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CONTENTS PAGE

EASTERN EUROPE

BULGARIA

Pollution Problems at Devnya Industrial Complex Reviewed
(ZDRAVEN FRONT, 30 Jul 77)..... 1

Environmental Protection Investigated
More Accurate Apparatus Needed
Vinylchloride, Mercury and Other Elements Found
Hygiene Epidemiological Institute
Rational Nutrition of Workers
Lack of Treatment Facilities
Viewpoints on Contract Expressed

Ecological Problems Caused by Construction Industry
(Tsveti Dakovski; IKONOMICHESKI ZHIVOT, 24 Aug 77)..... 13

HUNGARY

Environmental Protection, Conservation Organization
Established
(MAGYAR KOZLONY, 28 Aug 77)..... 18

LATIN AMERICA

BRAZIL

Possible Fallout From South African Tests Seen
(O GLOBO, 16 Sep 77)..... 25

NEAR EAST AND NORTH AFRICA

PERSIAN GULF AREA

Marine Meteorological Center To Be Established
(ARAB NEWS, 26 Sep 77)..... 26

CONTENTS (Continued)

Page

USSR

Environmental Statistics Indicators Proposed (M. G. Trudova; VESTNIK MOSKOVSKOGO UNIVERSITETA: EKONOMIKA, May-Jun 77).....	27
Objections to Placing Atomic Stations on European USSR Raised (V. N. Busarov; ELEKTRICHESKIYE STANTSII, Aug 77).....	34
Environmental Protection Measures in Angarsk (A. Nikolayev, V. Prusakov; PARTIYNAYA ZHIZN', Apr 77).....	38

WESTERN EUROPE

SWEDEN

Handling Weedkiller Exposes Workers to Fatal Poison (Gunilla Lindahl; DAGENS NYHETER, 1 Sep 77).....	42
Phenoxide Connection to Cancer Discussed (DAGENS NYHETER, 1 Sep 77).....	45
Environmentalists Caution Against Expansion of Power Plants (Lennart Lundegardh; SVENSKA DAGBLADET, 26 Aug 77)...	46

SWITZERLAND

Details of September Pollution Initiative Outlined (Hubert Ruf; NEUE ZUERCHER ZEITUNG, 10 Sep 77).....	48
Effects of Fluoride Emissions in Canton of Valais Examined (NEUE ZUERCHER ZEITUNG, 10 Sep 77).....	55

WEST GERMANY

Changing Attitudes Toward Environment Reported (Wolfgang Hoffmann; DIE ZEIT, 19 Aug 77).....	58
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BULGARIA

POLLUTION PROBLEMS AT DEVNYA INDUSTRIAL COMPLEX REVIEWED

Environmental Protection Investigated

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 1

[Text] Environmental protection! How little was demanded of any one of us, the enterprises, the state, in order not to disturb the natural harmony surrounding us! Yet failing to do so we turned environmental protection into a major problem. This occurred gradually and imperceptibly. The reasons are well known as well as, now, the consequences...

Now the public and the state have decided to erect a barrier against the pollution of the air, water and soil. It is neither too late nor impossible. The allocated 320 million leva in the Sixth Five-Year Plan and 840 million in the Seventh Five-Year Plan represent basic steps in this direction, and so are the "Basic Directions for the Preservation and Reproduction of the Environment in the Bulgarian People's Republic," recently approved by the State Council. These are indeed quite serious efforts aimed at systematically surmounting the consequences of the rather lengthily tolerated priority given to production problems compared with environmental production requirements. This priority was defended quite frequently through the shortsighted persistence of designers, investors and economic managers...

The imperative today is the following: to clear up the sinister pile which has accumulated and to see to it that with drastic severity no one would add to it anything more, not a speck! Otherwise, we would be actually wasting our efforts as well as millions and billions of people's money with no improvements...

It is high time to act! Action is already being taken on a comprehensive, intelligent, and aggressive basis! It is comprehensive for the damages caused are equally ... comprehensive! A single unit (even though a ministry!) would be unable to stop and eliminate them. Intelligently, for matters are far more profound than could be imagined by some economic managers. Aggressively, for otherwise no radical cleanup would be possible: the inertia is high...

All this equally applies to the Devnya lowland where an impressive territorial-production complex is being established based on the Varna-Devnya-Provadiya industrial-transportation settlement agglomeration.

A great deal has been and is being written about Devnya, frequently, in detail and well. I have been closely familiar with it for the past 22 years, having become particularly linked with it through journalism in the first half of the 1960's. I am familiar with the better condition of its living environment which existed in the past. I remember the ambitious plans for the future of a large scale chemical industry developed in the lowland, the prosperity of the area and the local population and the rapid growth of the local industrial-construction detachments of the working class...

I share this feeling with the deep hope that the zealous involvement with which I conducted this investigation will be not only properly understood and appreciated but forgiven...

We cannot but be hurt by the awareness that today's Devnya is not only our national pride but also ... a great concern! For centuries on end the magic Devnya springs as well as the Provadiyska River have been enriching the waters of the Beloslavsko and Varnensko Lakes. Today these river waters are unrecognizably polluted by the fecal-residential sewage waters of the urban and plant sewer systems, while all life has practically disappeared in the Devnya River. The complex hydroengineering installations in the Beloslavsko and Varnensko Lakes have substantially changed the morphometric, hydrological, and biological structure, thus disturbing the ecological harmony in the new twin lake. Pollution will increase even further following the commissioning of the Devnya-Ilichovsk ferryboat port. The air is filled with so many toxic concentrations that forestation is doomed to failure. Toxic gases have already damaged thousands of decares planted in young coniferous and other trees; hundreds of decares allocated for afforestation have been wasted, and so on. Sulfur oxides released by the chemical fertilizers plant, however, could be converted (with improved technological processes) into sulfuric acid! The more so since the chlorine plant, for example, already has a system for the production (from waste chlorine and iron) of ferrichloride until recently imported from abroad! How many other facts we could add! ...

Under such circumstances how could we not be universally concerned with the adoption of systematic measures to prevent the degradation of the environment and protect the help of the people?!... One of the specific manifestations of this concern is the contract concluded nearly 1 year ago among the ministries of public health, chemical industry, and construction and construction materials, and the Varna Okrug People's Council on protecting the air, waters and soil from pollution and on improving the hygienic condition of the working environment and medical services in the area of the industrial complex.

It would be both exaggerated and erroneous to believe and expect that this contract would resolve immediately all accumulated problems as with a magic wand. No, it merely lays a hopeful beginning and is factually the first comprehensive, serious, and organized step for the protection, restoration, and enrichment of the national environment in the lowland. It is an initial step logically to be followed by other steps, bigger and even more effective!...

The purpose of the investigation conducted by Zdraven Front in the first half of last June was to determine in detail how and to what extent the contractual stipulations mainly applicable to the organs of the Ministry of Public Health are being applied.

Nevertheless, a very short description would be helpful. Some 20,000 workers and employees work at the approximately 12 industrial, power, construction and other enterprises and establishments in the lowland. Most of them live in other settlements and commute by train and bus. There are nearly 12,500 permanent and temporary residents inhabiting the five Devnya districts. In other words, the overall size of the population requiring medical services exceeds 30,000 people, including 6,000 children and students. This is a large number of people, particularly bearing in mind some specific factors, such as, for example, the substantial variety of living and working detrimental conditions to which those who live and work here are subjected, or the high cycle emotional stress in some production and construction types of work (during launching periods).

Furthermore, the study of morbidity in the plants shows the trend of high frequency and severity of diseases causing temporary disability. The highest percentage in morbidity is that of diseases of the respiratory system, followed by complications caused by pregnancy and diseases of the skeletal and muscular apparatus, diseases of the urinary-reproduction system, the stomach, the duodenum, and others. The longest disability occurs in diseases of the skeletal and muscular apparatus (breaking of bones, rheumatism of the joints, and others), and in neurological diseases, while the shortest disabilities result from colds whose frequency, however, is significant. The studies conducted by the scientific institutes indicate the existence of some allergy and skin diseases among those using industrial harmful substances, as well as chronic bronchitis among workers operating in an environment saturated with irritant gases.

More Accurate Apparatus Needed

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 1

[Text] The first contractual obligation of the MNZ [Ministry of Public Health] -- to sum up data of the systematic observance of sanitation conditions in the Devnya industrial area and submit them for use by the Ministry of Chemical Industry (MKhP) and the Ministry of Construction and Construction Materials (MSSM) -- is being implemented.

We could say in this connection that as early as 1968 the organs of the KhEI [Hygiene-Epidemiological Institute] in Varna have been watching the content of harmful substances in the air. Furthermore, as of 1971 the area was included in the National System for Control of Atmospheric Pollution in the country, and 6-day surveys are being conducted on a monthly basis in the Nanko Nedev, Izvorite and Poveyanovo residential districts and, as of 1974, in the Khimik district as well. Each quarter the results are reported in bulletins which are subsequently distributed among interested departments. In the period we mentioned of laboratory control of the air (1969: sulfur dioxide, chlorine, and free mineral acids; 1971, nitrogen oxide; 1974, hydrogen sulfide, sulfuric acid, and ammonia; and 1975, hydrogen fluoride) the concentration of atmospheric pollutants has remained constant.

Current health control of the atmosphere in the first quarter of 1977 covered four areas: the Izvorite, N. Nedev, and Poveyanovo districts, and the Odesos pumping station. A total of 102 samples were taken for dust, 110 for sulfur dioxide, 122 for chloride, 110 for mineral acids, 130 for nitric acids, and 85 for lead aerosols. As we may see, extensive work has been done.

What notes and conclusions could be made? In the case of dust the average monthly concentrations in the individual areas have exceeded the average monthly concentrations by area up to 700 percent above the maximally admissible levels while the maximal concentrations have exceeded the maximum from 100 percent to 14.6 times. This means that compared with the same period in 1976 there have been no improvements. In the case of free mineral acids the average concentrations have equalled zero while maximum concentrations have ranged from 0 to 2.5 times the maximally admissible concentrations (remaining, nevertheless, below last year's!). The situation of the other pollutants is considerably better. Concentrations of sulfur dioxide, chloride, nitrogen oxides, and lead aerosols (excluding the maximal in the air have been low and have not exceeded the maximally admissible concentrations. Naturally, the observations are continuing and will continue. There is no deadline. The results, however, would have been even more accurate had more accurate equipment been used!...

Vinylchloride, Mercury and Other Elements Found

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 3

[Text] All sorts of fears exist in the lowland concerning the harm caused by vinylchloride and mercury, particularly among the workers of the Plant for Chlorine, Vinylchloride, and Polyvinylchloride. This is understandable, for everyone is concerned with his health. However, lack of information triggers concern and the "eyes of fear" become even bigger. Yet there is only one proof! It must reach the workers, everyone, in order to put an end to fabrications...

The contract contains stipulations on this matter as well. Furthermore, work has been done in this area for quite some time and certain results are visible.

The Scientific Research Institute of Hygiene and Vocational Diseases (NIKhPZ) of the Medical Academy in Sofia has been controlling the health of the workers in this plant starting with the second year following its completion. In the past 2 years a complex institute brigade (toxicologists, dermatologists, vocational pathologists, neurologists, physiologists, cardiologists, and biochemists) have made three clinical and paraclinical examinations of the workers. The examinations established the existence of ten light cases of effect by vinylchloride and the affected workers were transferred to other jobs. Furthermore, the Council of Ministers issued decree No 120/1976 on the basis of which all personnel employed in the synthesis and polymerization of vinylchloride have a 6-hour work day, supplementary breakfast, free food, and others. I discussed subsequently present activities, in Sofia, with Dr Mincho Spasovski, senior scientific associate first class and candidate of medical sciences, scientific secretary of the institute and head of the laboratory on hygiene norming of industrial toxins. He stated the following:

"The institute is continuing its scientific research on vinylchloride. We are engaged in experiments to determine a new maximally admissible vinylchloride concentration. We are processing all studies conducted so far which will be included in a report and sent both to the plant's management as well as the respective trade union and health organs."

I also met with Dr Nikolina Tsaneva, senior scientific associate and head of the section on labor physiology at the same institute. She said:

"Our section as well conducted studies of great importance to the work capability, effectiveness, reliability, and satisfaction of the workers and the modernization of the shops. The result indicated the need for such modernization. We must also provide short rests with substitute personnel. The training of operators and the development of an incentive system are very important if we are to lower turnover. A number of unresolved problems related to female labor remain."

Therefore, both fears of any eventual self-seeking activities of the health organs, as well as the concern of the plant and lowland workers are obviously exaggerated.

Implementing its contractual obligations, the toxicological laboratory at the KhEI in Varna, headed by Dr St. Stanchev, has made a contribution to this problem (the toxicological laboratory, as stipulated by the conference, was not opened with staff personnel at the POB [first class okrug hospital]; Dr Evgeni Velkov, the OARIL [expansion unknown] specialized as clinical toxicologist and attended a course at the N. Y. Pirogov RNPISMP [expansion unknown] in Sofia). The shop for mercury electrolysis of the same plant

began operational tests 5 years ago. As early as 1973, however, the workers were covered by complete specific laboratory examinations including control of mercury released in the urine. Furthermore, vocational pathology specialists conduct a complete specific neurological, stomatological, and ophthalmological examination. This covered 70 workers in 1973, 246 workers in 1974 (including outside workers who replaced the floor covering), 154 in 1975, 133 in 1976, and 107 in the first half of 1977. At the same time, starting with 1974, every year the personnel of the Mercury Electrolysis Shop spend a certain time at the prophylactic establishment of the plant at the Zlatni Pyasutsi complex near Varna without missing work. Using the Soviet preparation Unitol, this makes possible to clarify the extent to which mercury is deposited in the body. At the same time the workers are disintoxicated through the elimination of the mercury in the urine (achieved through the repeated application of Unitol under proper laboratory control condition). Thus, 99 workers underwent preventive treatment with Unitol in 1974, 91 in 1975, 103 in 1976 and 61 in the first half of 1977. After a stay at the prophylactic establishment and a comparison of the data of the examination suspected cases of micro-mercurialism are sent to the Consolidated Workers Hospital in Varna.

This clearly shows that not only work is being done on the implementation of the contract but experience has been acquired after several years of work. Unquestionably, this will make further progress even more confident.

However, we are puzzled by Dr St. Stanchev's statement:

"The contract stipulates that the head of the experimental workshop at the Medical Academy based at the NIKhPZ in Sofia to supply annually the toxicological laboratory of the KhEI in Varna 30 glass distillation apparatus for determining the mercury content in the urine. Unfortunately, not one has been made and delivered so far!..."

Subsequently, I visited the workshop in Sofia for that reason. I received the following explanation from Dimitur Borimechkov, interim workshop manager (the manager retired):

"As early as the middle of January 1977 I sent a written report to the manager of the FAD [expansion unknown] Base 3, and Material and Technical Supplies. I asked that we be provided with the necessary materials for the manufacturing of these apparatus. However, the MTS [Material and Technical Supplies] has still not supplied us with such materials since, according to its information, they were unavailable on the market. Let me point out that, in fact, this is not the only order we are unable to fill due to the lack of materials! The irregularity of supplies with materials is an exceptional hindrance to the scientific and experimental activities of the institute. We have repeatedly reported this to the management of the Medical Academy."

Nevertheless, the people of Varna will be pleased by the news that starting with August they will receive the first five to six apparatus! After we establish contacts the comrades were energized, Sections were found, and testtubes and taps will be delivered...

Yet such an activity could have taken place 6 months ago! It could and it would have been proper, but...

Hygiene Epidemiological Institute

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 3

[Text] The physiological laboratory of the Labor Hygiene Section of the KhEI in Varna plays its role in the general project and has a share in the implementation of the contract.

An audiometric screening of 312 workers operating at noisy work places was made with a view to the detection of eventual vocational illnesses. Noise damages were detected in 44 of them. A name list was drawn up and submitted to the Devnya Branch Polyclinic.

Now, as a result of the forthcoming opening of a prophylactic ward and of still unclarified matters concerning the type and extent of its activities, screening operations have been temporarily interrupted. However, the idling on the part of the Varna KhEI applies to yet another obligation stipulated in the contract: "The organization of psychophysiological studies and measures aimed at maintaining the working readiness of the operators in control premises during night shifts at an optimal level and the creation of criteria for the professional selection of workers in professions of particular importance to the chemical industry." The reason given by Dr Ivan Zlatarov, laboratory head, for the unusually passive attitude, was the following:

"This task is being implemented under the direction of specialists from the NIKhPZ in Sofia. They should give us a work program. The role of the Varna KhEI (of the physiological laboratory) in this case is reduced to the implementation of specific tasks together with specialists from the institute or separately. So far we have done nothing waiting for the specific program and instructions of the NIKhPZ..."

Subsequently, in Sofia, Dr N. Tsaneva, from the NIKhPZ, stated in this connection no less firmly:

"Nothing of the sort! Our section drew up a detailed program and responsible comrades took it to the KhEI in Varna as early as 1976! Furthermore, I delivered another copy of the program personally to Dr Zlatarov on 25 April 1977 while visiting Varna!"

This is a delicate situation!... I am confident that Prof Dr Fina Kaloyanova, director of the NIKhPZ, and Dr Marin Mirchev, director of the Varna KhEI will not only trace the truth and inform the editors but do what is necessary for the implementation of this "mysterious" program...

Rational Nutrition of Workers

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 3

[Text] The contract clearly stipulates the following: "Organize the elaboration of nutritional systems with model menus and proper recipes for workers handling mercury, chloride, sulfur dioxide, ammonia, and polyvinyl chloride, by 30 December 1976." Actually, this is merely one aspect of the project. It was accomplished within the stipulated deadline. Sample menus, instructions, and recipes for the rational, dietetic and preventive vocational nutrition of the working people employed in the four main groups (based on caloric content, in accordance with labor intensiveness) in Devnya were drawn up. Together with proper instructions they were given to the cafeterias. Three of the main kitchens have nutrition engineers-technologists who have attended a one-week training course at the Nutritional Hygiene Section of the KhEI in Varna. Talks were read on plant radio systems. Conferences and instruction meetings were held with the managements of plants, trade union chairmen, and cafeteria management personnel. A description was made of material and technical facilities. The factual nutrition of workers engaged in the production of chlorine and polyvinyl chloride was studied and improvements were suggested to the choice of products.

Well and good! What, then? Then, nothing! Stagnation! There was no technical readiness which should have been provided by the management of the Devnya Chemical Combine along with the preliminary preparations, for even though the material and technical base is fully consistent with hygienic requirements, the available facilities are insufficient. No assembly lines for receiving the prepared food, for loading and unloading operations, for moving dirty utensils, and so on, exists.

Toward the end of the investigation matters seemed somewhat better. An integrated public catering facility was developed for the first time in the country. This way the plant managements were relieved from extraneous activities and the implementation of the rational nutrition program was secured and facilitated. Today the Devnya industrial complex has five main kitchens, 20 cafeterias, 51 serving areas, and 11 booths selling snacks and food products. Heating and refrigeration equipment, general purpose washing machines, and electric grills and pans were purchased. A course offered by the Ministry of Internal Trade and Public Services trained 28 people as assistant cooks, chief cooks and managers...

It seems likely that rational nutrition would be served at the Plant for Chemical Fertilizers as of 1 July and that this would be extended to the other plants before the end of the year.

The saying is that all is well that ends well.

This is just a saying. However, there is also a contract and since the ministers of the respective departments have signed it it must be observed strictly within the deadlines! This does not apply mainly to the organizations within the Ministry of Public Health!...

Otherwise it would be a depreciation of signatures and reciprocal trust!... A depreciation whose significance and reverberations would be many sided!...

Lack of Treatment Facilities

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 3

[Text] A contract is precisely a contract because its signatories assume specific obligations. Naturally, each of the parties is concerned, above all, with the implementation of its own obligations. However, this should hardly mean that it should have no interest in what the other partners do (or fail to do) on time or belatedly. So far a lot has already been said on what the units of the Ministry of Public Health are doing or not doing. Stopping the discussion here would objectively enable the contracting parties to interpret this as a neglect of their efforts in pursuit of the common goal. On the other hand, were to make a detailed study on the way they fulfilled their obligations, their printed organs would have reasons to accuse us of entering "foreign territory."

That is why let us quickly go through this "foreign territory" stipulated in the contract...

Stefan Stoyanov, Ivan Malchev and Dr Stanoev: "Page 8 of the copy of the contract we received contained an important stipulation which is lacking in your copy. It literally states that in order to stabilize medical cadres within the public sector system in Devnya the Ministry of Chemical Industry and Ministry of Construction and Construction Materials undertake to allocate a certain percentage of the newly built apartments for health workers, as needed (to be allocated by the Devnya City People's Council). Has a technical error been committed in transcribing the document? Otherwise we request its absolute inclusion. It is hardly necessary to explain why!..."

The "building 150" of the Chlorine, Vinylchloride, and Polyvinylchloride Plant has already become a "historical" project. Its purpose will be to treat refuse waters containing mercury. This is an important project! It was scheduled for completion some 10 months ago yet it remains unfinished to this day!...

For the past year water with a disturbed pH (acid-alkali) frequently reaches the fecal-residential sewage waters treatment station. Frequently such waters come with a pH 1 and 12. A real danger is created of the

destruction of the microflora in the biological basin of the station and of disturbing the entire technological system and causing systematic and irreparable damages to pumps and equipment. Consequently, the station frequently converts to an emergency work system by releasing acid waters directly into the water receptacle -- i.e., into the Devnenska River -- through a spillway station. Such water reaches the Varnensko-Beloslavsko Lake. The alkaline waters are treated mechanically only at the station and (without neutralizing them) are also released into the Devnenska River. The station's dispatcher service regularly reports to the official in charge at the Devnya chemical combine the poor quality of the water received. Usually, however, no measures are taken. RIGOPS draws up documents and even takes the Devnya SKhK to court. However, nothing is changed. The building of the intraplant separation sewers must be completed and stricter control must be organized in the shops to prevent the releasing of industrial waters into the fecal sewer system. Furthermore, it is imperative to speed up the designing and construction of the station's expansion.

The Cement Mills Shop at the Cement Plant has considerably improved the maintenance of the filtering equipment. This has resulted in a substantial reduction of the dust content. Most modern Soviet dust tapping electric filters (with a 30 percent reserve capacity) have been installed at the 5th technological line (i.e., at the big stack). Presently nothing is being seen coming out of the stack. The old capacities for the production of clinker and cement have not been forgotten. The necessary work for first degree treatment has been completed at those capacities as well. This way the dust level caused by the kilns will be maximally reduced there as well.

We mentioned at the beginning that no one should add to the sinister heap. Yet something is being added! For the past 2 years, without clearing in advance the estimated cost documents with the Ministry of Public Health, a new plant for chlorine, vinylchloride, and polyvinylchloride has been under construction. Finally, now specialists from the Ministry of Public Health will be offered the full set of documents for view. Let us hope that it is not too late and that this will not necessitate corrections in the construction work!...

Viewpoints on Contract Expressed

Sofia ZDRAVEN FRONT in Bulgarian 30 Jul 77 p 3

[Text] Mancho Genov, deputy chairman of the Varna Okrug People's Council Executive Committee, in charge of public health and environmental protection: "The fact that such a contract was signed is, in itself, a very positive aspect in energizing the struggle for environmental protection in the Devnya lowland. Naturally, this could not be considered in the least as totally adequate. In my view, all contract parties must fulfill the stipulations of this contract as they apply to them!

"A special program for the preservation, renovation, and enrichment of the environment was adopted by the Varna Okrug People's Council for the Seventh Five-Year Plan. This includes the Devnya lowland. Measures costing about 12 million leva were planned for the chemical plants. Furthermore, measures were planned (some of which to be implemented in the Eighth Five-Year Plan as well) for which no funds have been secured at present. The proper proposal shall be submitted to the planning organs to secure such funds. The program also includes a number of measures pertaining to the cement and sugar plants. A city treatment station was built in Devnya to process fecal-residential waters. A sludge dump was built and commissioned with the completion of the new plants to collect the chemically polluted waters from all the plants of the Devnya Economic Chemical Complex. A ferrichloride system was built to tap and utilize chlorine waste. This way the emission of chlorine in the atmosphere was reduced to a minimum. Work is being done also on protecting the soil from salinization along the track of the brine pipe running from the salt deposits near Provadiya to Devnya. Let us also note that the okrug people's council executive committee systematically hears reports submitted by the management of the Devnya SKhK and of the other plants on the implementation of the basic current measures for environmental protection in the lowland and that we are taking additional measures in this respect. The joint activities of the okrug people's council executive committee, the Devnya City People's Council Executive Committee, and the okrug public environmental protection committee (of the okrug Fatherland Front Committee) and the specialized control organs have been improved considerably."

Vasil Rusev, chairman of the Varna Okrug Fatherland Front Committee and the Okrug Public Environmental Protection Committee:

"As everywhere throughout the country the public committees in our okrug -- okrug, city and obshtina -- are doing a great deal of useful work for the protection of the environment. Such a committee has been set up at the Devnya Industrial Complex as well.

"Our representatives had investigations conducted jointly with other specialized organs, after which they issue prescriptions and recommendations on the elimination of noted weaknesses within a stipulated time. The rayon environmental protection inspectorate supervises the implementation. If necessary we seek the intervention of the courts and impose other penalties.

"Thanks to the systematic and purpose agitation-explanatory and cultural-mass activities the labor collectives are joining ever more actively the struggle for the preservation, restoration, and enrichment of nature and natural resources. In this respect we pay particular attention to Devnya. We cannot claim that a great deal has been achieved. However, nor are the accomplishments minor. Thus, for example, thanks to the correct and responsible attitude adopted by the management of the Cement Plant, serious measures are being undertaken to insure the normal work of dust

tapping systems and for maintaining the filtering equipment in a state of technical readiness. Our cement plants emit 350,000 tons of dust annually, 20 percent of which from the finished products. This could be packaged in 3.5 million standard size 20 kilogram bags.

"Let us not even mention the destruction of vegetation, the polluted air, water and soil, and the harmed living environment! Currently the "contribution" of the Devnya Cement Plant in this respect has been reduced considerably. In the next few years it will be reduced even further! Furthermore, a large percentage of the boilers of the Devnya TETs have converted to a different fuel -- natural gas. This has also been the case of the Plant for Chemical Fertilizers in its ammonia, triple superphosphate, mixed fertilizers and sulfuric acid shops. This has lowered the pollution of the air with sulfur compounds and of the waters with gasoline and fuel oil.

"Naturally, our successes would have been greater if all plant directors had raised the environmental protection problems to the level of production tasks as is being done, for example, at the Cement Plant. Suffice it to mention only that the State Sugar Refinery has not implemented a single one of the five measures included in the familiar Council of Ministers Order 19. We must also surmount the inertia not only of some local but of some central managements. Since this has not been accomplished as yet we shall continue our adamant efforts in this respect as well!"

Dr Marin Mirchev, director of the Varna KhEI: "We know that the contract mentioned here was signed by four parties -- the Ministry of Public Health, the Ministry of Chemical Industry, the Ministry of Construction and Construction Materials, and the Varna Okrug People's Council. Yet who is the coordinator? Nowhere is this stipulated. The approximate deadlines for high level meetings to discuss implementation and results of the work done as well as measures for surmounting arising difficulties have not been set. It would be proper, for example, for an initial such meeting to be held in the last quarter of this year, for it is precisely at that time that the deadlines for a high percentage of the measures will be elapsing.

"As to deliveries of equipment as stipulated in the contract, it appears that the Ministry of Chemical Industry is already taking specific steps. This is proper. It would be desirable, however, for the ministry to do what is necessary to insure the rapid implementation of the other stipulations it has assumed according to the contract."

5003
CSO: 5000

ECOLOGICAL PROBLEMS CAUSED BY CONSTRUCTION INDUSTRY

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 24 Aug 77 p 13

[Article by Engineering Economist Tsveti Dakovski, senior assistant at the Higher Engineering and Construction Institute: "Problems of the Ecological Environment"]

[Text] The constant growth of industrial, civil and other types of construction, as well as the production of building materials and articles directly influence the ecological environment. On the one hand, construction activities have a detrimental effect on the ecological situation. Fertile lands are destroyed both for construction needs as well as for uncovering raw materials for the building materials industry. The waters, soil and air are polluted.

On the other hand, the changes which have occurred in the ecological environment influence the capital construction projects. The consequences of this are apparent in the form of a number of negative phenomena which worsen the design and operating qualities of the buildings and installations, and so forth. The problem of protecting and improving the environment is particularly important for construction due to this two-way dependence.

The Bad Effect of Construction

As a result of the intense construction activities in our nation, there has been a rapid increase in the areas of arable land set aside for construction needs. In spite of governmental decisions to use low-fertile and untilled areas, from the middle of 1974 up to the middle of 1975 alone, 35,000 decares of arable land have been set aside for these purposes. This fact is disconcerting, in bearing in mind that the quality characteristics of our land resources is not very good. As a consequence of terrain features, erosion and other factors, the arable land is only around 40 percent of the nation's territory.

The bad effect of construction on our arable land requires, after a comprehensive evaluation of the effect of all the factors, that the directions be

given for introducing scientific and technical progress in studying, designing and building capital construction projects. This must guarantee the protection, recovery and recultivation of the lands touched by construction activities.

First of all it is essential to improve the preliminary studies. A portion of these studies, depending upon the type, character, size and location of the new projects, must have a land management character. In doing this it is essential to establish and examine the existing organization and arrangement of the given economic unit on the territory of which the future project is to be built. At the same time, it is essential to evaluate the consequences of construction and future operation, and the expected losses are to be taken into account in the economic projections of the plans.

An inseparable component part in the general plans must be the plans for the restitution of the destroyed terrains and the recultivation of the removed humus layer. This plan must also be economically sound. It is essential to observe the requirement that a bank does not finance projects without these particular plans.

In order to protect the arable land, even in the stage of studying and designing the projects, a maximum economy of area must be most strictly required in the situational layout decisions. Along with this, it is essential to improve the methods and organization of construction in the aim of protecting the arable lands to the greatest degree. This is particularly imperative in developing raw materials for the building materials industry. In the technical and economic background studies of this production, even in the phase of studies and designing it is essential to investigate the effect on the biological equilibrium of the waste products which have been discarded or have fallen on the soil from the water or the air.

Soil and Water Pollution

As a result of intensive economic activities, pollution is constantly rising in the upper soil layer, particularly in industrial regions. For this reason comprehensive measures are not envisaged for preventing this phenomenon. By 1995-2000, however, it will turn out that structural elements in contact with the upper soil layer will be exposed to the strongly aggressive effect of the pollutants which have entered the soil.

The data for Sofia indicate that the situation is alarming. Observations of the permanent pollutants indicate that significant quantities of oil and oil products, cyanides, hydrogen sulfide and sulfides, heavy metals, various pesticides and so forth enter the soil intensely primarily through sewage water. Of them the hydrogen sulfide, sulfides and other sulfur compounds create the greatest danger for structural elements. The Svezhest DSP [?State Economic Enterprise] discharges 4,950 mg of such compounds per liter of its waste water, and the Leda DIP [?State Industrial Enterprise] some 900 mg per liter.

Equally large quantities of cyanides enter the soil through the same way. Along with other unfavorable consequences, due to their corrosive character, these pollutants strongly influence not only the concretes which are in direct contact with them, but also steel structural elements.

The scale of the corrosive effect of the pollutants is very great. In spite of the fact that the economic consequences have not been completely determined, these represent significant annual losses. In certain instances the durability of the structural element is jeopardized. For this reason the scientific research in this area must be aimed most actively at establishing the type and character of the pollutants and as well the economic consequences of their action.

The water problem for us by the end of the century will become exceptionally important, in bearing in mind that even now there are unfavorable trends in the water management balance of the nation. As a whole, however, water pollution is continuing to increase. First of all, it is essential to improve the methods for purifying the industrial and domestic waste waters. New purification methods must be rapidly introduced, and their construction and design improved. It is imperative to change over to prefabricated structures, to standardize the biotanks, the radial settling tanks, and so forth. The necessity has also arisen of bringing the capacity of the sewage network into accord with the increasing quantity of sewage water by reconstructing the sewage conduits.

There are significant opportunities for reducing water consumption in the building materials industry by introducing methods with self-contained water cycles.

The Air

The relation of the construction sector with the problem of air pollution, as one of the most important elements in the ecological environment, is also a two-way one, as on the one hand, construction activities and particularly the building materials industry pollute the air, and on the other, mechanical and gas pollution have a negative effect on the structures and installations. Although not such corrosive chemicals the waste products released into the atmosphere by the cement industry are some of the basic air pollutants. In the areas of cement plants, the dust concentration in the air exceeds the tolerable standards by several fold. The main and immediate task in the cement industry is to improve production methods and to find more efficient methods for reducing the quantity of the wastes released in the atmosphere.

The polluted air causes more rapid amortization and even partially destroys buildings and installations, with the economic losses from this being enormous. In certain countries, as an indicator of this, they calculate the annual amount of losses caused per capita as a consequence of air pollution. These losses are measured by the expenditures on painting and repairs, for anticorrosion surfaces, the cleaning of stone and brick facings, and for

eliminating the physical wear on buildings and installations. In the United States alone, over the last decade, these expenses have increased from 95 to 126 dollars. In Great Britain, in 1953, when the first study was made, it was established that 30 million pounds are spent on painting, and 20 million pounds on cleaning and wear of the buildings, while as a consequence of corrosion of metals and other building materials the losses were 77.5 million pounds. Over the 20 years, these losses have increased from 2- to 3-fold, without considering the social consequences of air pollution.

It has been established that as a result of air pollution, building materials are exposed to a severe physical and chemical effect which alters their physical and mechanical qualities. From a survey conducted in the United States it has been established that in percentages the annual amount of damage, for example, to paints is 5 percent, for cement and concrete 0.1 percent, for sheet iron 2.6 percent, and so forth. In bearing in mind the enormous use of these materials, the losses from just certain of them, for example for paints, are enormous.

In our country, in spite of the smaller scale and significantly lower level of air pollution, this problem also must not be neglected. Attention must be paid to producing building materials and articles with improved quality and less sensitive to pollution. Along with this, it is essential to improve the existing methods and develop new ones for protecting the structural elements of buildings and installations against the increasing corrosive effect of the air.

Scientific and technical progress in architecture, the construction and production of building materials play an important role in solving the problems of noise abatement as one of the factors for improving the ecological environment. The exceptionally rapid introduction of motor vehicles over the last 10 years alone has led to a rise of the background noise in large cities of the world from 12-14 decibels, and at present this has reached an average of about 80 decibels. With this growth rate, it is expected that by the year 2000 the upper physiological limit for human tolerance will be passed.

The increase in background noise in Bulgaria is most clearly expressed in Sofia. Its level at certain points of the city has already reached 80 decibels. In certain acoustically poorly designed structures, the noise level reaches about 90 decibels.

The solving of the noise abatement problem, to the degree that this is in the range of activities of construction, requires that the necessary noise comfort be provided by improving the architectural designing and employing building materials with good noise-suppressing qualities. The noise level must be within the limits of the accepted standards for housing, public and industrial buildings.

In the long-range general plans for communications, it is essential to take into account the expected noise effects on residential areas, and the plans for major arteries without fail must be accompanied by an acoustical plan.

The investment policy in protecting the ecological environment is expressed primarily in a comprehensive approach in the study, design and construction of capital construction projects through providing the necessary capital investments for this. It is essential to constantly raise the economic and social effectiveness of the funds spent for this purpose. The difficulties in determining the criteria and indicators for the effectiveness of these capital investments should not stop the constant rise of their volume.

10272
CSO: 5000

ENVIRONMENTAL PROTECTION, CONSERVATION ORGANIZATION ESTABLISHED

Budapest MAGYAR KOZLONY in Hungarian 28 Aug 77 pp 854-856

[Text] The Council of Ministers' resolution No 1035/1977 (VIII. 28) about continued development of the environmental protection and conservation organization

In the interest of more effective coordination and supervision of the environmental protection activity and conservation, the Council of Ministers resolves the following:

Section I

National Environmental Protection and Conservation Council

1. The Council of Ministers establishes a National Environmental Protection and Conservation Council (hereinafter: Council). In environmental protection and conservation matters, the Council is the Council of Ministers' coordinating, opinion rendering and supervising organ.

2. a) The Council's chairman is appointed by the Council of Ministers.

b) The Council is composed of responsible officials appointed--in agreement with the Council's chairman--by:

the minister of internal trade
the minister of interior
the minister of health
the minister of construction and urban development
the minister of defense
the minister of metallurgy and machine industry
the minister of light industry
the minister of transportation and postal affairs
the minister of culture
the foreign minister
the minister of agriculture and food
the minister of heavy industry

the minister of education
the president of the National Planning Office
the minister of finance
the president of the Central Geological Office
the general secretary of the Hungarian Academy of Sciences
the president of the Bureau for Local Councils of the Council of Ministers
the president of the National Mining Technology Supervision Office
the president of the National Bureau of Environmental Protection and Conservation
the president of the National Technical Development Committee
the president of the National Bureau of Water Conservation
the president of the Capital City Council
and of scientists and specialists invited by the Council's chairman.

c) The Council's secretary is the president of the National Environmental Protection and Conservation Office.

d) The Council of Ministers requests

the National Council of the Patriotic People's Front,
the Central Committee of the Hungarian Communist Youth League,
the National Council of Trade Unions, and
the National Council of Producer Cooperatives,

to participate in the Council--as its member--through being represented by a high level official.

3. In urgent matters occurring between sessions of the Council, the Council's chairman is authorized to take steps with the Council's authority. He must report on measures he has taken, to the Council at its next session.

4. The following are the Council's tasks:

a) to develop concepts for the tasks of environmental protection and conservation, for the development of its goals, and--as necessary--to make proposals about the size of separated [elkulonitett] financial means and for the main directions of their use serving environmental protection tasks, to initiate measures for carrying these out and to coordinate the activities of the ministries (organs of national authority), capital city and megye councils, and social organizations in this direction,

b) supervise the execution of environmental protection and conservation tasks,

c) approve the guiding principles for the use of separate financial means serving environmental protection goals, and supervise the use of these,

d) theoretical guidance of the work of megye, capital city environmental protection and conservation committees,

- e) designating the main directions of scientific research and development for environmental protection, expediting the dissemination and application of the research results and of foreign experience,
 - f) instigating the development of environmental protection's industrial background and disseminate technologies which do not harm the environment, or which are low in waste,
 - g) promoting the coordinated development of environmental protection education and advanced education,
 - h) initiating measures by the authorities, branches, or supervisory units in connection with environmental protection,
 - i) developing a standpoint of principles in connection with the development of international cooperation: organizing and supervising the carrying out of domestic tasks derived from environmental protection cooperation conducted with the CEMA countries and with other countries, and from the international obligations related to these,
 - j) developing a stand in the more important issues of environmental protection, and supervising their coordination and realization.
5. a) The Council takes a stand in matters referred to its authority, or--with the exception of issues resulting in significant financial effect on the people's economy--makes compulsory resolutions for the national organs regarding the operative coordination of environmental protection activity.
- b) The Council of Ministers must be regularly informed about the Council's operation and resolutions.
6. The Council's operation does not affect the sphere of authority and responsibility of the ministers (heads of organs of national authority) established by legal regulations.
7. The Council sets its own agenda.

Section II

The National Bureau of Environmental Protection and Conservation

8. The Council of Ministers establishes a National Environmental Protection and Conservation Bureau (hereinafter: Bureau).

The Bureau is an organ of national authority, which carries out the tasks related to the Council's operation, to the coordination of environmental protection and to its supervision, and takes over the sphere of authority and tasks of the National Environmental Protection Bureau.

9. The Bureau's tasks are:

a) with respect to environmental protection, it

--works out proposals for the Council on the basis of surveying the situation of the environment to develop the environmental protection concepts and for the tasks of environmental protection,

--makes suggestions for environmental protection's observation and information system, for initiation of measures and for the solution of other problems of environmental protection which belong under the Council's authority,

--organizes the execution of the Council's resolutions and monitors them,

--works out ideas about the environmental protection tasks of the people's economy's plan by involving the interested parties, and--as necessary--initiates proposals for the amount of the separated financial means serving the environmental protection tasks and for the main directions of using them,

--provides opinions about plans of proposals, legal regulations, development concepts, investment suggestions, regional plans, etc. which affect environmental protection,

--together with the interested organs, makes suggestions to the Council for establishing the guiding principles for using the separate financial tools which serve the goals of environmental protection, and on the basis of the position assumed by the Council--together with the interested organs--takes care of the realization of the things included in the guiding principles,

--initiates complex environmental protection checks, works out suggestions for the guiding principles of these, and organizes their execution,

--may request information from state, cooperative and other organs, data about measurements, observations and controls related to environmental protection, monitors the execution of environmental protection investments,

--centrally guides--through the executive committees of the megye and capital city councils--the megye and capital city special management activities connected with coordination of environmental protection,

--professionally aids the activities of the megye and capital city environmental protection and conservation committees;

--follows with attention the development of environmental protection's industrial background, and the introduction of technologies which do not harm the environment and which are low in waste,

--participates in the organization of scientific research for environmental protection purposes and in developing the conditions necessary for this,

--organizes the execution of tasks derived from international contacts,

--collaborates in environmental protection training and advanced education,

--organizes propaganda activity for environmental protection,

--takes care of the Council's secretarial duties;

b) with respect to conservation, it

--guides and supervises conservation activity,

--accomplishes the authoritative tasks defined in the legal regulations regarding conservation,

--takes care of the maintenance, protection and management of protected values,

--organizes popularization of conservation and the dissemination of its results,

--participates in organizing scientific research for conservation purposes and in assuring the conditions necessary for this,

--carries out other tasks defined in the legal regulations for the National Bureau of Conservation, and exercises its authority.

10. The Council of Ministers supervises the Bureau through its vice president. The head of the Bureau is its president. The Council of Ministers appoints the Bureau's president and vice president.

11. The Bureau's president determines the Bureau's organizational and operational rules.

12. The Bureau operates as an organization of the budget, and financial coverage for the Council's operation must also be assured in the budget. The Bureau's budget must be planned in the Council of Ministers' budget.

Section III

Environmental Protection and Conservation Committees in the Megyes

13. The Megye Conservation Committees must be reorganized into Megye Environmental Protection and Conservation Committees (hereinafter: Committee).

In environmental protection and conservation questions, the Committee is the advisory, opinion rendering and supervisory organ of the executive committees of the megye and capital city councils.

14. The Committee's chairman is the vice president of the capital city and megye councils, or another person suitable to carry out this activity.

The Committee's members are appointed or invited by the megye and capital city councils' executive committees from among the megye's and capital city's environmental protection and conservation experts, representatives of social organizations dealing with environmental protection, and the heads of the interested state and cooperative organs. If possible, the Committee's number of members should not exceed 20 people.

15. The Committee's main tasks are:

- a) prepares the comprehensive megye plans and concepts of environmental protection,
- b) coordinates the environmental protection activities of the councils and social organizations,
- c) monitors the megye and capital city environmental protection situation, and the observation of environmental protection rules and measures for the area of the megye and capital city,
- d) monitors the activities conducted in the sub-areas of environmental protection and, in justified cases, may create a subcommittee for this purpose,
- e) collaborates in discovering the natural treasures deserving protection, renders opinion on proposals for declaring or dissolving protection, provides expert opinion in connection with the maintenance of protected objects and areas.

16. The Committee's detailed sphere of tasks is determined by the megye and capital city councils' executive committees, taking into consideration the guiding principles issued by the Council.

17. To aid the Committee's operation, to supervise the carrying out of resolutions, an environmental protection and conservation official must be employed in the megye and capital city council's executive committee's specialty management [szakigazgatási] organization: his detailed circle of tasks will be determined by the Bureau's president in agreement with the president of the Council of Ministers' Council Office.

Section IV

18. This resolution takes effect on the 1st day of October 1977; simultaneously, effectiveness of resolution No 1046/1974 (IX. 4) Mt. h.

terminates, and subpoint 5 of point 24 of resolution No 1012/1972 (IV. 27) Mt. h. is modified as follows: the name of the research goal program named "The most favorable development of the human macro- and micro-environment" is changed to "The protection of human environment," and instead of the minister of construction and urban development, the Bureau's president will be responsible for it.

19. Wherever legal regulations refer to the Secretariat of the National Environmental Protection Council, from now on the National Bureau of Environmental Protection and Conservation must be understood by it.

20. The chairmen of the megye and capital city councils should see to it that the Megye Environmental Protection and Conservation Committees are established by 31 March 1978.

[Signed] Gyorgy Lazar, president of the Council of Ministers

8584

CSO: 5000

BRAZIL

POSSIBLE FALLOUT FROM SOUTH AFRICAN TESTS SEEN

Rio de Janeiro O GLOBO in Portuguese 16 Sep 77 p 6 PY

[Excerpt] Sao Paulo--Physicists Joao Andre Guillaumont and Giorgio Moscati, professors at the University of Sao Paulo (USP), suggested yesterday that the Brazilian authorities should become informed about the atomic explosions to be carried out by South Africa in the Kalahari Desert in Namibia, because they may affect eight states in Brazil, producing illness from cancer to genetic changes among a population of 14 million persons.

According to geography Prof Aroldo de Azevedo, the drought in the northeast is caused by hot air masses formed in the Kalahari Desert and blown into the [Brazilian] northeast by regular winds, passing into Brazilian territory over Ceara after crossing the Equator. These masses hit the region called "the drought polygon" including Ceara, Piaui, Rio Grande do Norte, Paraiba, Bahia, Alagoas, Sergipe and Minas Gerais.

It is not yet known how the explosions will be carried out, but it is possible that they will be made in the air, according to Giorgio Moscati, since the United States and the Soviet Union are the only ones that carry out underground explosions.

An atomic bomb of minimum power--from 10 to 20 kilotons, like the Hiroshima and Nagasaki bombs--can be compared with an explosion of 2,000 tons of TNT, sufficient to form an atomic cloud which, following the same route as the hot air masses from South Africa, could cause atomic fall-out on the Brazilian northeast.

CSO: 5000

MARINE METEOROLOGICAL CENTER TO BE ESTABLISHED

Jiddah ARAB NEWS in English 26 Sep 77 p 12

[Text]

JEDDAH, Sept. 25 (SPA) — The First Gulf Conference for Marine Meteorology has approved the setting up of a Regional Marine Meteorological Center.

The six-day conference was meeting for the second day at Jeddah Palace Hotel here Sunday under the chairmanship of director general of the Saudi Arabian Meteorological Department, Rumaih Mansour Rumaih.

The new center will provide data to the relevant bodies in Gulf countries for oil prospecting and beach development, and issue meteorological forecasts to help in the region's various national activities.

Deputy Governor of Mecca Prince Saud ibn Abdul Mohsen, who opened the conference Saturday on behalf of Deputy Defense and Aviation Minister Prince Turki ibn Abdul Aziz, will provide the necessary assistance for the establishment of the center in view of its special importance.

He expressed hope that the conference would reach posi-

tive results, and set elaborate machinery to accelerate technological progress and contribute to the protection of the Gulf area against air and sea pollution.

The director general of the Saudi Meteorological Department said a Saudi working-pa-

per under discussion called for the creation of a standing committee to be in charge of the Gulf states' interests in the marine meteorological domain.

He said the conference was confined to representatives of oil-producing countries on the grounds that oil prospecting and the varied economic activities of the area required enhanced services in the field of meteorology.

Rumaih indicated that an Arab League Meteorology Standing Committee, grouping all Arab countries in Asia and Africa, including Saudi Arabia, was meeting once every two years.

He stressed the Kingdom's keen interest in preventing air and sea pollution which is one of the items tabled for discussion.

He added that Gulf waters were particularly exposed to pollution because of the movement of giant oil tankers.

He said that delegates at the conference were also projecting to set up a number of marine meteorological centers.

ENVIRONMENTAL STATISTICS INDICATORS PROPOSED

Moscow VESTNIK MOSKOVSKOGO UNIVERSITETA: EKONOMIKA in Russian No 3, May-Jun 77 signed to press 8 Jun 76 pp 42-47

[Article by M. G. Trudova: "Environmental Statistics at the Present Stage"]

[Text] Over the last two decades, the environment problem has become the subject of intense scrutiny by society at large throughout the world. In and of itself, this problem is not new. Its essence is that, in acting on nature and obtaining as a result the wealth necessary to meet his own needs, man also causes a number of changes in the environment which are not desirable to man himself. Even F. Engels wrote that, "...with every step the facts remind us that we can in no way rule over nature in the way that a conqueror rules a foreign people, that we cannot rule it as someone outside nature; to the contrary, we are nature in our flesh, blood and brains and are within it; the sum of our dominion over it lies in the fact that we, as distinct from all other creatures, are able to recognize its laws and use them correctly."¹

The negative consequences of human activity have accumulated and intensified as production has grown. The modern scientific and technical revolution has permitted a many-fold increase in the amounts of natural resources being processed and the inclusion of numerous new natural substances previously unused in production, and all in a historically brief time span. In terms of its scale, the influence of human society on nature approximates the effect of the forces of nature themselves. The preservation in natural systems of that level of equilibrium to which all human economic activity and man himself have adapted has become impossible without the active assistance of man. This has made the problem of protecting the natural environment for those now living and for future generations one of the most important problems of present-day humanity.

The efficient use of nature, which is taken to mean a system of exploiting natural resources which will not worsen the environment and which ensures

1. K. Marx and F. Engels, "Soch." [Works], Vol 20, p 496.

conditions for implementing restorative processes in nature, has become a necessary condition for economic growth. This can be achieved only if the development and distribution of production is planned on the basis of comprehensive consideration of the environmental impact of different production facilities and on a basis of simultaneous planning of environmental protection activity.

In our country, the protection of nature is state policy. The USSR has recently issued governmental legislative documents and decrees whose basic aim has been to increase the responsibility of party and soviet agencies locally for the creation of conditions necessary to the efficient use of nature and for protecting natural resources.

Serious attention has been paid to environmental problems at the 25th CPSU Congress. In the "Basic Directions of USSR National Economic Development in 1976-1980" approved by the congress, listed among the basic tasks was the national economic task of "working out and implementing steps to protect the environment, to make efficient use of and recycle [reproduce] natural resources."¹

Improving the management of resources use and making it more efficient are impossible without the creation of a reliable system of information.

The most important channel of information in the system of national economic management and planning is state statistics, which provides the party, soviet, economic and planning agencies with data on the status and development of all branches of the national economy, on plan fulfillment, and on reserves and opportunities.

Thus, only state statistics can ensure that monitoring of the efficiency of resources use, of protection and use of the natural potential, is included in the system of public state supervision of socioeconomic progress and its consequences. Development of the branches of socioeconomic statistics in conformity with the practical demands of management and planning has led to the generation of sections or particular indicators describing the environment. However, no country has yet created environmental statistics as a special subsystem of state statistics, although such work is under way in all the developed nations. Moreover, discussion is continuing at the international level on what the components of man's environment are. During the course of these discussions, "the environment" is often interpreted very broadly, to include both natural and artificial "man-made" elements (industrial zones, urban and rural settlements, transportation routes, and so on), as well as many biological, cultural, ethical, moral, economic and other aspects of human life.

Without getting involved in criticizing such a broad interpretation of the environment, let us note at the start that in our country (at least at the

1. "Materialy XXV s"yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, 1976, p 174.

present stage), "the environment" is understood to mean first of all a complex of interacting natural elements, which is entirely correct, since it enables us to concentrate our attention on the problem of interrelationships between man and nature, a problem whose solution is especially important.

Environmental statistics must be included in the automated system of state statistics as one of its special subsystems, which will ensure a unified approach to all environmental components and the integrated processing of data on the environment with data from other subsystems, and especially from economic, social and demographic statistics.

Included in the tasks of this new area of statistics will be study of the complex of conditions in the natural environment of man at a specific period of time, in a specific place, and the environmental impact on man's health, ability to work and mood, as well as the effect human activity has on these conditions and the steps being taken by man to improve these conditions.

The first stage in creating this new subsystem of statistics must be to work out a system of indicators for those aspects of the environment problem which require that definite steps be taken to improve human living conditions.

On instructions from the USSR Central Statistical Administration's Scientific Research Institute, a group of associates in the statistics chair of the economics department of Moscow State University is now engaged in working out plans for such a system. Development of a system of statistical indicators describing the environment and its interconnection with economics has required that statisticians penetrate deeply into a research subject new to them. In performing this work, university department associates have certain advantages, since they have an opportunity to make use of broad direct contacts with the scientists of practically every specialty for which the environment, its components, their interrelationships, and so forth have been traditional objects of study.

The contacts established by the statistics department with biologists, physicists, chemists and geographers have permitted rather rapid familiarization with the basic problems, their interconnection, the extent to which they have been studied and their urgency and have enabled us to single out those areas which must be given priority in statistical studies of the environment in connection with the urgency of taking definite steps of a restorative or protective nature in those areas.

Among the priority problems requiring statistical study are: protecting the air from pollution; the efficient use of water resources and protecting them from pollution; the efficient use and protection of land resources; the efficient use and protection of forest resources; the elimination, destruction and utilization of wastes.

From among all the environmental components, five (air, water, land, forests and the elimination and destruction of wastes) were used in the system of

statistical indicators as the basis for developing environmental statistics. Selection of these particular components is justified not only because they are the main, vitally important components, but also because the problems associated with them have become most urgent. Moreover, their interconnection with each other is great and the matter and energy exchange among them is significant, so any changes in the condition of one lead to changes in the conditions of all the others.

Let us stop briefly on the essence of problems connected with these particular components, since the tasks of statistics and the nature of the statistical indicators needed stem from it.

Most noticeable, even without special study, is the industrial pollution of such environmental components as air, water and soil, which are vitally important to man and to all living nature. The natural self-purification capacities of these elements have long sustained in man the illusion that they are practically inexhaustible and unlimited. It is on that very premise that mankind has proceeded, discarding thousands of tons of harmful waste daily into the air, water and soil. However, the self-purification capacity has turned out to be far from limitless. Pollutant particles entering the atmosphere from factory stacks, ventilation systems and vehicle engines do not disappear without a trace, but are carried by air currents and pollute the air far from their source. Gradually washed out by precipitation and falling to the earth, they contaminate the water, soil and vegetation. In industrial regions, pollutants from numerous discharges at a variety of sources combine with motor vehicle exhaust to create a constant pollution of the lower atmosphere, a background which is especially saturated near these sources and which is constantly being added to.

Weather conditions (temperature, wind, precipitation, fog, and so on) have a great effect on the concentration of pollutants in the lower atmosphere. If unfavorable weather conditions combine with industrial regions, the concentration of pollutants in the air can threaten life and health without exceeding maximum allowable concentrations. Thus, for example, we can cite the sharp increase in mortality and morbidity in London, Tokyo and other cities during periods of smog, that is, when harmful substances discharged by transport and smokestacks are concentrated in the lower atmosphere by the weather.

Air pollution has a negative effect on the durability of metal and rubber items, building materials, fabrics, paper, paint, and so on. According to the estimates of American scientists, losses of this kind in the US are up to 15 billion dollars annually.

Pollution of internal waterways, seas and oceans, into which industrial and household waste water which is contaminated and which renders 15 times as much clean water unusable is often discharged without any purification at all, is equally harmful to man and living nature. Polluted river water flows to the sea; poisoning river flora and fauna en route and contaminating

the river silt and sand. The damage to human health from water pollution is hard to overestimate if it is borne in mind that harmful substances reach the human organism not only from drinking water (if it does not pass through purification installations at water works), but also from vegetable and animal foods.

Biological productivity in soil contaminated by industrial waste is sharply reduced. With high concentrations of pollutants the soil cover dies, and it can be restored, even after the contamination stops, only by removing a surface layer of soil sometimes 40-50 cm deep.

A serious problem is the collection and disposal of huge amounts of solid industrial and household waste from the population centers; the amounts of such waste per capita are increasing rapidly in all the developed nations. In US cities, for example, each resident produces 18 kg of household waste daily, which is about 6,500 tons per year per capita. Even larger amounts of refuse are generated by industry.

All of this waste must first be collected and removed; then everything which can be used must be carefully picked out and the unused remainder buried. Specialized production capacities are necessary to make use of many types of refuse. In a word, efficient "waste service" organization is becoming an increasingly important task.

Enormous tasks face the national economy in making efficient use of water, forest and land resources as environmental components. In this connection, the development of methodology for evaluating the ecological-economic effectiveness of various options for using these important natural and economic resources is very important.

In working out complexes of indicators for the five above-indicated environmental components, the authors tried to reflect in them the specific characteristics needed to solve the problems connected with each of the components.

As distinct from existing statistics on certain components, which viewed them first of all as economic resources, the proposed system had to describe their condition, efficient use and protection precisely as the most important components of man's environment.

The indicators included in the proposed system had to offer material for verifying plan fulfillment in the area of efficient resources use, so they had to include plan indicators presently outlined for protecting the air basin, those for protecting water, forest and land resources and using them efficiently, and also those for putting into operation production capacities, installations and projects for protecting nature and using natural resources efficiently.

Statistical indicators must also describe those changes in the environment which have occurred under the influence of nature-protection planning measures and provide a basis for developing new plans.

The data of environmental statistics must be used in planning the location of national economic projects and in selecting technological variants of production. Moreover, environmental forecasts and concomitant projected social-demographic indicators must be based on them. All this determined the content of the proposed system of indicators.

The system of indicators includes five sections, each of which is devoted to a specific component of the environment.

To digress from the specifics of the individual sections, which are associated with the specific features of the matter described in them, the following main principles for structuring all the sections can be delineated. Each section consists of four groups of indicators: presence and structure of environmental components; data describing man's activity causing particular changes in the quantity and quality of the environmental component; indicators describing steps being taken to protect and improve the environment and the expenditures connected with them; a description of the qualitative state of the environment in specified regions and centers and the size of the population living under specific conditions.

Insufficient study of the degree of influence of changes in the state of one environmental component on the state of all the other components enables us at present to include in the system of indicators only a description of the direct, immediate effect of economic activity on each environmental component. It is not possible to reflect in quantitative descriptions the indirect influence of this activity on all other components.

Thus, for example, in describing the discharges of enterprises of various branches of the national economy into the atmosphere, we cannot give a quantitative description of the water and soil contaminants then generated by natural processes. Thus, in examining discharges into the atmosphere only as a factor in its contamination, we are actually failing to take into account their deliterious effect on the environment as a whole. A supplemental system of this kind of indicators is a question for the future.

In a majority of instances, rather than using absolute descriptions of contamination by particular substances harmful to man and to the whole biosphere, we compared these pollutants with certain maximum allowable norms worked out by the USSR Ministry of Public Health (the so-called MAC [maximum allowable concentrations]) in setting up quality indicators for environmental components. To improve this group of indicators further, we need to work out, in cooperation with environmental specialists, methods for setting up synthetic overall pollution indicators for each environmental component and a world statistical indicator describing the quality of the environment as a whole in a specific population center. The entire system as a whole must describe an administrative region, oblast, republic or country and provide materials for decision-making at all levels on rational resources use, on the level of urgency of any given step to protect the environment.

Using indicators relating to the effect of human activity on the environment, we have outlined a departmental cross-section which will ensure the proper referral [adresnost'] of decisions and steps to protect the environment from pollution.

Progress in studying environmental problems is occurring rather rapidly. The number of scientific institutions engaged in the problem as a whole or in individual aspects of it is high. This testifies to the necessity and possibility of continuing work on improving environmental statistics. As environmental problems are studied further and the demand for information on the environment grows, this system we are proposing must be supplemented, modified and improved.

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OBJECTIONS TO PLACING ATOMIC STATIONS ON EUROPEAN USSR RAISED

Moscow ELEKTRICHESKIYE STANTSII in Russian No 8, Aug 77 pp 9-10

Article by V. N. Busarov, candidate of geographical sciences, Power Engineering Institute imeni G. M. Krzhizhanovskiy: "Ecological Problems of Placement of Atomic Electric Power Stations on the European Territory of the Soviet Union"

Text The development of nuclear power engineering requires the pursuance of research on the possible ecological consequences of the operation of atomic power installations and the development of scientific principles of a conflict-free interaction of atomic electric power stations and enterprises producing nuclear fuel with the environment. Ensuring an outstripping development of atomic power engineering is especially significant for the European territory of the Soviet Union. In the zones of the present placement of atomic electric power stations we are already approaching an exhaustion of the "ecological capacity" 1. This article examines three ecological factors whose consideration can right now have an effect on the capacities of the stations being developed.

In the last few years under the effect of man's economic activity the total annual river runoff has sharply decreased as a result of irrevocable losses. At the same time, the southern rivers of the European territory of the Soviet Union account for 84 percent of the decrease 2. In 1975 the average annual runoff in the mouths of the Dnepr, Don, Kuban' and Dnestr was lowered by 17 to 30 percent, as compared with the period before the control of these rivers. The stepped-up water resources balance of the Central, Volga-Vyatka and Central Chernozem regions is to be covered as a result of the transfer of the runoff of northern rivers. The scheme of the directions and volumes of the transfer of the runoff of northern waters to southern rivers is now being discussed. At the first stage the extent of the transfer in the western variant will be 10 to 15 cubic km and the full volume will be 25 cubic km 3. The introduction of restrictions on water use, establishment of closed water supply systems and a restriction on the placement of water retaining enterprises not connected with great volumes of transport of raw materials or finished output are some of the ways of solving the water problems in these regions.

Atomic stations can be included among such enterprises. The consumption of water at an atomic electric power station reaches 180 cubic meters in 24 hours [4]. The Kursk, Chernobyl', Smolensk, Rovno, South Ukraine and a number of other atomic electric power stations operate and continue to be built in regions with a stepped-up water balance [5]. In 1977 alone with a total growth of 5.5 percent in the output of electric power its production at atomic electric power stations will increase by 40 percent [6]. If it is assumed that 1.5 to 2.0 percent of the circulating water is lost during cooling, irrevocable losses will total about 2 cubic km annually on the European territory of the Soviet Union alone. According to the data of Gidroproyekt [All-Union Planning, Surveying and Scientific Research Institute imeni S. Ya. Zhuk], water diversion and consumption for the needs of heat and power engineering will amount to 168 cubic km in the year 2000, as compared with 45.4 cubic km in 1975, and irrevocable losses will amount to 7 cubic km annually [3]. Atomic stations on the European territory of the Soviet Union will account for a considerable part of the irrevocable losses.

In 1973 the disposal of heated water at thermal and atomic electric power stations totaled 225 million cubic meters in 24 hours. The research conducted by a number of institutes shows that, owing to the disposal of heated water, the ecological situation of reservoirs is disrupted [7]. Especially sharp changes occur at overall-purpose water storage basins in southern regions and the problem is less acute in moderate and northern latitudes. The partial emission of radioactive substances of atomic electric power stations into reservoirs hampers fishing development and makes it impossible to place stations at water storage basins with drinking water supply. Thus, on the European territory of the USSR water is a valuable raw material, whose shortage does not make it possible to increase the capacities of atomic electric power stations, or makes it necessary to transfer power production to technology reducing the volumes of the water being used.

Land is the second resource limiting the buildup of the capacities of atomic electric power stations on the European territory of the Soviet Union.

The construction of atomic electric power stations requires the alienation of a large amount of land. According to the data of Energoset'proyekt [All-Union State Planning, Surveying and Scientific Research Institute of Power Systems and Electric Power Networks], the cooling water storage basin of an atomic electric power station needs an area of up to 8,000-9,000 hectares. The great expenditures of water on cooling atomic electric power stations necessitate the placement of stations near water sources, which leads to a deterioration and alienation of valuable agricultural land and, especially, arable land. In 1960 there were 1.0 hectares of arable land per USSR resident, in 1974, 0.89 hectares and in the Ukraine, 0.70 hectares. A reduction in agricultural land in the Ukraine is undesirable, because, on the whole, USSR territory is located under less favorable climatic conditions

and agricultural intensification in other regions cannot make up for the natural yield of the lost land. Compensation for the deteriorated land through irrigation of other land will require expenditures of 2,500 to 4,500 rubles per hectare in South Ukraine.

The placement of atomic electric power stations in the densely populated European part of the USSR can also increase the probability of irradiation of the population. The problem of transporting replaceable fuel and spent fuel elements through the pipelines existing in densely populated regions deserves special attention.

The development of power complexes, which should be placed in regions with a lesser shortage and value of land and water resources, as was often noted in the press, is one of the ways of solving the problem of nuclear power engineering.

BIBLIOGRAPHY

1. Dollezhal', N., and Koryakin, Yu., "The Atomic Reactor: Light and Heat," PRAVDA, 1976, No 196.
2. I. A. Shiklomanov, V. Ye. Vodogretskiy, Ye. A. Leonov and G. M. Vere-
tennikova, "Evaluation of the Changes in the Runoff of USSR Rivers
Under the Effect of Economic Activity," in the book "Tret'ye Nauchno-
Tekhnicheskoye Soveshchaniye Gidroyekta po Podvedeniyu Itogov Nauchno-
Issledovatel'skikh Rabot v Oblasti Energeticheskogo i Vodokhozyay-
stvennogo Stroitel'stva za Devyatuyu Pyatiletku i Rassmotreniye Zadach
Desyatoy Pyatiletki" /The Third Scientific and Technical Conference of
Gidroyekt on Summing up Scientific Research in the Field of Power
and Hydroeconomic Construction During the Ninth Five-Year Plan and Ex-
amination of the Tasks of the Tenth Five-Year Plan/, Moscow, 1976,
Part II.
3. Zamakhayev, V. S., "General Scheme of Measures for a Territorial Re-
distribution of the River Runoff," in the book "Tret'ye Nauchno-Tekh-
nicheskoye Soveshchaniye Gidroyekta po Podvedeniyu Itogov Nauchno-
Issledovatel'skikh Rabot v Oblasti Energeticheskogo i Vodokhozyaystven-
nogo Stroitel'stva za Devyatuyu Pyatiletku i Rassmotreniye Zadach Des-
yatoy Pyatiletki," Moscow, 1976, Part II.
4. Margulova, T. Kh., "Atomnyye Elektricheskiye Stantsii" /Atomic Electric
Power Stations/, Moscow, Vysshaya Shkola, 1974.
5. Shertel', N. I., and Sidorov, M. A., "Promyshlennost' v Desyatoy Pya-
tiletke" /Industry During the Tenth Five-Year Plan/, Moscow, Znaniye,
1976.

6. Isayev, V., "The USSR on a Construction Project," PRAVDA, 1977, No 2.
7. Mordukhay-Boltovskoy, F. D., "The Problem of the Effect of Thermal and Atomic Electric Power Stations on the Hydrological Conditions of Reservoirs," TRUDY INSTITUTA BIOLOGII VNUTRENNIKH VOD, 1975, Issue 27 (30).

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ENVIRONMENTAL PROTECTION MEASURES IN ANGARSK

Moscow PARTIYNAYA ZHIZN' in Russian No 8, Apr 77 pp 42-44

[Article by A. Nikolayev and V. Prusakov: "Concern for Environmental Protection"]

[Text] The Communist Party and the Soviet Government are constantly giving their most steady attention to environmental protection. The decrees, decisions and directives of the CPSU Central Committee and the USSR Council of Ministers and the legislative acts of the USSR Supreme Soviet bear witness to this. They are permeated with a deep concern for the development and implementation of measures for environmental protection as well as for the rational use and reproduction of natural resources.

At the 25th party congress environmental protection was designated in a series of the basic undertakings of the 10th Five-Year Plan. For these undertakings 11 billion rubles were earmarked. As the CC CPSU General Secretary Comrade L. I. Brezhnev noted in his Accountability Report, this sum will be increased according to the development of the national economy and the growth of the cities and industrial centers.

Party, soviet and fiscal agencies see their duty in doing everything possible for the rational and effective use of the tremendous resources allotted by the government for environmental protection. Success can be achieved here, it is understood, only by way of a complex approach to the matter. Some experience in the solution of the problems linked to environmental protection has also been accumulated in our city.

In order to impart a concrete, purposeful character to this work, to control it on a daily basis, the city commission for environmental protection was created as far back as 1969 through the initiative of the party's gorkom. Party and soviet workers, economic leaders and business specialists, scientist-researchers, project designers, public health doctors and hygienists, representatives from the regional inspection center of dust- and gas-trapping installations took part in it. The commission's sphere of activity is fairly wide. There is, first and foremost, the comprehensive analysis of work on environmental protection conducted in the city. The analysis is conducted on the basis of data from planned surveys of industrial facilities as well as from the study and comparison of technical documentation and the actual state of affairs.

The most important direction in the activity of the commission is the search for ways of increasing the effectiveness of existing purification facilities; the working-out of recommendations for the perfection of technological processes and for the introduction of new techniques and technology, which will allow for the reduction of the pollution of the atmosphere and reservoirs. The data prepared by the commission is periodically examined at sessions of the bureau of the party's gorkom and gorispolkom.

The commission is called upon also to supervise the implementation of adopted solutions. Those same comrades who prepared the data for the session of the bureau of the party's gorkom and gorispolkom, as a rule, are occupied at the same time with its verification.

Members of the commission take part in the organizing of seminars, lectures, conferences, in explanatory and preventative work. Thus, last year the commission helped to organize and conduct in our city a seminar on the theme "New directions in the technology of systems of gas purification and ventilation in industrial and energy-producing enterprises and the protection of the atmosphere from industrial emissions." Party and business leaders, project designers and specialists from the cities of the Irkutsk region as well as from Leningrad and Dzerzhinsk took part in the work of the seminar.

The commission attracts competent specialists on the city's enterprises and institutions to its work; within the limits of undertakings worth doing, it becomes acquainted with the state of affairs on the spot by technical documentation. All of its activity is conducted in close contact with the sanitary-epidemiological services of the city, with the department of environmental protection of the office of hydrometeorological services, with the regional inspection center of dust- and gas-trapping installations, with the deputy commission of the city soviet, with the society for the protection of nature and with other organizations.

The possibility of a qualified answer to the questions concerning environmental protection has made its appearance with the formation of the city commission made up of various types of specialists. For example, the complex examination of the project for the factory of protein-vitamin concentrates under construction showed that sufficient measures for eliminating the discharge of dust of protein-vitamin concentrates and the culture of yeast fungi were not provided for in it. On the basis of the commission's presentation the bureau of the party's gorkom demanded from the factory's management the adoption of the necessary measures for trapping and neutralizing waste products. The commission acts as an interdepartmental advisory agency and coordinates the efforts of all the enterprises of the city to try to comprehensively resolve the important ecological problems.

In its daily work the city commission is extensively guided by help from analogous commissions created for the city's businesses. As a result, a broad segment of the community participates in working out recommendations aimed at implementing a given measure for environmental protection.

In the successful resolution of problems of environmental protection much depends on engineering-technical workers, specialists and business leaders, i.e. on the very people who are obliged by nature of their official duty to look after the correct supervision of production processes and after the maintenance of technology, to fight against deviations from established practices. That is why the party's gorkom constantly directs the party committees and the bureau of primary party organizations to conduct serious, thoughtful, educational work locally; it achieves an improvement in the feeling of responsibility for the job to be done, in the activity and creative initiative of each engineer and technician, of each leader. Such goal-seeking, educational work yields good results.

Engineering-production workers and rationalizers of the industrial amalgamation Angarsknefteorgsintez Ye. Ye. Shevchenko, G. I. Bogomolov, A. F. Babikov, P. S. Lymar' and V. P. Kuks have worked out and introduced an effective scheme for the decomposition of oxides of nitrogen in the tail gases during the discharge of weak nitrogen acid. Their persistent efforts made it essentially possible to completely liquidate the so-called "fox tail" which is the constant companion of nitrogen-fertilizer factories.

Among the economic leaders who have applied their knowledge, experience and energy to the business of environmental protection, it is necessary to name above all: the director of the pilot plant of the amalgamation Angarsknefteorgsintez, candidate of technical sciences, S. A. Eppel'; assistant to the chief engineer of the branch office of VNIPINeft', I. A. Yefremov; chief of the communal division of the Scientific Research Institute of Industrial Hygiene and Occupational Diseases, candidate of medical sciences, G. D. Khamuyev; chief doctor of the sanitary-epidemiology station, V. V. Buzyun; chief engineer of the Irkutsk TETs-10, V. P. Rybalko; chief engineer of the cement and rock combine, A. N. Zausayev.

During the years of the last five-year plan, more than 500 sanitary-technical measures were introduced in leading industrial facilities for the reduction of emissions of harmful substances and for the sanitation of work conditions. The general expenditures on capital construction and from funds for the development of production consisted of almost 35 million rubles; 14.5 million rubles of which went for the protection of the atmosphere and 20.3 million rubles--for the protection of bodies of water.

The realization of a system of protective measures, including those developed expressly for adverse meteorological conditions, has made it possible, for example, at the amalgamation Angarsknefteorgsintez not only to limit the discharges into the atmosphere and bodies of water of all harmful substances as much as possible, but also to secure the full neutralization of many of them. This is the result of the intensive work of the department for the protection of nature created here in 1970, made up of the engineer-technical workers of other subdivisions of business and of the coworkers of the Scientific-Research Institute for Petrochemical Synthesis and Coal Chemistry, a branch of VNIPINeft'. In addition to this it is impossible not to note the constructive contribution made by communists from business to the pursuit of environmental protection.

As a result of the unremitting attention to the solution of the problem by the party committee of the amalgamation (secretary of the party committee, V. V. Zemchenko) and by the commission created here for environmental protection, headed by assistant to the chief of administration of capital construction, A. M. Burd, steam-oxygen blasting has been introduced during the gasification of semicoke and the hermetic nature of equipment has been upgraded for a series of petroleum refineries and chemical plants of the amalgamation. In addition to this, substantial work is also being conducted for the care of the forest protection zone.

In the beginning of last year at the joint conference of the bureau of the CPSU gorkom and the executive committee of the city soviet, the results of the work on environmental protection done in Angarsk during the Ninth Five-Year Plan were correlated and the tasks of the party, soviet and fiscal agencies of the primary organizations and the administration of the city's businesses and institutions for environmental protection were clearly defined for the 10th Five-Year Plan.

Provisions have been made for complete documentation on all sources of pollution of the atmosphere and bodies of water and the establishment of scientifically sound sanitary-hygienic standards for the discharge of the wastes of production and strict control over their observance in the plan for organizational-technical, scientific research and projected development. It is proposed for industrial and energy-producing enterprises to develop complex plans for the solution of the problems of environmental protection, including here the introduction of new and the modernization of existing purification facilities as well as the perfection of technological plans and production processes.

However, the solution of many questions and problems, which are very important in Angarsk, depends not only on the initiative and competence of local party, soviet and fiscal organizations. Separate ministries and departments do not provide sufficient financing of measures for environmental protection; they experience difficulties in obtaining the necessary equipment. In particular, the solution of the problem of allocating money for the specific purposes of environmental protection is being delayed by the USSR Ministry of the Petroleum Refining and Petrochemical Industry. We hope that more attention to the development and the introduction of nature-protecting measures in our city will be shown by the USSR Ministry of Power and Electrification, especially in the area of reconstruction of the dust catcher systems at such long-operating stations as the Irkutsk TETs-1.

The rapid growth of socialist industry makes the problem of environmental protection especially urgent. The solution of this problem will secure to future generations of Soviet people the use of all the wealth that nature has kindly bestowed on our native land.

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SWEDEN

HANDLING WEEDKILLER EXPOSES WORKERS TO FATAL POISON

Stockholm DAGENS NYHETER in Swedish 1 Sep 77 p 6

[Article by Gunilla Lindahl]

[Text] The workers who dug up the newly-discovered barrels in the BT Kemi factory area in Teckomatorp ran a grave risk of being poisoned by the weedkiller Dinoseb. In the quick analysis of the content of the barrels made at the Conservation Board's special analytical laboratory on Wednesday large amounts of the weedkiller were detected.

"In the past this chemical has caused a number of fatal poisonings," said Bo Thente of the Product Control Board. A couple of grams are enough to kill a man.

The newly-found barrels were uncovered last week during work on a drainage ditch in the BT Kemi factory area in Teckomatorp outside Landskrona. The director and plant manager of the Danish-owned company had been charged previously with negligence with poison in connection with other buried barrels but they were found not guilty due to lack of proof.

Now about 132 new barrels containing 200 liters each have been found buried in the area of the factory. The workers refused to continue the drainage project until the contents of the barrels became known since they suspected that they contained Dinoseb.

The Conservation Board decided to make a quick analysis and samples were sent to the Conservation Board's special analytical laboratory in Stockholm. The analysis was completed Tuesday [as written].

Unknown Substances

"About 10-20 percent of the contents of the barrels consisted of the weed-killer Dinoseb; we have found 100-200 grams per liter. We do not know yet

what other substances are involved," said Soren Jensen, professor of the chemistry of environmental poisons.

"Dinoseb is an extremely unpleasant substance. It is the only known weed-killer belonging to Poison Class I. Handling this substance requires special training and protective clothing as well as a dust mask," said Bo Thente, head of the the Pesticide and Herbicide Division of the Product Control Board.

"Dinoseb belongs to the dinoprophenol group of herbicides. Most of them are yellow in color and are called 'yellow preparations' in popular speech.

"In the past there have been a number of fatal poisonings. One can become poisoned just by breathing the fumes or getting the substance on the skin," said Bo Thente.

"The preparation is a cell poison that affects breathing and metabolism. The early signs of poisoning are sweating and fever. The rate of breathing increases and body temperature becomes so high that eventually the person dies.

"There is no antidote for the poison. The only thing one can do is keep the patient cool," Bo Thente said.

"Now it is possible that the barrels contained only a weak concentration of Dinoseb which would not be fatal if handled. In that case contact with the substance would produce corrosive skin damage and big yellow spots on the skin."

Bo Thente said it is likely that the Product Control Board will review the question of whether to allow the use of Dinoseb as a herbicide in the future.

Harmful to Animals

"Today it is used only in plantings of podded vegetables such as peas and beans. There is a very limited crop of this type in Skane. But it is known to have an effect on wildlife. Only a very small amount is needed to kill animals, which is also true for human beings.

"As early as 1970 the old Poison Board discussed banning the substance.

"The reason why permission was granted anyway was that at the time there was no alternative. But new products are now beginning to emerge that should make it superfluous," Bo Thente stated.

On Thursday when the new barrels were discovered, Per Axelsson, engineer with the conservation unit of the County Council, was at the site to supervise the digging operation.

"We could not rule out the possibility that the barrels contained Dinoseb since the substance had been manufactured by BT Kemi in the past. The substance has a very characteristic smell. As soon as the workers recognized it we stopped digging and took precautionary measures," Per Axelsson said.

Leaks

On Tuesday the last barrels were removed. In handling a quantity of liquid leaked out.

"It will go into a drainpipe and be filtered there. There is no danger that it will get into the ground water," Per Axelsson thought.

Before deciding how to dispose of the contents of the 130 barrels those in charge are waiting for a more detailed analysis by the Conservation Board laboratory.

According to the new Environmental Protection Act it is illegal to bury containers holding poisonous substances in the ground. The question now is who decided to bury the barrels and when this was done. District prosecutor Jan Linders has already decided to appeal the earlier poison case against the responsible leadership of BT Kemi. These person had previously denied having any knowledge as to whether any more containers had been buried.

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SWEDEN

PHENOXIDE CONNECTION TO CANCER DISCUSSED

Stockholm DAGENS NYHETER in Swedish 1 Sep 77 p 11

[Text] "We cannot point to any specific herbicide as carcinogenic in our research but we can mention the possibility that there is somewhat more reason to suspect phenoxides as a group."

That was the opinion of professor Olav Axelson and medical superintendent Lennart Sundell in an article in LAKARTIDNINGEN.

In 1974 they published a study of railroad workers exposed to herbicides. The conclusion at the time was that a higher incidence of cancer than expected could be seen among workers exposed to Amitrol.

But workers exposed to phenoxide did not show an increased incidence of cancer. Many people had been exposed to more than one substance which made the analysis more difficult.

Now the two research workers have analyzed their results and made the following cautious statement:

"Even though the relevant material is scanty and the pattern exhibited is ambiguous there is some reason to suspect that an abnormally high rate of tumors is also associated with the use of phenoxides.

"A great deal of caution in drawing conclusions is in order," the two scientists wrote. "And above all we cannot point to any specific herbicide as being carcinogenic."

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SWEDEN

ENVIRONMENTALISTS CAUTION AGAINST EXPANSION OF POWER PLANTS

Stockholm SVENSKA DAGBLADET in Swedish 26 Aug 77 p 32

[Article by Lennart Lundegardh]

[Text] This fall just at the time when the government has to decide about whether or not to continue expanding water power in Sweden a report is being issued on the effects of expansion on the environment. Fish and the contours of the landscape are two of the elements that are most affected.

At the moment no one knows what will happen to the remaining undeveloped brooks and waterways of Sweden. The government has not yet determined the degree of expansion it will allow.

The study referred to was undertaken under the leadership of professor Ake Sundborg, Natural Geographic Institute, Uppsala University. The Conservation Board and the power interests' Central Management (CDL) shared the costs of the study.

More Mist

Of course development affects such things as the water level, flow conditions and stream banks (which are either flooded or drained depending on the nature of the construction).

But the climate can also be affected, even though this is a local phenomenon without the widespread effects big foreign projects have had. Mist formation can increase the length of winter below a power station dam and the effect is noticeable for a distance of up to 10 kilometers.

Making changes in streams and lakes affects the quality of the water both physically and chemically. But the ground water level can also be changed as a result of flooding or draining.

Changed ice conditions -- including positive changes -- are another of the effects one can expect from construction.

And People?

Within the framework of the study a separate sociological survey was taken to try to determine people's attitudes toward water power development. It was directed by professor Erik Bylund of Umea.

Among other things it was discovered that people's first contact with a construction project often determined their permanent attitude, either positive or negative. Many seemed to feel anonymous and powerless with regard to the construction and its consequences.

Many advocates of continued expansion of water power stress the points that it pollutes the environment less than other energy sources and that it is reliable and renewable.

But the chairman of the united organization of those wishing to save the brooks, Lars Lindstrom of Arvidsjaur, repeated:

"Development always means a catastrophe to the natural balance and a destruction of animal life to an extent that closely resembles the effects of poisoning them.

"It is not true that water power is a clean source of energy. The flooding of woods and fields can greatly increase the phosphate content of the water. In the artificial Stegs Lake the phosphate content of the water after construction increased as much as it would have if 100,000 people had emptied their waste water into it.

"In addition there is the risk that the power plant will pollute the water by leaking such things as grease and hydraulic oil. At the Bastusels power plant in 1972 500 liters of oil containing the environmentally-poisonous substance PCB were released and came close to running out into the Skellefte River. In the salmon spawning grounds in the developed Umea River, high concentrations of PCB have been found in the young salmon.

"But the most important argument against it is that the undeveloped water power sources that are left are so insignificant that they would have only marginal importance in supplying energy needs. They wouldn't even be sufficient to help us through an acute crisis situation.

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SWITZERLAND

DETAILS OF SEPTEMBER POLLUTION INITIATIVE OUTLINED

Zurich NEUE ZUERCHER ZEITUNG in German 10 Sep 77 p 23

[Article by Hubert Ruf, Study Group Clean Switzerland: "No Clean Car Engines in the Age of Space Travel?"]

[Text] The initiative for a plebiscite launched without regard for party and aimed at air pollution by motor vehicles intends as early as possible to reduce to a minimum the toxic components of motor vehicle emissions. The launch of the Albatros initiative was due to the serious concern about rapidly increasing air pollution and its disastrous effects on the health of man, fauna and flora.

Health Risks

Even the opponents of the initiative do not dispute the fact that certain emission components injure our health and share the responsibility for certain acute and chronic diseases. Breathing carbon monoxide, for example, changes the composition of the blood and causes cardiac and circulation disease. The substance is lethal at high concentration. Carbon monoxide is imperceptible to human senses and therefore particularly invidious. Some of the hydrocarbons emitted by exhausts are carcinogenous. A study carried out by three physicians in the Canton of Glarus revealed that residents at a much traveled Cantonal road are 9 times more liable to contract cancer than people living far from traffic routes. Greater concentrations of nitric oxides result in respiratory disease, bronchitis or damage to the eye. Lead is deposited in human or animal organisms either directly by the air breathed in or indirectly by contaminated foods. Quite small quantities are capable of destroying liver and kidneys, curtailing the production of red blood corpuscles, disrupting the metabolism or producing intestinal inflammation and neuritis. In larger doses lead is lethal.

It is ridiculous to close one's eyes to the problem of air pollution by motor vehicles. Man merely deceives himself. He is, after all, well aware that a running car engine in a closed garage represents a deadly danger. He is equally aware that the atmosphere of our planet is limited

just as that of the garage. When we also realize that no less than 300 million motor vehicles are now circulating in this "world garage", any reasonably sensible and responsible person must appreciate that we should do everything possible to keep air, that vital element, as clean as possible. Or will it really be necessary that the same error which was committed with respect to water should be repeated for air of which we breathe at least 8,000 liters per day? Will it need another smog disaster somewhere before modern and superficial man realizes the immense danger? The confederate popular initiative against air pollution by motor vehicles should be assessed from that aspect. People who oppose this popular initiative on merely economic, technical or constitutional grounds, simply do not speak the same language.

Requirements Technically Feasible

It is quite obvious that certain circles are vigorously fending off the Albatros initiative--circles which evidently underestimate the value of air, that vital element. Can they possibly be aware of the fact that they could not live for more than 3 minutes without air? These circles claim that the popular initiative asks for emission standards which it is impossible to observe. Yet we have proof that various models of cars (such as Honda and Volvo) are not only able to achieve the values required by the initiative but in some respects considerably to improve on the Albatros values. Nor can the fact be disputed that ever since 1968, a full 9 years ago, European vehicles with detoxified engines are exported to the United States while, at the same time, these very models are sold in Europe with polluting engines. Is the health of Europeans worth less than that of Americans? It is hardly credible for anyone to assert that no clean car engines can be produced in the age of space flight. It is true, on the other hand, that detoxification of engines means a slight rise in the cost of vehicles. We therefore must ask ourselves which is the more sensible line to adopt: To be prepared to spend 100-600 Swiss francs more for a detoxified vehicle, or to save money on cars, spending instead thousands of Swiss francs for medical costs, sick leave, material damage to buildings, crops and animals, or for the devaluation of real estate due to air pollution.

Deliberately Short Term

The Albatros initiative asks for strict emission standards as of 1 January 1977. The date was set deliberately close, in view of the 470,000 tons of carbon monoxide, 30,000 tons of hydrocarbon, 61,000 tons of nitric oxide and 1,200 tons of lead spewed into the air annually by the 2 million motor vehicles operating in Switzerland. Car manufacturers are complaining about the "inadequate adjustment terms", but this is due mainly to the fact that they have long neglected to take the detoxification of emissions with the appropriate seriousness and have now been "surprised"

by developments. At the time of the significant adoption of article 24, the environmental control article, in 1971 these circles should have become aware of their responsibility for contributing to the maintenance of clean air.

The Albatros initiative for a plebiscite was submitted in September 1974. It will only be voted on a full 3 years after submission, that is on 25 September 1977. Why did the authorities not deal more speedily with the initiative, why was so much time allowed to elapse though the initiative includes mandatory dates? Several popular initiatives were dealt with two or three times faster than Albatros. We must conclude that certain agencies lack proper interest in the defense of our atmosphere--despite the clear expression of popular will in 1971.

Noncommittal Policy of the Federal Council

If we more closely observe the emission policy of the Federal Council, we are bound to note with some disappointment that no mandatory emission program exists at this time. Clear proof for this assertion may be found in the Federal Council message No 76.078 on Albatros, dated 8 September 1976. This states, among other items: "The Federal Council report of 20 November 1974 (relating to a proposed emission program) includes targets and statements of intent, and is therefore of a programmatic nature. Insofar as it does not include legally mandatory standards...The Federal Council's program may be compared to a financial plan which represents merely a guideline for the authorities..."

In the final analysis the Albatros popular initiative against air pollution by motor vehicles represents a question of principle. Either we gaily continue to live by the highly questionable principle "after us the deluge" and accept the corresponding risks (we are unable to take the responsibility for such a procedure!), or we become aware of the importance of air as a vital element and at this very moment do everything we possibly can in order to keep the atmosphere as healthy as possible for our children and ourselves--even if the new car should get a little more expensive.

Progressive air pollution means that we are in the best way of engaging in an experiment of unknown dimensions, which might cost us dearly indeed. It is our opinion that our greatly advanced technology must, in the interest of popular health, be promptly used for the effective detoxification of car emissions. As this is obviously not happening on a voluntary basis, the initiative for a plebiscite represents an imperative and deserves the support of the voters.

One Dilemma on Top of the Other by National Councilor Dr Urs Schwarz

Action against air pollution is doubtlessly an important and urgent task for public agencies. The detoxification of vehicle emissions occupies a particularly significant place in these efforts. Unfortunately matters are not nearly so simple as might be desirable from the standpoint of the target.

The Federal Council's Middle Course

The first dilemma arises when we consider the strategy of action. Should we begin by promulgating standards of which, at the time of enactment, we do not even know whether they are technically feasible, or should we wait for developments and subsequently pronounce certain standards as generally mandatory. Firmly believing that their country has unlimited potential the Americans chose the first alternative and came to grief insofar as they were compelled constantly to extend the original dates because the complexity of the problem had been vastly underestimated. Spurred by various interventions--I myself undertook one in June 1972--the Federal Council decided on a middle course when adopting the 1974 program. While this program sets definite values, the schedule is drawn up in such a way that the achievement of these values within the period stated appears feasible. Some experts, however, consider even this schedule (it extends to 1982) unduly optimistic.

The sponsors of the Albatros initiative differ. Though most of them admit that they have failed fully to inform themselves about the action dates set by the administration and parliament, they are (at least it appears so) persuaded that the 1982 values can be achieved in Switzerland right now. The technical layman now meets another dilemma. Whom is he to believe, the Federal Council or the sponsors of the initiative? Parliamentarians are quite used to such a situation. They must decide many questions--without being experts. To allow suitable opinions to be formed, parliamentary committees question experts and confront them with each other's testimony. As member of the National Council's committee on Albatros I had the opportunity of attending such hearings. The information obtained then persuaded me that the dates set in the initiative are unrealistic, although I fully appreciate the target it is designed to achieve, and so does the Federal Council. Technological, administrative, economic, constitutional and political reasons speak against the initiative. Let me give you some indications:

Catalytic Converters and Layer-Charge Engines [Schichtmotore]

At the moment we have two potential technical solutions for the detoxification (or, to put it more modestly, for lessening the toxic content) of motor vehicle emissions: Catalytic Converters and Layer-Charge Engines. Catalytic Converters are used mainly in America and built into European export vehicles also. At this point the first misunderstanding arises because the sponsors of the initiatives assert with apparent logic that whatever is possible for America should be possible for Switzerland also. It is, however, a fact acknowledged by all experts, that catalytic converters work efficiently only when unleaded gasoline is used. As Volvo is praised by the sponsors of the initiative as an example of emission technology, let us give the word to Automobiles Volvo S.A. In a letter to the sponsors the firm says: "Volvo, as do several other important

car manufacturers, sell some models in California. The vehicles operating in that state are provided with fuel injection engines and specially developed catalytic converters; they must therefore use unleaded gasoline only." Experts of the Commerce Department inform us that Switzerland would not be able to provide sufficient unleaded gasoline. At this point we get another erroneous assertion in the string of arguments advanced by the sponsors of the initiative. Again with apparent logic they conclude that there can be no problem involved in obtaining unleaded gasoline because, after all, lead is not initially contained in gasoline but subsequently added to it. Unfortunately here also the facts of the matter are somewhat more complex. Lead is added to the engine to prevent knocking. If no lead were used, other additives would have to be substituted, the so-called aromatics. Experts assured us that the additional investments to be provided by the refineries for the production of adequate unleaded gasoline would be on the order of 15-20 billion Swiss francs. Depending on the type of additive, new and sometimes even more hazardous pollutants will arise so that the need for a tremendous amount of research continues, and that necessitates time. United States anti-emission standards mean an additional 10-20 percent consumption of fuel--and this is another dilemma, this time involving environmental considerations, which needs more time for solution. If the legislators should in future require an even greater reduction of nitric oxide emissions, new and multifunctional catalytic converters will be needed and that again takes time.

On the other hand, layer-charge engines--the alternative solution in the field of emission control--are still in their infancy. The American car industry, therefore (we are told by the experts) has largely turned to catalytic afterburning, because it is extremely difficult to achieve the official emission standards in the mass production of engines. There is also some uncertainty about behavior after several years of operation. This brings us to the second group of problems, the administrative aspect.

Problems of Supervision

It is not enough to command; supervision must subsequently be exercised. In Switzerland the entire supervisory apparatus must be established and complemented; methods of measurement vary from one state to the next. As Honda is quoted as a prime witness for the assertions of the sponsors of the initiative, let us quote from a letter to them by Honda Automobiles (Suisses) S.A.:

"The text of your initiative fails to state clearly what methods of measurement or supervision are to be used. Manufacturers must therefore reject the initiative, because they are already compelled to produce several models in order to satisfy the currently effective and varied regulations. For economic reasons it is impossible to produce a model specially for Switzerland, because the total market there does not exceed 200-250,000 units, a fraction of world production. It would surely have been more reasonable to propose standards already in effect in other countries, thereby meeting the efforts of the manufacturers concerned with rational production.

It is also unrealistic to ask for such measures to take effect within such a very brief delay. On the one hand manufacturers are unable to convert their production lines without much preparatory work (long-term planning, orders to foreign component suppliers for starters, carburetors, exhausts, and so on). On the other hand it would be necessary to effect complete conversions of the distributive facilities for fuel (cancellation of lead admixture), even disregarding the supply and delivery problems likely to arise."

Economic, Legal and Political Reservations

This last quotation already leads up to the economic problems of the initiative. Even if there were a type of car anywhere in the world, which meets the standards desired by Albatros, and even if it could be imported in large enough quantities together with sufficient unleaded gasoline, the economic consequences would be unimaginable, both from the aspect of trade for the national economy as a whole as from the operational aspect of our service stations. The enforcement of such revolutionary innovations requires an appropriate interval for adjustment. Nor must we forget the so far unsolved problems of the sales and the tremendous influx of foreign registered vehicles daily traversing our country. Both these considerations make any unilateral adoption of emission standards by Switzerland appear completely unrealistic.

In conclusion I want to invoke legal and constitutional reservations. We must remember that the principle of air pollution control is already incorporated in two provisions of the constitution (article 24 paragraph 1--(environmental article)--and article 37 paragraph 1--regulations concerning cars and bicycles. As the initiators of the plebiscite lack confidence in the Federal Council, it is unlikely that their confidence will be any greater following a third incorporation of the plebiscite decision in the constitution. From the legal aspect it seems most unwise to insert detailed provisions in the constitution instead of leaving them to decrees, and in our opinion it is irresponsible if these regulations are already out of date before the people are able to decide. It is furthermore politically irresponsible to compel the people to vote on demands to the state which the latter, as we have seen, is unable to meet despite the best of intentions. I am persuaded that a disservice would thereby be rendered the actual aim of the initiative which I support without reservations. It is therefore imperative to escape from the dilemma and vote no.

Problems of Gasoline Supply by pd.

The Oil Federation, the trade association of the Swiss oil industry, in its capacity as fuel supplier draws attention "from a neutral standpoint" to the following problems:

1. The stricter emission standards provided in the initiative assume the installation of catalytic converters in motor vehicles. Catalytic converters, however, function only if unleaded gasoline is used.
2. Unleaded premium gasoline with a 98 octane rating cannot be produced in existing European refineries. Vehicles requiring premium gasoline will therefore be unable to obtain fuel suitable for their engines.
3. The production of unleaded regular gasoline results in loss of capacity in domestic and foreign refineries. This necessarily results in higher prices for regular gasoline.
4. Cars with catalytic converters cannot travel abroad because only leaded gasoline is available there.
5. It is not possible to guarantee the maintenance of full supplies of unleaded gasoline for Switzerland.

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EFFECTS OF FLUORIDE EMISSIONS IN CANTON OF VALAIS EXAMINED

Zurich NEUE ZUERCHER ZEITUNG in German 10 Sep 77 p 21

[Text] The long criticized fluoride emissions in the Canton of Valais, caused by the Chippis and Steg plants of the Schweizerische Aluminium AG, were the focus of a press conference conducted by Alusuisse. Presented there was the "Alusuisse Study," a 154-page document which was submitted to the Valais Cantonal Council in April 1977. A. Poretti, director of the Valais plants, explained that this was by no means a simple problem, nor was any "miracle solution" available. Alusuisse was prepared to accept responsibility for damage caused by fluoride and had paid compensation to affected property owners for many years. On the other hand the firm "refused to accept responsibility for environmental damage due to other causes, such as the climate, outside industries or human fallibility."

Efficiency of the Chippis Roof Spraying Facility

Aluminum is produced by an electrolytic reduction process in furnaces through which high-voltage direct current is conducted. By this means the raw material alumina is reduced to metallic aluminum. Pollutants are released as a consequence of this electrolysis. Some of them, such as carbon dioxide, carbon monoxide, soot and sulfur dioxide, are inherent in all or most combustion processes. Related to electrolysis alone are emissions of fluoride compounds; certain types of furnaces (Soederberg furnaces), some of which are used in Chippis, also produce tar vapors.

To keep pollutants out of the atmosphere Alusuisse has developed a system of wet cleaning by way of a roof spraying facility. The tests described in the Alusuisse study have shown that this method deals with 90-95 percent of gaseous fluoride by washing it out. Some 30-50 percent of fluoride dust are extracted. Other dusts, especially alumina and carbons from the anodes are eliminated to 50-70 percent. Sulfur dioxide is eliminated at an efficiency of about 20-30 percent.

Chippis emits 68 tons of gaseous fluoride per annum, the Steg plant (which is equipped with modern purification facilities) 11 tons.

How Toxic are Fluorides?

Regarding the legal provisions the Alusuisse study states "that the new standards adopted in 1976 by the Swiss Accident Insurance Institution (Suva) with respect to factory air are noticeably stricter than average international standards." American directives, often cited as exemplary, limit the emission of dust but not the emission of fluorides. The study asserts that it is a mistake to describe fluorides generally as toxic; only "excess exposure to fluorides" may become dangerous. It should not be forgotten that the element fluorine is an important part of the earth's crust, that fluoride emissions occur in other industries also, and that many medicaments are "enriched" with fluorine.

The Effects of Fluorides on Men, Animals and Plants

Fluorosis in man notably affects the skeleton and the teeth; X-ray examinations reveal similar or identical symptoms as in arthrosis or rheumatism. It is now known that the daily intake of 20-80 milligram fluorine ions may produce fluorosis in a period of more than 15-20 years.

Since 1963 a total of 51 employees have been examined as possible cases of fluorosis and in fact 80 diagnosed. Total or partial disability grants were awarded to 39 of them.

No cases of fluorosis were diagnosed in cattle during the period 1972-1974; compensation amounting to 11,519 Swiss francs for five heads of cattle was paid in 1973, 1975 and 1976 and in the period 1972-1976 a beekeeper received 1,890 Swiss francs in compensation for several hives.

From 1972-1976 four cases of damage to apricots were found and compensated by the payment of 4,465 Swiss francs; in the same period 87,359 Swiss francs were paid for two vineyards. Alusuisse also paid 25,483 Swiss francs to the four owners of the Pfyn forest, including three villages.

Goals and Costs of Environmental Control

Absolute priority is given the complete elimination of fluorosis among employees. As to cattle, investigations will have to be conducted before deciding whether removal to another location is possible. Apricots and vines in the immediate vicinity of the plants will continue to be exposed to relatively high fluoride concentrations. It is intended in future to eliminate any undue exposure to fluoride of plants in general and forests in particular. It must be pointed out, though, "that many instances of damage to forests--in the Canton of Valais as elsewhere--are not due to aluminum factories."

Many medium and long-term improvements are planned for the Chippis and Steg plants. The current costs of environmental control in Chippis amount to 1 million Swiss francs per annum, in Steg to 2.2 million Swiss francs. In 1981/1982 a new purification system is to be installed in Steg, at a cost of approximately 30 million Swiss francs.

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CHANGING ATTITUDES TOWARD ENVIRONMENT REPORTED

Hamburg DIE ZEIT in German 19 Aug 77 p 20

[Article by Wolfgang Hoffmann: "DM 500 More for a Car--According to an INFAS Poll, People Are Ready To Make Material Sacrifices for a Cleaner Environment"]

[Text] While industry is deploring the increasing pressure of costs due to more and more new environmental protection measures and the construction and energy industry because of the embargo on building new nuclear power plants is sending shockwaves through the employment market, with frightening news about an increase in the number of unemployed, a brand new investigation with a clearly opposite trend is making the rounds in Bonn: FRG citizens are insisting on greater environmental protection and are even ready, if need be, to pay a high price for it.

There is no lack of proof: 62 percent of the population would not mind paying extra--DM 500 more--for a car which is kinder to the environment; and 82 percent would not mind doing without the handy nonreturnable bottle and are prepared to go back to a bottle requiring a deposit and the inconvenience connected with it. And wholly in the spirit of keeping our waterways clean, 53 percent of all citizens are ready to pay an additional DM 2.50 per capita per month for water.

The findings of the Institute for Applied Social Science (INFAS) commissioned by the Ministry of the Interior could--if the trend increases even further--give a new priority to Bonn's policy on the environment within the overall government policy. For in the last few years there has been a clear, abrupt rise in the readiness of the population to also make specific sacrifices for environmental protection measures--from 44 percent in 1974 to 73 percent in May of this year. Among young people up to the age of 24, a particular readiness to make sacrifices for a sounder environment is expressed by more than 80 percent. The same is true of persons with higher education (persons who have qualified for college or have engaged in college studies). This attitude is also quite prevalent among employed persons--about 70 percent--and skilled and unskilled workers. Those whose environment is still largely intact--the farmers--according to the INFAS poll, are least ready to make sacrifices.

While the circles of people polled by INFAS (1,196 persons) is extremely small, polling techniques have become so sophisticated that the results are quite valid. Of those polled, 97 percent consider protection of the environment "very important" or "important," compared with only 79 percent in 1974. The proportion of people--already low (13 percent) 3 years ago--who consider protection of the environment less important has meanwhile shrunk to 1 percent.

While those polled were less inclined than previously to favor basic general reforms (only 27 percent--compared with 42 percent in 1968--favored them), the issue of protection of the environment did not suffer as a result. INFAS explains this as follows: "One could conclude from this that, compared with the past, this subject is having a greater effect on the area of daily existence."

A further indication of this is the fact that other areas which also clearly affect daily living conditions--residential and road construction--are no longer nearly as much in the center of attention as they were a few years ago. In response to the question as to the area which should receive more financial support, in 1970 still 55 percent decided in favor of residential construction and only 32 percent in favor of environmental protection. Now only 21 percent favor residential construction, as opposed to 64 percent who favor protection of the environment. Faced with the question of an alternative between road construction or protection of the environment, the change in opinion, despite the restrictive overall economic conditions, is even clearer: only 13 percent give priority to more money for road construction (as compared with 44 percent in 1970), while 72 percent (compared with 44 percent in 1970) give priority to protection of the environment.

INFAS was unable to confirm the assumption that the large number of unemployed would push the advocates of protection of the environment into the background because of job considerations. In the fall of 1974, 56 percent of those polled favored protection of the environment despite the job risks connected with it, and in May 1977, when there seemed to be no end to the storm clouds hanging over the unemployment market, the percentage--45--was still remarkably high. The proportion of those who assess the job risks as greater (20 percent of those polled) has remained almost constant, however.

Nor can the, by no means unnatural, expectation be documented that, in view of the tight financial situation of the Federation, the Laender and the municipalities, the citizen would, for a start, favor economies in the environmental protection rather than economies in more important branches of the economy. The number of those who were against economy measures in the sector of environmental protection in 1975 clearly rose, from 70 percent to 88 percent. INFAS' comment: "The relevance of environmental protection is assessed higher today than in previous years."

One reason for this is the higher level of information about problems of the protection of the environment. Compared with the 1972 data, the proportion of citizens who consider themselves very well informed has risen from 13 to 18 percent. The number of the not knowledgeable has decreased to less than half, or 7 percent.

The institute has come up with telling results about the question of the credibility of institutions and persons passing information to the public about whether industries and nuclear power plants are friendly or unfriendly toward the environment. The spokesmen of the power plants and those of the industrial enterprises have the lowest credibility with 3 percent; it is noteworthy that the credibility of the sellers of electricity has clearly worsened (from 6 to 3 percent) compared with 1974, while that of the industrial enterprises has somewhat improved (from 2 to 3 percent).

By far the greatest reputation (36 percent) continues to be enjoyed by scientists, though no longer to the same extent as in 1974. Then come doctors (21 percent). In third place on the scale of trust are citizens' initiatives and organizations for the protection of the environment (15 percent). Far outdistanced are politicians and journalists: only 6 percent of the population consider these two groups as enjoying credibility.

Those INFAS questions which deal with the pros and cons of activities for the protection of the environment could be used as a weapon in the hands of the Bonn politicians. INFAS states: "Presumably, a more rigorous action against those polluting the environment would be welcomed by broad circles of the population. Anyway, 65 percent of those asked expressed the opinion that those polluting the environment are punished too leniently, while 23 percent believe that the state is strict enough."

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