 0829 GMT 7 Sep 92*

[By ITAR-TASS correspondent Vasilii Belousov]

[Text] Murmansk, 7 Sep (ITAR-TASS)—Samples of soil and plant life taken in the region of the Novaya Zemlya nuclear test ground will be studied simultaneously at special laboratories in the United States, Norway, Denmark and Russia. Scientists of these countries are participating in the first international scientific expedition to the soviet arctic sector.

An ITAR-TASS correspondent learned from reliable sources that the foreign scientists have been convinced of the authenticity of the data published in our press on the radiation situation in the region of the southern test ground. The background level, as reference readings have demonstrated, is relatively normal here. However, there are sections of the locality which are highly polluted by isotopic elements. The main place where they accumulate is in lichens, containing in places from 600-1,000 Becquerels of artificial isotopes per kilogram of moss.

95 Percent of Arkhangelsk Children Born in Weakened State

92WN0728C Moscow ZELENYY MIR in Russian
No 25-26, Jul 92 [signed to press 14 Jul 92] p 2

[Unattributed report: "Hostages to Politicians"]

[Text] Arkhangelsk Oblast is an ecological disaster zone—this is the conclusion drawn by researchers at the Arkhangelsk Medical Institute on the basis of 20 years of studies on the effect of the environment on the health of people in the region.

Ninety-five percent of all children here are born weak and physically immature. Compared to neighboring oblasts, pregnancy and birth complications are 70 percent more frequent. Blood diseases and cancer among children have increased 200 percent in the past three years.

Professor Pavel Sidorov pointed out that the cause of this dramatic situation lies in the accumulation of a critical mass of negative effects on the ecosystem of the Arkhangelsk northern region. They include the effects of nuclear tests on Novaya Zemlya, pollution of the White and Barents seas with toxic and radioactive wastes, the appearance of an "ozone hole" over the region, and hazardous emissions from timber-industry enterprises. In the scientist's opinion, there can be no question of resuming nuclear tests on Novaya Zemlya, of expanding the capabilities of Russia's Plesetsk cosmodrome, or of developing a nuclear shipbuilding center at Severodvinsk, although the top Russian leadership has such plans. The ecosystem simply won't be able to stand the stress.

Fishing Ban Near Kola Nuclear Power Plant Ignored

LD0209105092 Moscow ITAR-TASS in English
0831 GMT 2 Sep 92

[By ITAR-TASS correspondent Vasilii Belousov]

[Text] Murmansk, September 2 (TASS)—Though the banks of the Kola nuclear plant drainage canal are full of stern signs prohibiting fishing in this manmade reservoir, one can see people catching fish with hook and line here any day. Besides this, many combine angling with a dip in the warm water of the canal without any fear of the nuclear power plant's proximity.

This tradition was long ago established by members of the state atomic energy commission who accepted the plant after its completion. Apparently to show that the nuclear power plant is absolutely safe for the environment and men, they all took a bath in the canal just filled with water in front of the dumbfounded public. Later, near the entrance to the Imandra Lake a fish-breeding plant was constructed which annually supplied dozens of tons of trout. Amateur anglers not only from the nuclear plant township, but also from neighboring settlements,

rush to catch this wonderful fish which at times jumps out of damaged breeding pools.

Fish are caught with the help of spinning or simple rods. Lucky ones can at times catch a trout weighing about a kilogram. Sometimes sig and kumzha, varieties of salmon, old habitants of the lake, are also caught. Even carp was caught, fingerlings of which were let out in the lake. The southern migrant fish over the years have matured, and some of them weigh even more than seven kilograms, a rare thing for the north.

With a view to keep under control amateur fishing, the plant management issues free vouchers to its workers. Others fish at their own risk, because fishery inspectors appear from time to time on the canal.

Moscow Conference To Showcase Ecologically-Safe High Technology

92WN0732A Moscow ROSSIYSKAYA GAZETA
in Russian 20 Aug 92 p 6

[Article by Vladimir Alfeyev, president of the Russian Federation Academy of Technological Sciences, under rubric "Science and New Technologies": "Moscow Prepares for NANO-II: In August 1993 the International Conference on New High Technologies That Open the Doors to an Ecologically Clean World Will Take Place in Moscow"]

[Text] The administrators of UNESCO, UNILO [UN International Labor Organization], and other authoritative international organizations, and scientists, representatives of governments and entrepreneurs from Japan, France, West Germany, Turkey, and other countries have already expressed their desire to help Russia in organizing this representative conference, which has been given the name NANO-II. Right here in Moscow, the announcement will be made of the country whose people and government will have the honor of inviting the scientists and industrialists of the highly developed countries to the third conference.

The world's scientific organizations are publishing survey after survey about this new miracle that might mark the beginning of the nanoindustrial revolution in the new nuclear-free technologies for the good of mankind... But what exactly is nanotechnology?

We have already become accustomed to the fact that, in modern laboratories or production shops manufacturing output of microtechnology (for example, microelectronics, microbiology), use is invariably made of optical or scanning electronic microscopes with high spatial resolution. They make it possible to see the smallest details of the elements in microtechnologies, down to a single micrometer (that is, one-thousandth of a millimeter). For a transistor that was the minimal dimension possible.

But then scanning tunnel microscopy was discovered. It makes it possible consistently, atom by atom, to scan,

that is, to travel line by line, across the entire sector that has to be studied. Thus, a new world was opened up for studying and creating elements with sizes of approximately a nanometer (one-thousandth of a micrometer), and there was also opened up the astonishing possibility of creating, instead of transistors, new elements consisting of only two or three atoms!

Swiss scientists H. Rohrer and H. Binnig, of IBM, who in 1986 received a Nobel Prize for this outstanding discovery, gave researchers the opportunity to march ahead in knowing the world of the individual atoms in any substance without destroying that substance. Instead of microscopes, scientists in the United States, Russia, Japan, and other countries created the first nanoscopes, which made it possible to see and understand unknown phenomena for the first time.

Simultaneously in America and Russia there began research the goal of which is the creation of new technologies on the basis of scanning tunnel, atomic power, and other new microscopes. The latest area in technological sciences was born, an area that scientists gave the name "nanotechnology" (or "science technology nanometer scale"). It became one of the chief fundamental areas of activity for the Russian Academy of Technological Sciences.

Nanotechnology makes it possible to create previously unseen computerized equipment and to begin the search for ways to create from individual selected atoms those multiatomic structures that cannot be manufactured by microtechnology methods. The first major results in this area were obtained by sciences in America, Russia, and Japan in 1990. They became the basis for International Conference NANO-I, the first in the history of science. It was held in the same year in the United States, in the city of Baltimore, under the chairmanship of James Murday, the president of the American Vacuum Society, and foreign member of the Russian Academy of Technological Sciences. The Russian delegation was headed by ATN [Academy of Technological Sciences] Vice-President V. I. Nikishin.

The success of the NANO-I conference surpassed all expectations. It was decided to hold them regularly. So America handed over the relay baton to Russia. Russian-American cooperation between the scientists and technologists of both countries began. That cooperation was supported both by the U.S. government, which registered the creation of the Russian-American Academy of Technological Sciences in the United States, and by the Supreme Soviet, the government, and the President of Russia. An ukase by the RF [Russian Federation] President, entitled "The Russian Academy of Technological Sciences," reconfirmed legislatively that the ATN has been called upon to guarantee the fundamental and applied research in the field of nanotechnology and nanoelectronics that are being created by our scientists jointly with the scientists of America and other countries.

During the two years that follows, Russian scientists and technologists created one-of-a-kind nanotechnological complexes on the basis of the first domestically-produced scanning tunnel and atomic power nanoscopes, created a combined electronic and tunnel scanning microscope and new competitive devices for nanotechnology, and laid the theoretical and computer-graphic foundations for nanoelectronics. The papers that were read by our scientists in Switzerland, at a jubilee conference on scanning tunnel microscopy (STM'91), convincingly demonstrated that Russia is actively preparing for a showing at the conference in Moscow of new articles and methods into which funds can be invested.

Taking into consideration this fundamental backlog created by our scientists and technologists, the International Organizing Committee reconfirmed the decision to hold NANO-II specifically in Russia and announced its readiness to render assistance to J. Murday and V. Alfeyev in preparing it. And this is despite the stiff competition and the proposals from other countries that the conference on nanotechnology should be held there... The period for conducting the conference was also mentioned—from 2 through 6 August 1993.

In June of this year an All-Russian Contest for Projects Involving Nanoelectronics and Nanotechnology was held in the Altay. It made it possible to begin to select domestic and foreign papers and finished articles for NANO-II. It should be noted that the active participants in this work include the Ukrainian, Latvian, and Norwegian academies of technological sciences.

Time is moving on. The first stage of NANO-II will begin on 1 September of this year. We are grateful to the leadership of the United States, Russia, Moscow, Barnaul, the Kabardino-Balkar, Dagestan, Chuvash, and other republics, and to the leadership of ROSSIYSKAYA GAZETA and television for the assistance during the first two years of preparation for this event. But at the present time, when the National Russian NANO-II Committee is reaching its final formalization, we have an even greater need for assistance. It is clear that the attracting of funds from major domestic and foreign banks, companies, scientific-production concerns, and associations, and the support of the press, are absolutely essential. But there is something else that is clear: the road to a nanoindustrial revolution is open for the good of nations. Put your money on NANO-II, and you won't be miscalculating!

Moscow Firm Offers 'New, Cleaner' Waste Incineration Process

92WN0744A Moscow ROSSIYSKAYA GAZETA
in Russian 25 Aug 92 p 2

[Article by Mikhail Abramov: "The Ecology of the City: Of Two Evils, the Wise Person Chooses the Lesser One"]

Atomic death, it seems, already no longer threatens people. But then, another danger—to be buried in a pile

of household and industrial waste—is becoming increasingly more real for the cities. To understand this threat, it is sufficient to stand for a while by any of the 120 dumps in Moscow Oblast. In an interminable line, vehicles with stinking, harmful, and sometimes simply poisonous substances....The dumps infect the air, soil, and water, and they are growing and growing.

In the opinion of the government of Moscow and the heads of the administrations of many rayons, the situation can be saved only by modern waste incineration plants. Moscow needs approximately 10 of them, the oblast scarcely fewer. In the view of emissaries who studied the experience of the solution of this problem in beautiful France and no less beautiful Italy, it remained only to find the money (each such plant costs about \$120 million)—and the waste will be taken care of already by the year 2020.

However, specialists assert that, before we will be done with this waste, another, more dangerous problem will arise. Already now there are too many harmful substances in the atmosphere of the Moscow region. In the opinion of ecologists, in zones of above-norm pollution of cities there live more than 13 million people, in zones of harmful influence of transportation—about 14 million, and in zones of pollution of the atmosphere from large poultry factories and livestock complexes—0.8 million.

The dumps now also pollute the atmosphere. But their "contribution" cannot be compared with the damage that a plant is capable of inflicting. As is well known, the waste contains many plastic products. In one of the stages of burning, plastic decomposes and harmful, frequently toxic gases are formed. In foreign plants, which operate with traditional technology, special filters are installed because of this. It is precisely these filters which in many respects determine the high cost of the plants that we are inclined to import. But the filters nevertheless are not able to fully purify the emissions. This is indicated by the truly sharp struggle against waste incineration plants now being conducted by the "Greens" in Sweden, a country which in terms of its treatment of nature serves as an example to all of Europe.

Thus: To preserve refuse is dangerous, to burn—harmful?

But there is a way out. And to find it, there is no need to go on hard currency business trips. We have developed a technology in Russia which is approximately 10-15 years ahead of the most advanced Western technology.

The Algon Scientific-Production Association is situated in the very center of Moscow. For a long time and successfully it has studied the creation of a furnace capable of competing with a blast-furnace. And here, in the process of the utilization of a pilot plant built at the Novolipetsk Metallurgical Combine, it turned out that this furnace can operate practically on any hydrocarbon fuels. Hence—one step toward the use of a new furnace for the processing of household and industrial waste.

And this step has been taken. The technology for the processing of household waste was tested at the Ryazan Experimental Metallurgical Plant. Let us leave the details to the specialists—for us something else is a hundred times more important: The emissions from this furnace contain much less dust, oxides, nitrogen, and sulphur than the much-vaunted foreign plants.

Moreover, after the burning of refuse in the foreign plants, there remain dust and water containing a large quantity of toxic substances, and the volume of these waste materials comes to approximately 25 percent of the mass of processed refuse. This toxic waste requires special burial. But the plant developed in the Algon Association "produces" for further burial only 5 percent of the refuse received for burning.

The latest news is as follows: From America, Germany, and Israel they are coming to us for a patent for the new, ecologically cleaner methods of refuse processing.

Industrial Waste Program for Moscow Proposed

PM0309152592 Moscow ROSSIYSKAYA GAZETA
in Russian 3 Sep 92 First Edition p 3

[AEN report: "Moscow's Ecology"]

[Text] The waste produced by Moscow's enterprises amounts to 6 million tonnes a year. It is made up of 4.3 million tonnes of inert hard waste and 1.7 million tonnes of toxic waste (the most dangerous kind). This equals 30 kg of toxic waste per Muscovite per year. Only 25 percent of the capital's 1,000 industrial enterprises have effective purification installations.

These data were cited at the 1 September session of Moscow's Government by Vasily Ivanov, general director of "Ekotekhprom" Science and Production Association. He outlined the main avenues of a comprehensive program for the processing and utilization of industrial waste, whose implementation is estimated to take eight years. The first stage, through 1995 (inclusive), will require about 3 billion rubles, according to Ivanov's estimates.

Program To Utilize Production Waste Seen as Profitable

LD1009104892 Moscow ITAR-TASS in English
1021 GMT 10 Sep 92

[By ITAR-TASS correspondent Veronika Romanenkova]

[Text] Moscow, September 10 (TASS)—The cost of the programme to use science-intensive technologies for processing secondary materials and resources, drawn up by specialists from the Russian Academy of Technological Sciences, may not only be recouped within only a few months, but may yield substantial profits, too. The document will be submitted to the Russian Government shortly.

Today, Russia possesses several dozen technologies to process industrial wastes. But very few of them have been put to use so far. In the meantime, the reprocessing of wastes yields a substantial saving of raw materials and power, prevents environmental pollution.

Vice-president of the Russian Academy of Technological Sciences Vladimir Bryunin told ITAR-TASS that the programme "envisages the creation of a data bank, containing information on wastes from all the Russian industrial enterprises and allowing us to take proper stock of them."

"Moreover," he stated, "it is necessary to provide economic incentives to enterprises so that they would be eager to reprocess secondary resources by means of advanced technologies. The government has already taken initial measures in this direction. It has endorsed a procedure for levying fines in case of environmental pollution and payments for industrial wastes dumping places."

Toxic Chemical 'Time Bomb' Stored Near St Petersburg

*PM2408155292 Moscow IZVESTIYA in Russian
22 Aug 92 Morning Edition p 8*

[Yevgeniy Solomenko report: "Chemical 'Time Bomb' Concealed Near St. Petersburg"]

[Text] St. Petersburg—Quite close to St. Petersburg, a mighty chemical "time bomb" is stored. Hundreds of thousands of highly toxic waste products containing arsenic, fluorine, mercury, lead, hydrocyanic acid, and phosphorus—that is the "arsenal" of the "Krasnyy Bor" yard, which is only half an hour's journey from the oblast center.

This yard, designed to receive and render harmless industrial chemical waste, was opened in 1970 as an experiment, intended to last only three years. But it is still being used to this day. Although its potential has been completely exhausted. Thus not far from St. Petersburg, a city of 5 million, and very close to the city of Kolpino and the settlement of Krasnyy Bor, there is a dangerous source of chemical pollution—50 hectares packed with the toxic "fruits" of galvanization and organic industries and petroleum refining.

The storage of these unwanted toxic substances violates numerous regulations: Health norms are stretched to breaking point. According to a government resolution, the yard is supposed to serve only enterprises in St. Petersburg and Leningrad Oblast. But instead, for some reason, it also takes waste from other states. In particular Ukraine and the Baltic.

Experts assess the situation as alarming. They estimate that, using traditional technologies, it will take between five and seven years to render harmless the toxic waste already accumulated here. So for a minimum of five

years St. Petersburg and the oblast will live beneath a sword of Damocles, in the shape of chemical pollution.

This already complex problem is further exacerbated by the fact that enterprises in St. Petersburg and the oblast have nowhere else to take their waste. So the yard cannot go on operating any longer, but at the same time it cannot be closed. The public and the press, the Green party, professional ecologists, and deputies have been arguing over "Krasnyy Bor" for a long time. But nothing has yet changed radically. At least, not for the better. The Petersburg chekists have had occasion to intervene. They were given the duty of monitoring situations which could develop into incidents, and informing representatives of the authorities about them.

The other day the Russian Security Ministry's St. Petersburg directorate submitted to the St. Petersburg and Leningrad Oblast leadership its official findings on the "Krasnyy Bor" problem. The document stresses: "In the opinion of specialists, the 'Krasnyy Bor' yard is at present a major source of dangerous pollution of ground and surface water and the atmosphere, and there is therefore no room for delay in resolving the question of building a modern plant for the reprocessing of industrial toxic waste in the region."

The only remaining question is: How can the "fathers" of the city and oblast fail to see for themselves the impending disaster, and if they do see it, why are they doing nothing?

Ministry Proposes 'Ecological Conversion' Program

*PM2708152392 Moscow Russian Television Network
in Russian 1900 GMT 25 Aug 92*

[From the "Vesti" newscast: Video report by T. Siratskaya and V. Rybakov, identified by caption]

[Text] [Video shows factory roofscape] [Siratskaya] The socioeconomic damage done annually by environmental pollution runs to around 300 billion rubles. And it is no secret that a very considerable proportion of this comes from discharges from defense industry enterprises. The Russian Ministry of Ecology and Natural Resources is now proposing its own program—"Ecological Conversion." The program utilizes state-of-the-art technologies and defines a clear-cut mechanism for the relationship between the customer (nature conservation organs) and the manufacturer (military-industrial complex enterprises). This could be the salvation of many defense industry enterprises that were on the brink of closure. In the absence of military orders, the Ministry of Ecology is prepared to give them work—by ordering nature conservation equipment from the enterprises, the sale of which will allow them to pay off their loans within two years, experts reckon. [Video shows V. Kutsenko, chief of the economic security administration, identified by caption]

[Kutsenko] So, it would be painful and unpleasant to come to terms with the fact that the government would

let our program pass unnoticed—as has happened to other programs in the past. [Video shows factory scenes, Kutsenko]

Military Seeks Site for Disposal of 'Certain Substances'

MK0709113992 Moscow ROSSIYA in Russian No 36, 2-8 Sep 92 p 2

[Andrey Pavlov report under the "INFO-'ROSSIYA'" news roundup: "Burial Rumors"]

[Text] After its imminent closure, the most northern of the Vorkuta mines—"Khalmer-Yu"—could possibly be used for the burial of "certain substances." This vague statement was made in a speech at the "Vorkutaugol" Association Council of Directors by its technical director A. Gorenok. Obtaining the details of this information turned out to be a difficult matter. All that could be ascertained was that a place for burying substances of an unspecified nature is being sought by military specialists, whose specialty is also being kept secret. According to "Vorkutaugol" representatives, the idea is technically unfeasible because of the presence of water-bearing strata [vodonosniye gorizonty] and that it was floated more as a "trial balloon"—but who will react to it, and how?

Damage to Komi Oil Installations Estimated at 700 Million Rubles

OW0809123592 Moscow INTERFAX in English 1021 GMT 8 Sep 92

[Following item transmitted via KYODO]

[Text] In the Republic of Komi a special commission set up by the local environmental committee has concluded its work. The commission conducted investigations into what caused in late June two accidents at the Vozey oil pipeline belonging to the Komi Oil and Gas Department.

In an interview for IF [INTERFAX]'s correspondent a leading member of the environmental committee described the accidents as unprecedented in the practice of oil extraction in Komi. Their consequences will affect other countries. The losses are estimated at 700 million rubles. As a result of cracks that developed in oil pipelines more than 8,000 tons of oil-containing fluid penetrated the soil and spilled along the Rivers Kolva, Khatayakha, Usa and Pechora for dozens of kilometers. According to the Public Committee for Saving the River Pechora, last year 700 minor accidents and emergencies took place in all sections of the pipeline. This year the number of such accidents might reach 800. The commission of the Komi Environmental Committee will submit its findings to the court of arbitration in the next few days.

Additions to Law on 'Social Protection' of Chernobyl Victims

925D0619A Moscow ROSSIYSKAYA GAZETA in Russian 5 Aug 92 pp 4-6

[Law of the Russian Federation: "On Making Changes and Additions to the RSFSR Law 'On Social Protection of Citizens Affected by Radiation Resulting From the Disaster at the Chernobyl Nuclear Power Plant'"]

[Text] Article 1. To make changes and additions to the RSFSR law "On Social Protection of Citizens Affected by Radiation Resulting from the Disaster at the Chernobyl Nuclear Power Plant" (VEDOMOSTI SYEZDA NARODNYKH DEPUTATOV RSFSR I VERKHOVNOGO SOVETA RSFSR, 1991, No. 21, p. 699), worded as follows:

LAW OF THE RUSSIAN FEDERATION "On Social Protection of Citizens Affected by Radiation Resulting from the Disaster at the Chernobyl Nuclear Power Plant"

Section I. General Provisions

Article 1. Objectives and tasks of the law

The present law is aimed at protecting the rights and interests of citizens of the Russian Federation who were in the zone affected by unfavorable factors resulting from the disaster at the Chernobyl nuclear power plant on 26 April 1988 or participated in the cleanup after this disaster.

Article 2. Legislation of the Russian Federation on the Chernobyl disaster

Relations pertaining to the Chernobyl disaster are regulated by the present law and legislation in effect in the Russian Federation involving norms that do not contradict the present law and other legislative acts of the Russian Federation published in keeping with them.

Article 3. The right of citizens of the Russian Federation affected by radiation resulting from the disaster at the Chernobyl nuclear power plant to receive compensation and benefits

Citizens of the Russian Federation are guaranteed by the state the monetary and other material compensations and benefits established by the present law for harm caused to their health and property as a result of the disaster at the Chernobyl nuclear power plant and also for the risk of radiation damage resulting from living and working in the territory subjected to radioactive contamination in excess of the permissible levels resulting from the aforementioned disaster.

Article 4. Amounts of compensation and benefits for harm caused to citizens of the Russian Federation resulting from the disaster at the Chernobyl nuclear power plant

The specific amounts of the monetary and other material compensations and benefits established by the present

law are determined by the Government of the Russian Federation unless otherwise stipulated.

Article 5. Financing the law

The costs involved in the execution of the present law are financed from the republic budget of the Russian Federation with especially designated money.

The procedure for financing the costs, including the procedure for compensating enterprises, institutions, organizations, and local organs of power and administration for costs involved in the execution of the present law with respect to norms falling within their jurisdiction is established by the Government of the Russian Federation unless otherwise stipulated.

State pensions (including disability pensions), stipends, compensations, sums of reimbursement for harm resulting from the Chernobyl disaster, and other payments to citizens established by the present law are subject to protection from inflation in their full amount, according to the procedure determined by legislation of the Russian Federation on indexation of monetary incomes and savings of citizens in the Russian Federation, unless otherwise stipulated.

Article 6. Basic provisions of the concept of the population inhabiting regions affected by the Chernobyl disaster

The present law, with respect to determining conditions for the population inhabiting the territory subjected to radioactive contamination as a result of the disaster at the Chernobyl nuclear power plant, is based on the following assumptions:

1. The main indicator for adopting a decision on the need to conduct protective measures and also to provide reimbursement for harm is the level of the dose to which the population has been exposed of radiation caused by radioactivity resulting from the disaster at the Chernobyl nuclear power plant.

2. An additional amount of excess (above the level of natural and technology-produced radiation background for the given locality) radiation to which the population has been exposed from radioactive fallout resulting from the disaster at the Chernobyl nuclear power plant, forming in 1991 and subsequent years an average annual effective equivalent dose not exceeding one mSv [millisievert] (0.1 REM) is permissible and requires no intervention.

3. Protective measures (countermeasures) are taken when there is an additional excess (above the level of the natural and technology-produced radiation background for a given locality) of radiation received by the population from radioactive fallout resulting from the disaster at the Chernobyl nuclear power plant, forming in 1991 and subsequent years an average annual effective equivalent dose in excess of one mSv (0.1 REM) per year.

The complex of protective measures must be aimed at a constant reduction of the dose load (including from

reduction of the contamination of food products) with a simultaneous easing of the restrictions on a normal life. The achievement of these goals is optimized taking into account conditions in which the average effective equivalent radiation dose received by the population does not exceed the level of one mSv (0.1 REM) per year.

4. It is necessary to complete the mandatory resettlement of citizens from population points indicated in the Unified State Program for Protection of the Population of the Russian Federation From the Effects of the Chernobyl Disaster for 1993-1995 and the Period Up to the Year 2000.

5. Citizens residing on territory contaminated by radionuclides outside the off-limits zone and the zone of mandatory resettlement have the right—on the basis of objective information given to them about the radionuclide situation, radiation doses, and their possible consequences for the health—to make an independent decision about continuing to reside in the given territory or moving to another place of residence.

Section II. Regimen and Ecological Improvement of the Territory Subjected to Radioactive Contamination Resulting From the Disaster at the Chernobyl Nuclear Power Plant, to Which the Present Law Applies

Article 7. Zones of radioactive contamination

The present law applies to territories subjected to radioactive contamination resulting from the disaster at the Chernobyl nuclear power plant:

from which citizens were evacuated in 1986 and were subsequently resettled;

on which, beginning in 1991, the average annual effective equivalent dose of radiation sustained by the population exceeds one mSv (0.1 REM);

on which, beginning in 1991, the density of the radioactive pollution of the soil with cesium-137 exceeds one curie per square km.

These territories are subdivided into the following zones:

off-limits [otchuzhdeniye] zone;

resettlement zone;

zone of habitation with the right to resettle;

zone of habitation with preferential socioeconomic status.

The borders of these zones are established and, depending on changes in the radiation situation and taking other factors into account, they are revised by the Government of the Russian Federation no less frequently than once every three years.

Article 8. The off-limits zone

The off-limits zone (during 1986-1987 called the 30-mile zone, and from 1988 until the adoption of the present

law—the resettlement zone) is the territory surrounding the Chernobyl nuclear power plant and also the part of the territory of the Russian Federation contaminated by radioactive substances as a result of the disaster at the Chernobyl nuclear power plant from which, in keeping with the Norms for Radiation Safety, during 1986 and subsequent years the population was evacuated or resettled.

The population is prohibited from residing permanently in the off-limits zone, and business activity and the use of nature are restricted there. In this zone on the territory of the RSFSR the kinds of economic activity, the procedure for its organization, and the use of nature are established by the Government of the Russian Federation.

Article 9. Resettlement zone

The resettlement zone is the part of the territory of the Russian Federation beyond the off-limits zone on which the density of the contamination of the soil with cesium-137 is above 15 curies per square km, or strontium-90—above three curies per square km, or plutonium-239 and 240—above 0.1 curies per square km.

On the territory of the resettlement zone where the density of the contamination of the soil with cesium-137 is above 40 curies per square km and also on territories of this zone where the average annual effective equivalent dose of radiation of the population from radioactive fallout can exceed 5.0 mSv (0.5 REM), the population is subject to mandatory resettlement and people are prohibited from moving back to these territories of the zone until such time as the risk of radiation harm is reduced to the established acceptable level. On the remainder of the territory of the resettlement zone, citizens who have made a decision to leave for a different place of residence also have the right to receive the compensation and benefits established by the present law.

Taking into account the topographical and geochemical peculiarities of the soil of the territories subjected to radioactive contamination resulting from the Chernobyl disaster, including the existence of territories with soil that contributes to a high level of migration of radionuclides into plants, legislation of the Russian Federation may include territories with lower levels of radioactive contamination in this zone.

In the resettlement zone there is mandatory medical monitoring of the condition of the health of the population, and protective measures are taken, aimed at reducing the radiation levels, of which the residents are informed through the media.

The conditions for the habitation of residents in the resettlement zone and the procedure for the economic use of the territory are established by the Government of the Russian Federation.

Article 10. The zone of habitation with the right to resettle

The zone of habitation with the right to resettle is the part of the territory of the Russian Federation beyond the off-limits zone and the resettlement zone with a density contamination of the soil with cesium-137 of from five to 15 curies per square km. Citizens living in population points of this zone, in which the average annual effective equivalent dose of radiation of the population exceeds one mSv (0.1 REM) who have made a decision to move to a different place of residence have the right to receive the compensations and benefits established by the present law.

Taking into account the topographical and geochemical peculiarities of the soil of the territories subjected to radioactive contamination resulting from the Chernobyl disaster, including the presence of territories with soil that contributes to a high level of migration of radionuclides into plants, legislation of the Russian Federation may include territories with lower levels of radioactive contamination in this zone.

Additional criteria for determining the boundaries of the zone for habitation with the right to resettle, depending on the degree of radioactive contamination of its territory with other (except cesium-137) long-lasting radionuclides are established by the Government of the Russian Federation.

In the zone of habitation with the right to resettle there is mandatory medical monitoring of the condition of the health of the population, and protective measures are taken aimed at reducing the level of radiation, of which the residents are informed through the mass media.

The conditions for the habitation of the population in the indicated zone and the procedure for voluntarily resettling from it, for conducting business and other activity on this territory, and for taking measures for protecting the health and reducing the risk of illness of the population are established by the Government of the Russian Federation.

Article 11. The zone of habitation with preferential socioeconomic status

The zone of habitation with preferential socioeconomic status is a part of the territory of the Russian Federation outside the off-limits zone, the resettlement zone, and the zone of habitation with the right to resettle with a density of radioactive contamination of the soil with cesium-137 of from one to five curies per square km. In this zone the average annual effective equivalent dose of radiation of the population should not exceed one mSv (0.1 REM).

Additional criteria for determining the boundaries of this zone, depending on the degree of radioactive contamination of its territory with other (besides cesium-137) long-lasting radionuclides are established by the Government of the Russian Federation.

In this zone, in addition to the implementation of a complex of countermeasures, including medical measures for radiation and radio-ecological protection, an economic-ecological structure is created, which provides for the improvement of quality of life of the population above the average level and compensates for the negative effects of the psychological and emotional strain related to the Chernobyl disaster and the application of countermeasures.

Article 12. Ecological improvement of the territory of the Russian Federation subjected to radioactive contamination as a result of the Chernobyl disaster

On the territory subjected to radioactive contamination as a result of the Chernobyl disaster, a complex of economic, legal, and other measures aimed at improving the natural environment are being taken: conducting scientific research, monitoring the condition of the natural environment and objects that are potentially dangerous from an ecological standpoint, providing state ecological expert evaluation of economic and other activity, reducing and compensating for harm caused to nature, including reducing the effects of factors that are potentially dangerous to it, putting areas contaminated with radiation into an ecologically safe condition suitable for economic use and the life activity of the population, and returning territories contaminated with radiation to economic circulation as they are ecologically improved.

The organization and provision of monitoring of the ecological situation on the territory subjected to radioactive contamination and the planning and implementation of measures for ecological improvement are conducted by organs authorized by the Government of the Russian Federation.

Section III. Status of Citizens Subjected to the Effects of Radiation Resulting From the Chernobyl Disaster

Article 13. Categories of citizens subjected to the effects of radiation resulting from the Chernobyl disaster

Citizens subjected to the effects of radiation resulting from the Chernobyl disaster to whom the present law applies include:

1) citizens who have contracted or suffered from radiation sickness and other diseases related to the effects of radiation resulting from the Chernobyl disaster or linked to the work of cleaning up after the disaster at the Chernobyl nuclear power plant;

2) persons disabled as a result of the Chernobyl disaster, including:

citizens (including those temporarily employed or sent on duty assignments) who participated in the cleanup after the disaster within the off-limits zone or engaged in operational or other work at the Chernobyl nuclear power plant;

military servicemen and reservists called to special training camps and enlisted to do work related to the cleanup after the Chernobyl disaster, regardless of where they were stationed or the work they performed, and also command and enlisted personnel of internal affairs organs who served (or are serving) in the off-limits zone;

citizens evacuated from the off-limits zone and resettled from the resettlement zone or who left these zones voluntarily;

citizens who donated bone marrow to save the lives of people who suffered from the Chernobyl disaster, regardless of the time that passed from the time of the transplantation of the bone marrow until the time disability developed in them because of this;

3) citizens (including those temporarily employed or sent on duty assignments) who participated during 1986-1987 in the work of cleaning up after the Chernobyl disaster within the off-limits zone or who were employed during that period in work related to evacuation of the population, material valuables, and agricultural animals, and in operational and other work at the Chernobyl nuclear power plant; military servicemen and reservists called to special training camps and enlisted during this period to perform work related to cleanup after the Chernobyl disaster, including flight-airlift and engineering-technical personnel from civil aviation, regardless of where they were stationed or the work they performed; command and enlisted personnel of internal affairs organs who served during 1986-1987 in the off-limits zone; military servicemen and reservists called to special training camps and those who participated during 1988-1990 in work on the "Shelter" facility and also junior and midlevel medical personnel, physicians, and other workers of medical treatment institutions (except individuals whose professional activity involved work with any kinds of sources of ionizing rays under the conditions of a radiation situation in their workplace which corresponds to the profile of the work done); individuals who received above-normative doses of radiation while rendering medical assistance and serving during the period from 26 April through 30 June 1986, who suffered as a result of the Chernobyl disaster and were a source of ionizing radiation;

4) citizens (including those temporarily employed or sent on duty assignments) who participated during 1988-1990 in the work of cleaning up after the Chernobyl disaster within the off-limits zone or were employed during this period in operational or other work at the Chernobyl nuclear power plant; ministries and departments and reservists called to special training camps and enlisted during these years to perform work related to cleaning up after the Chernobyl disaster, regardless of where they were stationed or the work they performed, and also command and enlisted personnel of internal affairs organs who served in the off-limits zone during 1988-1990;

5) citizens employed in operation of the Chernobyl nuclear power plant and work in the off-limits zone;

6) citizens evacuated (including those who left voluntarily) in 1986 from the off-limits zone or were resettled (are being resettled), including those who left voluntarily from the resettlement zone in 1986 and subsequent years, and including children who at the time of the evacuation were (are) in the womb;

7) citizens living (working) on the territory of the zone of habitation with the right to resettle;

8) citizens living (working) on the territory of the zone of habitation with preferential socioeconomic status;

9) citizens living (working) in the resettlement zone until they are resettled to other regions;

10) citizens employed in the resettlement zone (who are not residing in this zone);

11) citizens who left voluntarily for a new place of residence from the zone of habitation with the right to resettle after the Chernobyl disaster;

12) military servicemen and command and enlisted personnel of internal affairs organs who are performing (have performed) military service (other service) (Footnote 1) (Included among individuals who are performing (have performed) military service (service) are: officers, warrant officers, military servicemen on extended active duty, military servicewomen, noncommissioned officers, and enlisted personnel on active duty in the Armed Forces, state security forces and organs, internal forces, railroad forces, and other military formations, and also command and enlisted personnel of internal affairs organs) in the off-limits zone, the resettlement zone, the zone of habitation with the right to resettle, and the zone of habitation with preferential socioeconomic status;

If the radiation damage has been caused and (or) the risk of it has increased as a result of something the victim has done deliberately, the individual must be denied compensations and benefits, or their amount must be reduced by a court decision.

Article 14. Compensation and benefits to citizens who have contracted or suffered radiation sickness or other diseases and individuals disabled as a result of the Chernobyl disaster

Citizens indicated in points 1 and 2 of Part 1 of Article 13 of the present law are guaranteed:

1) free medical assistance (in inpatient or outpatient facilities), free medications (with prescriptions from physicians), free manufacture and repair of false teeth (except those made of precious metals), free annual sanatorium-health resort treatment or monetary compensation in the amount of the average cost of a pass, free travel on all kinds of transportation (except taxis) from the place of residence to the place of treatment and

back, including sanatorium-health resort, dispensary, outpatient, or clinic examinations, preferential hospitalization, and also a free compulsory medical insurance policy for citizens of the Russian Federation with a special basic program, charging the cost differential between the special basic program and the basic program for compulsory medical insurance for other citizens of the Russian Federation to the republic budget of the Russian Federation;

2) payment to disabled workers of a disability stipend for up to four months in a row or up to five months in a calendar year in the amount of 100 percent of actual earnings without a restriction to twice the wage rate (salary);

3) regardless of the length of time in residence in a given population point, the provision of a well-arranged living space within three months of the day of the submission of the application, under the condition that they are deemed to be in need of better housing or they live in communal apartments, and also the provision of additional living space in the form of a separate apartment;

4) payment for occupied dwelling space (within the limits of the norms specified by existing legislation), including for family members living with them, in the amount of 60 percent of the apartment rent calculated from the rates established for workers and employees and also the granting of discounts in the amount of 50 percent off the established payment for the use of telephones and radios and for their installation, for the use of hot water, running water, gas, and electricity, and, for people living in buildings that do not have central heating—the granting of discounts in the amount of 50 percent off the cost of fuel acquired within the norms established for sale to the population, including transportation expenditures;

5) additional payments up to the amount of the previous earnings when they are transferred to lower-paid jobs because of medical factors. This additional payment is made by the enterprises, institutions, and organizations up until the ability to work is restored or disability is established;

6) preferential gratis provision of a passenger car when the appropriate medical indications are present;

7) reimbursement by social security organs for costs involved in service in the home when there are no close relatives living with them;

8) free travel on all kinds of urban transportation (except taxis) and on general purpose automotive transportation (except taxis) in rural areas, and also on rail and water transportation for suburban travel and on suburban bus routes, and also free travel with the right to priority acquisition of tickets on the railroads or on ships of transit and local lines of the river fleet once a year (to the destination and back), and in regions that do not have rail transportation—by air, water, or interurban bus transportation;

9) the use of regular annual paid leave at a time convenient for them and also additional paid leave time of up to 14 calendar days;

10) exemption from the payment of income tax and all other kinds of taxes and also all kinds of duties and registration and health resort fees;

11) the payment of a disability stipend in the amount of 100 percent of the actual earnings, regardless of the length of continuous service, including for sanatorium and health resort treatment and medical consultation in a different population point, without restrictions to twice their wage rates (salaries);

12) priority telephone installation;

13) a preferential right to retain their employment when there is a reduction of the number of workers or staff, regardless of the amount of time worked at the given enterprise, institution, or organization, and preferential work placement when enterprises, institutions, or organizations are eliminated or reorganized.

In cases where the aforementioned citizens are cadre workers or have worked for 15 years or more and have lost their jobs as a result of reorganization, reprofiling (conversion etc.), or termination of activity (liquidation, bankruptcy, etc.), of the enterprises, institutions, organizations, and their legal successors, they are granted the right to obtain a share of the property (or monetary compensation for it) of the enterprise, institution, or organization from which they were discharged for the aforementioned reasons, without applying the costs incurred to the budget of the Russian Federation. The procedure for determining the share of the property of the enterprises, institutions, and organizations (or monetary compensation for it) due to the citizens is established by legislation of the Russian Federation;

14) out-of-turn admission to housing construction cooperatives, out-of-turn provision of plots of land for individual housing construction, out-of-turn admission to garage construction cooperatives and gardening societies (cooperatives), out-of-turn acquisition of garden sheds or materials for building them, industrial goods that are in great demand, including passenger cars, motorcycles, and motor boats, and out-of-turn service at enterprises for consumer services, technical service and repair of means of transportation, public catering, and institutions for housing and municipal service, communications, and interurban transportation;

15) receipt of interest-free loans for the acquisition or construction of garden sheds, improvement of garden plots, and individual construction, out-of-turn provision of the necessary construction materials, the conclusion of agreements with contracting organizations for the construction of residential buildings with outbuildings;

16) out-of-turn service in therapeutic and preventive medical institutions and pharmacies;

17) when going on pension or changing jobs, the use of the polyclinics to which they were assigned before they went on pension or changed their job;

18) admission to higher and secondary specialized educational institutions without competing. They are admitted to preparatory departments under higher educational institutions regardless of whether there is space, and they must be granted space in a dormitory if they need it; the stipends for the aforementioned individuals are set in amounts that are increased by 50 percent;

19) out-of-turn provision of accommodations for children in children's preschool institutions, specialized children's therapeutic or sanatorium institutions, health camps, and other health institutions, regardless of departmental jurisdiction, with payment of 50 percent of the cost of keeping them in the given institution;

20) the receipt of interest-free loans in the amount of 600 times the sum of the minimum monthly wage established by law for cooperative and individual housing construction with the repayment of 50 percent of the loan out of the republic budget of the Russian Federation;

21) by virtue of possession, free transfer to private ownership of premises of the state housing fund which they occupy;

22) provision of food for them and also for children under 14 years of age living with them in keeping with the rational norms of consumption of food products, with payment of 50 percent of their cost or a monthly payment to the individuals in the amount of the minimum amount of the wage established by the law;

23) preferential provision of places in boarding houses for the elderly and disabled;

24) the receipt of interest-free loans in the amount of 500 times the sum of the minimum monthly wage established by law for organizing a subsidiary or farmer-run farm;

25) repayment of the unpaid part of an interest-free loan for setting up housekeeping obtained by evacuees from the off-limits zone in an amount of up to R5,000 per family.

The benefits specified in points 3, 4, 12-15, 19-23, and 25 of Part 1 of the present law apply to families of citizens who have died as a result of the disaster at the Chernobyl nuclear power plant or as a result of radiation sickness and other maladies arising from the Chernobyl disaster, and also to families of deceased disabled persons to whom the benefits indicated in the present article apply. Family members or individuals who have taken over the organization of burials are paid a burial stipend in the amount of seven times the amount of the minimum monthly established by law.

Article 15. Compensation and benefits for participants in the cleanup after the disaster at the Chernobyl nuclear power plant in the off-limits zone

1. Citizens indicated in point 3 of Part 1 of Article 13 of the present law are granted the benefits specified by

points 4, 5, 9-11, 13-19, 21, 23, and 25 of Part 1 of Article 14 of the present law. Additionally, they are guaranteed:

1) free medical aid (in inpatient or outpatient facilities), free medicine (with a doctor's prescription), and also a free compulsory medical insurance policy for citizens of the Russian Federation with a special basic program, charging the cost differential between the special basic program and the basic program for compulsory medical insurance for other citizens of the Russian Federation to the republic budget;

2) priority free annual provision in the work place of a pass to a sanatorium-health resort (when indicated medically with the issuance of a list of disabilities) or other health institution, and in the event that it is impossible to grant the pass—a monetary compensation in the amount of the average cost of one;

3) priority provision, regardless of the time of residence in the given population point, of well-arranged housing under the condition that they are deemed to be in need of better housing conditions or are living in communal apartments;

4) a rebate in the amount of 50 percent of travel expenses once a year (there and back) on air, rail, and water transportation;

5) free travel on all kinds of urban passenger transportation (except taxis) and general purpose automotive transportation (except taxis) in rural areas, and also on rail and water transportation for interurban travel and buses on commuter routes;

6) an interest-free loan in the amount of 600 times the sum of the minimum monthly wage established by law for cooperative and individual housing construction with repayment of 25 percent of the loan from the republic budget of the Russian Federation;

7) priority installation of a telephone;

8) a temporary disability stipend in the amount of 100 percent of the actual earnings, regardless of continuous length of service without the restriction to twice the wage rate (salary);

9) free manufacture and repair of false teeth (except those made of precious metals);

10) provision of foodstuffs in keeping with the rational norms of consumption of food products with their payment of 75 percent of the cost or a monetary payment in the amount of 50 percent of the amount of the minimum monthly wage established by law;

11) compensation for damages caused as a result of illness or injury related to the performance of work for cleaning up after the disaster at the Chernobyl nuclear power plant, which has led to a continuous loss of the

ability to work (without the establishment of disability), determined according to the procedure established by legislation of the Russian Federation for cases of the appearance of this kind of harm caused to workers and employees while they are performing their work duties.

The compensations and benefits specified by points 4, 23, and 25 of Part 1 of Article 14 of the present law and points 3 and 7 of Part 1 of the present law extend to families, including to widows (widowers) of deceased participants in the cleanup after the disaster at the Chernobyl nuclear power plant.

2. Citizens indicated in point 4 of Part 1 of Article 13 of the present law are granted the benefits specified by points 5, 11, 13, 15-19, 21, 23, and 25 of Part 1 of Article 14 of the present law and points 5, 6, and 8 of Part 1 of the present article. Additionally, they are guaranteed:

1) regular annual paid leave at a time convenient to them;

2) preferential receipt in their place of employment of annual pass for sanatorium-health resort treatment and rest;

3) a rebate in the amount of 50 percent of the cost of medicines they have acquired with a doctor's prescription, medical aid (in inpatient or outpatient facilities), and also a free compulsory medical insurance policy for citizens of the Russian Federation with a special basic program, charging the cost differential between the special basic program and the basic program for compulsory medical insurance for other citizens of the Russian Federation to the republic budget of the Russian Federation;

4) preferential admission into garage-construction cooperatives and gardening societies (cooperatives);

5) registration of citizens in need of better housing conditions and those who live in communal apartments, regardless of the size of the dwelling space they occupy;

6) provision of foodstuffs in keeping with rational norms for the consumption of food products and also preferential provision of industrial durable goods.

Citizens indicated in points 1 and 3 of Part 1 of Article 13 of the present law are issued special disability certificates, and citizens indicated in points 3 and 4 of Part 1 of Article 13 of the present law are issued certificates of participation in the cleanup after the disaster at the Chernobyl nuclear power plant and badges. These documents confirm the right to the compensations and benefits specified by Articles 14 and 15 of the present law.

Article 16. Compensations and benefits to citizens engaged in the operation of the Chernobyl nuclear power plant and work in the off-limits zone

Citizens (including those temporarily sent or on assignment) indicated in point 5 of Part 1 of Article 13 of the

present law are granted higher wages, shorter working hours, and additional paid leave.

The benefits specified by Article 14 of the present law apply to workers and employees and also military servicemen and command and enlisted personnel of internal affairs organs who have contracted occupational diseases related to the effects of radiation in jobs in the off-limits zone.

Additional labor, and social and domestic benefits, for citizens employed in the operation of the Chernobyl nuclear power plant and jobs in the off-limits zone are established by the Government of the Russian Federation.

Article 17. Compensations and benefits for citizens evacuated from the off-limits zone who were (are being) resettled from the resettlement zone.

Citizens indicated in point 6 of Part 1 of Article 13 of the present law are granted the following benefits: Those evacuated from the off-limits zone—the benefits specified by points 4, 5, 9-11, 13-19, 21, and 25 of Part 1 of Article 14 and points 1, 2, 4, and 7-10 of part 1 of Article 15; those who were (are being) resettled from the resettlement zone—those specified by points 5, 9, 13, 15, 16, 18, 19, and 21 of Part 1 of Article 14 and points 7 and 8 of Part 1 and points 2 and 4 of Part 3 of Article 15. Additionally, they are guaranteed:

1) dissolution of their labor agreement (contract) upon resettlement to a new place of residence with observance of the time periods for notification of the administration of the enterprises, institutions, and organizations envisaged by existing legislation of the Russian Federation;

2) priority job placement in the new place of residence in keeping with their occupations and qualifications. If this kind of job placement is impossible, the citizens are given other work, taking into account their desires and their ability to learn new occupations (specialties) while retaining their average earnings during the time of training in keeping with the established procedure;

3) retention after their arrival at the new place of residence, but for no more than four months or, by decision of the local organs of executive power, for a period of up to 12 months, of their average earnings and continuous work tenure, and for individuals forced to resettle, also retention for a year of their continuous work tenure and the payments they received at their previous place of residence;

4) payment of full compensation for material damages related to loss of property, including:

the value of structures (residential buildings, garden sheds, dachas, garages, household structures, etc.), based on the actual expenditures for the construction or acquisition of structures analogous to the ones that were lost;

the value of all kinds of agricultural animals subject to forced slaughter and also of garden plants and berry bushes and other plantings that were lost;

the value of household property whose degree of radioactive contamination makes it impossible to move it to the new place of residence, based on the actual cost of replacement property which has been (is being) acquired;

5) a one-time stipend for moving to a new place of residence in the amount of five times the sum of the minimum monthly wage established by law for each family member who moves;

6) payment of the cost of travel and expenditures for shipment of property on rail, water, automotive, and air (if there is no other) transportation, except in cases when the transportation is provided free of charge. Then disabled citizens, families with many children, single mothers, and single women are also paid for the cost of loading and unloading the property;

7) out-of-turn provision of well-arranged dwelling space in buildings of the state and public housing supply or residential buildings belonging to kolkhozes, sovkhozes, and other agricultural enterprises, or out-of-turn acquisition of apartments in buildings of the state or public supply, and also out-of-turn admission to housing or housing-construction cooperatives in the new place of residence.

Instead of granting housing, it is permitted to award monetary compensation for its value and to reserve residential premises until dwelling space is granted and (or) accommodations are found in the new place of residence, according to the procedure and in the amount determined by the Government of the Russian Federation;

8) priority granting of well-arranged residential premises for disabled citizens who have moved to the dwelling space of close relatives (parents, children, grandchildren, brothers, and sisters) as family members for joint habitation if as a result of the resettlement there arises a need for better housing conditions in keeping with existing legislation of the Russian Federation;

9) out-of-turn acquisition of plots of land and acquisition of construction materials for construction of individual homes;

10) the receipt of interest-free loans for setting up housekeeping in the amount of 150 times the sum of the minimum monthly wage established by law, with a repayment period of 15, years beginning with the third year after the receipt of the loan, and for the construction of individual housing with outbuildings in the amount of 600 times the sum of the minimum monthly wage established by law with a time period for repayment of up to 25 years beginning with the fifth year after the receipt of the loan. The loans are repaid in an amount of 50 percent. It is permitted for loans to be repaid with funds of the enterprises, institutions, and organizations

in which the members of the resettled family are employed or from other sources of financing. The loans are granted by institutions of the Central Bank of the Russian Federation, regardless of the established limits for the issuance of long-term loans;

11) the receipt of interest-free loans for the acquisition or construction of garden sheds and the landscaping of garden plots;

12) a priority right to admission to cooperatives for construction and operation of collective garages and parking spaces for means of transportation (including water);

13) preferential provision of places in boarding houses for veterans or boarding houses for the elderly and disabled;

14) out-of-turn provision of spaces for children in children's preschool institutions and specialized children's institutions of a therapeutic and sanatorium type and health camps;

15) exemption from payment of land tax, tax on structures, premises, and buildings, and tax on means of transportation for a period of five years from the day of evacuation (resettlement);

16) out-of-turn acquisition of household property analogous to that for which the compensation was paid. The acquisition of household property is provided for from a special fund of the Government of the Russian Federation created for these purposes;

17) receipt of annual material aid for health improvement in the amount of the minimum monthly wage established by the law.

Citizens with dachas, garden sheds, and other structures and also fruit and berry plantings in the off-limits and resettlement zones, and citizens who have acquired property in these zones through inheritance or in other ways specified by existing legislation of the Russian Federation receive full compensation for their value in keeping with point 4 of Part 1 of the present article, regardless of their place of permanent residence.

The conditions and procedure for granting housing and providing jobs for citizens who have been evacuated and have been (are being) resettled are determined by the Government of the Russian Federation unless otherwise stipulated.

Article 18. Compensations and benefits to citizens living (working) on the territory of the zone of habitation with the right to resettle

Citizens indicated in point 7 of Part 1 of Article 13 of the present law are guaranteed:

1) a monthly monetary compensation in the amount of 40 percent of the amount of the minimum monthly wage established by law;

2) an additional annual paid leave lasting 14 calendar days, not counting the additional leave granted for work with harmful working conditions, with the payment of one-time material aid for improvement of health based on the additional payment established by point 5 of Part 1 of the present article;

3) a 100-percent increase of the amount of the stipend for children of underprivileged families;

4) partially paid leave to care for a child until three years of age, with the payment of double the amount of stipend for the child during the time of this leave;

5) a monthly additional monetary payment to workers regardless of the form of ownership of enterprises, institutions, and organizations, in the amount of 50 percent of four times the sum of the amount of the minimum wage established by law;

6) payment increased by 50 percent of the amounts of pensions and stipends for nonworking pensioners and disabled persons and disabled children, stipends for graduate students and students in higher educational institutions, people enrolled in secondary specialized educational institutions and vocational and technical schools, and stipends for individuals registered as unemployed;

7) payment of additional remuneration for length of service depending on the work tenure in the given zone and the degree of radioactive contamination according to the procedure and in the amount established by the Government of the Russian Federation;

8) maternity leave for women lasting 90 calendar days with health measures conducted outside the territory of radioactive contamination.

For pregnant women who have registered for gynecological consultation during the early period of their pregnancy (up to 12 weeks) a one-time stipend is paid in the amount of 50 percent of the minimum monthly wage established by law along with a simultaneous payment for pregnancy and birth;

9) free food for children up to three years of age from the dairy kitchen according to formulas from the children's polyclinic (consultation), and free child care in children's preschool institutions and free provision of food according to the norms of children's preschool institutions, if the child does not attend such an institution, in the amount established by the local soviets of people's deputies;

10) free food for schoolchildren, and for people attending secondary specialized educational institutions and vocational and technical schools;

11) provision of pure food products (Footnote 2) (pure foodstuffs means food products in which the radionuclide content does not exceed the established international norms and which are deemed fit for sale and consumption by organs authorized by the government of

the Russian Federation), containing the necessary valuable components with increased concentration and also preferential supply of durable industrial goods;

12) exemption from payment of the land tax, the tax on buildings, premises, and structures, and the tax on means of transportation;

13) exemption from payment of taxes on all kinds of increments to wages specified in the present article;

14) provision of annual passes to sanatoriums, holiday hotels, preventive treatment facilities, and other health institutions, based on the actual needs;

15) the receipt of interest-free loans for individual cooperative housing construction;

16) a preferential right (other conditions being equal) to admission to higher and secondary specialized educational institutions and vocational and technical schools, and also to courses for occupational training—with provision of space in a dormitory for the time of study. Admission to preparatory departments of higher educational institutions is provided regardless of whether or not there is space, with mandatory granting of space in a dormitory if there is a need for it. The stipend for these individuals is established in an amount increased by 50 percent, regardless of the place of training;

17) reservation of residential premises for a period of up to three years or until dwelling space is obtained in the new place of residence;

18) payment of a stipend for temporary disability in the amount of 100 percent of the actual earnings, regardless of the continuous length of service;

19) free medical aid (in inpatient or outpatient facilities), free medicine (with a doctor's prescription), and also a free medical insurance policy for compulsory medical insurance for citizens of the Russian Federation with a special base program and charging the difference in the costs of the special base program and the base program of the compulsory medical insurance for citizens of the Russian Federation to the republic budget of the Russian Federation.

The payment of compensations and the payment for costs related to moving are made by the local organs of executive power in the previous place of residence.

Workers temporarily sent or assigned for work in the zone of habitation with the right to resettle are granted the benefits specified by points 1, 2, 5, and 7 of Part 1 of the present article for the actual amount of time worked in the zone.

Article 19. Compensations and benefits for citizens living (working) on the territory of the zone of habitation with a preferential socioeconomic status

Citizens indicated in point 8 of Part 1 of Article 13 of the present law are granted the benefits specified by Article

18 (except points 1, 2, 5, 6, 9, 15, and 17 of Part 1) of the present law. Additionally, they are guaranteed:

1) a monthly monetary compensation in the amount of 20 percent of the amount of the minimum wage established by law;

2) an additional monthly monetary payment to workers, regardless of the form of ownership, of enterprises, institutions, and organizations in the amount of 20 percent of the amount of the minimum wage established by law;

3) payment of pensions and stipends increased by 20 percent for nonworking pensioners and disabled persons and disabled children, and stipends to graduate students, students in higher educational institutions, and people attending secondary specialized educational institutions and vocational and technical schools, and stipends for people registered as unemployed;

4) annual additional paid leave lasting seven calendar days, not counting the additional leave for work with harmful working conditions;

5) regular, thorough medical examinations;

6) for women, the length of the leave for pregnancy and birth with payment according to the disability list of full earnings without taking into account the length of service, regardless of the actual length of maternity leave, is established: with normal births—140 calendar days (70 days before the birth and 70 after the birth); with births with complications—156 calendar days (70 days before the birth and 86 days after the birth); when two or more children are born—180 calendar days (70 days before the births and 110 days after the births);

7) free food for children up to three years of age from the dairy kitchen using formulas from the children's polyclinic (consultation), and free food for children in children's preschool institutions.

Workers temporarily sent or assigned to work in the zone with preferential socioeconomic status are granted the benefits envisioned by points 1, 2, and 4 of Part 1 of the present article for the time actually worked in the zone.

Article 20. Compensations and benefits to citizens living (working) in the resettlement zone until they are resettled to other regions

Citizens indicated in point 9 of Part 1 of Article 13 of the present law are granted compensations and benefits specified by point 18 of Part 1 of Article 14 and Article 18 (except points 1, 2, 5, 6, and 16 of Part 1) of the present law. Additionally, they are guaranteed:

1) monetary compensation in the amount of 60 percent of the amount of the minimum wage established by law;

2) annual additional paid leave lasting 21 calendar days, not counting the additional leave granted for work with

harmful working conditions, with the payment of one-time material aid for health improvement in the amount of the additional payment established by point 3 of the present article;

3) a monthly monetary additional payment to workers of enterprises, institutions, and organizations, regardless of their forms of ownership, in the amount of four times the sum of the minimum monthly wage established by law;

4) payment of pensions and stipends in amounts increased by 100 percent for nonworking pensioners and disabled persons, disabled children, and stipends to graduate students, students in higher educational institutions, and individuals attending secondary specialized educational institutions and vocational and technical schools, and stipends for individuals registered as unemployed;

5) annual provision in the place of employment of free passes for health improvement in sanatoriums, holiday hotels, preventive treatment facilities, and other health improvement institutions, based on the actual need.

Article 21. Compensations and benefits to citizens employed in jobs in the resettlement zone (not living in this zone)

Citizens (including those temporarily sent or assigned) indicated in point 10 of Part 1 of Article 13 of the present law are guaranteed daily allowances in increased amounts established by the government of the Russian Federation and benefits specified by points 1-5 of Article 20 of the present law for the actual amount of time worked in the resettlement zone.

Article 22. Compensations and benefits to citizens who have voluntarily moved to a new place of residence out of the zone of habitation with the right to resettle

Citizens indicated in point 11 of Part 1 of Article 19 of the present law are guaranteed the compensations and benefits specified by points 1-17 of Part 1 of Article 17 of the present law.

Citizens who have moved after 30 June 1986 to a permanent place of residence in the resettlement zone or the zone of habitation with the right to resettle are guaranteed the compensations and benefits specified by Articles 20 and 18, respectively, of the present law; these citizens (with the exception of citizens indicated in point 6 of Part 1 of Article 13 of the present law), if they voluntarily resettle from the indicated zones to a new place of residence, are granted the compensations and benefits specified by points 1-17 of Part 1 of Article 17 of the present law in full measure, under the condition that they have been granted the right to go on pension on a preferential basis related to their residence in this zone, taking into account the time of residence in other zones of radioactive contamination resulting from the Chernobyl disaster. However, repeated voluntary resettlement into a zone with a higher or equal degree of radioactive contamination resulting from the Chernobyl

disaster does not entail the right to receive the compensations and benefits specified by points 1-17 of Part 1 of Article 17 of the present law.

Article 23. The policy for performance of military service (service) by citizens of the Russian Federation on territories subjected to radioactive contamination resulting from the Chernobyl disaster. Compensations and benefits for military servicemen

It is prohibited for citizens of the Russian Federation to perform military service in the off-limits zone.

If it is necessary to perform service duties in the off-limits zone, military servicemen are sent to this zone from among the military servicemen and (or) reservists of category I who are beyond the age of producing children (30 and older) who are deemed by military-medical and (or) military-consultation commissions to be fit for work under the conditions of increased risk of radiation harm, except for cases specified by legislative acts of the Russian Federation concerning the legal regime of a state of emergency.

The procedure for military service in the off-limits zone and the procedure for replacement (transfer) are determined by the conditions of the call-up, taking the requirements into account, and by the rules established in keeping with the Norms of Radiation Safety, and the period of military service (service) must not exceed 1.5 years.

More military service (service) in the off-limits zone is permitted after a period of recreation if there are no medical counterindications, but for a period of no more than one year.

Military servicemen who have performed military service (service) in the off-limits zone, regardless of their rank, position, or branch of the forces, have the right to additional paid leave of 30 calendar days, not counting the travel time to the leave location and back, and reservation of their dwelling space at their previous place of employment. The leave is granted no later than after nine months of service, and it is not permitted to give monetary compensation for the leave (basic or supplementary) or to accumulate leave and transfer it to the end of the period of service.

The time spent in fulfilling the assignments and performing military service (service) in the off-limits zone is counted in the length of service for a pension at a rate of three to one, and the time is counted according to this same procedure in the work tenure when assigning old-age (age) and disability pensions.

Military service (service) in the resettlement zone is performed by citizens who are military servicemen and reservists deemed by military-medical and (or) medical-consultation commissions to be fit for work under the conditions of increased risk of radiation harm, with mandatory insurance of the individual against radiation harm. (Footnote 3) (Citizens performing [who have

performed] military service [service] include officer personnel, warrant officers, military servicemen with extended duty, female military service personnel, non-commissioned officers and enlisted men who are on active military duty in the Armed Forces, troops and organs of state security and internal forces, railroad forces, and other military formations, and also management and rank-and-file personnel of internal affairs organs.)

The period of service for enlisted men, noncommissioned officers, and warrant officers from among the recruits in the resettlement zone is included in the length of service for discharge into the reserve at a rate of two months for one, but the period of service in the resettlement zone must not exceed 12 calendar months in a row. They are granted paid leave of 30 calendar days after receiving credit for 12 months, and citizens living in the resettlement zone who have been called to perform military service in this zone or citizens from among those previously evacuated have the right to sanatorium-health resort treatment.

Officers, warrant officers, and ensigns, and also military servicemen performing additional duty (service) in the resettlement zone are subject to replacement (transfer) after three years. The procedure for replacement (transfer) is determined by the Ministry of Defense of the Russian Federation.

In the zone of habitation with the right to resettle, and also in the zone with preferential socioeconomic status, military service (work) is performed in keeping with existing legislation. Moreover, noncommissioned officers and enlisted men performing active extra military service in the zone of habitation with the right to resettle have the right after the expiration of 12 calendar months to additional paid leave lasting 14 calendar days, not counting travel time to the place of leave and back.

Military servicemen (except noncommissioned officers and enlisted personnel on active extra military duty) serving in the aforementioned zones have the right to change their place of military service in keeping with the established procedure while retaining their dwelling space in their former place of service.

Decisions about additional compensations and benefits to citizens living (working) on territories subjected to radioactive contamination resulting from the disaster at the Chernobyl nuclear power plant adopted by the Government of the Russian Federation and also other organs specified by the Government of the Russian Federation apply to citizens performing military service (work) on these territories and also to members of their families.

Article 24. Organization of medical aid and radiation protection of individuals suffering as a result of the disaster at the Chernobyl nuclear power plant

Citizens indicated in Article 13 of the present law, and also their children born after 26 April 1986, are eligible for free compulsory medical insurance with a special

basic program, unless otherwise stipulated, and compulsory special medical observation (outpatient monitoring) throughout their lives.

The organization of medical and pharmaceutical service for citizens who suffered as a result of the disaster at the Chernobyl nuclear power plant is provided according to a special basic program for compulsory medical insurance for citizens of the Russian Federation.

Special territorial programs for compulsory medical insurance are being developed and approved on the basis of a special basic program and, in terms of their volume, quality, and conditions for rendering medical and pharmaceutical aid, may not be below the level established by the basic program.

The procedure for rendering medical and pharmaceutical aid to the aforementioned citizens and its volume are determined by organs authorized by the Government of the Russian Federation; these organs also monitor its quality.

In the present law, a causal relationship between illnesses and disability of individuals affected by radiation as a result of the disaster at the Chernobyl nuclear power plant is understood to mean a connection between the onset of consequences harmful to the health of the aforementioned individuals and the effect on them of radiation factors resulting from the Chernobyl disaster or a combination of radiation factors and other harmful factors.

The causal relationship between the diseases and disability that have developed and the consequences of the Chernobyl disaster is established by interdepartmental expert councils and military-medical commissions and also other organs specified by the Government of the Russian Federation.

The causal relationship between the deterioration of the condition of health, disease, and partial or complete loss of the ability to work of citizens who have suffered as a result of the Chernobyl disaster is recognized as established regardless of the amount of the dose of radiation or the lack of information on the radiation or medical history before the events of the Chernobyl disaster, or the duration of the period between the completion of the work or residence in the zones of radioactive contamination and the onset of harmful consequences, if the harmful consequences could have been caused by unfavorable factors arising as a result of the disaster at the Chernobyl nuclear power plant or if interdepartmental expert councils, military-medical commissions, and also other organs determined by the Government of the Russian Federation have not confirmed the absence of this kind of relationship.

The conclusions of interdepartmental expert councils and military-medical commissions are the basis for a resolution of the question of establishing the degree of loss of the ability to work, disability, and the amounts of

reimbursement for harm caused to the health of citizens according to a procedure established by the Government of the Russian Federation.

Upon the establishment by medical-labor expert commissions (VTEK) of disability related to illness with respect to citizens indicated in point 3 of Part 1 of Article 13, this disability is deemed to be related to the performance of work for cleaning up after the disaster at the Chernobyl nuclear power plant unconditionally, without certification, in interdepartmental expert councils, military-medical commissions, or other organs.

For all categories of citizens subjected to radioactive effects as a result of the Chernobyl disaster, local organs of executive power issue special certificates with a standard form on which they indicate the time periods when the indicated individuals were in the zones of radioactive contamination and the total dose of radiation they received.

In the regions of the Russian Federation subjected to radioactive contamination as a result of the Chernobyl disaster, the necessary level of ecological protection of the population is provided in keeping with international requirements. To this end special services of organs authorized by the Government of the Russian Federation provide state supervision, including monitoring of the condition of the environment, including the radiation situation throughout the entire contaminated territory and the content of any harmful substances (including radionuclides) in the drinking water, food products, and locally produced agricultural products and products of private subsidiary farms, and also the doses of internal and external radiation of the population.

Article 25. Social protection, medical support, and improvement of the health of children and adolescents

Children and adolescents under 18 years of age living in the resettlement zone and the zone of habitation with the right to resettle who have been evacuated and resettled from the off-limits zone, the resettlement zone, and the zone of habitation with the right to resettle, including those who on the day of evacuation were in an intra-uterine condition, and also children of the first and subsequent generations of citizens indicated in points 1, 2, 3, and 6 of Part 1 of Article 13 of the present law who were born after the radiation exposure resulting from the Chernobyl disaster of one of the parents are guaranteed:

1) free sanatorium-health resort treatment in keeping with medical indications in sanatorium-health resort institutions of the corresponding profile, including in "Mother and Child" sanatoriums;

2) free medical aid (in inpatient or outpatient facilities), including consultative, free medicines (with doctors' prescriptions), preventive means and bandage materials (with doctors' prescriptions) and also a free medical insurance policy for compulsory medical insurance for citizens of the Russian Federation with a special base program, charging the differences in expenditures on the

special base program and the base program for compulsory medical insurance for citizens of the Russian Federation to the republic budget of the Russian Federation;

3) free travel (to and from) along with one of the parents or someone replacing them, on rail or ships of transit or local lines of the river fleet, and in regions with no rail transportation—by air, automotive, or interurban transportation to the sanatorium-health resort institution or other place of treatment or medical consultation on referral from medical institutions with the right to priority acquisition of tickets;

4) annual free health improvement measures in health camps (of the general or sanatorium type) and other health institutions, and if it is impossible to grant passes—monetary compensation in the amount of the average cost.

One of the parents or the grandmother, grandfather, guardian, or the individual actually rearing the children indicated in Part 1 of the present article has the right to:

1) stay with an ill child in the therapy institution (upon recommendation from the physician) for the entire time of treatment;

2) receive a stipend for temporary disability for the entire time of the illness of the child (including the time spent with him in the sanatorium-health resort institution) in the amount of 100 percent of actual earnings, regardless of whether or not he has the continuous length of service required for obtaining this stipend;

3) monthly payment of compensation equal to the average value of food in schools and children's preschool institutions, if the children do not attend them, in amounts established by local soviets of people's deputies.

The benefits specified by points 1 and 2 of Part 1 of the present article apply to children and adolescents living in the zone with preferential socioeconomic status; they are also guaranteed annual health improvement procedures in health camps (of the general and sanatorium type) and other health institutions with a payment of 50 percent of the cost of the pass, and in the event that it is impossible to provide a pass—a monetary compensation in the amount of 50 percent of the average cost of a pass.

Children and adolescents suffering from illnesses resulting from the Chernobyl disaster, or conditioned by the genetic consequences of radiation exposure of their parents, are guaranteed the compensations and benefits specified by Article 14 of the present law. These same compensations and benefits apply also to subsequent generations of children in the event that they develop illnesses resulting from the Chernobyl disaster or conditioned by the genetic consequences of radiation exposure of their parents.

The procedure for medical support and health improvement of children and adolescents indicated in the present article is determined by organs authorized by the

Government of the Russian Federation, with the participation of public associations.

Article 26. On additional benefits not specified by the present law

The governments of the republics of the Russian Federation, local organs of executive power, enterprises, institutions, and organizations, and trade union organizations may, within the limits of their authority, take additional measures for providing pure food products, improving material living conditions, and providing medical, trade, and transportation service for citizens to whom the present law applies.

Article 27. On the restoration of the vital activity of the population in the off-limits zone and the resettlement zone

The resumption of permanent habitation of the population in population points and regions of the off-limits zone, including re-evacuation of the population, is possible only on a voluntary basis after the reduction of the radioactive effects on people in these population points and regions to levels that do not require any restrictions of their life activity and the creation in these population points and regions of the necessary conditions for habitation and the labor activity of the population.

The decision on resumption of permanent habitation of the population in the aforementioned zones, including on re-evacuation of the population, is made by the Government of the Russian Federation.

Article 28. On state insurance for citizens

All citizens of the Russian Federation subjected to the effects of radiation resulting from the Chernobyl disaster, regardless of their place of residence, are eligible for compulsory free state insurance of the individual against the risk of radiation impairments within the limits of 200 times the sum of the minimum monthly wage established by law. And the amount of the insurance sum is calculated on the basis of the amount of the monthly wage established by law at the time when it is paid.

The insurance event is the development of the illness in the insured, the establishment of the disability group, and also the individual's death (decease) resulting from the Chernobyl disaster, including if it has occurred before the present law goes into force. Additionally, the conclusion issued by the organs authorized by the Government of the Russian Federation should include an indication of the connection between the insurance event and the radiation effects (radiation damage) resulting from the Chernobyl disaster or the connection between the insurance event and the participation in the work for cleaning up after the disaster at the Chernobyl nuclear power plant.

The payment of sums for mandatory free state insurance of the individual from the risk of radiation impairment is made regardless of payments under social insurance,

social security, and under the policy for reimbursement for harm caused by the Chernobyl disaster.

Banks conduct operations for including in the citizens' deposits claims from compulsory free state personal insurance against the risk of radiation impairment, which are transferred (including upon opening an account) to their accounts by organs making the payments of the insurance sums; the banks also receive insurance premiums according to the procedure for the formation of the insurance fund and other mutual settlements for the payment of insurance sums under this kind of insurance of citizens among organs authorized by the Government of the Russian Federation, without demanding a commission fee for these operations.

Citizens who have arrived in the zone of the Chernobyl disaster have the right to conclude an agreement for voluntary state health insurance in connection with the risk of the development of an illness related to the effects of radiation. The conditions of the insurance and the sums of payments are determined by the agreement.

Section IV. Pension Support for Citizens Who Have Suffered From the Chernobyl Disaster

Relations involved in pension support of citizens who have suffered as a result of the Chernobyl disaster are regulated by the present law, the RSFSR law "On State Pensions in the RSFSR," and also existing legislation of the Russian Federation having to do with norms for reimbursement for impairment caused by injury or other harm to the health related to the performance of work duties but no less than the amounts of reimbursement for impairment established by the present law or the RSFSR law "On State Pensions in the RSFSR" are applied in relations which are not regulated by the present law.

Citizens who have suffered from the Chernobyl disaster are assigned old-age pensions at a younger age, which is established by Article 10 of the RSFSR law "On State Pensions in the RSFSR."

The age for going on pension on a preferential basis may not be less than 50 years for men and 45 years for women (the maximum amount of the actual reduction of the age for going on a pension is 10 years).

Citizens who are simultaneously included in two or more of the categories indicated in Article 13 of the present law who, in keeping with Articles 30-37 of the present law and Articles 11, 12, and 14 of the RSFSR law "On State Pensions in the RSFSR," are granted the right to go on an old-age pension (age-based) with the age reduction established by Article 10 of the RSFSR law "On State Pensions in the RSFSR," and have the right to add together the benefits for reducing the pension age. Here, if the overall sum of reduction of age exceeds 10 years, the amount in excess is applied to the special work tenure envisaged by Articles 12 and 14 of the RSFSR law "On State Pensions in the RSFSR," for increasing the

amount of the pension under the policy indicated in Part 2 of Article 16 of the RSFSR law "On State Pensions in the RSFSR."

Article 29. Pension support for citizens who have been disabled as a result of the Chernobyl disaster, and also members of families of citizens who have died (perished) as a result of the Chernobyl disaster

Citizens indicated in points 1 and 2 of Part 1 of Article 13 of the present law are guaranteed:

1) the assignment of a pension for disability occurring as a result of impairment or occupational disease resulting from the Chernobyl disaster and also pensions for the loss of the breadwinner as a result of the Chernobyl disaster, in the amount of reimbursement for the actual impairment, determined in keeping with existing legislation of the Russian Federation, but no less than the amount of pensions calculated based on seven times the sum of the minimum monthly wage established by law (for the period of the assignment of recalculation of the pension);

the assignment of a pension for disability or the loss of the breadwinner in keeping with the RSFSR law "On State Pensions in the RSFSR" the same as pensions for labor injury of occupational diseases;

2) the assignment of pensions to military servicemen and individuals on an equal footing with them in terms of pension support, individuals of management and rank-and-file levels of internal affairs and civil defense organs, and military servicemen called up for special training and testing camps who have been sent or assigned for work to clean up after the disaster at the Chernobyl nuclear power plant and are also performing military service duties (job duties) who have been disabled as a result of the Chernobyl disaster, and to their families upon the loss of the breadwinner as a result of the Chernobyl disaster, in the amount of the reimbursement or the actual harm determined in keeping with legislation of the Russian Federation or according to the procedure established by legislation of the Russian Federation for persons disabled as a result of combat injury, based on seven times the sum of the minimum monthly wage established by law but no less than the amounts specified by the RSFSR law "On State Pensions in the RSFSR." They are granted the right to obtain two pensions—an old-age pension (or pension for length of service) and a pension for disability resulting from the Chernobyl disaster on an equal basis with citizens who have been disabled as a result of combat injury or disease related to time spent at the front, unless otherwise stipulated.

In other cases of performance of military service duties (job duties) not related to work for cleaning up after the disaster at the Chernobyl nuclear power plant, military servicemen, and their families in the event of the loss of the breadwinner, are assigned pensions according to the procedure and norms established by legislation of the Russian Federation. For them a pension for disability

resulting from the Chernobyl disaster is assigned as a disability pension resulting from a disease contracted during a period of military service, regardless of the overall work tenure, including military servicemen;

3) the assignment of a pension for the loss of a breadwinner (except pensions to families for the loss of a breadwinner specified by the RSFSR law "On State Pensions in the RSFSR") who participated in the cleanup after the disaster at the Chernobyl nuclear power plant, from among those military servicemen or individuals on an equal footing with them in terms of pension support, who have been called to reservist training camps, individuals from among the management and rank-and-file personnel of organs of internal affairs, state security, and civil defense, and also disabled persons who have died as a result of a service-related injury resulting from the Chernobyl disaster—the same as if it resulted from military trauma (wounds, shell shock, injuries, or illnesses related to time spent at the front):

for disabled parents, regardless of whether they were dependents of the breadwinner who was killed (died);

for children in school upon completion of a secondary or higher educational institution but not beyond the time they reach 25 years of age;

for the spouse (wife, husband) if he or she is engaged in caring for the children of the killed (dead) breadwinner who have not yet reached 14 years of age, regardless of whether the spouse is employed or not;

for the spouse (wife, husband), regardless of whether she or he was dependent and regardless of the amount of time that has passed since the day of the decease (death) of the breadwinner, until the wife reaches 50 years of age and the husband reaches 55 years of age or until the onset of disability.

In the event of the death of the breadwinner, pensions are assigned according to the same procedure to parents, spouses, and schoolchildren of citizens who worked at the Chernobyl nuclear power plant from 26 April 1986 through 30 June 1986 who were lost (died) as a result of injuries, burns, radiation sickness, and other illnesses related to the Chernobyl disaster, and disabled persons from among these same citizens who died because of the Chernobyl disaster.

The pension for the loss of the breadwinner is assigned to families regardless of other kinds of pensions, stipends, and incomes.

According to the desire of the citizens, the amount of the pensions assigned in keeping:

with the first paragraph of point 1 of Part 1 of the present article, may be calculated from the average actual earnings without the restriction, determined in keeping with boosting coefficients and multiple increases of the wage rate (salary) during the period of employment until departure from the zone for cleaning up after the disaster at the Chernobyl nuclear power plant in the off-limits or

resettlement zones or in operation of the Chernobyl nuclear power plant after the accident;

with the second paragraph of point 1 of Part 1 of the present article, may be calculated from the average earnings without restrictions as for those who suffered from the source of increased danger and regardless of the length of service;

with points 2 and 3 of Part 1 and Part 2 of the present article, may be calculated from the actual monetary content (allowance) without restriction, increased for the period of work until departure from the zone for cleanup after the disaster at the Chernobyl nuclear power plant, and for military servicemen on active compulsory service who had other income in amounts less than the minimum monthly wage established by law or were dependent on parents, the amount of whose pension may be calculated as five times the sum of the minimum monthly wage as established by law.

Regular medical recertification of individuals indicated in the present article who have been fully or partially disabled is conducted by the VTEK every five years, and individuals who have reached the age for going on an old-age pension the disability is established permanently.

Article 30. Pension support for participants in the cleanup after the disaster at the Chernobyl nuclear power plant in the off-limits zone

For citizens indicated in point 3 of Part 1 of Article 13 of the present law (who participated during 1986-1987 in the work for cleaning up after the Chernobyl disaster):

1) old-age pensions are assigned with the age for going on pension reduced by 10 years, regardless of the duration of employment in the off-limits zone and with the following overall lengths of service: for men—no less than 20 years; for women—no less than 15 years;

2) increments to the pension are established in the amount of 30 percent of the minimum old-age pension, regardless of the amount of the pension assigned.

For citizens indicated in point 4 of Part 1 of Article 13 of the present law (who participated during 1988-1990 in the cleanup after the Chernobyl disaster):

1) old-age pensions are assigned with the age for going on pension reduced by five years, regardless of the duration of employment in the off-limits zone and with the following overall lengths of service: for men—no less than 25 years; for women—no less than 20 years;

2) increments to the pension are established in the amount of 25 percent of the minimum old-age pension, regardless of the amount of the pension assigned.

Article 31. Pension support for citizens employed in the operation of the Chernobyl nuclear power plant and work in the off-limits zone

For citizens (including those temporarily sent or assigned) indicated in point 5 of Part 1 of Article 13 of the present law, preferential pension support is established on an equal basis with the citizens indicated in point "a" of Article 12 of the RSFSR law "On State Pensions in the RSFSR." The time of the indicated work (service) is increased by 50 percent and included in the overall length of service and the specific length of service which is used to establish the pension in keeping with point "a" of Article 12 of the RSFSR law "On State Pensions in the RSFSR."

Article 32. Pension support for citizens evacuated from the off-limits zone and resettled (being resettled) from the resettlement zone

For citizens indicated in point 6 of Part 1 of Article 12 of the present law:

1) who were evacuated from the off-limits zone, the old-age pension is assigned with the age for going on the pension reduced by 10 years, regardless of how much time they spent in the off-limits zone;

2) who were resettled from the resettlement zone, the old-age pension is assigned with the age for going on the pension reduced by three years and by another half-year for each full year of residence or employment in the resettlement zone, but for a total of no more than seven years.

Pensioners who have been forced to resettle retain for a year all kinds of monetary payments, increments to pensions, and stipends received before resettlement.

Article 33. Pension support for citizens living on the territory of the zone of habitation with the right to resettle

Citizens indicated in point 7 of Part 1 of Article 13 of the present law are assigned an old-age pension with the age for going on a pension reduced by two years and by an additional one year for each three years of residence or employment on the territory of the zone of habitation with the right to resettle but for a total of no more than five years.

Article 34. Pension support for citizens living on the territory of the zone for habitation with a privileged socioeconomic status

For citizens indicated in point 8 of Part 1 of Article 13 of the present law, an old-age pension is assigned with the age for going on pension reduced by one year and an additional one year for every four years of residence on the territory of the zone of habitation with a privileged socioeconomic status but for a total of no more than three years.

Article 35. Pension support for citizens living in the resettlement zone until they are resettled to different regions

For citizens indicated in point 9 of Part 1 of Article 13 of the present law, an old-age pension is assigned with the

age for going on a pension reduced by three years, and an additional half-year for every full year of residence or employment in the resettlement zone but for a total of no more than seven years.

Note. The initial amount of the reduction of the old-age pension established by Articles 32-35 of the present law is envisaged for citizens living (working) or who have lived (worked) on the territory subjected to radioactive contamination during the period from the moment of the disaster at the Chernobyl nuclear power plant through 30 June 1986, regardless of the amount of time they spent in this territory during this period.

Article 36. Pension support for citizens employed in jobs in the resettlement zone (not living in this zone)

For citizens indicated in point 10 of Part 1 of Article 13 of the present law the old-age pension is assigned on the basis of norms established by Article 35 of the present law in proportion to the amount of time actually worked in the resettlement zone.

Article 37. Pension support for citizens who have voluntarily moved to a new place of residence from the zone of habitation with the right to resettle

For citizens indicated in point 11 of Part 1 of Article 13 of the present law, the old-age pension is assigned in keeping with Article 33 of the present law.

Article 38. Calculation of monthly earnings for assigning a pension

For purposes of assigning a pension, monthly earnings are calculated in keeping with the present law and the RSFSR law "On State Pensions in the RSFSR," unless otherwise established by legislative acts of the Russian Federation.

According to the wish of the applicant for the pension, the actual monthly earnings may be taken from any period of 12 months of work on territories subjected to radioactive contamination. If the applicant for a pension has worked less than 12 months, the average monthly earnings are determined by dividing the overall sum of earnings over the calendar months of work by the number of these calendar months. In cases when the period of work is less than one full calendar month, the average monthly earnings for purposes of calculating the pension are computed according to the procedure established by Part 3 of Article 103 of the RSFSR law "On State Pensions in the RSFSR," without restrictions on the earnings on whose basis the pension is calculated to twice the wage rate (salary).

Section V. Compensation to Citizens for Harm Caused to Their Health as a Result of the Chernobyl Disaster

Article 39. Compensation for harm to the health of citizens who have contracted or suffered radiation sickness and other maladies as a result of the Chernobyl

disaster, disabled persons, and members of families of citizens who have expired (died) as a result of the Chernobyl disaster

Citizens indicated in points 1 and 2 of Part 1 of Article 13 of the present law are paid annual compensation for harm to their health resulting from the Chernobyl disaster in the following amounts:

disabled persons of Groups I and II—five times the amount of the average monthly wage as established by the law;

disabled persons of Group III and individuals who have suffered radiation sickness as a result of the Chernobyl disaster—four times the amount of the average monthly wage as established by the law.

Citizens who have been disabled as a result of the Chernobyl disaster indicated in point 2 of Part 1 of Article 13 of the present law are paid a one-time compensation for harm to the health in the following amounts:

disabled persons of Group I—100 times the amount of the average monthly wage as established by the law;

disabled persons of Group II—70 times the amount of the average monthly wage as established by the law;

disabled persons of Group III—50 times the amount of the average monthly wage as established by the law.

In the event of increased disability discovered upon recertification by the VTEK, a one-time compensation is paid according to the newly assigned disability group minus the sum of the one-time compensation previously paid.

Families who have lost their breadwinner as a result of the Chernobyl disaster are paid a one-time compensation in the amount of 100 times the amount of the average monthly wage as established by the law, and parents of the deceased—in the amount of 50 times the amount of the average monthly wage as established by the law.

Article 40. Compensation for harm to the health of participants in the cleanup after the disaster at the Chernobyl nuclear power plant

Citizens indicated in point 3 of Part 1 of Article 13 of the present law are annually paid a one-time material grant for health improvement in the amount of three times the amount of the average monthly wage as established by the law.

Citizens indicated in point 4 of Part 1 of Article 13 of the present law who participated in the cleanup after the disaster at the Chernobyl nuclear power plant during 1989-1990 are annually paid a one-time material grant in the amount of the average monthly wage as established by the law.

Article 41. Compensation to families for the loss of a breadwinner who participated in the cleanup after the disaster at the Chernobyl nuclear power plant

The right to a monthly compensation for the loss of a breadwinner who participated in the cleanup after the disaster at the Chernobyl nuclear power plant is granted to family members who were dependent and who are incapable of working. Additionally, children are assigned a monthly compensation regardless of whether they were dependents or not.

The compensation is assigned for each family member who is unable to work, in the amount of 50 percent of the minimum old-age pension, regardless of the amount of the pension set for these citizens by the present law.

Children who have lost their breadwinner are annually paid a one-time material grant in the amount of the minimum monthly wage as established by the law.

Article 42. Payments of compensations to citizens for harm caused to their health as a result of the Chernobyl disaster and to families for the loss of their breadwinner

Compensation to citizens for harm caused to their health as a result of the Chernobyl disaster and to families for the loss of their breadwinner as a result of this disaster is paid irrespective of other kinds of incomes (payments).

Section VI. Rights of Enterprises, Institutions, Organizations, and Public Associations in Relation to the Chernobyl Disaster

Article 43. Rights of enterprises, institutions, and organizations in relation to the Chernobyl disaster

Enterprises, institutions, and organizations engaged in service to the population in the resettlement zone and the zone of habitation with the right to resettle and also food and other consumer goods sent to these zones, because of the special nature of these deliveries, are granted privileges in the payment of all kinds of taxes, duties, and other payments into the corresponding budget in the maximum amount determined by the Government of the Russian Federation.

Enterprises, institutions, and organizations located in the resettlement zone and the zone of habitation with the right to resettle are granted the right to:

exemption from taxation of funds paid for improvement of the health of workers and funds spent on passes for improvement of the health of workers and members of their families;

priority credit from state financing organizations for the implementation of measures for reprofiling production and the purchase of pure products.

For any enterprises, institutions, organizations, associations, and individuals the limitation on the amount of funds not taxed and sent as voluntary donations to Chernobyl philanthropic organizations, including international ones and their funds, is set at the level of five

percent of the taxed profit (added value), and the amount of the tax calculated from the actual expenditures is reduced by the sum of the aforementioned donations.

Article 44. The rights of public associations

Public associations (except political parties and trade unions) of individuals who have suffered as a result of the disaster at the Chernobyl nuclear power plant and also humanitarian organizations and funds, including international ones, whose declared activity is aimed at the performance of philanthropic actions related to the Chernobyl disaster are exempted from the payment of all kinds of taxes, duties, and other kinds of deductions and payments into the corresponding budget, and with respect to their declared activity which involves profit, preferential taxation is applied to them in keeping with existing legislation of the Russian Federation.

For enterprises, institutions, and organizations of public associations, and humanitarian organizations and funds indicated in Part 1 of the present article, taxes calculated from the actual expenditures are reduced by the sum sent to these public associations, humanitarian organizations and funds for the performance of their declared activity. The aforementioned enterprises and organizations are exempt from payment of customs duties on imported and exported goods.

The contributions of public associations, humanitarian organizations, and funds indicated in Part 1 of the present article placed in state banks of the Russian Federation are subject to indexation through a change in the interest rates, taking into account the price index according to the procedure approved by the Presidium of the Supreme Soviet of the Russian Federation.

Article 45. Guarantees to citizens and legal entities when they conduct protective measures on contaminated territories

The procedure for producing food products and other consumer goods on territories subjected to radioactive contamination, their sale, and also the licensing of activity involved in radiation monitoring of products that are produced is established by organs authorized by the Government of the Russian Federation.

Citizens and legal entities who conduct protective measures on the aforementioned territories on their own initiative and who are promoting radio-ecological rehabilitation of the territory and also the reduction of the radionuclide content to the levels established by organs authorized by the Government of the Russian Federation and below in their products, including food products, are compensated for all actual expenditures related to the implementation of these measures according to the procedure determined by the Government of the Russian Federation.

The production and sale of consumer goods that are contaminated with radioactive substances above the

level established by organs authorized by the Government of the Russian Federation are prohibited. In the event that these products and goods appear for sale, they are subject to confiscation by the local authorities.

Individuals guilty of violating the requirements of the present article bear administrative or criminal liability in keeping with legislation of the Russian Federation.

Article 46. The rights of citizens and social associations of the Russian Federation to information about the Chernobyl disaster

Citizens and social organizations of the Russian Federation are guaranteed prompt receipt of complete and reliable information on questions pertaining to the Chernobyl disaster, the level of contamination of the localities in which they live (work) with radionuclides, the degree of pollution of food products and property, and also other requirements and conditions for the observance of conditions for radiation safety.

This information is granted by institutions (organizations) authorized to do so by the Government of the Russian Federation.

Officials of these institutions (organizations) bear responsibility for deliberate distortion or concealment of information on questions related to the Chernobyl disaster in keeping with legislation of the Russian Federation.

Section VII. Monitoring the Execution and Liability for Violation of Legislative Acts of the Russian Federation on the Chernobyl Disaster and Other Acts of Legislation Published in Keeping With Them

Article 47. Organs monitoring the execution of legislation of the Russian Federation on the Chernobyl disaster

The monitoring of the execution of the present law and other acts of legislation of the Russian Federation published in keeping with it is carried out by the Supreme Soviet of the Russian Federation, the Government of the Russian Federation, local soviets of people's deputies, trade unions, and public associations of citizens who have suffered as a result of the disaster at the Chernobyl nuclear power plant or participated in the cleanup after it.

Article 48. Liability for violation of legislation of the Russian Federation on the Chernobyl disaster

Officials and organizations guilty of violating the present law and acts of legislation of the Russian Federation published in keeping with it bear criminal, administrative, disciplinary, and material liability in keeping with legislation of the Russian Federation.

The following come under the jurisdiction of the courts:

the examination of any decision or action of officials (at any level) which is required in the implementation of the present law;

the determination of the jurisdiction of the officials (at any level) and the correctness of the adoption of any decision or the performance of any action (including the adoption of explanatory, instructive, normative, and other documents) required according to the present law.

Article 49. Compensation and benefits for citizens of other countries who have suffered as a result of the Chernobyl disaster

Citizens who have suffered from the disaster at the Chernobyl nuclear power plant and participants in the cleanup after it who have moved from the territory of Ukraine, the Republic of Belarus, and other states to the territory of the Russian Federation enjoy all the compensations and benefits envisaged by the present law, regardless of whether or not they are citizens.

Article 2. To enact the present law according to the procedure envisaged by the decree of the Supreme Soviet of the Russian Federation "On the Procedure for Enacting the Law of the Russian Federation 'On Making Changes and Additions to the Law of the RSFSR 'On Social Protection of Citizens Subjected to the Effects of Radiation Resulting from the Disaster at the Chernobyl Nuclear Power Plant.'" "

[Signed] President of the Russian Federation
B. Yeltsin
Moscow
House of Soviets of Russia
18 June 1992
No. 3061-1

The statute on the procedure for enacting the present law will be published in the next issue.

WESTERN REGION

Chernobyl Staff Sees Undue Haste in AES Phaseout

92WN0737A Kiev PRAVDA UKRAINY in Russian
14 Aug 92 pp 1-2

[V. Vasilchenko, acting director of the Chernobyl Nuclear Power Station Production Association, interviewed by Valentin Vernodubenko and Viktor Rasokha: "Chernobyl Nuclear Power Station To Be Closed Within—"]

[Excerpt] Since the accident at the Chernobyl Nuclear Power Station in 1986, it is impossible to count that the rallies that have been held in Ukrainian towns and villages demanding that the Chernobyl station be closed immediately. And how many stormy debates on this subject have been held in the Ukrainian parliament! The press has also made its contribution, publishing articles demanding that the station's reactors be "pacified." Carrying out the parliament's will, the Ukrainian government adopted a resolution on July 1 of this year that envisions measures to ensure that the Chernobyl Nuclear Power

Station will be taken out of service. All the nuclear power plant's power-generating units are to be fully shut down next year.

"How is the government's resolution being implemented?" we asked V. Vasilchenko, chief engineer and acting general director of the Chernobyl Nuclear Power Station Production Association.

"There have been two government decisions on taking the Chernobyl Nuclear Power Station out of service," Viktor Nikolayevich answered. "One was quickly rescinded, since it failed to take into account a number of issues, above all financing. And on July 1, a resolution was adopted on measures to take the station out of service."

[Correspondents] *Will the reactors continue to operate in 1992?*

[Vasilchenko] The second generating unit was shut down in 1991. The first and third are being serviced, and they will start producing power again this fall. This is necessary in order to avoid disruptions that could cause an accident situation. Normative and technical documentation now in effect sets aside five years for preparing the station for shut-down. We have been given just two years to do this job, which is unlike anything in the world. This is why the resolution of the Cabinet of Ministers we are talking about has perplexed many nuclear station specialists. They can't understand how they can do in two years have the regulations say has to be done in five. We constantly hear people say, "Why such haste?"

[Correspondents] *So the station's staff opposes the government's decision. Have we understood you correctly, Viktor Nikolayevich?*

[Vasilchenko] Let me put it this way: The Chernobyl station specialists do not agree with the planned timetable for taking the station out of service in all respects, but they will do everything in their power to carry out the decision. A program has been drawn up to this end, and it is already being implemented.

[Correspondents] *What is the staff currently doing?*

[Vasilchenko] After the incident at the Leningrad Nuclear Power Station, which uses RBMK-type reactors like those at the Chernobyl station, it was decided to replace the shut-off and regulating valves at our station. It was defects in those valves that caused the accident at the Leningrad station. We plan to complete all the work on the first and third generating units by September or October, and then to start up both reactors. This will not be easy. The equipment I'm talking about is made in Russia. It was difficult to reach agreement on partial deliveries of this equipment.

We're going to make the parts we lack in Kiev. We need more than 1,500 such valves for each reactor. Without this it will be impossible to start up the two generating units in the fall.

[Correspondents] *How long will the reactors continue to operate? And another question: The press has reported rumors to the effect highly advanced equipment has been delivered to the plant. What is being talked about here?*

[Vasilchenko] We will start up the two reactors on a temporary basis, which is not at variance with the resolutions of either the Supreme Soviet or the Cabinet of Ministers. As I already said, unless they are started up, it will be impossible to ensure the station's normal operation over the winter. And in 1993 we will shut them down. The job of supplying heat to the station, as well as to the "sarcophagus," will be taken on by a new boiler facility whose construction has gotten under way. The press reports apparently have to do with that facility, as well as with the new valves.

[Correspondents] *But there are fears that the startup of the third generating unit, which is next to the "sarcophagus," could trigger all but a spontaneous chain reaction in the destroyed fourth reactor.*

[Vasilchenko] Many specialists who have studied this problem agree that nothing of the sort is going to happen. An accident could occur only in the event of some sort of serious natural cataclysm. But, excuse me, for all practical purposes there isn't a single nuclear power plant in the world that is immune to such natural disasters. But since this problem worries the Ukrainian public, we are studying the effect of the operating third generating unit on the "sarcophagus." And believe me, if we find even one fact confirming that such a threat is real, the third generating unit will not be started up. And let me return to the government resolution. It is important to us that it provide for the creation of a specialized construction and installation directorate that will be in charge of taking the equipment out of service, and that it clarify financing issues. And we regard the outlined measures with regard to social protection for the Chernobyl station's employees as insufficient. They are not of a long-term character and ensure [Translator's note: The sense of this passage suggests that the Russian negative adverb "ne" was inadvertently omitted before the verb "ensure" and that the passage should read "and does not ensure..."] that Ukraine will retain first-rate specialists in the field of nuclear engineering.

[Correspondents] *And here it seems we have come to the main issue. Does it grieve you that the Chernobyl Nuclear Power Station will no longer be on Ukraine's nuclear power map?*

[Vasilchenko] It can't help but grieve me. I started here as an auxiliary equipment mechanic and technician, and went on to serve as senior engineer in the turbine department, shift manager, and shop head. Now I'm chief engineer. I know many of the station's 4,500 employees personally. I know for certain that most of them did not come here to earn big money. By way of comparison, let me say that on average, the station's specialists probably earn no more than a streetcar or bus driver. I won't even compare their salaries to what

miners make. We professional nuclear station employees were initially attracted by the prestige of this industry and the outlook for it. We made it through the accident and have spent our professional careers here, and this is what keeps us at the power station...

Researchers Identify Cheap, Effective Means To Control Potato Beetle

*LD2808214192 Moscow ITAR-TASS in English
1316 GMT 28 Aug 92*

[By BELINFORM correspondent Ivan Kuksa—TASS]

[Text] Brest, August 28 (TASS)—Belarusian scholars have evidently found the cheapest and most effective means to control the Colorado potato beetle. Potato fields where tubers were treated with polymetallic water concentrate before planting, became quite clean from the main enemy—the Colorado beetle.

The experiment was carried out under the supervision of researchers from the Brest Agricultural Station.

Investigations will be continued on a larger scale next year. If it turns out that polymetallic water concentrate is a poison for the Colorado beetle, this discovery will bring huge profits for potato-growing Belarus.

The method is simple and very cheap. The stocks of water concentrate are virtually unlimited in the Pripyat river bulge, Gomel Region. According to specialists, its use substantially decreases the quantity of radionuclides in agricultural products.

The first tests showed that the level of pollution with strontium and caesium drops to 60-75 percent in vegetables, grain crops and grasses. This property of "miraculous water" is very important for Belarus where the problem of decontaminating agricultural products is very acute.

Ukraine Coastal Zone Pollution Requires 'Urgent' Measures

*AU0109115092 Kiev Radio Ukraine World Service
in Ukrainian 1000 GMT 1 Sep 92*

[Text] Ukraine may lose its sea resorts unless urgent ecological measures are taken in the near future. This conclusion was reached by specialists of Ukraine's Ministry of Health after inspections in Odessa, Donetsk, and other oblasts of the republic.

As a consequence of the unsatisfactory state of the sewage structures in Odessa, Mariupol, Belhorod-Dniestrovskyy, and other places, the coastal zone is being steadily contaminated.

Specialists Urge Thermal Energy Exploitation

*AU0709145892 Kiev Radio Ukraine World Service
in Ukrainian 1200 GMT 7 Sep 92*

[Text] Ukrainian power engineering specialists have proposed resuming use of restored [vidnovlyuvani] energy sources. This primarily means thermal energy, as recovering heat from the earth's interior could allow savings of hundreds of millions of tonnes of organic fuel annually and represent a source of ecologically clean energy. Specialists believe that in this respect, Transcarpathian [thermal] deposits could already be used today, more specifically, geothermal stations could be built to exploit them.

It is worth mentioning that the heat from the earth's interior is an abundant energy source that mankind has hardly utilized. As drilling equipment is improved, it will become possible in the future to reach depths of 5 to 20 kilometers where magmatic rocks are heated to 100 or more degrees [Celsius].

CAUCASUS/CENTRAL ASIA

Georgia Bans Importation of Industrial, Other Waste

*92WN0731B Moscow NEZAVISIMAYA GAZETA
in Russian 13 Aug 92 p 2*

[NEGA report: "Georgia Is Worried About Ecology"]

[Text] The importation of industrial and everyday waste into the territory of Georgia for the purpose of their utilization, and neutralization or burial will henceforth be prohibited.

A draft decree on this question, submitted by the ecological commission, was reviewed at the last session of the State Council of Georgia and was unanimously adopted.

Rise of Caspian Sea Linked to Destruction of Aral

*92WN0729A Moscow ZELENYY MIR in Russian
No 24-25, Jun 92 [Signed to press 25 Jun 92] p 5*

[Unattributed report: "New View of a Problem: Saving the Aral and Stopping the Rise in the Caspian's Level Are Phenomena of "a Single Root"]

[Text] Scientists with the Kazakhstan Academy of Sciences have called attention to a curious relationship between the behavior of the Aral and Caspian seas, which are located 450-500 km from one another. As it turns out, soon after the first began to dry up the level of the second began to rise.

It is legitimate to ask how long the Caspian's assault on the land, which has already caused many billions of rubles' worth of damage to the coastal regions of Azerbaijan and Kazakhstan, will continue. And the answer given to this question by Robert Kurmantayev, doctor of

geological and mineralogical sciences and director of a laboratory at the academy's Institute of Hydrogeology and Hydrophysic, who has studied this complex problem, offers little consolation.

In the scientist's opinion, the research that has been done has provided grounds for asserting that the flooding of the coastal land in the Caspian basin will continue until the process of the drying out of the Aral's seabed ceases. Such a conclusion stems from the scientific hypothesis of V.I. Vernadskiy and A.S. Romye. According to it, the ratio between the areas in these basins should be approximately the same.

The researcher believes that the main reason for the ecological upheavals in both basins is a disturbance in the gravitational equilibrium in the internal continental area of Eurasia that is directly related to the sharp drop in the volume of the Aral Sea. At the same time, our planet, thanks to its revolution around its axis, strives to restore the equilibrium. Because of this, regional changes have begun in the earth's surface and climate, changes which should be regarded as a response by one of the largest internal bodies of water on earth to the Aral's progressive degradation.

That is why it is necessary to save the drying-up sea as fast as possible and thereby prevent the flooding of agricultural lands, oil fields, port installations and communities within the Caspian lowland. But how is that to be done? One of the options proposed by Alma-Ata scientists provides for laying a 450-km Caspian-Aral canal. It would direct excess Caspian water to fill in the declining Aral.

According to preliminary calculations, its restructuring would cost less than building huge dikes and other protective installations in the path of the oncoming Caspian waters. And the canal would produce a dual benefit: the levels of both of the internal seas would be normalized, and the environmental situation would be improved in the Aral region, where great damage has already been done to agricultural oases, pastures, fishing industry and the public health.

Hindering the practical implementation of this option is the fact that the Caspian is located below the level of the Aral. Therefore, to transport billions of cubic meters of water along a canal would require electricity. Physicists with the Kazakhstan Academy propose obtaining it by building a network of solar electric power stations. In the region of the canal's possible route the sun shines up to 300 days a year, and there are boundless desert spaces there that are unfit for farming and could be used for siting the solar energy converters.

In the foreseeable future Kazakhstan alone will not be able to solve the problem of stabilizing the two seas. It is necessary that it be tackled by all states with a stake in an ecological stable situation both around the Caspian and in the Aral region.

Aral Residents See Many Visitors, Little Aid

92WN0749A Alma-Ata AZIYA
(MEZHDUNARODNAYA GAZETA) in Russian No 13,
Jul 92 p 6

[Interview with Bigali Abdikerovich, head of administration of Aralskiy Rayon, by AZIYA Correspondent Tleuzhan Yesilbayev, Alma-Ata: "The Aral—Our Common Pain"]

[Text] [Correspondent] *You, as a native of these parts, and now also as the head of administration of the Aralskiy Rayon, know better than anyone else the problems that worry the population of the Aral region. What is the situation in your region today?*

[Abdikerovich] The situation here is very difficult. The ecological catastrophe, the epicenter of which is Aralskiy Rayon, continues to worsen and is assuming a more and more irretrievable character. Judge for yourself. The sea has receded from the shore by a hundred kilometers and more. Salt is accumulating at the bottom of the Aral, which actively influences the mineralization of the atmospheric moisture, increases the salinization of the soil, depresses the natural vegetation cover, and lowers the yield of agricultural crops, pastures, and hayfields. In a word, the desertification of the Aral region is continuing. But the deterioration of the ecological situation negatively affects the development of the productive forces of the region. Many types of production are dying out. For example, shipbuilding has come to an abrupt standstill, and the fish industry works almost entirely on imported raw materials. And it is not surprising that the drop in the economic potential of the Aral region has led to a lowering of the living standard of the population here.

[Correspondent] *Kazakhstan residents know from hearsay about the tragedy of the position of the Aral inhabitants. But our readers beyond the borders of the republic, apparently, would like to receive reliable information about this, as the saying goes, firsthand.*

[Abdikerovich] That my Aral countrymen have ended up in a very difficult situation arouses a sense of alarm over their future fate. After all, social problems of the rayon center and other worker settlements have remained unresolved for years. There is no sewerage system and no heating system, and almost 60 percent of the water supply is in an emergency condition. So-called sors, which constitute small-sized swamps and which are scattered throughout the city, are a real disaster for the residents of Aralsk. They now number 30. In the summer, the swamps become a breeding ground for various infectious diseases. The toxic fumes poison an already polluted atmosphere.

Poisonous air, saline soils, and sharply mineralized water—all of this leads to an extreme socioecological and sanitary-epidemiological situation. The sickness rate among the population has increased, especially of viral hepatitis, and the infant mortality rate is increasing. The number of the mentally ill is also growing from year to

year. Today, they amount to about three percent of the total population of the rayon. Other types of dangerous diseases have increased by several times. The overall illness rate of the population per 1,000 persons has increased by a factor of 4.4 by comparison with 1970. The deterioration of living conditions has caused migration. In the past year, more than 35,000 persons have left our rayon.

Irreversible biological and genetic changes are also occurring in the biosphere and in the animal world. Of late, we have even stopped being amazed by the fact that, during the lambing campaign in sheep raising, lambs are being born with one eye, with changes in extremities, without scalps, or with some other pathology. But cannot the fact that a sheep eats its own lamb evoke a sense of vigilance? As you see, a degradation of people and their environment is going on. The question is: What other arguments are needed in favor of the adoption of urgent effective measures to improve the socioeconomic and ecological situation in the Aral region?

And here, I cannot avoid talking about this. Concerning help for the Aral, the number of different kinds of merchants who are getting rich on the people's tragedies on the sly is growing like mushrooms after a rain. Under the pretext of helping the Aral, foreign and domestic film studios are producing films, and, side by side, all kinds of organizations are printing placards, badges are being stamped out, various measures are being taken, and money is being collected. However, the utility of all of this for the population of the Aral region is like "giving a corpse a poultice." People are already meeting the numerous visitors, who are pursuing only their own narrow aims, with irony, distrust, and at times with irritation. In the last two years, our rayon was visited by 700 persons from various countries, cities, and scientific and other institutions. The Aral area inhabitants are sick of being an object of curiosity. The pain and the lack of understanding result in groundless articles and reports in the press, and over radio and television, about the alleged "help being given the Aral." In fact, there is no such help.

[Correspondent] *Bigali Abdikerovich, what, in your opinion, has to be done to improve the living conditions of the population of the Aral region and to resolve the problems that trouble Aral inhabitants?*

[Abdikerovich] The inhabitants of the Aral region have been experiencing the consequences of the ecological disaster for more than 20 years. Almost all families during this time have lost either a breadwinner or an heir—their hope. And all of this is the result of the pernicious and imprudent activity of a system that we recently called the administrative and command system.

The other day, speaking at a session of the Supreme Soviet of Kazakhstan on behalf of my countrymen, I put forth a number of proposals on the resolution of the problems that have piled up. In particular, it is necessary to take measures for the urgent implementation of rescue

and restoration work, and also for permanent scientific observations of changes in the biosphere, the fauna, and the entire environment. In our opinion, all of the residents who have lived in the zone of the ecological catastrophe during the last 10 years must be given monetary and material compensation. We consider it important to establish a coordinating organ on questions of the Aral region on the staff of the president and in the government, and also to organize a branch of the Kazakhstan Academy of Sciences in Aralsk on the analysis and revival of the Aral. For the specific implementation of the law on the Aral region ratified by the Kazakhstan parliament, a decree of the Cabinet of Ministers of the republic should be adopted on the socioeconomic development of the Aralskiy Rayon.

And more. There are about 7,000 persons in the rayon without jobs. What must be done in order to give them work? In our opinion, it is necessary to establish industrial, construction, and agricultural production enterprises in Aralsk, or to restore that which existed previously. After all, during the war and in the postwar years, a glass plant operated on local raw materials. Bituminous coal was also extracted here. And in the 1950's, sodium sulfate was mined here, which made it possible to open a large enterprise—the Aralsulfat combine. Why not conduct additional geological surveying and prospecting to determine the industrial significance of these natural reserves?

We are also disturbed by the slow pace of work on the Aral program. For example, the construction of a canal for the creation of the so-called Saryshyanak small sea was started two years ago. During this time, only 2.3 kilometers of the projected length of the 43-kilometer canal have been completed. In the meantime, the work is being conducted by seven uncoordinated PMK [mobile mechanized construction columns] of six rayons of Kzyl-Orda Oblast. Already 11 million rubles [R] have been expended on the construction. But, today, no one will answer the question: How much must be expended to complete the construction work? There is no general manager for the installation. And it is not surprising that there is a deathly silence on the route these days.

Another variant is now being offered—to create the Little Aral not by means of construction of the Saryshyanak canal, but Karateren-Kokaral weir dams. This would cost much less, and the surface area and the volume of the small sea would be greater. Considering the planned measures for resources being allocated in the Aral program, up to R60-R120 million of capital investments should be absorbed. However, these resources will in no way be assimilated with the existing low-powered PMK. That is why we are proposing to establish an Aralvodstroy Construction Trust in Aralsk. The problem simply cannot be resolved any other way.

Today, the Aral has become our common pain. Overcoming the ecological catastrophe depends on realistic work. It is time, finally, to fill good intentions with

specific content, and with good decisions and resolutions. This is exactly what the people are waiting for who have themselves experienced the consequences of the ecological disaster. Availing myself of this occasion offered me by the newspaper AZIYA, I want to appeal to everyone who is not indifferent to the fate of the Aral region's inhabitants: Let us display maximum charity—we will protect the living and we will create normal conditions for the vital activity of future generations.

Conference on Aral Sea Environmental Problems Opens

LD2708091292 Moscow ITAR-TASS in English
1520 GMT 26 Aug 92

[By ITAR-TASS correspondent Svyatoslav Fenyyutin]

[Text] Nukus, August 26 (TASS)—The Aral Sea can only be saved through joint effort, according to participants in a conference, which opened in the capital of the Republic of Karakalpakstan today.

It is attended by representatives of government, scientific and public organizations of the Middle-Asian region, Russia, experts from abroad. Certainty was expressed that the international community will find money to eliminate the global-size catastrophe, and this is precisely how scientists and specialists—participants in the conference—characterize the Aral ecological crisis. This is especially important because, according to forecasts, within two decades more than 80 million people will be living in the region near the Aral Sea.

BALTIC STATES

Strontium-Powered Beacons in Estonia Considered 'Environmental Threat'

PM0309143692 Stockholm SVENSKA DAGBLADET
in Swedish 1 Sep 92 p 8

[Bjorn Hygstedt report: "Russian Beacons an Environmental Threat"]

[Text] Rohuneeme—Along the Estonian coast there flash at least 23 radioactive environmental threats, Russian beacons whose strontium-powered generators are housed in rusty iron cages behind leaky wooden doors held closed with clotheslines twisted together.

The carelessly built generator sheds are literally left at the mercy of the elements. The majority are without warning signs on the outside. Only the protective cages that are almost eaten away by rust inside the wooden doors carry small triangles with the word "radioactivity."

"These dangerous beacons are completely unguarded and at present no one is taking any responsibility for them," Estonian Green Movement (EGM) chairman Valdur Lahtvee said.

In collaboration with Greenpeace the EGM has taken measurements in and around 8 of the 23 beacons. At the Keskmadal beacon outside the village of Rohuneeme north of Tallinn the geiger counter registered a total of 500 milliroentgen per hour.

"This means that in one hour a person is exposed to what the Swedish Radiation Protection Institute considers to be the maximum radiation dose for a person for a whole year," Rune Leite-Eriksen of Greenpeace said.

SVENSKA DAGBLADET recently visited Keskmadal, a rocky islet rich in bird life north of the island of Aegna. On the flat rocks around the beacon lie the corpses of several birds, but no one can say with any certainty whether the deaths of the seabirds has anything to do with strontium radiation.

Sticking your head into the generator room is an unpleasant experience, even though a minute's dose of radiation is hardly likely to trigger leukemia. But the humming of the radioactive generator does nevertheless send shivers down the spine.

Strontium 90 is a radioactive isotope and one of the cheapest side products in the field of nuclear power. With a half-life of 28 years it is a popular source of energy for the unmanned operation of light buoys and lighthouses, chiefly in the former Eastern bloc.

"This radionuclide is also one of the more dangerous because it seeks out bones and is therefore only slowly removed from the body. Strontium 90 isotope is concentrated in the skeletons of living organisms," Enn Kivisakk, head of inspection at the Radiation Protection Institute, said.

There are several risks from the radioactive beacons.

Waste. According to Captain Aleksandr Antakov at the Defense Ministry in St. Petersburg which is ultimately responsible for the beacons, the strontium fuel is replaced after 10 to 15 years. At this time the isotope batteries still contain considerable quantities of radioactivity. It is still unclear where they have been dumped. According to the official version, the batteries are sent to Moscow.

However, the Estonian environmental movement fears that large amounts of strontium waste may have been transported to the notorious waste installation at Saku, a little over 10km from Tallinn.

Leaks. Since the beacons are constantly subject to attack from salt there is an increased risk of corrosion. A leak could have very serious consequences and require a comprehensive cleanup operation.

Accessibility. Even a child can open the "lock" on the beacon doors and the generator room can be a very exciting den while mom and pop are enjoying their picnic on the island or on the beaches on the mainland where there are several strontium beacons.

Nonexistent maintenance also increase the risk of sabotage or of the theft of the isotope batteries.

It was similar arguments which made the Swedish authorities shelve their strontium plans for good in the late sixties.

"It is true that strontium-powered beacons were under consideration in Sweden, but fortunately safer techniques were chosen. A lot of strontium is needed to power a beacon and sooner or later there are serious risks of a leak," Enn Kivisakk said.

Despite the fact that the experts are agreed that strontium is a fuel that is as dangerous as it is efficient, strontium 90 beacons are still being marketed by a military research institute in Moscow. SVENSKA DAGBLADET has read the institute's color brochure which introduces the Gong, Gorn, and Grab generators.

The brochure states that the radionuclide thermoelectric generators, called RTGs, are environmentally safe both in operation and in the event of an emergency. The USSR National Technical Physics and Automation Research Institute [name given in English] claims that "strontium 90, unlike nuclear reactor fuel, is not a radioactive material."

You can sell anything with cutthroat advertising.

[Item is accompanied by a map showing the locations of the eight beacons investigated by EGM and Greenpeace. These are: Naissaar, Keskmadal, Prangli, Aksi, Rammu (2), Pohja-Uhtju, and Louna-Uhtju.]

Estonia's Sillimae Uranium Waste Dump Threatens Baltic Ecology

PM0309154092 London THE DAILY TELEGRAPH
in English 3 Sep 92 p 7

[Julian Isherwood report: "Uranium Fear for Baltic"]

[Text] A Soviet underwater uranium waste dump in Estonia is threatening the environment of the Baltic—it is only separated from the open sea by a 10-yard dam, a Swedish newspaper said yesterday.

The report gathered on site by Sydsvenska Dagbladet, said that four million tons of uranium ore waste, including 1,200 tons of pure uranium, had been dumped in an artificial lake near the town of Sillamae, 50 miles east of Tallinn, the capital.

Sillamae, which is on the Gulf of Finland, was a closed city until last year because of its apparent importance to the Soviet nuclear industry.

The Sillamae Plant of Chemical and Metal Production, which is still Russian-run, said the uranium waste was deposited under 15 feet of water in the artificial lake.

"Apart from the uranium there are about 1,000 tons of radium, 500 tons of thorium and a couple of million tons

of calcium sulphate, calcium fluoride and ash," the company told the newspaper.

"When it's windy, the lake goes all white. When it's calm it's clear," said Mr. Vladimir Nosov, plant laboratory manager.

He said the waste was more than 20 yards deep and 60 feet above sea level.

"Of course there is increased radioactivity in the sea outside the dam," Mr. Nosov said. "But some kilometers off the coast, the levels are normal."

Sillamae first attracted publicity in 1990 with reports of a mass case of inexplicable hair-loss and widespread occurrence of allergies in the town of 25,000.

At the time, Soviet authorities denied that environmental causes made 200 people, including an entire high school class, go bald.

The Sillamae complex was opened in the late 1940's, when it was used to extract uranium from local ore. When Sillamae deposits dwindled, East German and Czechoslovakian ore was shipped there for treatment.

Study Determines Ozone Layer Over Lithuania Depleted by One-Third

WS1009130192 Vilnius LITHUANIAN WEEKLY
in English No 30, 28 Aug-3 Sep 92 p 1

[Text] The ozone layer over Lithuania has depleted by one-third. This fact was determined by the Vilnius Physics Institute Laboratory on the basis of a two-year-long scientific research program.

Viktoras Lujanas, head of the laboratory, says that the scientists are determined to expand research further if they receive the support of the Lithuanian Council of Sciences and Government.

The ozone layer protects the living beings on Earth from ultra violet rays which are known to cause skin cancer, eye diseases and other serious illnesses.

Communications System To Link Russian-Lithuanian Nuclear Stations

WS0209060492 Vilnius ELTA NEWS BULLETIN
No 64 in English 1521 GMT 25 Aug 92

["Security Chain: Finland-Russia-Lithuania"]

[Text] Finnish specialists set to work on creating a system of special direct communication which will connect nuclear power stations of the Kola Peninsula, Leningrad and Ignalina with the centre for radiation protection in Finland. The system will also comprise the Murmansk port where Russian nuclear vessels are based. This system will make it possible to obtain detailed information on the state of nuclear objects in Russia and Lithuania and an emergency situation in them. The new

system is to be put into operation this September. All the Nordic countries, including Germany will be provided with the information.

Power System Coping With Shutdown of Ignalina AES

*LD0709170592 Vilnius Radio Vilnius Network
in Lithuanian 1400 GMT 7 Sep 92*

[Text] The Ignalina AES [nuclear electric power station] has been out of operation since 5 September. According to a report by the BALTIC NEWS SERVICE, Lithuania has been buying almost half its necessary power from Belarus and Estonia since that date. Lithuania had been selling 5 million kW hours of energy daily.

According to power engineering officials, unexpected breakdowns like this one do not cause any danger or breakdowns of any kind because Lithuania is part of the unified northwest power engineering system.

When the Ignalina AES went out of operation, the Elektrenai thermal power station started working at a greater capacity. At the moment, four of the eight power units are operating at full capacity. Only one power unit has been operating at minimal capacity of late due to the short supply of natural gas. The Elektrenai thermal power station is now using fuel oil reserved for the winter.

Ignalina Nuclear Power Station Unit Restarted

*LD0709171392 Helsinki Suomen Yleisradio Network
in Finnish 1600 GMT 7 Sep 92*

[Excerpt] The pipe fault in the second unit of the Ignalina nuclear power station in Lithuania has been repaired and the process of restarting the unit has begun. The unit was shut down on 5 September when a small pipe broke. The reactor had to be shut down because the pipe could not be repaired otherwise, the Lithuanian Energy Ministry said. According to the Ministry, there was no leak of radioactive substances from the power station.

The Finnish Center for Radiation and Nuclear Safety confirms that the pipe breakage in Ignalina was not detected in Finland in any way. [passage omitted]

Lithuanian Endangered Species 'Red List' Issued

*92P50138A Vilnius LITHUANIAN WEEKLY
in English No 31, 4-10 Sep 92 p 3*

[Article by Alis Balbierius: "The Red List"]

[Text] The first Lithuanian Red List of Endangered Species was compiled in 1976. In 1981, a special edition

of the Red List was published for the public at large. The first Lithuanian Red List contained the names of only 30 plants, 1 mammal, 31 birds, 2 fishes, 4 invertebrates and the whole genus of bumble-bees. However, specialists were well aware that the small number of threatened fauna and flora, identified by the List, represented only the visible fraction of a much greater problem, especially when compared to the Red Lists of Western European states which enumerated up to several thousand of species.

Making the Red List more exact required much scientific and organizational work. In 1991, the Department of the Environment of the Republic of Lithuania approved a new and expanded List of endangered species, which were grouped into six categories according to the rate of their vulnerability. The Zero Class includes extinct animals and plants which could still be found in Lithuania in the 19th and the beginning of the 20th centuries. The subsequent four classes indicate the level of distribution of the threatened species, and the fifth category lists those species which have already restored their numbers.

At the present moment, the Lithuanian Red List comprises the names of 292 plants and mushrooms and 212 animal species. Besides the more familiar species, it includes 11 rare kinds of moss, 4 seaweeds, 68 mushrooms and 13 lichens. The class of very rare species was also enlarged. Following the example of Western European countries, the list enumerates 18 mammals, including 9 species of bats, the European mink and otter. Almost all birds of prey, owls and waterfowl are now protected by the Lithuanian law. The Red List comprises 67 threatened birds, which makes up one third of all bird species found in Lithuania, 104 invertebrates (including the medical leech), 2 reptiles, 3 amphibians, and 7 fishes. In all, there are 504 species of plants, mushrooms and animals written down in the Lithuanian Red List.

All data about the endangered species is accumulated and generalized in Vilnius, at the Department of the Environment. And though the new Red List was approved on February 7, 1991, the public is not yet well-informed about it. Therefore, the Department of the Environment has prepared a popular variant of the List which will be published in the nearest future. Heavy fines are slapped on those who kill or destroy endangered species or engage in illegal hunting activities. However, having in mind the low level of ecological awareness of the Lithuanian society, the Red List is more of a symbolic than conservational or legal significance. The majority of inspectors for environmental protection are not qualified enough to recognize all the rare species of plants and animals. There is a shortage of popular literature and information on environmental protection issues for the people to become ecologically conscious of the Lithuanian future.

FINLAND

Neste Corporation Develops Low-Emission Fuels

92WS0706C *Toddington NEW MATERIALS INTERNATIONAL in English Jul 92 p 5*

[Unattributed report: "Neste Develops Low-Emission Traffic Fuels"]

[Text] Further reduction in traffic-related emissions is the aim of a new Emissions Laboratory just commissioned by Finland's Neste Corporation at its Technology Centre in Porvoo, east of Helsinki. The new laboratory will supplement the work of Neste's existing Oil Fuel Laboratory and of the Fuel and Process Technology Laboratory run by the State Research Centre of Finland (VTT).

The Technology Laboratory in Porvoo will investigate car-exhaust emissions under a range of different climatic and loading conditions, using a road simulation dynamometer which allows a test car to be driven, on a set of rollers, under carefully controlled laboratory conditions. The new laboratory also houses Finland's first SHED [Sealed Housing for Evaporative Determination], which measures the level of hydrocarbons released by a vehicle's fuel system while stationary, with the engine switched off. Finland was one of 21 signatories to the ECE [Economic Commission for Europe] environmental protocol (November 1991) for a 30 percent reduction in volatile hydrocarbon emissions by the year 2000.

Neste's research into clean-burning fuels has already led to the development of Neste Oil's City Gasoline, launched in 1991 and on sale throughout Finland since 1 May 1992. It is the first low-emission fuel of its type in Europe to have widespread distribution. Neste has also developed City Diesel, a new fuel with substantially reduced sulphur and particulate emissions. These latest fuels, which permit immediate emission-reductions from the vast majority of vehicles in current use, promise to have a great impact on pollution reduction together with catalytic converters.

The chassis dynamometer and associated equipment installed in Neste's Emissions Laboratory are capable of accurately simulating driving speeds up to 200 km/h, replicating wind resistance and other forces affecting a vehicle on the road. The appropriate wind speed is set automatically, in accordance with the vehicle's speed. The system also permits analyses of fuel performance in areas such as ease of starting, stop-start driving or fast acceleration. Tests can be undertaken in temperatures from -30C to +40C. Extended testing, as well as research on heavy vehicles, is normally carried out on engines mounted on a test bed.

A computer-controlled exhaust-gas sampling and analysing system measuring mainly levels of carbon monoxide, carbon dioxide, nitrogen oxides and hydrocarbons, usually dilutes the emissions with air, prior to measurement, in order to increase accuracy. In addition,

undiluted exhaust gases can also be measured, at two points simultaneously, thereby allowing catalytic converter performance to be monitored. Particulate emissions from diesel engines are also measured after exhaust gases are diluted with air. Particulate collected in filters is measured to an accuracy of a millionth of a gram.

Difficulties in Applying Rio Summit Agreement Viewed

92WN0673A *Helsinki HELSINGIN SANOMAT in Finnish 16 Jul 92 p A 2*

[Article by Martti Tiuri, Conservative member of the Eduskunta, Energy Policy Council, and Environment Council: "It Is Difficult for Finland To Implement the Rio Agreement"]

[Text] According to the Rio Agreement greenhouse gas emissions are supposed to be decreased, so that the climatic change that threatens life on earth can be stopped. Saving energy is an essential means to reduce emissions.

At the UN Conference on the Environment and Development, Finland signed the agreement on reducing greenhouse gases to the 1990 level. It is recommended that the reduction be carried out by the end of the century. The agreement is the first step in a program, the objective of which is to reduce the emissions of greenhouse gases into the atmosphere in several decades in such a way that a change in climate can be stopped. The greatest importance of the Rio Agreement is bringing the matter into the consciousness of decisionmakers and the public.

The climatic change must be brought under control, because otherwise the average temperature of the earth will rise faster and faster as the atmospheric content of the greenhouse gases (carbon dioxide, methane, CFC's, nitrous oxide, and ozone) that are produced by humans increases. As a consequence of this many kinds of plants and animals will become extinct when they are unable to adapt to the too rapid heating of the climate. The present grain-growing areas of the earth may dry up and the deserts spread. The surface of the ocean will also begin to rise gradually, causing difficulties for coastal dwellers.

The climatic change has been delayed by the slowly warming oceans and locally by the air's sulfur dioxide particles, which reflect part of the sun's radiation back into space. Thus in Europe the average temperature remained almost stable in the 1960's and 1970's as sulfur emissions increased continually. Also the sulfur particles hurled into the upper atmosphere by powerful volcanic eruptions (including Pinatubo) will lower the earth's average temperature about 1 degree for a couple of years. On the other hand the effect of the CFC's on strengthening the greenhouse effect has been offset by the ozone depletion that they cause. As sulfur emissions and the use of CFC's decreases, the climatic change is expected to accelerate. There is also the risk that the climatic change will run away; the change will begin to reinforce

itself. This could be brought about, for example, by the liberation of methane gas when the swamps of tundra areas melt.

Slowing Down Climatic Change by All Means

Slowing down climatic change should be undertaken by lowering carbon dioxide emissions in addition to the already agreed-upon cessation of the use of CFC's. The main part of the 27 billion tons of emissions per year come from the production of energy from fossil fuels and the remainder from the destruction of forests. According to the UN's international advisory group (IPCC) carbon dioxide emissions have to be reduced worldwide over 60 percent to attain equilibrium. The developing countries have to be permitted to increase their use of fossil fuels because of population growth and to raise the standard of living, so that the industrialized countries will have to reduce emissions more, as much as 80 percent in a few decades.

Saving energy is an important means of reducing emissions. In the industrialized countries the growth in energy consumption has already ceased, but electricity's share of energy has continually grown a little faster than national income. In the developing countries energy consumption has grown at the same rate as the national income and electricity consumption has increased twice as fast. It is obvious that electricity consumption in the world will continue to increase and that saving energy will not suffice to reduce carbon dioxide emission adequately.

The Production of Energy Must Change

For the most part reducing emissions must be accomplished through changing the production of energy. The task is extremely demanding, because a tremendous amount of capital has been invested in energy systems, and changing them substantially will take decades. Electricity generated from the wind, sun, and new bioenergy (energy plants) will thus not provide significant assistance in stopping the greenhouse effect; their share at present is on the order of a ten-thousandth of the earth's energy. In the long term, in the second half of the next century, solar energy in its various forms will be an important energy source, as fusion also may be.

The carbon dioxide emissions from fossil energy sources can be reduced by 40 percent by shifting from coal to natural gas. Emissions will still be large, however, and nitrogen emissions will be just as large as when coal is burned. A second means of reducing power plant emissions is to improve the efficiency by the gasification and pressurized burning of coal in combination power plants.

Emissions are reduced most effectively by replacing fossil energy with water power and nuclear power, because they do not produce emissions. There is great potential for building water power in many developing countries. The obstacle is the large capital requirement. The share of nuclear power in producing electricity on

the globe is 17 percent and the share of total energy is 5 percent. Because of this the world's carbon dioxide emissions are almost one-tenth smaller than they would have been without it. In the 1980's the amount of nuclear power tripled. Over 50 nuclear power plants are now under construction.

Finland differs from other industrialized countries in that our energy consumption is predicted to continue to increase up to the year 2000. The reasons are the growth in industrial output of over 3 percent annually, the increase in the number and size of residences, and the increase in services. The forest industry can expand, because at present one-third of the forest's natural increase remains unutilized. According to a basic estimate of the Ministry of Commerce and Industry, total energy consumption will thus grow 14 percent up to the year 2000 and electricity consumption much more. Carbon dioxide emissions would increase over 40 percent from the 1990 level if base-load power were produced by coal.

Trying To Reduce Consumption

By means of the government's energy saving program an attempt is being made to reduce consumption in such a way that total energy will grow only 11 percent and electricity consumption only one-fourth. Even if the base load were generated by natural gas instead of coal in addition to the saving, emissions would still be one-fourth larger in the year 2000 than in 1990 and in the case of nuclear power nearly one-fifth larger.

The objective is to bring the carbon dioxide emissions back down to the 1990 level by the year 2005. It is possible to carry out the savings program by producing the required 1,000 megawatts of additional base load power by nuclear means and building a sixth nuclear power plant (1,000 megawatts), gas-fired power plants totaling about 1,000 megawatts, and wood-using (gasification) plants producing a total of about 500 megawatts to replace the old coal-fired power plants. Gas-fired power plants are out of the question as a substitute for two nuclear power plants, because then emissions would be over 10 percent greater than 1990 in 2005. The goal for nitrogen emissions reduction (30 percent) would also be pushed farther away. After 2005 carbon dioxide emissions must still be reduced rapidly.

A Correct Picture of the Dangers Using Comparisons

Nuclear power is feared because of accidents and wastes. The dangers of nuclear power, however, must be compared to those of other energy sources and other risks to obtain the correct picture. The particulate emissions of fossil-fuel power plants cause 100 Finns to die of cancer yearly, according to a estimate by the Institute of Public Health. Particulates also cause genetic damages. In all Europe 10,000 persons die every year from fossil-fuel power plants or 50-100 times more than the cancer deaths that were calculated to result from the Chernobyl accident. The radiation doses from X-ray examinations

produce an estimated 15,000 cancer deaths in Europe each year. There has been no demand to stop them because of this, however, because the benefit is regarded as important. Passive smoking also kills about 10,000 persons in Europe yearly.

In Western nuclear power plants there has only been one accident in which radiation escaped. In the Harrisburg accident the reactor melted because of residual heat, but the containment jacket prevented almost all of the radiation from escaping from the power plant. The newer power plants are even safer. The storage of nuclear wastes in bedrock is also safe. In Finnish bedrock the radiation in an 8 kilometer cube is the same as the amount all of the waste from a 1,000 megawatt nuclear power plant produces. After about 10,000 years nuclear waste will not differ substantially in its radioactivity from the surrounding rock.

Nuclear power is the safest energy source from the human standpoint. There is no danger to nature from nuclear power. Fossil-fuel power plants, on the other hand, cause acid precipitation and the greenhouse effect, so that the true nature protector supports nuclear power.

Nordic Ministers Demand Russian Action on Nickel Smeltery

LD0409161692 Helsinki Suomen Yleisradio Network in Finnish 1600 GMT 3 Sep 92

[Text] The Nordic environment ministers are demanding that Russia start concrete negotiations on the modernization of the Pechenga nickel smeltery. According to the ministers, the Nordic countries have made a good financial offer to reduce the emissions of the smeltery. Now, Russia should show its willingness to implement the project. The Nordic environment ministers, meeting in Kirkenes, Norway, also agreed on areas to emphasize in Nordic environmental cooperation. It was noted that the most urgent environmental problems are to reduce the amount of acid fallout, to improve the state of the Baltic Sea, and to acknowledge environmental questions in trade policy.

FRANCE

Oil Companies Take Initiative on Environmental Measures

92WN0730A Paris LE FIGARO (LE FIG-ECO SUPPLEMENT) in French 4 Aug 92 p 5

[Unattributed report: "Oil Companies To Invest 45 Billion Francs by Year 2000"]

[Text] Strongly opposed to the tax on carbon proposed by Brussels, French companies intend to finance their own environmental protection measures...

French oil companies, a major source of carbon dioxide and sulfur emissions, plan to invest substantial sums to comply with national and European regulations. The

French Union of Petroleum Industries (UFIP) estimates outlays of 5 billion French francs [Fr] per year will be needed between now and 1999—a total of Fr45 billion, five times the yearly budget of the Ministry of Environment.

Strongly opposed to the tax on carbon proposed by Brussels, the French companies want to keep the initiative by demonstrating they are capable of taking their own environmental protection measures: "We are responsible industrialists," UFIP emphasizes.

The companies therefore have launched major investment programs costing between Fr700 and Fr3 billion per year, primarily to cut down on their discharges of pollutants into the water and atmosphere.

Elf-Aquitaine allocated Fr3.2 billion to the environment in 1991 (7.5 percent of its total investments) and Fr3 billion in 1990. Total's outlays of Fr1.5 billion have focused primarily on reducing hydrocarbon fumes at fuel depots and service stations, and avoiding the risks at exploration and production sites. In addition, Fr1 billion has been earmarked for installation of unleaded gasoline units.

Light Products

At Shell-France, Fr200 million will be allocated for water quality improvement between 1992 and 1995. Between now and 1997, Fr900 million will be spent on air quality and Fr500 million on reduction of the benzene and sulfur content of fuels. Finally, some Fr2 billion will be devoted between now and the year 2000 to reducing the sulfur content of fuel oil. Altogether these efforts represent expenditures of about Fr730 million per year.

Esso SAF estimates that its direct investments for environmental protection between 1991 and 2000 will cost Fr8 billion, or Fr800 per year. The largest outlay will be for deep conversion (Fr5 billion), a refining process to change fuel oil into lighter, less sulfurous products.

All these investments, some of them already committed, are bearing fruit. BP-France notes that sulfur dioxide (SO₂) emissions declined 67 percent between 1980 and 1990. Similarly, the quantity of pollutants discharged into the water during production cycles has declined between 80 and 97 percent in a 10-year period.

According to the Ministry of Industry, oil products were responsible in 1990 for the emission of 0.5 million tons of (SO₂, or 56 percent of all emissions attributable to the three biggest energy sources (coal, oil, and gas). Carbon dioxide emissions amounted to 196 million tons, or 62 percent of the total.

But by themselves the oil industry's efforts will not be enough to meet Brussels's goal of stabilizing CO₂ emissions by the year 2000. According to the Ministry of Industry, that would require "an unrealistic increase in

consumption of natural gas, success in energy conservation that is unattainable without increased reliance on nuclear power—or an extremely deep recession in Europe.”

Environment Minister Defends Policy on Waste Issue

92WN0741A Paris LE FIGARO in French 21 Aug 92
p 7

[Interview with Environment Minister Segolene Royal by Jerome Strazzulla; in Paris, 21 August: “The Environment Must Prevail Over Economic Considerations”]

[Text] The French minister met today with her German counterpart to discuss the problem of the circulation of hospital waste in Europe. She received LE FIGARO to defend her policy.

Minister of Environment Segolene Royal met with her German counterpart today in Paris. While on vacation in the heart of Turkey, Klaus Topfer learned that France had unilaterally decided to close its borders to waste on the heels of the successful dismantling last week of a hospital waste trafficking operation going on between France and Germany. In an exclusive interview with LE FIGARO, Royal explains why France chose to confront other European countries with a *fait accompli* following a week-long crisis. She also reviewed her own record of government performance five months after her appointment and six months before the coming legislative elections.

[Strazzulla] *Germany is illegally introducing dangerous waste into France. Should a French minister be negotiating tight border controls with German Minister Klaus Topfer?*

[Royal] Germany is not introducing dangerous waste; German and French traffickers are the ones doing it. It all depends on how you interpret “negotiate.” I have a moral responsibility to ensure that all countries are pulling in the same direction, particularly since both German public opinion and Topfer condemn such trafficking. Negotiate, yes, insofar as what one means is concerted, effective action. We need to have Europe resolve this problem, which is mainly an industrial problem. What good would it do now to condemn the Germans when it is the traffickers who are responsible? What purpose would be served by fanning anti-German feeling among public opinion or to play the game of demagogic bullying? Klaus Topfer and I basically take the same position. I hope to make the cleanup industry, the option of recycling and incineration, a matter of French-German cooperation.

[Strazzulla] *In a Europe governed by Maastricht, should waste be considered a dangerous product? In other words, what should its status be in terms of free circulation?*

[Royal] We all agree on that principle: Waste is not merely another type of goods. Europe, which must be

built in a positive fashion, has already made that choice: Environmental logic prevails over the economic logic of free trade.

Role of Public Opinion

[Strazzulla] *What would your attitude be if future European legislation on household waste contradicted a French regulation?*

[Royal] Events have led us to confront our European partners with a *fait accompli*, but actually, even given the urgency of decisions, we were merely encouraging a process that was already underway. It was in keeping with Community rules of play. The Court of Justice has recognized that the environment and health outweigh free circulation.

[Strazzulla] *Germany is the biggest exporter of waste. You know that anything that can no longer be shipped into France will be sent to Romania or Poland. How far can you go to prevent such trafficking?*

[Royal] That is one of the concerns pushing us toward coordinated action with Germany. We do not have the right to be intransigent on what crosses our borders or to close our eyes to the portion that may be diverted to poorer countries. In this specific case, the draft regulation of the next European Council provides for a ban on such exports in the absence of a government-to-government agreement. Once that regulation has been passed, public opinion will play a considerable role. In the specific case of waste, what we have seen in terms of the recent Swiss and German reactions is extremely positive.

[Strazzulla] *Should we continue to import nuclear waste?*

[Royal] We do not import nuclear waste in order to store it, but rather, to reprocess it at La Hague. The recycled waste is then reexported, as required by the law of December 1991. The real problem will therefore be one of transport, particularly in the case of Japanese nuclear waste. The current process is not logical, but it has long been the practice in industry and, therefore, cannot be interrupted immediately. France reprocesses Japanese waste because it was the leader in the treatment process. Contracts have been concluded to use facilities which the Japanese do not have. It would be irresponsible to halt that process overnight. However, in terms of the future of the planet, the Japanese should acquire the equipment they need to treat nuclear waste at home and thus keep it out of circulation.

[Strazzulla] *The law of July 1992 would lead to the closing of 6,700 dumps, but precisely what does closing a dump mean?*

[Royal] It means rehabilitating it. One cannot simply wash one's hands of this. Rather, one must see that there is no further risk to the environment by cleaning up the dump and rehabilitating the site. Even quarries will have to be cleaned up. It will all be financed by the new tax on

dumping, which will help local communities assume that responsibility. What will happen in the years to come? Some 20 final storage centers will replace the existing 6,700 dumps and 160 processing and incinerating plants with departments responsible for household waste and the regions for industrial waste.

I would like to speak to those who are rightfully shocked about trafficking in German waste: Elected officials should assume their responsibilities and associations must understand that there is no industrialized society without waste.

It is not reasonable to have but one Class 1 dump (for industrial waste) south of the Loire when the Rhone-Alpes region, the so-called "chemical corridor," which is the second most industrialized area of France, does not have a single one! It is too easy for industrial regions to dump their waste in neighboring rural regions. I am determined to make elected officials own up to their responsibilities.

[Strazzulla] *Final waste, the only type whose dumping will be authorized in France, presumes major industrial development. Do you favor the establishment of enterprises from outside the European Community?*

[Royal] You are referring to the U.S. company Waste Management. Yes, I favor competition; we need rivalry. Competition does not frighten me; in this area, French businesses are among the best in the world, and they should even win markets in Europe. The cleanup industry is an exceptional opportunity for French technology, which is one of the reasons for promoting it. Europe must in the end allow the French industrialists with whom I met to do business in Germany.

Faithful to Priorities

[Strazzulla] *You outlined five priorities when you took office. Do you have the same ones after five months in office?*

[Royal] Yes, I am faithful to my priorities, which were the object of intense work these past few months and of highly important arbitration by the prime minister. The action plan for the countryside is being finalized for September. The first 20 urban ecology charters will soon be signed, emphasizing, among other things, taking back the countryside. The noise pollution bill will be discussed in the coming parliamentary session. We are now working daily on the remaining two priorities: equality of opportunity before nature and employment-environment. Concerning the latter, among all the action undertaken to help the long-term unemployed, we have signed agreements and made all subsidies from the Ministry of Environment subject to the hiring of one long-term unemployed person, particularly in the case of big associations.

[Strazzulla] *In 11 months, can one fashion an environmental policy different from that of your predecessor?*

[Royal] Continuity of government implies that I take up the work of Brice Lalonde. Moreover, I am morally committed by virtue of the action of the previous government because it is the same political majority. However, I intend to implement my own priorities. I am an elected official, have been a deputy for four years, a General Council and Municipal Council member. I was in charge of the environment at the Elysee [the presidential palace], and I have my own projects and passions that I want to carry out in the Ministry of Environment, such as the rural countryside and urban ecology. That is what provides the strength of conviction to negotiate with the other ministries. Contrary to what many claim, I consider Brice Lalonde a friend and share his convictions. Moreover, I have asked elected officials from Generation Ecologie and the Greens to take on a number of official tasks and head up certain dossiers. I hope they will accept. For example, I am awaiting a reply from Noel Mamere to whom I proposed an international mission concerning water because he is exceptionally competent in that field.

Green Party Leaders Support Maastricht Treaty

LD0109225192 Paris France-Inter Radio Network
in French 2030 GMT 1 Sep 92

[Text] The Greens seem on the whole to be defending the "yes" to Maastricht even if they allow their members a free hand. Brice Lalonde and Antoine Waechter, both guests of the phone-in on France-Inter this evening, played down their differences to unite their voices in favor of "yes."

For Brice Lalonde, Maastricht will give an impulse to ecology:

[Begin Lalonde recording] The Maastricht Treaty quite clearly introduces ecology within the EC. Article 2 of the Treaty of Rome is modified and amended, and now environmental protection—the very content of growth must take environmental protection into account. This concern must be included in all policies; it is compulsory. Moreover, a number of new means which make this policy even more efficient have been set up by Maastricht, particularly money and also a fund called a solidarity fund which will partly serve environmental matters. This is what was lacking when one asked countries which considered themselves short of sufficient means, such as Spain, Portugal, or even Italy and Greece, to take measures and not to freeze the improvement of measures in favor of environment. [end recording]

As for Antoine Waechter, he is convinced that the Maastricht Treaty will also favor the solving of certain social problems:

[Begin Waechter recording] Political will is necessary, for example to make sure that the competition rules are the same everywhere, that is, that the cost of labor is more or less the same everywhere. This presupposes the will to draw up a common social policy at the European

level. The Maastricht Treaty in fact introduces a qualified majority on social issues within the Council of Ministers. [end recording]

GERMANY

Firm Develops Polyurethane Recycling Process

92WS0661L *Toddington NEW MATERIALS INTERNATIONAL in English Jun 92 p 5*

[Unattributed report: "Germany: Krauss Maffei Develops PU Recycling Route"]

[Text] In collaboration with Dow-Plastics, Tragerwilen (Switzerland), Krauss-Maffei Kunststofftechnik GmbH, Munich has evolved a process for the recycling of RIM- and RRIM polyurethane mouldings, which it claims is economically viable.

Whereas some experience has been available for the recycling of thermoplastics and individual projects have been put into operation, little knowledge has so far been gained with the recycling of thermosets.

The process developed now operates on the principle of the triple-flow technology, with the individual components of the PUR-system being fed to the mixing head in three separate streams.

For RIM-recycling, painted car body parts were ground into a fine powder. This powder was then mixed with the basic polyol. The mixture with the amine-containing component would have resulted in a structural alteration of the foam system, however. The volume-ratio of polyamine to the basic polyol-powder compound was around 1:2 parts.

The third stream was responsible for supplying the iso-component. The process was tested with a production tool for the moulding of sound-absorbing pods for a transport vehicle, made available by Osbra Formteile GmbH of Mindelheim. The mouldings weighed 1,700 g and had an average wall thickness of 4 mm. At the end of the test, 30 percent of recycled material was being used. The articles were ready for demoulding after a cure-time of 35 s, at a mould-temperature of 60°C.

Subsequent investigation of the mouldings showed excellent results in all points. The surface quality was given the 1A rating. Painting trials at 120°C in an on-line plant were also successful. In this case the inherent colouring of the starting-material had no negative influence. The mechanical as well as the thermal properties were identical with the data of mouldings produced in the conventional way.

Krauss-Maffei Kunststofftechnik GmbH also ran trials with a glass-filled, amine-containing recycling component in a RRIM-system. In this case, nucleation of both components proved an advantage. Subject to application, the gas at 15 to 20 percent can be combined with a 10 to 15 percent recycling-material content.

All tests were conducted on a standard lance-type PU-machine of the Comet KK240 range, equipped with the microprocessor system PUC 04. A standard MK 16-3FK mixing head for filed systems was employed for dispensing.

The system used was an IMR-RRIM-system, based on Spectrim RD 408. The RRIM mouldings for recycling were supplied by the companies PEBRA, of Esslingen and Phoenix, Hamburg.

The new mouldings produced from the recycled material and PUR-system were tested and investigated by well-known car manufacturers which rated them as being of best quality. Since then, a number of practical tests are also being conducted.

The successful conclusion of the tests show that the recycling of RIM- and RRIM-mouldings is possible without problems, so the automotive industry's demand for recyclable plastics can be met.

Minister Urges EC States To Dispose of Own Waste

LD2208000692 *Berlin ADN in German 2108 GMT 21 Aug 92*

[Text] Hamburg/Bonn (ADN)—Federal Environment Minister Klaus Toepfer (Christian Democratic Union) has called for more environmentally friendly waste disposal plants in Germany. This must be the consequence of the French-German garbage scandal, Toepfer said on the ARD program "Tagesthemen" on the "Bericht aus Bonn" [regular additional part of the "Tagesthemen" program]. The environment minister affirmed that in future he would advocate a complete renunciation of garbage exports within the EC. Every member state should try to dispose of its own waste.

Federal Research Minister Sets Goal for 21st Century Technologies

AU2108190092 *Duesseldorf HANDELSBLATT in German 21-22 Aug 92 p 6*

[Report by "bag": "Riesenhuber Advocates Close Links Between Research and Industry"]

[Text] Bonn, 20 August—Federal Research Minister Heinz Riesenhuber will spend DM260 million this year on the search for "technologies for the 21st century." The CDU [Christian Democratic Union] politician set out his goal, to ensure the competitiveness of business and industry in a way that takes account of environmental requirements and resources. But industry and science do not cooperate closely enough for the new technologies to be put into practice just yet.

According to Riesenhuber, the longterm plans of the Federal Ministry of Research and Technology are to guarantee that the opportunities for new technologies like nanotechnology, biotechnology, or material sciences

are taken. The general goal here is to make economic growth possible without a corresponding increase in the consumption of resources.

An expert commission on "visions of research policy" has been set up to find out which of the many new technologies are in any way required by industrial society. The minister stressed the importance of considering changes in the age structure of society and environmental protection. On behalf of the Federal Research Ministry, the Fraunhofer Institute for Systems Technology and Innovation Research is currently working on a study of the probable development of technologies.

Future Technologies in Specific Sectors

Riesenhuber stressed that the funds for new technologies, accounting for 6.5 percent of his ministry's DM9.3 billion budget, have shown an above-average increase this year. This tendency will continue over the next few years.

Future technologies are being developed principally "in physics, chemistry, and biology," said Riesenhuber. He gave nanotechnology as an example, which constructs minimum elements. It could replace microelectronics as a key technology in the next millennium. He said that one of its possible applications is implantation of mini-insulin pumps into diabetics.

Adaptronics research develops materials that react automatically to outer influences. The minister gave as examples window panes that become lighter or darker according to the level of solar radiation, and aircraft wings that adjust automatically to air currents and even repair minor damage automatically.

New carbon molecules, the so-called fullerenes, are harder than diamonds and can be put to many purposes. At low temperatures, they are superconductors, and Riesenhuber also sees chances for the development of light batteries and new semiconductor materials.

Materials Are Imitated From Nature

Another key technology, according to the minister, is photonics, which stores information through light and transfers it at the speed of light. Nature is the model for material science, which is trying to imitate useful substances like shells, sea urchin spines, or spiders' webs. A halm, [not further specified] for instance, is a "miracle of stability," said Riesenhuber.

Based on biology, research is also being done on high-tech sensors which could show minimum traces of poison or foodstuffs. In practice, they could be a low cost way of measuring blood sugar and cholesterol.

IRELAND

Chemical Firms Adopt Comprehensive Environmental Package

92WN0684A Dublin IRISH INDEPENDENT
in English 26 Jun 92 p 5

[Text] Major chemical companies yesterday introduced a programme which they say is the most comprehensive health, safety and environmental package ever initiated by a manufacturing industry.

And they said the Responsible Care programme will bring the chemical industry ahead of forthcoming legislation.

Thirty-nine of the 43 companies affiliated to the Federation of Irish Industry (FICI) have adopted it.

But Director General of FICI Neil Buckley confirmed that the companies would be "policing themselves" and there were no immediate plans to introduce independent assessors.

But Mr. Buckley gave a "commitment in principle" that they would involve outside consultants.

"We cannot identify when or who it will be," said Mr. Buckley. "But we are not ruling out a third party and we accept entirely that we need an independent, certification. However we are feeling our way at the moment and that has not yet been decided."

He said the "Responsible Care" programme, which has been introduced in a number of other countries including the United States and Canada, commits companies involved to achieve an acceptable and improved level of health, safety and environmental procedures.

"This new programme is designed to measure, document and demonstrate improvement in every aspect of their activities. It is the most comprehensive health, safety and environmental initiative ever put together by a manufacturing industry and necessitates regular audits of every activity carried out by the industry," said Mr. Buckley.

Mr. Buckley said that he believed the chemical industry in this country have "perceived problems as well as real problems" and they intend to address both.

"This is not a glamorous public relations exercise. We have been slow to get here but we have arrived. Historically we were less than open and we are not finding it easy now to change that attitude and it will be a long, hard job. However we are trying."

Replying to questions about the smells in the Cork Harbour area, Mr. Buckley said he would not "defend the indefensible." "The smell of mercaptan gas is unacceptable and we are committed to eliminating those smells."

Mr. Buckley ruled out the possibility of health surveys being carried out by the chemical companies "as the results would be looked on as suspect."

However if there was a need for such a survey and all that was needed was funding they "take a serious look at it."

The three companies out of the 41 under the FICI umbrella which are not taking part in the Responsible Care programme are the Cork based Mitsui Denman and Devcon, and PGB in the Shannon area.

NORWAY

Impact of Barents Sea Oil Drilling Examined

92WN0693A Oslo AFTENPOSTEN in Norwegian
29 Jul 92 p 6

[Article by Ole Mathismoen: "Oil Spill in North Could Be Catastrophic"]

[Text] The environmental consequences of oil drilling in the Barents Sea do not depend on the number of kilometers of oil booms or superlative safety measures. Even a small oil spill can be catastrophic. Mopping up the oil and cleaning off the animals are regarded as almost impossible.

When the politicians eventually have to decide whether to allow oil exploration and perhaps commercial extraction in Norway's northernmost waters, the willingness to take a risk with nature will be far more crucial than it is in the North Sea. Environmental Minister Thorbjorn Berntsen said yesterday that if the safety measures are good enough the region could be opened up for drilling. Over the next two or three years researchers will look into whether there is any possibility of guarding against environmental catastrophes.

Several research institutes are devoting all their time to surveying the consequences of any exploratory drilling in the north. A consequence report is due before 1995 and the Oil Ministry will then prepare a report for the Storting. The researchers know little about how the ecology in the north will react to oil spills and in particular about how the oil will act in polar waters.

Recent research suggests that bacteria can break down oil just as quickly in the north as in the south—if they get enough nourishment to reproduce.

Assistant director Rasmus Hansson of the Norwegian Polar Institute is among those who are highly skeptical about oil activity so far north. Together with colleagues he spends the few summer weeks on Svalbard trying to penetrate more deeply into the secrets of the polar ecology.

Oil Spills Dramatic

"Even small oil spills can have very dramatic consequences in the north. At the edge of the ice and in toward

its center any oil mopping operation will be practically impossible. Rinsing and cleaning animals will be impossible up there. The possibility of spills and accidents will always be present. Oil-damaged birds will lose their insulation and quickly freeze to death. We know little about the effect of oil on seals. After thorough tests in Canada we do know that polar bears are extremely vulnerable. They die quickly from internal poisoning and even small oil spots on their skin and fur cause such great damage that the animals die," said Hansson.

Oil spills can hit the ice edge, the polar region's biological oasis. Here algae grow, here the capelin feed and here birds, seals, and polar bears congregate in big colonies.

"Auks, fulmars, and herring gulls gather in large flocks in concentrated areas at the edge of the ice. These populations are already small and a single oil slick can do irreparable damage. We must remember that there is total darkness for a large part of the year so even if the animals can see the oil in daylight they will be unable to do so in the wintertime."

Ecology Vulnerable

Hansson said the trend in the research is clear: "The more we find out about the animals' life patterns and the ecology up there, the more skeptical we become about oil activity. The ecology is extremely vulnerable. We are now anxiously waiting to find out what the effects will be on predators, polar bears, and herring gulls, in whom we have found very high concentrations of the environmental poison, PCB [polychlorinated biphenyl]. The substance is brought from the mainland. Possibly it will weaken the animals' reproductive ability and it may change their behavior," he said.

Frede Tingstad, a microbiology professor at Bergen University, is one of the people who know most about oil drilling in the north.

"Despite the fact that the water temperature is as low as minus 1.9 degrees centigrade for large parts of the year, the temperature is not the most critical factor in breaking down oil, although decomposition does not occur when oil freezes and becomes completely stiff. The bacteria that break down oil need nitrogen and phosphate to reproduce.

"The upper layer of water in the Barents Sea is often stable and when algae reproduce they quickly use up the nitrogen and phosphate. That means that conditions for breaking down oil are very poor later in the summer. Not because it is cold but because the bacteria do not receive nourishment. Actually, decomposition could occur more quickly during the winter storms," Tingstad said.

"As a microbiologist I am not particularly concerned about possible accidents in the course of oil activity. Plankton and other microorganic life will quickly recover, something that will obviously be more difficult for the large animals," he said.

SWEDEN

Russians Bar Swedish Scientists From Nuclear Reactor-Waste Dump Sites

LD0609125392 Stockholm Sveriges Radio Network in Swedish 1030 GMT 6 Sep 92

[Text] Russian authorities are refusing entry to Norwegian scientists to study areas which are assumed to be dumps for nuclear reactors and radioactive waste. The Norwegians suspect that the Russians have dumped a large number of nuclear reactors in the Arctic. Here is a report from Oslo:

[Per Ritzler] At least 13 reactors have been dumped, some 10 of them in three bays east of Novaya Zemlya. Three of the reactors come from the atomic-powered icebreaker Lenin, while the other reactors presumably are from atomic-powered submarines. In addition, the Russians are supposed to have dumped a large number of barrels or small containers holding radioactive waste into the sea. The reports range from 13,000 to 17,000 barrels with low radioactive waste.

In a conversation with this morning, Magne Roeed of the Environment Ministry's international department here in Oslo says that it has not been possible to obtain confirmation about the reports of the Russian dumping, originating largely from Grenpeace, but that the Russian authorities are not denying facts when confronted with them.

Roeed is also chairman of the group of experts which has negotiated a research project between Russian and Norwegian authorities, which is currently in progress. The Russian research vessel Viktor Buynitskiy, which has a number of Norwegian researchers on board, together with a representative of the International Atomic Energy Agency, will in one week's time complete work on mapping out the extent of the Russians' dumping of nuclear waste in the Barents Sea, among others, and the possible consequences of the waste for the seabed and marine life.

It is also the research project's ambition to take a closer look and map out particular areas where reactors and other nuclear waste dangerous to the environment have been dumped. However, the Russian authorities have said no to this. The researchers have not been granted access to the three bays east of Novaya Zemlya where some 10 reactors are supposed to have been dumped into the sea. The Environment Ministry in Oslo explains the Russian no partly by referring to the heavy Russian bureaucracy with several decisionmaking stages with which they have to deal and the slowness among the Russian military to adopt openness.

At the Nordic environment ministers' meeting in Kirkenes this past week criticism was voiced against the Russian-Norwegian research project, among other things because the researchers were denied access to some Russian waters.

Magne Roeed thinks that the project has achieved some success. Roeed and the ministry want to hold back on further reports that add to those that have been published until the researchers have collected and processed the data. When the research work is completed in a week's time, the ambition is to proceed with attempts to seek out those areas where the Russians have dumped radioactive waste and reactors in order to define them more closely.

UNITED KINGDOM

Longterm Radiation Risk Estimates Urged

92WN0717A London THE DAILY TELEGRAPH in English 16 Jul 92 p 6

[Article by Roger Highfield, science editor: "Million Year Forecast for Nuclear Risk"]

[Text] Nirex, the nuclear waste agency, should estimate the radiation risks to Cumbrian subsistence farmers one million years from now, according to advice to the Government published today by the National Radiological Protection Board.

The need to calculate the radiation threat posed to a community of farmers between 10,000 and one million years from now is one bizarre consequence of the Board's advice on the safe disposal of solid nuclear waste for the proposed £2.5 billion underground dump proposed for Sellafield.

The Board aims to ensure future generations receive a level of radiation protection "at least equivalent" to that accorded now. Its report updates advice published in 1983.

Calculations of the risk posed by the deep nuclear dump proposed at Sellafield should be made for up to one million years, the same period over which Homo Sapiens has walked the planet, the Board suggests.

For comparison, studies on high level nuclear waste show there will be peak flow of radioactivity into the environment in about 300,000 years, while the half life of uranium 238 is in the order of 1,000 million years.

The risks to a "reference community"—subsistence farmers—should be considered for a period stretching from 10,000 years to one million years into the future, says the board.

The report describes the community it had in mind: "Perhaps a few families who produce a range of food to feed themselves. They should not be assumed to have unusual habits: for example, they should not be extreme consumers of particular foods, and they would not be likely to drill holes hundreds of metres deep."

The advice marks a move away from limiting doses to minimising risks, ending confusion caused by the use of both by the Department of Environment.

...raced by a reference community are ... then in all probability you will control the ... to anybody alive in that time frame," said Dr. John Cooper, head of the environmental assessments department at the Board.

Farmers were chosen in preference to simpler hunter-gatherers, because they would stay put on the dump. But Dr. Cooper stressed the Board's vision of the future communities is pessimistic: "We would all hope that the human race would advance more than that."

Nirex welcomed the recommendations because they mark an improvement on the current Environment Department principles which suggest Nirex should predict risks for all time. "This is more realistic," said Nirex.

Dr. Cooper said yesterday: "In one thousand million years time 75 per cent of the Thorium 232 in a waste package will still be there but the Sun will be a red giant and the human race will have other problems," said Dr. Cooper.

Board Statement on Radiological Protection Objectives for the Land-based Disposal of Solid Radioactive Wastes. Documents of the NRPB. HMSO £5.00.

Environment Department Considering 'Tough' Pollution Taxes

92WN0715A London THE DAILY TELEGRAPH
in English 24 Jul 92 p 4

[Article by Charles Clover, environment editor: "Tough Taxes Plan To Fight Pollution"]

[Excerpt] A system of tough pollution taxes is being considered to clean up dirty rivers and reduce acid rain from power stations, Mr. Howard, Environment Secretary, said last night.

The Environment Department is also studying the idea of a levy on landfill firms to encourage recycling rather than dumping waste, he told the Royal Society of Arts in London.

Britain wanted, as part of its EC presidency, to see the Community moving towards the use of "economic instruments" instead of environmental regulations to fight pollution.

Ministers have hinted at introducing such "market incentives" for the past two years but this is the first evidence that the department is working on such measures.

Britain is under pressure to raise more revenue to clean up rivers and to accelerate its acid rain clean-up. It is seeking ways of putting into effect a sweeping new EC recycling directive requiring 90 percent of waste to be recycled or burned by the year 2000.

Mr. Karel van Miert, EC Commissioner for Environment and Transport, said at the meeting that the commission was also looking to introduce "market incentives" to tackle pollution.

EC Transport Ministers had just agreed that "the cost of road haulage must be made more expensive" as part of a forthcoming EC White Paper on transport policy.

In his speech setting out Britain's agenda for its EC presidency, Mr. Howard said he was considering allowing the main emitters of acid rain—the power companies—to trade their permissions so that they could meet international pollution targets.

Such a system is already in operation in the United States, where the government raises the cost of pollution by slowly raising the cost of the permits. In this way, those who pollute the most have the biggest incentive to cut emissions.

Mr. Howard is also considering proposals by the Royal Commission on Environment Pollution suggesting polluters be charged in proportion to the pollution they discharge into rivers instead of a flat charge as at present.

Mr. Andrew Lees, campaigns director of Friends of the Earth, said of Mr. van Miert's proposal to make road haulage more expensive: "About time too. All the damage to people's health, property, houses and that traffic mayhem is about to be built into the so-called economies of freight movement on roads."

But Mr. Lees said there were "real dangers" in the introduction of tradeable permits for acid rain without a commitment to tighten up pollution standards. [passage omitted]

EC To Prosecute Britain Over Destroyed Scottish Moors

92WN0740A London THE DAILY TELEGRAPH
in English 6 Aug 92 p 4

[Article by Charles Clover]

[Text] Europe has decided to prosecute Britain for permitting a conifer-planting scheme to destroy an area of Scottish moorland known for its views, its grouse and its rare birds of prey.

The European Commission has ruled that the Forestry Commission should have published an environmental assessment of a 2,000-acre planting scheme at Glen Dye, Deeside, on the estate owned by Sir William Gladstone, former Chief Scout and Lord Lieutenant of Clwyd.

Britain will now be required to carry out such an assessment of the planting scheme which conservationists opposed, saying it was "officially-inspired vandalism," which would displace merlins and hen harriers and would spoil the views over one of the most beautiful parts of Deeside.

If the Government refuses, the case will go to the European Court.

Matters are complicated by the fact that the estate has already carried out 40 per cent of a five-year planting programme, which has involved deep ploughing of the site.

Depending on the view it chooses to take, the assessment could allow the planting going ahead, allowing some planting or could force the estate to pull up the trees.

What could also be at stake is the £800,000 the Forestry Commission paid over 15 years to Sir William Gladstone's estate. The complaint to the Commission was made by the Royal Society for the Protection of Birds after a Scottish law lord, Lord Justice Coulsfield, ruled in the Court of Session in Edinburgh that Britain was entitled to ignore EC rules on environmental assessment of forestry projects.

The Commission's judgment is a result of last week's ruling in which it decided to drop an action over the M3 London-to-Southampton motorway through Twyford Down, but to proceed with the case against Britain over the proposed road through the 8,000-year-old Oxleas Wood in south London. Commission lawyers ruled that Britain had failed to transcribe EC law into British law correctly on five out of six principles which were the subject of complaint, two of which were directly relevant to Glen Dye.

In the case of Glen Dye, the Commission upheld the complaint that Britain passed the environmental assessment legislation into British law on July 15, 1988—12 days late.

The Glen Dye application was made on July 13, 1988.

Britain also failed to impose sufficiently rigorous conditions on all forestry projects.

The Forestry Commission has already published plans to extend the law on environmental assessment to planting schemes not requiring a grant, which the Commission has said should have been covered by British legislation. The Commission lawyers' "reasoned opinion" is expected to be delivered to the Government shortly.

Sir William Gladstone was unavailable for comment yesterday.

Mr David Minns, of the Royal Society for the Protection of Birds, said in Edinburgh: "We are delighted the Commission is now going to require an environmental assessment. This case will hopefully result in much greater care being taken over the siting of large-scale commercial plantations in Scotland's important upland areas."

Defense Ministry Confirms Dumping of Munitions in Atlantic

PM0809112492 London THE DAILY TELEGRAPH
in English 8 Sep 92 p 7

[Report by Environment Editor Charles Clover:
"MOD's Ocean Arms Dump 'Cheats Ban'"]

[Text] The Ministry of Defense is dumping thousands of tons of shells, bombs and grenades in the Atlantic in a rush to beat a new international law on pollution of the sea which makes such dumping illegal.

The MOD confirmed last night that 7,656 tons of munitions had been dumped over the past five years and that the total projected to be dumped this year—before the ban early next year—was 8,405 tons.

The race to dispose of the surplus munitions was highlighted by Greenpeace, the environmental group, and later confirmed by the MOD.

Mr. Chris Smith, Labour environment spokesman, said he was writing to Mr. Howard, Environment Secretary, asking for an explanation of the surge in dumping, which he said was "an attempt to cheat" the international deadline.

The munitions are sent from all over the country to Glen Douglas, at the head of Loch Long on the Clyde estuary. From there they are taken by the Naval Vessels Resource, Regent and Kenterbury [as published] to the dump 400 miles west of Land's End.

The convention for the Protection of the Marine Environment, due to be signed by ministers of Atlantic nations in Paris later this month, will ban dumping.

Greenpeace accused the Government of dumping munitions secretly, without informing officials of the London Dumping Convention, and of not monitoring the site. It said it had been unable to find any evidence of any other nations still dumping munitions into the sea.

Mr. Paul Horsman, a toxics campaigner, said: "Britain must stop using the seas as its own private garbage dump."

He said that studies in the United States showed waste from explosives could cause kidney, liver, genetic and cell damage.

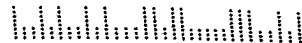
An MOD spokesman said: "The Government is not dumping secretly or in breach of international law.

"Under the London Dumping Convention or vessels are entitled to sovereign immunity. Dumping will cease on Jan 1, 1993."

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