

PN-ABM-863



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

**The Role of the Engineering Community
in Infrastructure-Related Trade and
Investment in Eastern Europe**



Project No. 398-0249

APPENDICES I - II

Appendix I

USEC Questionnaires

U. S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. **Does your organization operate internationally? What Countries?**

IEEE has members in 145 Countries and organized Sections
in 57 Countries

2. **If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?**

3. **If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?**

IEEE has active Sections in Hungary and Poland and is attempting
to establish a Section in Czechoslovakia.

4. **Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.**

Dr. Kurt R. Richter - Director Region 8 (Member)
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Mr. Melvin I. Olken - Staff Director, Field Services (Staff)
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**U.S. and Eastern Europe Engineering Community
QUESTIONNAIRE
Page - 2**

- 5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?**

Ongoing programs in Hungary and Poland consist of local meetings and an international conference held in Hungary in 1991, with another scheduled in 1993.

- 6. What are the roadblocks to implementing your program?**

Currency conversion deters membership

- 7. What programs would you like AID to consider in order to implement your program?**

Sponsorship of technology transfer ventures

- 8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?**

Yes

U.S. and Eastern Europe Engineering Community
 Energy and Infrastructure
 Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?

Indonesia, Philippines, Bangladesh, Guatemala, El Salvador, Bolivia, Honduras, and India

2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?
3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?

Yes

4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.

*Mr. Bard Jackson, Director, Special Projects,
 International Program Division, NRECA, 1800
 Massachusetts Ave. N.W., Washington, DC 20036
 (202) 857-9635*

5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?

Submitting proposal to Estonia to establish distribution Cooperatives, waiting on response. Finalizing proposal to Poland for Coop. Agreement to Rehabilitate hydro. projects.

6. What are the roadblocks to implementing your program?

Soft loan financing

7. What programs would you like A.I.D. to consider in order to implement your program?

Financial Assistance to Support Rehab. of Hydro. projects in Poland.

8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?

Yes



The American Society of
Mechanical Engineers

David L. Belden, Ph.D., P.E.
Executive Director
212-705-7730
FAX 212-705-7739

345 East 47th Street
New York, NY 10017

November 15, 1991

Mr. Robert H. Staplin
Senior Vice President
Harza Engineering Company
Sears Tower
233 South Wacker Drive
Chicago, IL 60606-6392

Dear Mr. Staplin:

Thank you for your November 5 letter concerning linkages between the U.S. Engineering Community and the Eastern European Engineering Community. ASME is interested in playing an active role in this project.

The answers to your questionnaire are as follows:

1. Yes, ASME does operate internationally. ASME Chapters, which are geographical units of ASME and which function similarly to ASME Sections in North America, are located in France, India, Japan, Saudi Arabia, Singapore, and the United Kingdom and Ireland.

In areas where there are not enough members to form a chapter, ASME designates a member to serve as a Correspondent. Correspondents are located in Argentina, Australia, China, Colombia, Germany, Greece, Hong Kong, Israel, Italy, Korea, Kuwait, Netherlands, Norway, Pakistan, Philippines, Portugal, South Africa, Taiwan, Thailand, Turkey, Uganda, Venezuela, the West Indies, and Yugoslavia.

ASME has agreements of cooperation with engineering societies in Argentina, Australia, Belgium, Brazil, Canada, China, Czechoslovakia, Egypt, France, Germany, Hungary, India, Indonesia, Israel, Italy, Japan, Korea, Netherlands, Norway, Philippines, Poland, Taiwan, United Kingdom, USSR, and Yugoslavia.

3. ASME has worked with existing organizations in Czechoslovakia, Hungary, and Poland.

We are extremely interested in making these relatively new relationships more useful to all parties.

W

4. A nine-member Board on International Affairs oversees ASME's international activities. The staff director for international activities is the appropriate contact as follows:

David J. Soukup, P.E.
Director, International Affairs
ASME
345 E. 47th St.
New York, NY 10017
Telephone: 212/705-7397
Fax: 212/705-7739

An organization chart of ASME is enclosed. The international affairs area falls under the Council on Public Affairs.

5. ASME has had an agreement of cooperation with Gepipari Tudományos Egvesület (GTE), the Scientific Society of Mechanical Engineers of Hungary, since 1985. We have conducted two exchanges of engineering students with GTE. ASME hosted a group of 22 Hungarian students in 1987 and in 1990 a group of 21 Americans visited Hungary for a week-long seminar on "International Aspects of Engineering." There have also been short exchanges of individual engineers averaging two per year.

ASME was the first American organization to hold a major technical conference and exhibition in Eastern Europe, when the Cogen-Turbo Conference was held in Budapest in September 1991. GTE and the Hungarian Scientific Society of Energy Economics co-hosted the meeting.

GTE has offered to serve as the matchmaker for American companies interested in setting up joint ventures with counterpart organizations in Hungary. ASME received inquiries from ten American companies which recently have been forwarded to the Hungarians.

ASME is planning to hold an international waste management conference in Prague in 1993, co-hosted by the Ceska Strojnicka Spolecnost, the Czech Mechanical Engineering Society. ASME has had an agreement of cooperation with this society since 1990.

An agreement of cooperation also exists with the Slovenskou Strojnicka Spolecnost, the Slovak Mechanical Engineering Society, which has been in effect since 1990.

The organization with which ASME has an agreement in Poland is Stowarzyszeniem Inzynierow i Technikow Mechanikow Polskich (SIMP), the Polish Society of Mechanical Engineers and Technicians. Exchanges of engineers between SIMP and ASME have averaged one per year.

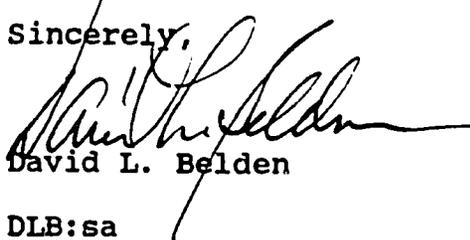
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In order to overcome the soft currency difficulties, the agreements call for the host society to assume in-country costs for exchange visits.

6. In my opinion, the roadblocks to implementing the programs have included lack of funding to pay for continuing education programs and publications, and failure to bring individuals who wish to attend meetings in the United States. These problems mostly relate to the difficulty in resolving soft currency issues.
7. ASME is interested in the following items:
 - a. Sending ASME instructors to Eastern Europe to present short courses in all areas of mechanical engineering. This would include instruction in the use of ASME Codes and Standards, which would enable firms to reach new markets.
 - b. Bringing experts from Eastern Europe to ASME Conferences so that they may visit industry, attend technical meetings, present papers and attend exhibit shows so that they may establish networks of engineers in their fields.
 - c. Conducting the second "International Aspects of Engineering" seminar for Eastern European and American students.
 - d. Hosting the leadership of engineering societies to instruct them on how to provide products and services for their members and to discuss further joint conference and publishing opportunities.
8. Yes, ASME would be interested in participating in such a workshop.

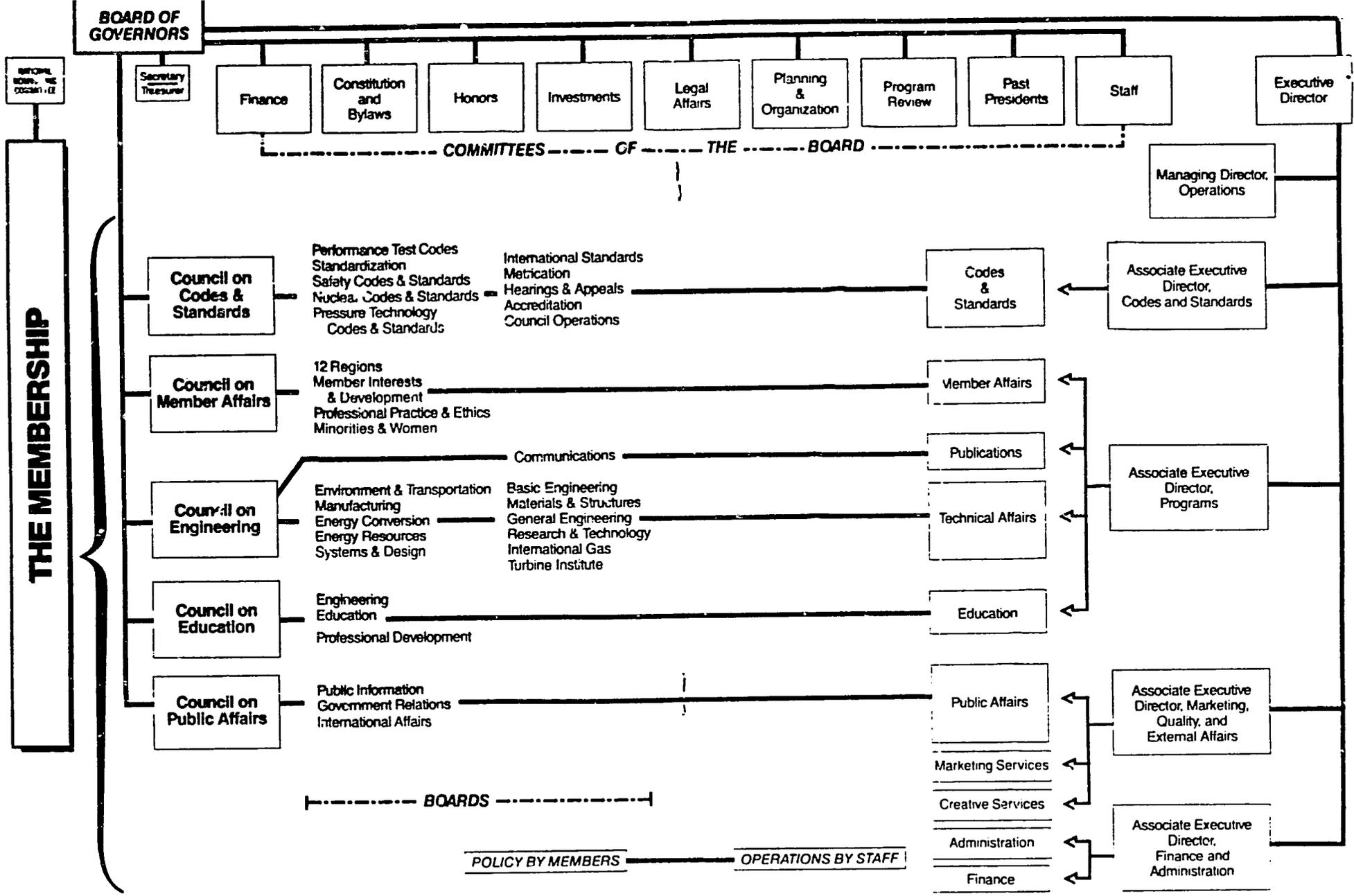
We are most anxious to participate in your project and look forward to your response.

Sincerely,



David L. Belden

DLB:sa



V



U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?

*Yes, attached is a list of the societies with whom we have Agreements of Cooperation.
(The country is self-explanatory.)*

2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?

N/A

3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?

Yes.

4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.

**George L. De Feis, Director of International Affairs, ASCE, 345 East 47th Street,
New York, NY 10017. Tel: (212) 705-7290, Fax: (212) 421-1826**

Attached is a copy of the ASCE Organizational Chart.

5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?

Attached is our contact list in Czechoslovakia, Hungary, and Poland.

6. What are the roadblocks to implementing your program?

Not knowing who is the most appropriate group to deal with in each country; how stable a country is, etc. Also, since 90% of the ASCE membership is domestic (in the U.S.), there is concern about the extent to which ASCE should pursue international affairs.

7. What programs would you like AID to consider in order to implement your program?

I would like AID to consider supporting joint professional engineering society relationships in these countries, for the purpose of transferring technology and much-needed management expertise. ASCE is well equipped to provide training courses, seminars, workshops, and the like, to assist these new democracies in strengthening their infrastructure; developing energy sources; and modernizing their economies, of course, with due regard for the environment.

8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering communities in Czechoslovakia, Hungary, and Poland?

Yes.

AGREEMENTS OF COOPERATION (current list of those approved by Board)

AUSCE	All-Union Society of Civil Engineers (USSR)
CCES	China Civil Engineering Society (PRC)
CICHE	Chinese Institute of Civil and Hydraulic Engineering (Taiwan)
CIP	Colegio de Ingenieros del Peru
CNI	Consiglio Nazionale degli Ingegneri - Italia
CSCE	The Canadian Society for Civil Engineering
CSSI	Czech Institution of Civil and Structural Engineers
DSCE	Danish Society of Civil Engineers
HKIE	The Hong Kong Institution of Engineers
	Hungarian Hydrological Society
	Hungarian Scientific Society for Building
	Hungarian Scientific Society for Transport
	Hungarian Society of Surveying, Mapping and Remote Sensing
ICE	The Institution of Civil Engineers (United Kingdom)
IE, Aust	The Institution of Engineers, Australia
IEB	The Institution of Engineers, Bangladesh
IEI	The Institution of Engineers of Ireland
IEM	The Institution of Engineers, Malaysia
IEP	The Institution of Engineers, Pakistan
IESL	The Institution of Engineers, Sri Lanka
IET	The Institution of Engineers, Tanzania
IIch	The Institution of Engineers, Chile
IPENZ	The Institution of Professional Engineers New Zealand
ISCE	Israel Society of Civil Engineers
ISE	The Institution of Structural Engineers (United Kingdom)
ISF	Societe des Ingenieurs et Scientifiques de France
JSCE	Japan Society of Civil Engineers
KSCE	Korean Society of Civil Engineers
NIF	Norwegian Society of Chartered Engineers
OIAV	Osterreichischer Ingenieur- und Architekten-Verein (Austria)
RIL	The Association of Finnish Civil Engineers
SCI	Sociedad Colombiana de Ingenieros
SIA	Swiss Society of Engineers and Architects
SVR	Svenska Vag-Och Vattenbyggares Riksforbund (Sweden)
SZSI	Slovak Society of Civil Engineers
VDI	Verein Deutscher Ingenieure (Germany)
ZIE	The Zimbabwe Institution of Engineers

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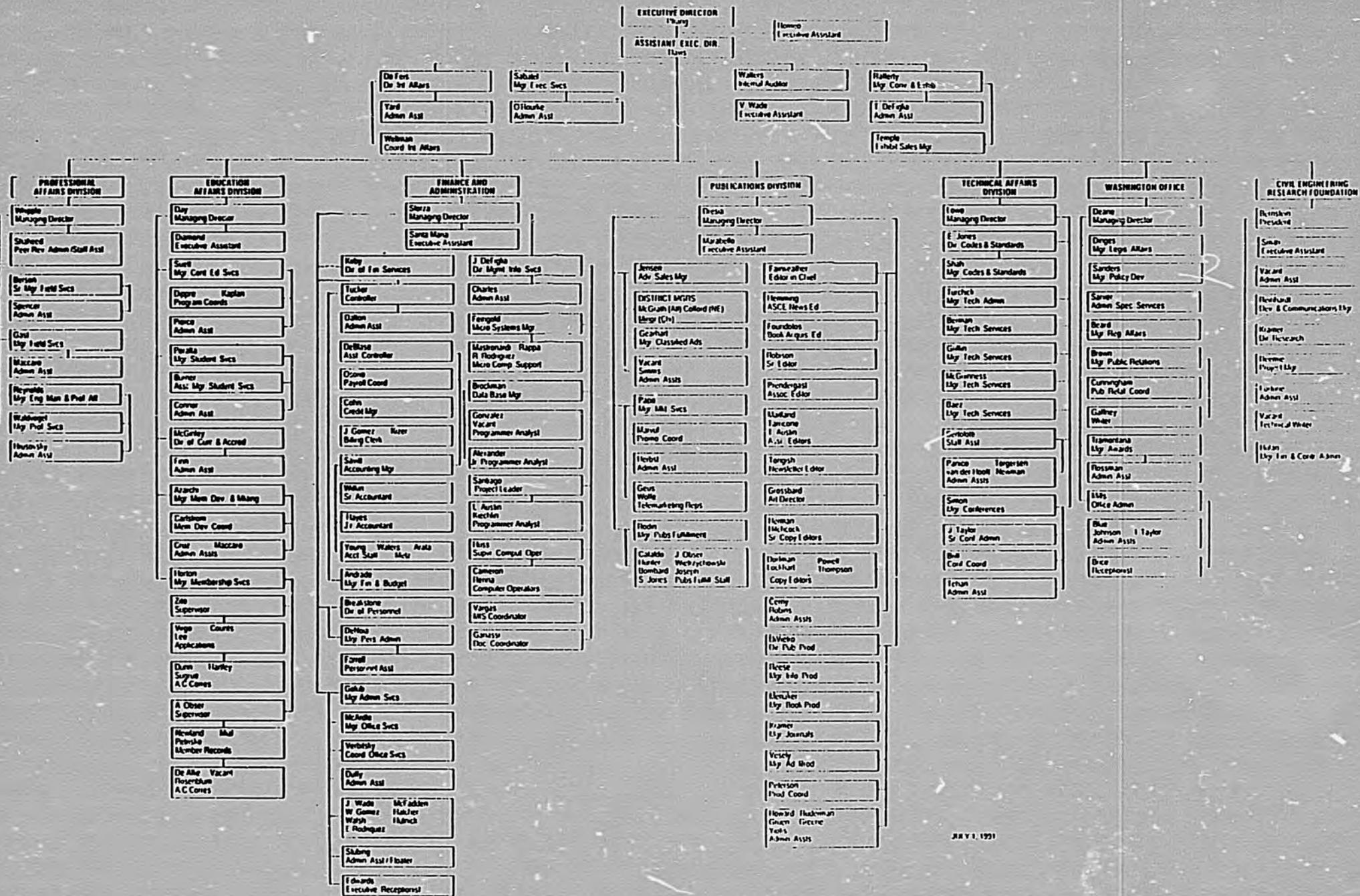
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JULY 1, 1991

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American Consulting Engineers Council

1015 Fifteenth Street N.W., Washington D.C. 20005
202-347-7474 FAX: 202-698-0068

Jane E. Sidebottom
Assistant Director
International Programs

in Europe Engineering Community ogy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?
Yes, Through our affiliation with the Federation of International Consulting Engineers (FIDIC)
2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?
Yes
3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?
No, as we have been unable to identify who we should be in communication with
4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.
Jane E. Sidebottom
Assistant Director, International Programs
(also) Howard M. Messner
Vice President
5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?
6. What are the roadblocks to implementing your program?
It is unclear if a private sector consulting engineering organization has developed in these countries
7. What programs would you like AID to consider in order to implement your program? A private sector/trade association development program to introduce the benefits of trade associations to the consulting engineering community in these countries - we would be willing to help with such a program.
8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?

Absolutely - We would like very much to share our programs and experiences with the emerging private sector engineering community in these countries.

To: Mr. Robert H. Staplin
Senior Vice President,
Harza Engineering Company

FAX: 312/831-3999

Subject: Responses to Questionnaire (Attached)

From: Fred I. Denny
Vice President, Engineering and Fossil Fuels
Edison Electric Institute
701 Pennsylvania Avenue, N.W.
Washington D.C. 20004-2696
Phone: 202/508-5639
FAX: 202/508-5225

Following up on our telephone conversation and your letter to EEI President, Tom Kuhn, following are answers to the questions in your questionnaire:

1. EEI has "international affiliates" in Japan, Europe, and South America. In addition, several electric utility companies in other foreign countries are currently considering joining EEI as affiliates.
2. Not applicable.
3. EEI is coordinating with USEA to assist in establishing utility partnerships.
4. My name, title, address, and phone number are given at the top of this FAX. EEI is organized functionally. While I should probably be the primary contact, Tony Anthony our Vice President who handles the international affiliates program will also be interested in your project.
5. We have recently begun to participate as indicated in item 3.
6. To be determined.
7. To be determined.
8. As discussed on the telephone, I will plan to attend your meeting in Washington on February 11-12.



U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?
Yes. All World Energy Council (WEC) member countries
2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?
Yes. US-AID Contract established 10/1/91
3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?
Yes
4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.
*Eric W. Haskins, Program Manager; US Energy Association
202/331-0415, Ext 3007 1620 Eye St. N.W.
Washington DC 20006*
5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?
(See Question 2) WEC Counterparts and Electric Utility org.
6. What are the roadblocks to implementing your program?
Limited Funding
7. What programs would you like AID to consider in order to implement your program?
Expanded commitment to current project.
8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?
Yes

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United States Energy Association

Utility Partnership Program

1620 Eye Street NW
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Tel: (202) 331-0415
Fax: (202) 331-0418

FOR ADDITIONAL INFORMATION, CONTACT:

Eric W. Haskins, P.E.
USEA Program Manager
Utility Partnership Program
TEL: 202/331-0415 Ext. 3007
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U.S.-EASTERN EUROPEAN - UTILITY PARTNERSHIP PROGRAM

INTRODUCTION:

On September 30, 1991, the United States Energy Association (USEA), U.S. Member Committee of the World Energy Council (WEC), signed a Cooperative Agreement with the U.S. Agency for International Development (USAID) to implement a "U.S.- Eastern European - Utility Partnership Program". Through this cooperative agreement, USEA anticipates working in cooperation with the Edison Electric Institute (EEI), the North American Electric Reliability Council (NERC) and the Electric Power Research Institute (EPRI), to leverage government and industry resources in a program which will result in the transfer of engineering, operating, financial and managerial information between electric utilities in the U.S. and Central and Eastern Europe.

BACKGROUND:

As countries in Central and Eastern Europe continue their evolution from centrally-planned to market-oriented institutions, it is becoming increasingly clear that significant improvements are required in the energy sector to support these major reforms. For several decades, electric utilities in Central and Eastern Europe have performed less efficiently than their U.S. counterparts in terms of operating efficiency, service reliability, environmental concerns and economic criteria. Additionally, the recent changes in Europe have increased focus on inter-utility cooperation, transmission connections, tariff design, investment criteria and the emerging potential role for independent generation.

The U.S. electric utility sector has much to offer by way of experience, management and technology, that can be of value to Central and Eastern European utilities. U.S. utilities have made tremendous strides in operating efficiencies for both fossil and nuclear generating plants, and the safety and environmental performance of U.S. facilities is unmatched. In addition to technical capabilities in engineering and operations, U.S. management experiences in financing and investment; establishing cost-based electricity pricing formulas; corporate organization and operations; customer service; and energy efficiency, could be of tremendous value to Eastern European utilities.

Conversely, with increased reliance on world-markets, off-shore manufacturing, international standards, foreign investment opportunities, and U.S. involvement in, and response to global environmental and nuclear safety concerns, electric utilities in the United States have much to gain through the establishment of long-term international relationships. This program can help participating utility executives in the development of many of the needed personal contacts and experience in international business, as well as providing a potential opportunity for increasing business development of the customers within a utility's service territory.

PROGRAM DESCRIPTION:

The USEA Utility Partnership Program will focus its activities in three primary arenas: 1. Engineering, operational and managerial information exchange between U.S. and Eastern European utilities (a "Sister Utility" program), 2. Focused regional seminars with broad-based interest (to be conducted in Eastern Europe), and 3. Providing technical and managerial reference information and materials related to the issues and activities identified and carried out in the first two phases.

In Part I of this program, electric utilities in Poland, Hungary and Czechoslovakia, will be matched with one or more utilities in the United States. These "Sister Utilities" will then be asked to enter into a cooperative agreement with each other and proceed in an effort to identify the basic engineering, operating and managerial issues which should be addressed to improve Eastern European utility operations. It is anticipated that each year, approximately 12 representatives from the selected U.S. investor-owned electric utilities (and related organizations) will spend 10 days visiting their Sister Utilities in Eastern Europe, while a similar number of visits will be made by Eastern European utility executives to the United States. Some of the issues which are identified may then be used as the basis for the Focused Regional Seminars, while other issues may be the basis for future business ventures between U.S. companies and the Eastern European utilities.

In Part II of the program, two or three, week-long Regional Seminars will be conducted in three central locations in Eastern Europe, to provide interested Eastern European organizations with more generalized information on issues with broad-based interest. Topics such as utility regulatory methods, utility financial operations, environmental issues, engineering (including standards development), operations and maintenance, and integrated reliable system operations are examples of the themes which may be discussed. Speakers will be solicited from U.S. utilities, financial institutions, regulatory agencies, architect/engineering firms, and other U.S. business institutions, as needed.

Part III of the program will be to provide the technical documentation and information which will be required by utilities in Eastern Europe as they attempt to implement the techniques which they will have identified as being useful to their operations.

CONCLUSION:

The United States Energy Association invites your interest and support for this venture to aid in the development of a strong, independent, Eastern European electric utility structure which can contribute to the quality of life and economic stability of the entire region. Participating organizations are expected to provide the manpower and expertise which can be made available for program activities in both Europe and the U.S. Funding for the travel, lodging and incidental expenses of participants, as well as coordination and logistical support, will be provided by USEA, through the joint agreement with the U.S. Agency for International Development. In addition, USEA will provide coordination and funding for travel of participants at the Regional Seminars, and will plan, facilitate and administer the overall US-AID grant.

If you feel that your organization can contribute to the success of this program, please contact the United States Energy Association at the address shown above.

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**PROSPECTUS
FOR
AAES/MTESZ INTERNATIONAL CONFERENCE
ON
QUALITY IN THE MANAGEMENT OF ENGINEERING PROJECTS**

- I. BACKGROUND**
- II. CONCEPT**
- III. CONFERENCE TOPICS/SESSIONS**
- IV. CONFERENCE PLANNING ASSUMPTIONS**
- V. NEXT STEPS**

**DRAFT
APRIL 16, 1992**

I. BACKGROUND

The nations of Eastern Europe are committed to restructuring their economies along the principles of the free market to recapture their lost potential, raise their living standards and unlock individual enterprise. The U.S. government is developing regional programs to help foster and strengthen privatization and free-market economics.

Within this broad international context, the engineering organizations of Eastern Europe and the United States have opened communication channels and entered into a number of cooperative agreements for the sharing of information and publications.

The Federation of Technical and Scientific Societies of Hungary (MTESZ) and the American Association of Engineering Societies (AAES) entered into a cooperative agreement on behalf of their member societies in July, 1991. Since that time, the leadership of the two organizations has explored options for joint activities. The urgent need for improving quality in all aspects of engineering in Eastern Europe was identified as a top priority, and it was agreed that co-sponsorship of an international conference to address this critical need would be a most timely and desirable cooperative venture.

A preliminary outline of such a conference was endorsed in principle by the AAES Board of Governors on April 2, 1992. The President of MTESZ and his colleagues have also endorsed the outline.

This Prospectus builds upon and expands the preliminary outline, and provides the framework for more detailed planning and implementation of the conference.

II. CONCEPT

The conference has been conceived as the first major step in a "building block" approach to establishing an "opportunity" network for continuing cooperative activities and communication between and among both single discipline and multi-disciplinary engineering organizations in Eastern Europe and the United States. To realize this concept, the conference will include sessions and information in the following areas:

1. Quality in the Management of Engineering Projects
2. Quality in Engineering Education Management and Curriculum
3. Creating and Operating Professional Organizations in Eastern Europe
4. Conducting Business in Eastern Europe
5. Currently Planned and Needed Technical Training, Conferences, and Seminars
6. Organizational Contacts and Available Professional and Technical Publications

These subject areas will be discussed in greater detail. Taken together, they are intended to provide a strong base for expanded and continuing professional growth and economic progress for Eastern Europe and the United States.

III. CONFERENCE TOPICS/SESSIONS

QUALITY IN THE MANAGEMENT OF ENGINEERING PROJECTS

Note: To ensure that all participants develop a basic working knowledge of quality management, emphasis will be placed on clear fundamentals of organizing and managing for quality.

Quality Management Process (Quality Management, Quality Assurance/Quality Control, Peer Review)

Organizing for Quality (Matrix Organization, Traditional Line Organization, Small Organizations)

Project Quality Management (Team Member Responsibility, The Project Engineering Plan, The Construction Management Plan, Implementing the Plan)

Industrial Plant Quality Management (Organizing for Quality Operation, Operations Management, Employee Skills Enhancement, TQM)

Quality in Construction (Organizing for Quality, The Construction Plan, Implementing the Plan)

Quality Management Training (Universities and Conferences, Professional Societies, Continuous Quality Management within Organizations)

How To Get Started (Senior Management Commitment, Training of Key People, Quality Management Teams, Monitoring and Continuous Feedback)

Skilled Trades Quality Training (On the Job, Quality Workshops, Skills Enhancement, Refresher & Update Training)

Enhancement of Innovation (The Atmosphere of Innovation, Removing the Barriers to Innovation, The Rewards for Innovation)

QUALITY IN ENGINEERING EDUCATION MANAGEMENT & CURRICULUM

The Application of Quality Management to the Education Process

Introducing Courses in Quality Management into the Curriculum.

CREATING AND OPERATING PROFESSIONAL ORGANIZATIONS IN EASTERN EUROPE

Organizations (Organizing, Staffing, Finance, Administration)

Operations (Publications, Technical Affairs, Professional Affairs, Research Activities, Inter-Society Relations, International Cooperation)

CONDUCTING BUSINESS IN EASTERN EUROPE

Procedures (Business Processes, Codes and Standards, Design Organizations, Construction Organizations, Expected Changes Abroad, Getting Paid, Risk to Foreigners)

CURRENTLY PLANNED AND NEEDED TECHNICAL TRAINING, CONFERENCES AND SEMINARS

Information Session (Review of Current Programs, Identification of Technical Training Needs, etc.)

ORGANIZATIONAL CONTACTS AND AVAILABLE PROFESSIONAL TECHNICAL PUBLICATIONS

Information Sessions (Bibliographies, Information on Agency Roles, Contacts, etc.)

The following Possible Time Block Plan indicates how these topics and sessions might be organized.

TIME	WEDNESDAY	THURSDAY		FRIDAY	
		Concurrent Panel Discussion Sessions			
8:30-10:00am	Registration	Quality Management Process	Creating Engineering Organizations	Quality Management Training	How To Get Started
10:30-12:00pm	Registration	Organizing for Quality	Operating Engineering Organizations	Enhancement of Innovation	Conducting Business in Eastern Eur.
12:00-1:30pm		Luncheon Speaker		Luncheon Speaker	
2:00-3:30pm	Keynote Lecture - Quality Management	Project Quality Management	Industrial Plant Quality Management	Quality Management in Education	Planned and Needed Technical Programs
4:00-5:30pm	Keynote Lecture - Engineering Business Status in Eastern Europe	Quality in Construction	Skilled Trades Quality Training	Quality Courses in Curriculum	Contacts and Available Publications
6:30-8:00pm	Opening Reception	Reception/Dinner			

IV. CONFERENCE PLANNING ASSUMPTIONS

The Conference will be jointly sponsored by AAES and MTESZ, with broad co-sponsorship invited.

The Conference will be held in Budapest, Hungary, in the period from late August to late September, 1993. (Note: Consideration will be given to scheduling just before or just after the Triennial Conference in London in late September).

The Conference will be approximately two and one half days, and primarily in Keynote and Lecture format, with concurrent sessions.

Consideration will be given to adding one day of technical sessions at the end of the Conference on such possible subjects as the use of biotechnology in hazardous waste disposal, and other environmental technology. The additional day would require separate planning and registration, and would only be scheduled if there is adequate interest and demand.

Speakers and lecturers will be from the United States and Eastern Europe, and the Conference attendees will be invited from the Americas and all of Europe.

Partial funding support from appropriate international government agencies will be sought.

Because of all the educational nature of the Conference, advance papers, advance reviews, and proceedings for attendees will be included in Conference costs.

Optional post conference tours will be considered.

V. NEXT STEPS

Using this Prospectus as a framework, the following steps are planned:

1. Meet with MTESZ Leadership in Budapest In June to finalize location, timing, and structure of the Conference.
2. Organize and convene multi-disciplinary conference planning committee with international representatives.
3. Refine and detail conference sessions, identify potential speakers, and issue call for papers as appropriate.
4. Seek co-sponsorship and funding support from interested organizations and government agencies
5. Plan promotional activities for conference.

U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries? Yes. We have on-going interactions with organizations in other countries.
2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?
3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland? Yes.
4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.
Dr. Woodrow W. Leake, Deputy Executive Director
American Society for Engineering Education
11 Dupont Circle, Suite 200, Washington, D.C. 20036
5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?
Jagiellonian University, Cracow, Poland }
Techbucak University of Lodz, Poland } East-West Congress on
Engrg. Education
6. What are the roadblocks to implementing your program?
Insufficient Opportunity to establish meaningful relationships.
7. What programs would you like AID to consider in order to implement your program?
Funding activities to increase U.S. engineering colleges' interaction with Eastern European engineering colleagues.
8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?
Yes.

U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?

Yes, all

2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?

3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?

Yes, see attached list

4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.

Dr. George Sinnott, Associate Director, National Institute of Standards and Technology, Building 101, Room A505, Gaithersburg, MD 20899, 301/975-4000

5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?

Standards organizations in all three countries and Russia

6. What are the roadblocks to implementing your program?
Limited funding to acquire private sector expertise as well as travel-related costs. Lack of development of the technical infrastructure with Eastern European institutions.

7. What programs would you like A.I.D. to consider in order to implement your program?

Support exchange programs of personnel and technical publications, support joint research projects/workshops, support development of technical infrastructure in standards and metrology.

8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?

Yes

Organizations Now Working With NIST

NIS of Former Soviet Union

Institutes of the Academy of Sciences
Institutes of GOSSTANDART (Ministry for Standards, Testing, and Quality Control)

Poland

State Committee on Standards, Measures, and Quality Control
Institute of Physics, Jagellonian University of Krakow
Institute of Ferrous Metallurgy, Ministry of Industry, Gliwice
Warsaw Technical University
Institute of Nuclear Chem & Tech, Dept. of Analyt. Chem, Atomic Energy Agency
R&D Center for Standard Reference Materials, Committee on Standards, Measures, QC
Institute of Atomic Energy, Dept. of Metrology of Radioactive Matls, Swierk
Copernicus Astronomical Center, Polish Academy of Sciences, Warsaw
Institute of Organic and Physical Chemistry, Wroclaw Technical University
Institute of Physics and Nuclear Techniques, Academy of Mining and Metallurgy
R&D Center for Standard Reference Materials, Committee on Standards, Measures, QC
High Voltage Department, Electrotechnical Institute, Warsaw
Center of Molecular and Macromolecular Studies, Polish Academy of Sciences, Lodz
Institute of Physics, Plasma Physics Division, Pedagogical University of Opole
Technical Institute of Wroclaw, Institute of Telecommunications and Acoustics

Hungary

National Office of Measures
Technical University of Budapest
Institute of Plasma Physics, Academy of Sciences
Central Research of Chemistry, Academy of Sciences
Institute of Technical Physics, Academy of Sciences

Czechoslovakia

Federal Office of Standards and Measures
Institute of Metrology, Bratislava
Nuclear Research Institute, Rez
Institute of Chemical Technology, Prague
Institute of Radio and Electronic Engineering, Academy of Sciences
Institute of Macromolecular Chemistry, Academy of Sciences
Czech Technical University, Prague

U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary, and Poland

QUESTIONNAIRE

1. Does your organization operate internationally? What countries?

Yes, Central Europe and Eurasia (Eastern European Countries and former Soviet Union)

2. If no, are you interested in establishing relationships in Eastern Europe and specifically, Czechoslovakia, Hungary, and Poland?

3. If yes, have you attempted to establish linkage with existing organizations or attempted to establish a new organization in Czechoslovakia, Hungary, or Poland?

Currently have linkages with existing organizations

4. Name, title, address, and telephone number of your member responsible for this activity. A copy of your organization chart would be helpful.

Mr. Glenn Schwitzer, Director, Office for Central Europe and Eurasia, NAS, 2101 Constitution Avenue, Washington, DC 20418, (202) 334-2644

5. What is the status of your current program and specifically, what organizations are you dealing with in each of the three countries?

Professional exchange workshops, policy-oriented workshops, summer training programs of postdoctoral scientists

6. What are the roadblocks to implementing your program?
Lack of funding

7. What programs would you like A.I.D. to consider in order to implement your program?
Support for policy-oriented bilateral workshops

8. Would your organization be willing to participate in a workshop to develop plans to further linkage with the engineering community in Czechoslovakia, Hungary, and Poland?
Yes

Appendix II

EEEC Questionnaires

Hungary

Thoughts on the Energy and Infrastructure Questionnaire of the U.S. and Eastern Europe Engineering Community on behalf of the Scientific Society for Building

1. Official name of the organization:

Építéstudományi Egyesület

/The Scientific Society for Building/

Address: 1027 Budapest II. Fő utca 68, Hungary

Phone numbers: 201 7137, 201 8616

Contact persons:

Dr. Miklós Márkus, President

Dr. László Varga, Secretary of the Committee of the Foreign Affairs

Members of the organization: about 6000 members

Organizational set-up:

President

two Deputy Presidents

three General Secretaries, one of whom is the head of the Administrative Section

The organization has regional groups in several towns all over the country, the center itself being divided into professional sections and committees. The professionally related sections are coordinated by divisions. Larger regional groups consist of smaller specialized units.

It is not reasonable to include an organization chart at the moment, since the entire set-up of the Society is subject to re-organization.

Goals and objectives of the Society;

By its technical knowledge propagating and mobilizing activity, the Society wants to promote that the experts of building should be more and more conscious of the technical, economic and social coherences of their work, that they should familiarize themselves with the detail problems of their special fields, develop their technical knowledge and thereby serve the development of the human built environment at a higher and higher level.

2. The recent structural changes in Eastern Europe cannot pass unnoticed for our organization. From a purely scientifically orientated society, which used to subsist largely on state budget funds, it is to emerge as an economic society with very precisely defined aims and objectives with the ultimate goal of sel-financing. The interests of the members also require that the Society should be transformed into an economic unit endeavouring to create and maintain connections with domestic and foreign companies interested in building projects. In addition to making and keeping up provisions for the constant information flow between and for the members, the Society wishes to play an active part in searching for and creating business opportunities not only in the quality as a consultative body but also as mediator and acting as general contractor for the companies belonging to its sphere of business activity. In this way the Society will be able to give direct economic

assistance to the member at the same time ensuring the best possible business partners for the foreign companies involved.

3. We do have direct working connections with the United States although this can only be regarded as modest beginnings. In the near future an engineer exchange agreement will be signed with ASCE with the aim of getting the American engineers acquainted with the possibilities of the newly emerging Hungarian market economy and at the same time giving opportunity for Hungarian engineers to study the world's leading working methods and project directing. At present we have no connections with economic organizations as such.

4. Our future program does focus on the United States with the initial step of realizing and extending the exchange of the engineers as outlined above; in the perspective we intent to take up direct market connections with the largest possible number of the companies interested in the East-European region generally, and in Hungary particularly.

5- In the light of the above we wish to reiterate our intentions to develop business connections with the U.S. here as well.

6. In addition to the generalities of our objectives we intend to find potential investors whi might be interested in Hungarian projects the realization of which could bring mutual advantages.

7. As for current obstacles we wish to point out to the structural change our society has to face. This means enormous work in restructuring the internal set-up and finding the right partners for the future cooperation. Although ASCE is no doubt in a position to bring us together with potential partners, we need access to a more substantial circle of investors. Initial financial difficulties also impose restrictions on us while we urgently need detailed and useful information about the potentialities of the American investments and project directing in the form of descriptive material, occasional lectures or regular courses.

8. Major energy and infrastructure problems facing our country, in the order of importance; Hungary's largest energy problem is not the lack of energy but rather the lack of modern and environment-friendly energy resources. Although we do have coal it is not of superior quality. Our natural oil and gas resources are not adequate. Already the substitution of coal by oil was effected far too late in this country, not to mention modern atomic reactors where it is to be examined whether the development is efficient. Water, as environment-friendly energy resource can be hardly be considered due to the geographical features of the country. Among the major deficiencies of the infrastructure we would list the inadequate public road and railway network /there is only a short stage of motorway towards the West/, water supply, sewage lines where building-out is most inferior in whole Europe, also severe problems

in telecommunications, especially in the telephone network, with a rather sluggish pace in computerization.

9. Major obstacles in addressing these problems: first and foremost the loss of the East-European, particularly the Soviet market, as the main supplier of energy products. New suppliers are to be found parallel with the complete restructuring of the Hungarian economy which will determine when and what sort of power stations will be constructed in the near and distant future. Since the majority of the Hungarian factories was geared to the needs of the CMEA, the complete reorganization takes considerable time and efforts leaving us with limited financial resources in the meantime.

Capital efficiency is to be reconsidered together with the lack of such economic units the development of which would contribute to general progress with adequate capital returns.

Other problems are the constant increase in the price of energy bearers and building materials, financial limitations of the investments, uncoordinated regional activities, inconsistent entrepreneurial policy etc.

10. Energy and infrastructure projects that could be of interest to U.S. entities:

- development of the road and railway network
- public amenities mostly water and sewage water lines with independently working economic units

- construction of atomic reactors
- development of the telecommunication system
- transformation of the financial system
- purchase and transformation of several state-owned enterprises being currently on the privatization list of the State Property Agency
- direct investments in the holidaymaking sector and the catering industry

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Answers for the Questionnaire of Harza EC

1. Hungarian Chamber of Innovation

2. This is a new organisation, no changes in the structure and goal. We expect the number of member organisations grow rapidly

3. No

4. -

5. Yes

6. -Exchange of information
 - Organisation of courses and symposia
 - Facilitate contacts between our member organisations and U.S. entities
 - Attract U.S. contracted research to Hungary
 - Organisation of joint RD programs

7. a. Lack of contacts and information
b. Scarce financing of international cooperation

8. The major infrastructure problems are;
 - telecommunication
 - professional education
 - lack of international contacts

9. - Lack of know-how and special knowledge
 - Lack of special funds to support RD
 - Relative isolation

10. - The participation in joint RD programs
 - Establishing data banks and information networks to facilitate U.S. investment in prospective areas in Hungary
 - Setup an International Technology Centre for promotion of concrete technology cooperation between Hungarian and U.S. enterprises
 - Cooperation in satellite teleeducation, teleconferencing and telemanagement

A N S W E R S

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to questionnaire of USAID in U.S. and
Eastern European Engineering Community

Item No.1. : A.W.E. Consulting Ltd. (founded in 1990.)
----- (Alternative Water - Energy Limited Liability
Company)
Address : 1134 Budapest , HUNGARY
Csango u. 3/b.
Contact person : Dr Szeredi Istvan
Owners : Hungarian Electricity Board ,
Norconsult International A.S. ,
Kvaerner Eureka A.S. ,
Accurate Mechanical Co. ,
private persons ,
Board of directors : will reelected at 15. January
(probably Mr Jenssen vice president of
Norconsult , Mr Jani who returned from
U.S. + 2 hungarian persons)
Managing director : Dr Szeredi Istvan (till 15-th
January - probably will reelected)
Capital: 6.000.000,- HUF
Phone : (36-1) 120 80 83 or 120 16 18
Fax : (36-1) 120 16 18
Activity : Consulting engineering services in the
field energy development , water mana-
gement , environment protection - with
the right to foreign trade .
Staff : max. 10 persons permanent + 10 - 15 free
lance experts (in last year).
Goals : Development of local and renewable energy
sources - organization of consulting ser-
vices , general contract , joint venture,
financing (basicly small hydro and ratio-
nalization of cooling water systems).
Participation in preparation of operating
flexibility of energy system .
Reconstruction of operating plants , bar-
rages , pumping stations .
Sclution of environmental problems of
energy industry .

Item No.2. : After political change in Hungary 1,5-2 years ago
----- everybody wait (and politicians promised) lot of
economic changes . After near two years not noti-
cable result in field energy and infrastructure .
Only empty words . The production of energy are
monopolium of government and no market in this
field . No energy policy . The companies are not
indepent and haven't right (and financial possi-
bilities) to decision and development . In the

leading position not system changes in persons only on the top . Everybody waiting . The interest of bank loans are up 45 % - no free capital for development . The international aid programs like PHARE are unresultable .
The economy stopped , no market , no investment sources , no change in monopoliums of state , incorrect bank system , no guaranties to return the foreign capital (loss of our norwegian partners at Hungarian National Bank 150.000,- NOK). The social stress increased . Lot of people don't believe changes or wait new changes .

Item No.3. : In the field of flexibility of hungarian energy
----- system the hungarian energy board haven't suitable modelling system . The Norconsult are contacted with PTI . I think very important to establish working relationship with the experienced U.S. companies .

Item No.4. and 6. : We are open to different kind of cooperation
----- with U.S. companies

Item No.5. : According Item No.3.

Item No.7. : Hungarian National Bank
----- Unable to change of struture energy industry.
Missing laws.
Missing investment sources

Item No.8 : - Conditions of conection to UCPTE
----- - Flexibility of energy system .
- New structure of energy production with market
- Opening the state limitiations of using local energy suorces (legal , financial and technical background .
- Treatment of environmental problems .

Item No.9. : According Item 7.

A C T U A L I T Y

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of operating flexibility of hungarian electric energy generation system

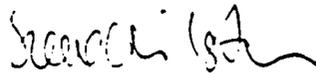
Several factors necessitating the promotion and revision of developing the hungarian system of electric power supply in term of sources . The conversion to the convertible clearing of accounts and the very hard market price of imported power , the gradually growing extent of coordinated operation with the power system of Western Europe (UCPTE) , and the changes in the magnitude of energy safety are factors that cannot be omitted consideration . At the same time the development mechanism of energetics that has prevailed in this country till now has excluded rationalization at the side of sources and the formation of system safety , operating reserves and system flexibility , features that are well proved in both the western and eastern energy systems . In addition to considering technical , economic and energy factors , and in order to prevent or eliminate a national catastrophic situation , the question of flexibility of hungarian power production system should be kept in the foreground .

To the end of last year in the hungarian power supply system was the greatest and , on the basis of its magnitude , the only capacity that provides control , follows a time schedule and ensures reserves is import from the Soviet Union . The capacity of energy import from 1850 MW (1990. year) in the 1992. decreased to 200 MW . Industry stopped and energy consumption decreased but with this the hungarian possibilities for the supplementation or replacement of this import can be regarded as the very same kind of natural resources as the mineral stock. In the secure of operating flexibility generation system without the knowledge of the natural , social , technical , economic and power engineering conditions of their accurate assesment and utilization no information basis is aviable for rational decisions in the energy policy . From the other side the hungarian energy system haven't means and plants to secure spinning reserve (necessary to connection into UCPTE) , load following , to reduce of minimum loading , frequency regulation and other dynamic duties . The energy board haven't suitable tools for system modelling in the generally changed fuel and price conditions .

On the basis of professional knowledge , near twenty years of diverse foreign connections , and hungarian background of experts the A.W.E. consulting engineering services undertake the whole domain of decision support . Among other things , we undertakes the following activities :

- Promotion of forming an alternative way of thinking , through making use the possibilities offered by the professional media and technico-scientific organizations , in the domain of the role , execution possibilities , power engineering functions , economic , technical and environmental questions of system flexibility and safety .

- Special examination of conditions of preventing or eliminating the potential or presumable environmental harms , and through this the promotion of improving the environmentally sound options of power supply .
- On the basis of the political background and intentions and fitting the development requirements of the given region , preparations for creating a system interest through which the confidence of local population can be obtained for the construction .
- In the frame of our tecnico-economic connections, and participation in preparation for creating a frame for economic cooperation .
- Organization and planning of the required work in engineering , economy , environmental exploration and environmental protection ; performance of public relation tasks .



Dr Szeredi Istvan
managing director

C U R R I C U L U M V I T A E

=====

NAME : Dr SZEREDI Istvan

NATIONALITY : Hungarian
MARITAL STATUS : Married , two childrens
PROFESSION : Hydroengineer

EDUCATIONS: Technical University of Civil Engineering-Moscow ,
Faculty : Hydroelectric Power Station and Hydroconstruction ,
Speciality: Design and Modelling Constructions and Equipments,
Diploma : From 1972. year (Summa cum Laude)

POST GRADUATE COURSES :

Course of Modern Mathematics for Engineers, Budapest, 1977-1978 years.
Course of Numerical Methods for Solution of Partial Diff. Equations,
Dissertation for Degree : = Candidate of Technical Sciences = (Ph.D)
Transient Operating Conditions Equipments , Hydroelectric Power
Stations and Hydraulic Systems - Budapest-Moscow, 1979.
Doctor Technical Graduated from 1981. year , Budapest.
Diplom Manager School Ministry of Water Management and Env. Protect.

PAST EMPLOYER : VIZITERV - Consulting Co. for Water Engineering Budapest,
HUNGARY from 1972. to 30. June 1990. /to the collapse of VIZITERV /
in position Chief Engineer of Hungarian Pumped Storage Project and
Energy Development Department.

PRESENT EMPLOYER: A.W.E. (Alternative Water-Energy) Consulting Ltd. from
July 1990. - Managing Director .

MAIN FIELDS OF ACTIVITY :

- Planning and Design of Hydroelectric Power Stations ,
- Small Hydro Power Stations , Planning and Design Hydroconstructions,
- Dynamic Problems of Systems and Structures ,
- Analysis of Transient Operating Conditions of Turbines, Pumps, Pumping
Stations , Water Transmission Pipelines , Open Channal, River Beds .
- Design of Water Hammer Protection Devices , Unsteady Flows,
- Organization of Project Works ,
- Energy Balance and Cost Analysis , Public Relations ,
- Supervision of Investigations and Construction-Erection Works .

PROFESSIONAL SOCIETIES :

- Member of Hydro- and Thermodynamic Comitee of Hung. Academy Sciences,
- Member and Secretar of Hung. Delegation in the Hydropower Comission
Comecon Countries ,
- President of Hydroconstr. Comitee Hung. Hydrological Society ,

PUBLICATIONS :- Papers for Symposiums , Conferences and Journals more than
50 on the Field : of Dynamic Problems ; Pumped Storage ; Transient
Operating Conditions of Pumps, Turbines , Pipelines ; Unsteady Flows;
Finite Element Modellings .

- Studies in the Fields of Activity more than 200 .

Budapest , October 1991.

Dr SZEREDI Istvan

SCIENTIFIC SOCIETY of MECHANICAL ENGINEERING
Hungary, Budapest

HARZA ENGINEERING COMPANY

233 South Wacker Drive
Chicago, Illinois 60606-6392
Fax: 00-1-312-831 3999

Subject: USAID
Role of US. Engineering Organisation
Eastern Europe Energy and Infrastructure

Dear Mr. Robert H. Staplin!

We were glad to receive you in Hungary and we are convinced that it was useful for us to have entered into contact in order to prepare an even more successful co-operation between American and Hungarian experts and companies in the future.
Please find enclosed our answers to the questionnaires.

Let us however, make a remark. Although, among the aims of your trip, you laid special emphasis on establishing contact with members of the private sector we think that the meetings you took part in did not provide you with sufficient information about this sector. We are sure though that the experience you gained this time will help you to arrange the schedule of your future visits. We would be happy to be at your disposal in this field, too.

Answers:

1. Scientific Society of Mechanical Engineering, Energy and Chemical Machinery Section
2. The Central European changes have brought about considerable changes: the members have a more important role in the Association. Greater economic and professional independence means heavier responsibilities for the organisation.

3. Yes, our organisation currently have a working relationship with a US. entity, with A.S.M.E.

4. -

5. In spite of the fact that we already have existing relation with American organisations we do consider making further contacts important. This is one of the reasons why we received your representative with special attention.

6. It would be useful to enter into contact with organisations that could help us to get know the list of the ASME standards or the technical literature. It would also be of a great help if we could information about the direction of development and demands of the American market.

7. We see no obstacle that would hinder the realisation of our ideas. This is why we are seeking the appropriate way for the improvement of.

8. 1. Energy-intensive production infrastructure

2. Drinking water supply in the countryside, drainage, water cleaning

3. Obsolete and high energy consumption of agricultural plants and farmers, the lack of technology for environmental protection, education and training

4. Obsolete, pollution of the environment of power-plants and the treatment of nuclear waste and biopollution

5. Out of date machines and vehicles

9. The main reason are the lack of capital, national investment and know-how

10. -

Budapest, 26th February 1992.

Marton Aron

Aron Marton

Secretary



Mr.R.H. STAPLIN

Senior Vice President
HARZA Engineering Co.
Sears Tower 233 South Wacker Drive
CHICAGO, ILL. 60606-6392, USA

ERŐTERV

Power Station and
Network Eng. Co.
P. O. Box 23.
H-1361 Budapest, Hungary

Your Ref.:

Date:

Our ref.:

11/1340

Date: 05.02.

Dear Mr. Staplin,

Referring to your discussion with Mr. Péter Balázs on 8th January 1992 we have compiled and are sending you herewith the list of projects we propose to be taken into consideration in the USAID programme.

We are of the opinion that all the projects listed are of extreme importance with regard to developing the Hungarian economy and reducing the environmental pollution.

Our company, ERŐTERV, is interested in contributing to the preliminary investigations of the proposed projects and the preparation of the feasibility studies, either alone or in cooperation with American companies.

Since Mr. Balázs has already presented ERŐTERV's activity and structure and has also handed over to you the brochures describing the company, I think it needless to introduce it now again.

I only should like to emphasize that our staff number is over 500 persons, two-thirds of which are qualified technical-economic labour force.

Head Office
Széchenyi rkp. 3.
H-1054 Budapest
Hungary

Cable Address:
Elprojekt

Telefon No.:
(361)-1314-100

Hungarian National Bank
Account No.:

Telex No.:
22-3383 ervh h

220-06121

Telefax:
(361)-1531-249

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Our economic situation is stable, we are one of the quite few Hungarian engineering offices that have been performing their work with a good business profit for years. At your request, we willingly give you further information on the company.

In addition to the engineering activity proper, more and more emphasis has been recently given to our efforts to establish business relations between foreign investors and domestic enterprising possibilities in energetics.

We readily participate in the introduction of advanced technologies in the Hungarian power plant industry. We are willingly at your service to perform any engineering activities in these projects.

On account of this, or if you need more details, please turn to

Mr. Péter BALÁZS
Tel: 00-361-153-0581
Fax: 00-361-153-1249

Looking forward to your contacting us, I remain

Sincerely yours,



Dénes Szluha
Manager Director

ERŐTERV

1205.70/92.01

A N N E X

Projects proposed for consideration within USAID

1. POWER PLANTS

1.1 Repowering of the existing power plant units over 40 with new, up-to-date facilities, considering the existing site, the connecting electric network and other infrastructure. The upgrading of power plants usually situated near to towns with economically operating facilities, taking care of environment, could also promote the reduction of the price of produced electric- and thermal energy.

Some 6 to 8, mostly coal fired, power plants could be investigated in the following stages for each site:

- Determining the physical condition of the power plant. Economic and environmental study of those pieces of equipment to be remaining and to be rejected resp.
- Long-term availability of primary energy source and provision for it.
- Based on the first two studies, determining the hierarchy of economic efficiency and preparing a feasibility study.

1.2 Feasibility study for a new up-to-date power plant of some 1200-1500 MW capacity to be established on the lignite resources explored in Hungary.

1.3 Feasibility study for a new power plant of some 1500 MW capacity established on imported coal.

1.4 Upgrading of existing combined heat- and electric energy supplying power plants operating in large towns, extending them with combined cycle units. Preparing a feasibility study.

More than 70 district heating systems operate in Hungary at present, in which the district heat utilized amounts to over 100 TJ/year. A considerable part of the systems did not produce combined electric power, that is why the cost is very high. In existing heat centres like these it is reasonable to consider the potentiality of combined electric energy generation by the following schedule:

- Studying the potentiality of combined heat- and electric energy production, developing an optimum technical solution for each site.
- Based on the results of the first stage, identifying the most economical district heating systems and preparing a detailed feasibility study for them.

1.5 Installation of desulphurizers

Desulphurizing units need to be installed in the Hungarian power plants so as to restrict the emission of sulphur dioxide. The final product is expected to be gypsum (plaster), for whose industrial utilization or environment protecting deposition an appropriate solution should be found. Several power plants can be investigated where the fuel is low-grade lignite and brown coal, such as:

- 'Máttra' Power Plant Company, 3x200 MW
fuel: lignite
- 'Oroszlány' Thermal Power Plant Company, 4x50 MW
fuel: brown coal

Further preliminary examinations, studies are required for the disposal and industrial utilization of contaminated slag and fly ash produced at fluid firing.

- 1.6 Updating the process control systems of power plants operating with various fuels.

The measuring- and recording technique for the emission of coal- and lignite fired power plants, with a view to drawing up feasibility studies.

2. Electric networks

- 2.1 Elaborating the medium-range development strategy of the Hungarian electric energy system in several alternatives, for the estimated trends of consumer demands. The study considers both the power plant system and the national transmission network.
 - 2.2 Technical-economic investigations of transformer replacements in power plants and substations resulting in energy savings (wattous and reactive).
 - 2.3 Economical potentialities and technical solutions of upgrading old, obsolete high/medium voltage substations, as applied for particular substations.
 - 2.4 Economic and technical conditions of designing four- and multi-circle transmission lines, with special regard to the licensing difficulties of new rights of way.
 - 2.5 Possible applications of transmission lines with isolated arms in the Hungarian electric energy system.
3. Establishing regional repositories of hazardous and radioactive wastes in the Mecsek mountain. The detailed programme of work is attached.

3. Regional repositories of hazardous and radioactive wastes

INTRODUCTION

The 'Mecsek' Ore Mining Company (MÉV) and the Power Station and Network Engineering Company (ERÓTERV) recommend the completion of a feasibility study on the implementation of a regional hazardous- and radioactive waste disposal site in the Mecsek mountain.

Hazardous wastes produced in industrial processes that

- cannot be utilized as secondary raw material,
- cannot be destroyed by technological processes (e.g. incineration)

should be safely, either permanently or finally, isolated from the environment.

The feasibility study would be used by the proposers as a basic document for organizing the economic frame and the financial sources of the implementation.

NATURAL ENVIRONMENT OF THE SITE

An extensive, massive, impermeable siltstone suite of great thickness can be found in the immediate vicinity of the uranium mine, situated west of the town of 'Pécs' in the Mecsek mountain. So far, research results are available based on the knowledge obtained on the structural conditions of the uranium site in the Mecsek and on purposeful research work performed to support the present concept.

The suite is composed of some 240 million year old petrified red clay containing fine sand and rock flour. The at least 800 m thick consolidated compact suite and its rocks on the whole can be considered practically impermeable. Notable water filtration can only occur in the rock cracks, in the tectonic crushed zones. The permeability coefficient of the homogeneous rock was found to be of the value of $5.19 \cdot 10^{-8}$ cm/s. The entire layer series rests on a crystalline bedding extremely stable from a geodynamic point of view, and consequently it is qualified as an aseismic area. The data obtained so far show no water movement in the deep zone of the siltstone suite. Due to its water sealing character, the siltstone suite is hydrogeologically isolated from the Lower-Permian Triassic suite containing vein waters, and is no part of any hydrodynamic system.

Based on the extension of the rock suite, a space of 1500 m x 550 m x 400m is available for the construction of trench cells.

DESIGN OF THE DISPOSAL FACILITY

The rock suite is accessible from an existing pit of the uranium mine through a ca 700 m long horizontal drift. Waste delivery might also be developed from here.

The trench cells would be formed by mining methods. The extension of the rock suite enables different waste categories to be deposited at a safe distance from each other.

The company operating the uranium mine has the expertise, the machines and the equipment required for the mining operations.

By the pre-estimates, some 30.000 m³ of wastes per year could be disposed of in this repository.

PREPARATION OF THE PROJECT

To decide on launching the project, innumerable research and exploration jobs have to be done such as:

- proper geological exploration of the area,
- assessment of wastes produced in the region, evaluation of potential neutralizing processes, quantitative - qualitative appraisal of wastes to be disposed of, planning of transportation modes,
- general outlining of waste management technologies and installations,
- planning of storage (disposal) technologies and installations,
- strategy and programme for the information of the press, the population and local municipalities, sociological investigations,
- cost elaboration, economic analyses,
- studying the legal and organizational possibilities of construction and operation.

Based on these jobs, we intend to compile the following documents:

1/ Strategical Plan

- the government's concept on waste management,
- coordinating the proposed project-alternatives with this concept (x),
- surveying the situation of regulation and identifying the regulation requirements (x).

2/ Feasibility Study

The Study would be prepared in three phases built on each other following the elaboration, analysis and

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evaluation of the results of background investigations to be outlined in a project management scheme.

The first phase would include:

- verifying the suitability of the geological formation by continuing the geological-hydrogeological-rock mechanical investigations (the uranium mine has so far spent a considerable sum on this)
- assessing the quality and quantity of wastes produced in the region and requiring disposal.

In the second phase would take place

- the establishment of initial data for the designing of the deep-seated site,
- the selection and conceptual design of technologies for waste treatment-conditioning, transportation and disposal and of their installations. (x)

In the third phase we would carry out

- the safety analyses (x)
- the development of quality assurance programme, (x)
- the cost analyses, (x)
- the time scheduling of construction,
- the finding out of organizational and financing possibilities,
- the exploration of licensing process. (x)

3/ Plan of Public Relations

A modelled plan would be set up concerning public issues, the main elements of which are:

- presentation of the site and the project for the public,
- description of social background,
- programme of public relations activity and of public participation, (x)

- programme for the permanent information of the public and their competent representatives.

To complete the three documents and to carry out the supporting investigations will take some 36 months. For the financing we wish to have recourse to several sources.

USE OF THE AID

We propose to finance the stages of work marked with (x). In these stages of work we wish to have recourse to the assistance of special domestic organizations, as well as special foreign companies, engineering offices in an attempt to adopt foreign experience, waste management- and disposal technologies.

As far as we know, in the United States the following organizations have got experience in the preparatory activity of similar facilities and in the engineering support of their implementation:

The S.M. Stoller Corporation
5700 Flatison Parkway, Boulder,
Colorado 80 301-5718, USA

Fluor Daniel, Inc.
3333 Michelson Drive
Irvin, CA 92730)

Bechtel Power Corp./Bechtel National, Inc.
P.O.Box 3965
San Francisco, CA 94119

FEDERAL CHAMBER OF TECHNICAL AND
SCIENTIFIC SOCIETIES

H—1055 Bp., Kossuth L. tér 6—8.

2/92

HARZA Engineering Company
Sears Tower
233 South Wacker Drive
Chicago. IL 60606-6392

Dear Mr. Staplin.

We have the pleasure of referring to our meeting in Budapest, in our office on 9th January, Thursday. On behalf of our colleges, experts and on our own we would like to thank you for your brilliant lecture in front of our experts concerning the role of USAID, role of US engineering Organisations, Eastern Europe Energy and Infrastructure. We are convinced, that this programme will be of help for the hungarian economy in the future.

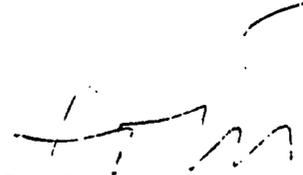
Dear Mr. Staplin, please let us refer to our negotiation regarding some other questions. As you might remember, we have requested you to help us in finding financial source for organising our International Conferences on protection of environment, and our other Conference on the question of Quality as well.

Hoping to meet you very soon in Budapest, we remain, Dear Mr. Staplin.

30.01.1992.

Yours faithfully


Dr. Gábor Náray-Szabó
President


Dr. János Tóth
President of Advisory Board
Secretary General

Subject: Conference and Exhibition, Spring 1993.

Until now, the world has been divided into three distinct groups: the developed, capitalist countries, the so-called "socialist" block and finally, the developing countries, also known as the third world. The past two years saw the collapse of the "socialist" regimes: these countries have to decide now whether they intend to catch up with the developed states or if they are content to join the impoverished and starving masses of the third world, which, according to Gro Harlem Brundtland, are "trapped in the descending spiral of ecological and economic decline".

Naturally, the ex-socialist states aim to join the ranks of the developed countries, who promise every possible assistance in order to achieve this. However, a few decades ago the countries of the third world aimed for the same goal, and multitudes of international support programs were called upon to help them achieve their goals. The end-result, as stated by the Brundtland report, was the deepening of the crisis. The periodical "Ecologist" accused the FAO and the technologies it supplied as parts of its support programs of causing the hunger-death of tens of millions and starvation and impoverishment of hundreds of millions.

When the countries of the third world started their quest to join the developed countries they were poor economically, but they had extensive ecological treasures. In less than three decades they lost their ecological wealth without

gaining any effective economical strength. The countries of the "socialist" block may be more developed economically, but they face the same task with a worn-out ecological treasury and a severely degraded environment. If they were to join the ranks of the third world, it would be a catastrophe not only for themselves but for the entire planet, including the developed countries.

Having realized the potential dangers of these processes, in order to examine the possible means of avoiding them, the organizers: the MTESZ and the AAAS have decided to host a conference and exhibition entitled:

**ECOLOGY, ECONOMY, TECHNOLOGY AND THE CHANGING
EASTERN EUROPE
CONFERENCE AND EXHIBITION
Spring 1993.**

with the assistance of scientific and engineering organizations from many countries the world.

The organizers hope, that;

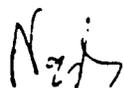
- the experts of the developed countries will present the economic systems and technologies which they think will eventually help the developing countries in their ecological-economic-technological recovery,

- the experts from the third world shall share their ecological and economic experiences concerning the implantation of developed technologies and economic systems in less developed conditions. the experts from the countries undergoing political changes will present the technological and economic niches, the needs and possibilities which could help keep the ecological stability and speed up the economic

growth and at the same time point out the details of the special factors to be taken into account when implementing these technologies and economic systems.

The organizers await the participation of the scientific and engineering organizations from all around the world.

Budapest, 30.01.1992.



Dr. Gábor Náray-Szabó
President



Dr. János Tóth
Secretary General

Czechoslovakia

TELEFAX: 07/72 70 87

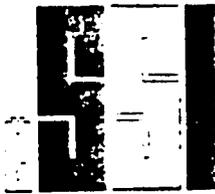
FAX: 001 312 831 3999

To: HARZA
Engineering Comp.
Mr. Robert H. Staplin

Questionnaire for USAID project

1. Slovak Society of Civil Engineers, Radlinského 11, 813 68 - Bratislava, CSFR, Contact: Ing. Igor Dula, CSc. Number of Members ca 850, Org. purposes and goals: To help the members to increase the professional skills, information etc. Central office in Bratislava.
2. SSCE, Re - established in 1989, according the changes in Eastern Europe.
3. There is an "Agreement of Cooperation" with American Society of Civil Engineers, signed in 1991.
4. Cooperation, growth in international affairs. We would appreciate to have also another partners in the USA.
6. To establish the information and coordination center for our and US entities to make the contacts easier.
7. We have not enough information about possibilities and potential partners in USA. Financial problems. We would appreciate closer participation on the project and let inform about possibilities in Slovakia.
- 8.- The Energy consumption of the industry is very high.
 - Energy production is based mainly on coal plants.
 - Environmental problems /coal - burning/
 - Transportation infrastructure is not sufficient /Highway net partly under construction etc./
 - Telecommunication problems.
9. Financial problems. Lack of information.. Need of consulting services. Technology. Training on international level.
10. - Restructuralization of coal power plants.
 - Highway program.
 - Telecommunication program.

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ČESKÝ SVAZ STAVEBNÍCH INŽENÝRŮ

ČESKÝ VÝBOR

USEC
EEEC

Titl.: HARZA
Engineering Company
Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6392

Váš dopis značky

Naše značka

Vyřizuje Plička Dne 31/1/1992

Věc

Attn.: Mr Robert H. Staplin
Senior Vice President
Project Manager

Dear Mr Staplin,

Let you find our answers prepared on the base of your questionnaire.

1. Name: Czech Institution of Structural and Civil Engineers

Adress: Praha 2, Legerova 52, Czechoslovakia

Contact persons: Mr Miroslav Pavlík PhD - Chairman

Mr Jiří Plička - Chairman of Foreign Committee

Number of members: 4500

The Czech Institution of Structural and Civil Engineers (CISCE) is organized with a very long tradicion. It has established already in the last century in 1865. It had survived both world wars and as late as fifties its activity was forbidden by the totalitarian regime. It was re-established in 1968 and after 10 years was forbidden again. With regard to the positive changes in Eastern Europe it has been re-established again, as we hope - forever. Our relations with the similar organisations in Western Europe or America were understandably broken. It is clear to us that in the current world the co-operation and exchange of information are of life-importance; for us, a small country in a very exposed position in the middle of Europe, much more than you, the representative of superpower. That is why we have started to renew these relations, we have already started the co-operation with Austria, Jugoslavia, Denmark, we co-operate with the British

Institution of Civil Engineers, with American Society of Civil Engineers etc. We hope the co-operation will be expanded.

2. Recent changes in Eastern Europe have allowed to re-established our Institution.
- 3.a) A Draft of "Agreement of co-operation" between CISCE and ASCE was signed within a visit of Mr James "Tom" Sawyer, President and Mr Edward O. Pfrang, Executive Director in Prague, last June.
b) CISCE hold negotiation about a possible mutual co-operation with AAES during visit of Mr Albert A. Grant, President, in Prague last October. AAES being multi-disciplinar organisation, CISCE is expected to be in contact with AAES until the time, when organisation of similar type is re-established here. A preparation committee has commenced its activities, Mr Jiří Plíčka being its member responsible for foreign relations.
4. Status of our program with the U.S. is mainly based on the Standard agreement of co-operation of ASCE.
5. ----
6. Expansion of mutual co-operation among Engineering Institutions is expected. Direct relations among consulting and contracting companies should be established.
7. Difficult economical situation of Czechoslovakia and CISCE as well results to the reduction of our plans and wishes.
8. List of main energy and infrastructure problems are as follows (acc. to our opinion, of course):
Reduction of unefficient energy consumption
Production of energy
Air pollution
Railway network
Decontamination of land
9. Situation of Economy due to low productivity of industry, insufficiency of investment capital, fall of East European market etc.
10. Ditto Item 8



Jiří Plíčka PhD

Chairman of Foreign Committee

Response of questionnaire

1. Title of organization: Česká stavební společnost
/Czech Building Society/
Novotného lávka 5, Praha 1 - 116 68
Czechoslovakia

membre of Czech Association of Scientific and Technical Societies

President: Jiří Hlaváček, PhD/Eng/ = vice-president of

Number of members: 15 000 specialists of all categories of Building Industry, it means Civil Engineers, designers, builders, supervisors, economists, foremen etc.

Head of organization: Committee of 15 persons- President, 2 Vicepresidents, Secretary of science and technics, Organization Secretary+10 members

ČSS organizes for its members and other specialists meetings and conferencies /about 10-20 per year/ discussing the important problems in the Building Industry, in its Technology, Economy, Material supply, Organization of work etc.

The Organization Chart is made out in the Czech language
2. Last year we have organized three meetings for foreign enterprises which have presented their activities and conditions of mutual collaboration in the domain of building materials, constructions and family houses.
3. No
4. Organization hasn't such program
5. Yes, we interest of change of knowledges in the domain of building technologies, modern technics and all need for good building processus/incl. management, financial questions /
6. See No 5
7. We are short of devises for organization such international conferencies and meetings, in this time it is rather difficult to participate on the meetings abroad. So we cannot buy the foreign reviews and papers in sufficient multitude for our members.
8. The main problems: a/ Too old technological equipment in our production units, b/ little internal investment and other financial means, c/ low level of production management, d/ bad knowledge of foreign languages e/ from point a: too high energy consumption everywhere

Pravdělník
Secretary of Sc and Tech.

6/5

QUESTIONNAIRE

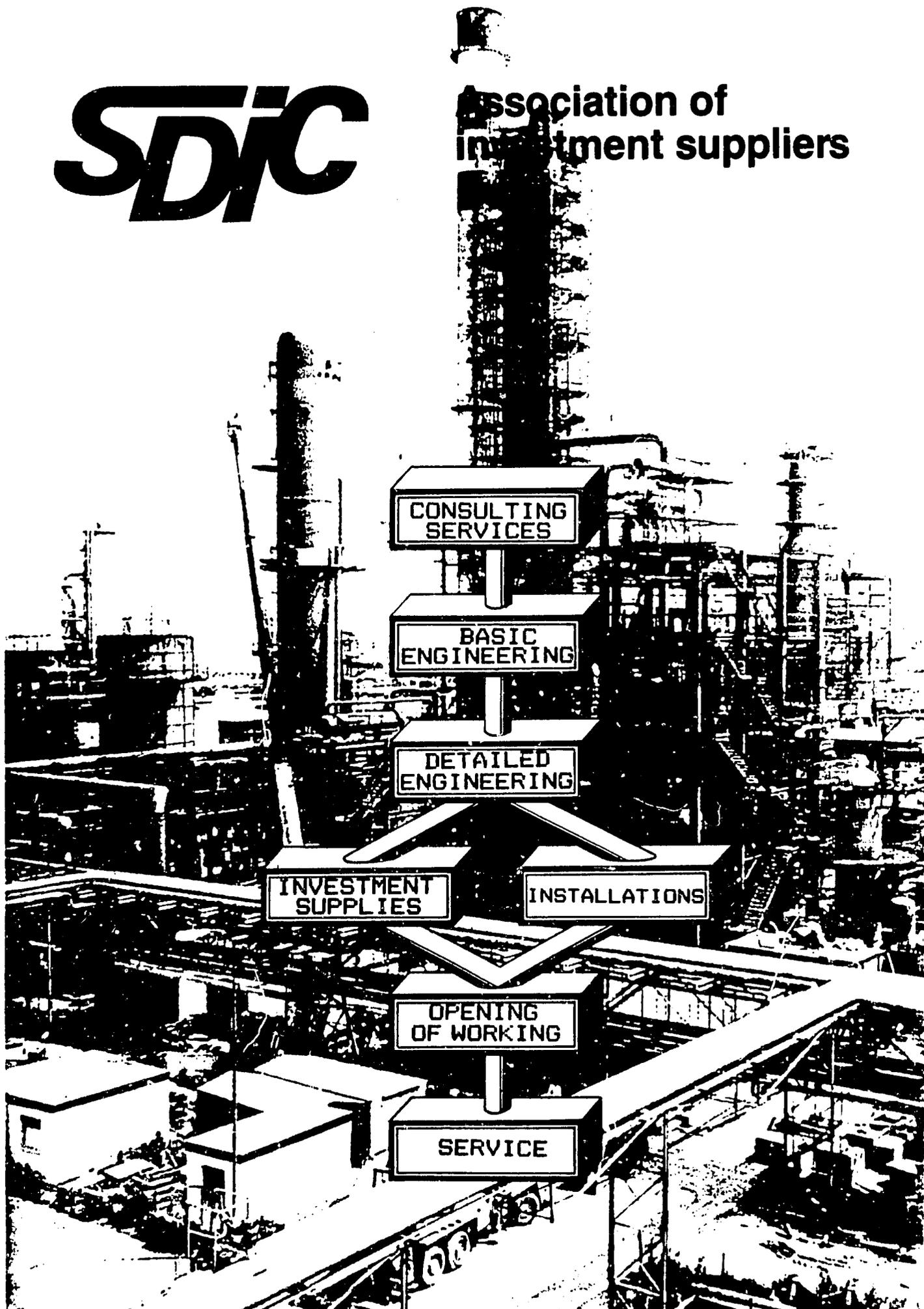
1. Official name : SDIC - Association for investment suppliers
Address : Sokolovská 278, 180 44 Prague 9
Czechoslovakia
Telephone No : 0042/2/6843200
Fax : 0042/2/6841215
Contact person: Mr. Ing. Antonín Hlas, CSc.
Number of members : 12 (Association 180 000)
Makeup of organization: Association
Purposes and goals : consulting, representation of members organizations
2. Support of privatization of members organizations.
3. No. relationship with U.S. entity.
4. No. status of program with the U.S.
5. Yes.
6. We are interested in cooperation on investment - projects in third countries.
7. Some differences in technical standards.
Our members are not sufficiently introduced in developing countries.
8. 1. Lack of financial means.
2. High energy consumption in industry branches.
9. 1. Financial help to energy investors.
2. Change of the industry - structure.
10. The energy projects are elaborated and at disposal in the Federal ministry of economy.

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Address : Sokolovská 278, 180 44 Prague 9
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SDIC

Association of Investment suppliers



	CHIRANA OTS
	Chotěbořské strojírný
	INPRO
	Inž.dodávatel.podnik Poprad
	Janka Radotín
	Karosa
	Kovofiniš
	Kovoslužba Praha
	Královopolská strojírna
	Modřanské strojírný
	Montas
	Montáže Píerov
	Mostáren Brezno
	Potrubi
	První brněnská strojírna
	Píerovské strojírný
	REGULA Košice
	REGULA Praha
	SIGMA Engineering
	EKOSIGMA Hranice
	Slov.energetické strojárne
	STASI
	Strojintex
	SKODA, koncern, Plzeň
	SKODA PRAHA
	TESLA Vráble
	Transporta
	Uničovské strojírný
	VÍIKOVICE
	Vojenské stavby
	Vzduchotechnika
	Závody elektrotepelných zař.
	Závody na výrobu vzduch.zař.
	ZPA Brno
	ZPA Čakovice
	ZIS IDOP Martin
	ZVU Hradec Králové
	Zdárské strojírný a slévárny

We are ready to act as mediators so as to provide:

- Individual deliveries and complete technological assembly groups
- Installation
- Projects
- Technological know-how
- Councelling, engineering
- Various forms of capital participation and cooperation in Czechoslovakia
- Cooperation on third markets.

Inquiries and offers are kindly to be addressed to:

SDIC Prague, Sokolovská 278
180 44 Prague 9
Czechoslovakia
Contact persons:
Mr. Ing. Antonín Hlas, CSc.
Telephone No.: 0042/2/68 43 200,
80 27 71
Fax: 0042/2/68 41 215

Index of our Companies

<p>AGRA Přeclouč, s.p. 17. 9. květen 1383 535 13 Přeclouč Telephone 0042 457 3511 Telex (0186 196730 Fax 0042 457 3375</p>	<p>ENERGOMONTAŽE, s.p. U Věže 8 461 07 Liberec 2 Telephone 0042 44 21641-9 Telex (0186 0186243 Fax 0042 44 21975</p>	<p>Kovostuha Praha - servis, s.p. Týnská 21 112 01 Praha 1 Telephone 0042 2 2310451 Telex (0186 127514 Fax 0042 2 2312740</p>	<p>SIGMA Engineering, s.p. Pastouřova 88 777 07 Olomouc Telephone 0042 68 27061 Telex (0186 86200 Fax 0042 68 31774</p>	<p>ZPR Čákovice, s.p. Oderská 1323 198 03 Praha 9 - Čákovice Telephone 0042 2 8390251 Telex (0186 191172 Fax 0042 2 681483</p>
<p>EMENDY, s.p. Rašín 2 657 91 Brno Telephone 0042 5 24011-9 Telex (0186 082241 Fax 0042 5 23174</p>	<p>ENERGOPROJEKT, s.p. Budešská 170 03 Praha 7 Telephone 0042 2 8738 Telex (0186 121844 Fax 0042 2 878658</p>	<p>KRAJNOVODSKÁ STROJIRNA, s.p. Křižkova 88 602 00 Brno - Kralupy Pole Telephone 0042 5 740100 7116 Telex (0186 62253 62401 Fax 0042 5 747700</p>	<p>STRA, s.p. Praha Karelšova 816 141 08 Praha 4 - Půzná Telephone 0042 2 321374 Telex (0186 123370 Fax 0042 2 359478</p>	<p>ZTS IDDP, s.p. Tismavý 23 036 38 Martin Telephone 0042 842 39559 Telex (0186 07559E Fax 0042 842 30104</p>
<p>TERMS ZDO, s.p. 121. 221 Jaroměř 27 516 51 Brno Telephone 0042 4 8777111 Telex (0186 02122 Fax 0042 4 87505</p>	<p>Elektromontážní závody, Praha, s.p. Na Dvůrce 5 4 7 111 16 Praha 1 Telephone 0042 2 2864111 Telex (0186 232559 Fax 0042 2 2312261</p>	<p>MDTRAS, s.p. Letňanská 433 501 07 Hradec Králové Telephone 0042 44 4411 Telex (0186 0186445 Fax 0042 44 613319</p>	<p>STROJINTER, IDP, s.p. Netejšovská 58077 461 02 Liberec 4 Telephone 0042 44 221 Telex (0186 191231 Fax 0042 44 421111</p>	<p>ZVL Hradec Králové, s.p. Pražská 17 32 501 07 Hradec Králové Telephone 0042 49 397 Telex (0186 194241 194321 Fax 0042 49 32721</p>
<p>TEPEL, s.p. Čechův 8 31 676 10 Brno Telephone 0042 4 7111 Telex (0186 04201 8765 Fax 0042 4 744714</p>	<p>FEKO Děpít, s.p. Lázeňská 31 474 30 Zábřeh Telephone 0042 412 27221-4 Telex (0186 186655 Fax 0042 412 27221</p>	<p>Modenské strojíreny, s.p. Komenského 376 13 143 16 Praha 4 - Modřany Telephone 0042 2 4007 Telex (0186 121441 Fax 0042 2 448571</p>	<p>Slovenské energetické strojíreny, s.p. Továrenská ul. 211 934 21 Třebíč Telephone 0042 810 921 Telex (0186 59154 Fax 0042 810 91941</p>	<p>ZVLK, s.p. Mladá Boleslav 121. 221 Jaroměř 27 396 01 Mladá Boleslav Telephone 0042 146 871111 Telex (0186 146221 146321 Fax 0042 146 3170 3171</p>
<p>TEKANA, s.p. Komenského 376 143 16 Praha 4 Telephone 0042 4 801111 Telex (0186 12001 Fax 0042 4 31791</p>	<p>FOKTRAD, s.p. Foktrádova 654 51 Brno Telephone 0042 4 33761-9 Telex (0186 62614 Fax 0042 4 33791</p>	<p>Montáže Brno, s.p. Břežanská 2 602 00 Brno Telephone 0042 441 3971 12651 Telex (0186 062316 Fax 0042 441 3931</p>	<p>TEKALFORM, s.p. Pražská 28 07 821 157 11 Brno Telephone 0042 412 0041 402 Telex (0186 191711 19227 Fax (042 412 3381</p>	<p>ČK, s.p. Brno 676 10 Brno Telephone 0042 4 871111 872201 Telex (0186 194241 194321 Fax 0042 4 871111 872201</p>
<p>STROJOPRAHA, s.p. Štefánikova 101 102 01 Brno Telephone 0042 412 211111 Telex (0186 191111 Fax 0042 412 211111</p>	<p>MU, s.p. Brno Mlýnská 20 602 00 Brno Telephone 0042 44 2291111 Telex (0186 04241 Fax 0042 44 23401</p>	<p>Master of Brno, s.p. Mlýnská 9 602 00 Brno Telephone 0042 441 3311 111111 Telex (0186 04241 Fax 0042 441 3311</p>	<p>Ustíavské strojíreny, s.p. 785 53 Ustí nad Labem Telephone 0042 01012463 50241 Telex (0186 06256 066851 Fax 0042 682 30721</p>	<p>ČK, s.p. Brno 676 10 Brno Telephone 0042 4 871111 872201 Telex (0186 194241 194321 Fax 0042 4 871111 872201</p>
<p>IZOSAVATA, s.p. Typická 10 157 01 Brno Telephone 0042 4 871111 872201 Telex (0186 194241 194321 Fax 0042 4 871111 872201</p>	<p>INFR, s.p. Na Slovanech 8 102 01 Praha 10 - Pohořelce Telephone 0042 2 224181 Telex (0186 121203 Fax 0042 2 2349145 764150</p>	<p>POKUBI, s.p. Štefánikova 3 112 01 Praha 1 Telephone 0042 2 220111 Telex (0186 121235 Fax 0042 2 224937</p>	<p>VZDUCHOTECHNIKA, s.p. Třetáková 1841 17 934 24 Nové Město n. Vahem Telephone 0042 834 73111 Telex (0186 63720 Fax 0042 834 4449</p>	<p>ČK, s.p. Brno 676 10 Brno Telephone 0042 4 871111 872201 Telex (0186 194241 194321 Fax 0042 4 871111 872201</p>
<p>ELCOTOP, s.p. 17. 9. květen 1383 535 13 Přeclouč Telephone 0042 457 3511 Telex (0186 196730 Fax 0042 457 3375</p>	<p>Ing. dopravní stavby podnik, s.p. Křižkova 88 602 00 Brno Telephone 0042 44 441111 442201 Telex (0186 121441 Fax 0042 44 613319</p>	<p>První brněnská strojírna, s.p. Dlouhá 7/9 602 00 Brno Telephone 0042 5 801 Telex (0186 62253 Fax 0042 5 83794</p>	<p>Vojenské stavby, s.p. Revoluční 3 115 20 Praha 1 Telephone 0042 2 2321794 Telex (0186 1912019 Fax 0042 2 2322633</p>	<p>ŽDAS, s.p. 591 71 Žďar nad Sázavou 675 Telephone 0042 616 413 Telex (0186 021 67031 Fax 0042 614 23380</p>
<p>ELEKTROMONT BRNO, s.p. Náměstí 11 602 00 Brno Telephone 0042 5 3163 Telex (0186 186434 Fax 0042 5 330089</p>	<p>Janka Radotín, s.p. Vrážská 143 152 01 Praha 5 - Radotín Telephone 0042 2 544141-9 Telex (0186 121589 Fax 0042 2 594527</p>	<p>Přerovské strojíreny, s.p. Kojetinská ul. 750 51 Přerov Telephone 0042 641 331111 Telex (0186 66313 66333 Fax 0042 641 3140 4098</p>	<p>VITKOVICE, s.p. Huska 101 706 02 Ostrava 6 Telephone 0042 69 5981111 Telex (0186 520201-2 Fax 0042 69 55191</p>	<p>ŠKODA PRAHA, s.p. Škoda 152 01 Praha 1 Telephone 0042 2 294241-8 Telex (0186 121885 VSPC Fax 0042 2 298425</p>
<p>ELEKTROMONT KOŠICE, s.p. Riečava 8 042 57 Košice Telephone 0042 95 437118 Telex (0186 77553 Fax 0042 95 89620, 437114</p>	<p>Karosa, s.p. Dobrovského 74/31 584 03 Vysočany Telephone 0042 488 21250 21252 Telex (0186 198216, 198432 Fax 0042 488 21348</p>	<p>REGULA Košice, s.p. Masarykova 6 042 01 Košice Telephone 0042 95 28688 Telex (0186 77551 Fax 0042 95 21239</p>	<p>ZEZ Praha, s.p. U Elektrů 850 184 05 Praha 9 - Hloubětín Telephone 0042 2 862841 Telex (0186 121091 Fax 0042 2 863140</p>	<p>ŠKODA, koncern, Píseň, s.p. Tylova 57 316 06 Píseň Telephone 0042 19 2151111 Telex (0186 154221-2 154247 Fax 0042 19 275589</p>
<p>ELTOS, s.p. Dlouhá 17 35 111 40 Praha 1 Telephone 0042 2 2327481 Telex (0186 122889, 122920 Fax 0042 2 2319405</p>	<p>Kovofinist, s.p. 584 07 Iteček nad Sázavou Telephone 0042 452 8111 Telex (0186 198231 Fax 0042 452 2306</p>	<p>REGULA Praha, s.p. Bartoškova 22 143 11 Praha 4 - Můstky Telephone 0042 2 421831-9 Telex (0186 121889 Fax 0042 2 433760</p>	<p>ZPI Brno, s.p. Mlýnská 20 602 00 Brno Telephone 0042 5 745030 Telex (0186 62460 Fax 0042 5 747628</p>	

SDIC Prague, Sokolovská 278
 180 44 Prague 9
 Czechoslovakia
 Contact persons:
 Mr. Ing. Antonín Hlas, CSc.
 Telephone No.: 0042/2/68 43 200,
 80 27 71
 Fax: 0042/2/68 41 215

Mr. Robert H. Staplin
Senior Vice President
Project Manager
HARZA Engineering Company
Sears Tower
233 Wacker Drive
Chicago, IL 60606-6392

Prague, December 23, 1991

Dear Mr. Staplin :

I have received your fax dated 19th December 1991. Your information and proposal is very important. I am looking forward to the appointment with you at Prague on ~~Monday 13th January~~. I suggest to meet you together with Mr. B. Beneš at 8:30 at the office of Mr. Beneš (Czech Ministry of Environment, Kodaňská 10, Praha 10). Besides the meeting with Mr. Beneš I will try to arrange the meeting with Mr. Petr Horáček (Federal Committee of Environment - advisor for energy of Federal Minister of Environment... J. Vavroušek) and with Mr. Jicha (president of Federal Agency for Energy). Later I will inform you by fax about the time and place of those meetings. Nevertheless I suppose your will call me from Budapest immediately before your visit of Prague to verify the time and the place of appointments.

Let me to answer the questionnaire. At first I will write you the information related to my institute and to the projects related to the institute. At the second place I will describe my idea which is related to the company BIOWATT where I am the member of directorial board. The company is dealing with utilization of biomass for energy cogeneration.

1. My organization :

name : Institute of Mineral Raw Materials
address : Vítězná 425, 284 03 Kutná Hora, Czechoslovakia
contact persons : RNDr. Ivo Šanc, CSc. - director
RNDr. Jiří Rusek - deputy director
number of employees : 154 persons (45 with university degree)
makeup of the institution : Institute was established 30 years ago as the institute of applied research for the development of technologies of mineral raw materials treatment and processing. The activity of the institute has been subsidized by government because of former policy of the independency of raw materials sources on the import from west world. The buildings of the institute were constructed 10 - 15 years ago. The institute is situated on the area cca 4 hectares and it is composed by 4 main buildings with laboratories, workshops and offices and by pilot plant which is equipped by a lot of machines and equipments for mineral and raw materials treatment and processing. Institute of Mineral Raw Materials is located in Kutná Hora, which is an old town with many historic monuments (25 thous. inhabitants) 60 km from Prague.
The institute is divided to 15 research groups which

* After the consultation with Mr. Beneš we suggest the date 15th January

are controlled by 3 members of control board (director, deputy director and business manager). Internally the work of each research group is economically independent, but externally the institute works as one economic subject. The whole activity of institute is based on direct contracts, i. e. our institute is not subsidized by government. Nevertheless there are many contracts between the institute and government. In the year 1992 the institute will be transformed to share company. The special form of privatization (so called coupon privatization) will be realized.

There are the names of some important research groups: gr. for gravitic technologies, gr. for silicate ceramics, gr. for municipal waste, gr. of industrial wastes, gr. for mineralogy and geochemistry, gr. of analytical chemistry, gr. for chemical treatment, gr. of technical and economical informations, physico-chemical laboratories, gr. of radiochemistry etc.

2. Influence of political changes to the makeup of the institute :

In the year 1991 the crucial changes within the institute were realized as the consequence of political and economical changes in our country. The former communist management was completely substituted by younger specialists. The number of employees was reduced. Especially the administration was reduced heavily (more than 50 % of administration was eliminated). Also the main object of research was changed : instead of the research of mineral raw materials the recycling technologies and other ecologic works are realized. The basic economical problems of the substitute have been solved.

Of course there are also negative aspects of actual complicated economic situation in CSFR : Generally the companies in our country are not able to invest money into the waste recycling technologies, therefore it is very difficult to find adequate contracts for our institute. The percentage of Czech banks does not permit the institute to ask credit for the financing of our activity.

3., 4. - our institute does not have work relationship with U.S. entities

5. - Yes, we would like to develop common programs with U.S. institution.

6. I suppose the aim "Desulphurization of Czech brown coal before the burning" could be interesting and purposeful. The experts from our institute have very good preliminary results with dry gravitic methods for desulphurization of brown coal from North-western Bohemia. Also we are dealing with the treatment of the waste produced by that procedure. The technology of dry desulphurization will help to improve our environment crucially. There is necessity to finish this research and to accompany it with the development of magnetic separation methods (high intensive magnetic separator based

on superconductor magnet). There is the possibility for U.S. companies to provide know-how and/or to invest money into the applied research and common production of equipments for dry desulphurization of brown coal.

7. Administrative and communication difficulties are the main obstacles in the international cooperation.

8. Main energy and infrastructure problems :

a) Generally the state of environment is the most important among the infrastructure problems. Especially the quality of air and water is very bad and the problem of urban and industrial wastes is very heavy as well.

b) The extremely harmful production of electric energy in our country : More than 50 % of total energy (electric and heat) in our country is produced by burning of brown coal with very high content of sulphur. The health of our population is influenced by SO_x emissions drastically, acid rains have damaged the quality of the soils and large part of the forests in our country is destroyed by imissions. There are not enough money for the building of new power plants or for the desulphurization of actual power plants.

c) The problem of nuclear energy : The technical level of nuclear power plants including safety system is not satisfactory. There is great problem of the radioactive waste, because there is not any facility for disposal.

d) The structure of our industry and infrastructure is extremely unsuitable from the point of view of energy. The high degree of the consumption of energy is not acceptable. There is large demand to change many technologies in order to save energy.

e) The education and knowledge of the population in our country is concentrated to the short-time consumption.

9. The main problem which obstructs to solve mentioned problems is the economical situation of our country. Great part of the effort and power of our government is dedicated to the internal political problems instead of to economy and ecology. The legislation for economical and ecological development is not ready. Also the privatization of our economy is necessary, but very difficult and time-consuming. There is not enough money for general restructuralization and for the reorientation of our economy. There is not sufficient accomodation from foreign companies to invest into our economy. The major part of foreign interest is concentrated only on the penetration into our market.

10. List of energy and infrastructure projects which could be of interest of U.S. institutions :

a) Desulphurization of our brown coal burning power plants :
I mean the desulphurization before the burning (project related to the activity of my institute) and also the desulphurization of smog.

b) Development of new facilities for "ecological" generation and cogeneration of energy (including renewable sources utilization etc. - see below)

Dear Mr. Staplin : During your visit of Prague I would like to speak with you about possible cooperation of U.S. entities in the program of biomass utilization for energy cogeneration. Together with my colleagues (experts for forestry, agriculture and energy systems) we are ready to establish private company BIOWATT for the application of modern technologies for biomass gasification and biogas utilization in gas turbines with combined cycle. That technology is under development in U.S. recently (Prof. R. Williams - Princeton University, J.Corman - General Electric etc.). We would like to introduce that technology to our country. There are several reasons for its substitution of some part of nonecological production of energy, large amount of cheap biomass in our country (both the waste from forestry and agriculture), high energetical and economical effectivity of that technology. This idea has a support of our government. From the point of view of U.S. entities there is the presumption of import of significant amount of equipments for gasification and energy covenation based on biomass and biogas (BIG/ISTIG technology). The company BIOWATT intends to coordinate and manage preliminary works in our country like an inventory of sources of biomass (forestry, agriculture, cultivating of rapidly growing trees and plants) and feasibility studies. The first actual goal will be to provide the data to our government and parliament for the preparation of legislation, because actual legislation system related to energetics does not consider nontraditional sources at all. The second step will consist on the realization of demonstration facility and the final and main step will be the mass application of BIG/ISTIG technology. There are many preliminary results which give us very good perspective.

According to my point of view that project would include from U.S. side :

- 1/ Providing maximal information about mentioned technology (including the short or long term stages in U.S. for us, assistance in feasibility study preparation etc.)

- 2/ provide financial assistance for the realization of the studies related to the problem and for the feasibility study

- 3/ perhaps to build demonstration object in CSFR

- 4/ finally the financial investment and possession participation of U.S. companies in the cogeneration based on biomass

I would like to speak with you especially about two mentioned projects (desulphurization, biomass). Institute of Mineral Raw Materials has the support of Czech Ministry of Environment (dept. of wastes), which could provide the guarancy. The company BIOWATT has the support of the same ministry (dept. of Ecological Policy) and Czech Ministry of Agriculture (Dept. of Forestry) can provide the guarancy as well.

I am looking forward to our next cooperation.

Yours sincerely



RNDr. Ivo Šanc, CSc.
Institute of Mineral Raw Materials
284 03 Kutná Hora, Czechoslovakia



INŽINIERSKE STAVBY s.p. KOŠICE

Nositel „Radu práce“ a „Čestného odznaku I. stupňa ZČSSP“

Podnik 30. vjučto oslobodenia Československa Sovietskou armádou

PODNIKOVÉ RIADITELSTVO, Priemyselná 7, 042 45 KOŠICE

HARZA ENGINEERING COMPANY
to Mr R.H. STAPITN
Senior Vice President
Sears Tower
233 South Wacker Drive
CHICAGO

NASA ZNAČKA

VAS LIST ZNAČKY/ZO DRA

VYBAVUJE/LINKA

KOŠICE

VEC 91/21-53/92

Košice 27 th January, 1992

Dear Sirs,

enclosed pleas find the answer to your questionnaire required to the negotiations that took place at 16 th January 1992 in Prag.

We should like to inform you about for us both interesting building contract that will complete the highway network in the East Slovakia region, in extent of 120 km.

Drawings are completed.

In February will be put out the prequalification. There are simultaneously solved the main questions of contract financing.

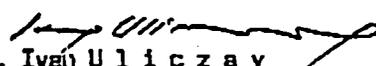
We assume that the questions of financing from you side and the building contracting in mutual cooperation are in conformity with intentions declaind at negotiations in Prag.

Provided you express interest in this tender and desire know more details about, please contact the responsible consultants of ther company Riaditeľstvo diaľnic Bratislava (Motorway management), Továrenská 7, 810 00 Bratislava

- Ing. Šamudovský - executive manager, tel. 0042 7 500 29
or - Ing. Celnar - consultant, telephone the same. Both speaks English well.

Fax connection 0042 7 577 83.

Your sincerely


Ing. Ivan Uliczay

marketing

Enclosure: 3 pages Quest.

Inžinierske stavby

štrný podnik

K O Š I C E

21

TELEFON
348 11-15
352 11-15

BANKOVÉ SPOJENIE
SBČS KOŠICE
1107-512

ICO
153 982

DALEKOPIS
KOŠICE 077 458

VTK-2 86100-87

- HARZA - Questionnaire -
Answer

Point 1)

Name of organization: Inžiniarske stavby, state enterprise
Priemyselná 7
042 45 Košice/CS

Identification number: 153 982

Name of General Director: Ing. Ján Z u š t i a k

Phone: 095/335 65

FAX: 095/378 31

Name of manager for contact with foreign countries:
Ing. Martin K l i m ě í k
marketing manager

Phone: 095/394 55

FAX: 095/378 31

Type of organization: state enterprise

Originated: in the year 1951

The number of employers: 4 100

Point 2)

The enterprise handed over the privative plan in the first private wave. It will be agreed to 31 st March 1992. Future organization design in frames joint-stock company will be changed after joint the foreign capital. The parties concerned are in progress the proceeding.

Point 3)

Our enterprise has any currently working relationship till now with organization or counsel firms in USA.

Point 4)

We have any status of our program with the USA.

Point 5)

We have interest to cooperate with building companies on contracts in the third countries. In ČSFR there is at present an damping in building investment.

Point 6)

- Cooperation by building of the motorway, with eventually financial contribution of the partner.
- Modernisation of the construction technologies, at the question of the protection of the life environment and of the saving of the energy.

Point 7)

The main obstacle is the shortage of the financial resources as in state so in enterprise sphere by the finance of the big projects of civil engineering. The further of the obstacle is the unfavourable price level which is going out from the exaggeration rate of exchange USD towards Czechoslovak crown.

Point 8)

- The state price policy as for the prices of fuels isn't in accord with the ecological requirements; see: gas, coal.
- The coal deposits are gradually exhausted. It is necessary to build up the power basis.
- The reconstruction of the contemporary heat supply networks will require the technology of building which will prevent the power losses in these lines.

It is necessary to get ready for this reconstruction.

Point 9)

The main obstacle are the resources of the finance, they are missing mainly by the building of the highway network.

The shortage of the top technologies by the building of the heat distributors, by the building of the waste water treatment plants, and methods of solution of the treatment of the industrial waste.

Point 10)

- road network
- railway network
- the reconstruction of the heating supply
- the waste water treatment plants
- the reconstruction of the heating plant

Košice 15 th January 1992

Translation of Slovak version, that you have obtained.

Ing. Martin Klímčík
marketing manager

Interstary
K O Š I C E
21



HARZA Engineering Co.
Sears Tower
233 South Wacker Drive
Chicago, Illinois
U S A

FAX Nr. 001 312 / 831 3999

VÁŠA ZNAČKA ZO ŠTA NAŠA ZNAČKA VYMAVUJE VŠE-LINKA BRATISLAVA POC 824 93
VEC: Sekr./92 28.02. 92

Mr. ROBERT H. STAPLIN, P.E.

Our fax: 07/665 36
Total pages: 6

Re: Answer to the Questionnaire

Points:

1. The basic information concerning the State Corporation Priemstav, Bratislava, is enclosed
2. In connection with the transformation to the market economy conditions, they have been realized changes in modification of competence in favor of the organizational units /Works/, and at the same time in reduction of the administration staff.
The Corporation shall be privatized in the second round of privatization, in 1992.
3. None
4. The manufacturing programme of the Corporation is orientated to the supplies of construction, without obligation to the U. S.

./ - Continued -

/Page 2 - Cont./

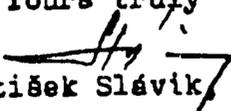
5. In case of mutually advantageous conditions - yes.
6. First of all the programmes orientated to the saving of energy exacting of the construction structures
7. The out-of-date devices, insufficiency of capital
8. In energy:
 - Out-of-date energy devices and progress
 - Inadequate technological and labor discipline
 - Contrull and regulation deficiency
 - Escape of heat through peripheral structures of the buildings
 - High energy demand of the transport.

The problems of infrastructure are not mentioned, because they are not immediate for us.

9. The insufficiency of capital /investment/ and the changes of proprietary relations.
10. In energy:
 - The complex scheme of the thermal protection of buildings
 - The programme of reduction of energy devices consumption, and of appliances in construction objects.

With kindest regards,

Yours truly


František Slávik, P.Eng.

Managing Director

23

Piece of Information

about the enterprise PRIEMSTAV, State Corporation,
Bratislava

Established 1951

Address: Zahradnícka 46
824 93 Bratislava
Czech and Slovak Federative Republic

Phone: 07/623 61
07/20 33 111

TELEX: 093309

FAX: 07/665 56

Managing Director: František Slávik, P. Eng.

Employees:

1989 - 4240
1990 - 3450
1991 - 3200

Turnover:

1989 - 904 Million Kčs /Czecho-Slovak Crowns/
1990 - 711 " "
1991 - 900 " "

The Orientation of Undertaking:

Complex supplies of buildings and their parts, re-construction,
modernization and repair.

Works and installation in civil engineering, built-up construc-
tion, industrial construction, hydro-construction etc.

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Organizational Structure:

The Corporation is divided into seven works and further several service centres /planning, marketing, foreign trade, machines - renting, technical check and test centre, computer centre, technical R and D and others/.

The Works:

Primary Building Work 1

Domicile: Bratislava

Employees: 420

Materializes mainly works of construction above all in Bratislava and also specialized technologies - warming of houses and laying of floorcovering.

Primary Building Work 2

Domicile: Bratislava

Employees: 430

At the present time is constructing above all buildings for industry and agriculture in Bratislava and in the West-Slovak Region.

Primary Building Work 3

Domicile: Malacky

Employees: 490

Realizes various constructions in West Slovakia, and as a specialized operation the construction of sidings and of pipeline distribution.

Primary Building Work 4

Domicile: Levice

Employees: 420

Realizes nearly all kinds of construction. The Work is mainly orientated to the precincts.

/Page 3/

Economic Services Work 6

Domicile: Bratislava

Employees: 220

An establishment for the purpose of service in the sphere of providing board, accommodation and resorts for the employees of the Corporation, and for prospective customers outside as well.

Specialized Labor Work 7

Domicile: Bratislava

Employees: 430

Materializes special technologies, manufacture and assembly of precast iron concrete structures, assembly of steel structures and excavated foundation engineering for the all territory of State.

Mechanical and Transport Work 8

Domicile: Bratislava

Employees: 440

Operates in the field of earth-works, transportation, mechanical works and repair of transport- and mechanical-devices. Realizes locksmith-works and complete overhaul of selected mechanisms for the all territory of State.

The Characteristics of the Corporation:

The Corporation has constructed so far over 1000 constructions, among them:

- The BAZ Automobile Works in Bratislava
- The Cement Works in Rohožník
- The Paper Mill in Štúrovo
- INCHEBA - The Multilateral Installations in Bratislava

/Page 4/

- The TV Tower in Bratislava
- The Underground Natural Gas Stores in Láb
- The Antioxidant Chemical Works in Šala.

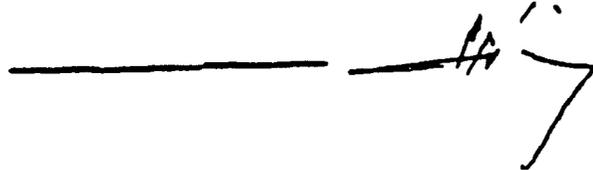
Among the constructions materialized abroad belong:

- The Exhibition Pavilion in Wels /Austria/
- The Power Plant in Zielitz /FRG/
- The Cafferilleries in Kazan
Krasnodar and
Stavropol
/Russia/

The Corporation co-operates with foreign companies:

- Spiral Werkzeuge /Austria/
- Makita /Japan/
- Georg Fischer /Switzerland/
- PASCHAL - Werk /FRG/
- N. W. T. /Canada/.

Within the framework of innovation of the manufacturing programme, the Corporation arranges for a production of a construction system of low-storey buildings, family houses and loft flats, based on a Canadian know-how and for warming of houses and facades, in co-operation with foreign partners.

A handwritten signature, possibly 'H. H.', is written above a horizontal line. From the right end of this line, an arrow points to the right.



ŠKODA PRAHA a.s.

113 31 Praha 1, Spálená 1

HARZA
ENGINEERING COMPANY
Robert H. Staplin, P.E.

Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6392

U S A

VÁŠ ODPIS ZNAČKY/ZE DNE

NAŠE ZNAČKA(CUVEŠTE V ODPOVĚDI)
SP/2014

VYŘIZUJE/LINKA

PRAHA DNE

21. 2. 1992

Věc :

Dear M. Staplin,

we refer to our discussion with you on January in Prague and we send to you the answers to your questions enclosed to this letter.

With regards

ŠKODA PRAHA a.s.
PROJEKTY

mu

Michael Trnka, M.Sc., Ph.D.

Š K O D A P R A H A a. s.

Answers to your questions :

1. ŠKODA PRAGUE is enterprise dealing with engineering, supplies, construction, testing and commissioning of all kinds of power plants and power systems. Present number of employees is 3500 approx. The uptodate survey of activities is in the enclosed reference list.

2. SKODA PRAGUE is at present in the transformation process of privatization. Out of 3 possible foreign partners (Westinghouse, ABB, Siemens) the ministry of industry and top management decided for Siemens.
There exists competitive privatization project which was submitted to the government on 20. 1. 92 in which cooperation with US capital is promoted.

3. There have been extensive contacts with Westinghouse.
For clean coal combustion technology (gasification + combined cycle) contacts with Shell have been established.
For desulphurization possibility to buy licence was discussed with GE (with no conclusion).

4. Westinghouse - some possibilities in cooperation in nuclear field still exist unless excluded by joint venture agreement with Siemens.
Shell - contacts in the process to aquire ICGCC technology.

5. Cooperation with leading US partners has had strong support among considerable portion of technical personnel of SKODA PRAGUE.

6. - Desulphurization and De - NO_x process for some of the existing Czechoslovak power plants
- coal gasification process
- projects for environmental cure like communal waste incineration plants, toxic waste incineration plants etc.
- aquiring of lower energy consumption process technologies
- combined heat and power generation bringing minimum pollution and max. efficiency

7. - Not clear status of limitations finally imposed by agreement with Siemens if coming into force
 - controversial approaches by top management and government authorities of Czechoslovak enterprises
 - preferation of German capital at certain government levels
 - many times personal preferences are ruling over objective benefits for the country and society
 - not developed market and missing legislative (antimonopoly laws for ex.)
 - inefficiency of certain administrative levels and bureaucracy

8.
 - a) Too high primary power consumption per gross national product

 - b) Environmental cure of conditions created by extensive surface mining and power generation on the equipment with low efficiency and extremely high polluting rate (for ex. Northwestern Bohemia, Central Slovakia)

 - c) Need of retrofit of the existing plants left in operation and establishment of the new modern plants

 - d) Nuclear safety of the existing nuclear plants

 - e) Power generation project Gabčíkovo - Nagymaros

9. - Inability of the government to formulate clearly the intentions, priorities and specific programs for power generation future development
 - lack of financing sources

 - lack of ability to draw and promote decisions based on the executed studies

 - prevailing management by "old" inefficient structures at most of the industry and uncomplete legislative together with not exactly defined competencies.

Specification of energy and infrastructure projects :

10.
 - a) Complex environmental cure for the region of Northwestern Bohemia - study proposal registered under Code F1.1 at Federal Ministry of Environment

 - b) Clean Coal based power generation - 250 - 500 MW units

 - c) Safe control, regulation and warning system for nuclear power plant Temelín - units 1 and 2

- d) Desulphurization and De - NO_x at selected Czechoslovak powerplants 100 and 200 MW units
- e) Development of safe nuclear unit (if applicable after year 2000) in the rating approx 600 MW to 1000 MW.

Ing. Jan Šilhavý
Ing. Michael Trnka, CSc



ČESKÉ PLYNÁRENSKÉ PODNIKY

koncern
ředitelství

PRAHA 1, REVOLUČNÍ 2, PŠC 111 51, pošt. příhr. 493

HARZA Engineering Company
Mr. R. H. Staplin
Senior Vice President
Sears Tower
233 South Wacker Drive
CHICAGO, Illinois 60 606-6392

NAŠE ZNAČKA
11/92/P

VYŘIZUJE/LINKA
Ing. Noveský
235 68 94

PRAHA DNE
27.02.1992

Dear Sir,

On the basis of your request which we have received from Federal Ministry of Economy we send you following information:

- as to point 1/ We enclose "Prospectus" giving in main points a characterisation of the ČPP, state enterprise, Prague.
- as to point 2/ We expect that, within the framework of privatization in the organization, substantial changes will occur perhaps also in the gas industry conception.
- as to point 3/ No
- as to point 4/ Identical as point 3/
- as to point 5/ We welcome any cooperation useful for both parties.
- as to point 6/ Natural gas - purchase, sales, storage, distribution, usage.
- as to point 7/ Perhaps excessive distance.
- as to point 8/ Privatization and dissents on an energy position (a policy of energy).
- as to point 9/ Interpolitical and economic problems in Czechoslovakia.
- as to point 10/ A diversification of sources, new ways of natural gas usage, cogeneration units etc.

We present you the information and in case of your interest in further one we are ready to answer you with pleasure.

We are pleased that you are interested in our enterprise.

Yours sincerely

GLS

Euroamerican Corporation spol. s r. o.

Associates Of:
Transimpex Commercial Limited
Zollstrasse 87
9494 Schaan
Liechtenstein
tel. 075/233 86
fax 975/203 53

Svobodova 9-Vyšehrad
128 00 Praha 2
ČSFR
tel. 20 61 02
fax 87 78 59

October, 1991

TO WHOM IT MAY CONCERN

We like to make some introductory comments regarding this Prospectus.

It has been prepared at the request of the management of the "Czech Gas Enterprise" (CPP) in Prague, which made kindly available to us various technical and financial documents. Advice and clarification of certain matters was provided by the employees of the office of the general director and of the economic department.

CPP is at present a complex business organization and we tried to present its functions, purpose and economic condition in the simplest possible form for easy understanding by everyone.

We hope that this prospectus will fulfill the purpose in giving a brief general information about this successful and in the future very promising company.

EURAMCORP
Oldrich Vaclavek, president

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1. BRIEF HISTORY OF THE COMPANY AND ITS PRESENT LEGAL STATUS

The beginning of the Czech and Moravian-Silesian gas industry (which is located on the territory of the present Czech Republic) dates to the fourties of the 19th century.

On 27th December 1844 the agreement has been finalized between the magistrate of the Royal Capital City of Prague and a gas company, that provided the basis for construction of a gas plant in Prague-Karlín and for illuminating the major part of the center of Prague from Celetná to National street and to Wenceslas Square.

The gas plant in Brno originated on the basis of an agreement finalized in 1846 between the Royal City of Brno and a gas company. Afterwards, in 1859 a gas plant in Opava and further 14 gas plants in cities and communities of the present Czech Republic have been constructed.

Already on May 9, 1875 the first legal norm for the gas industry was promulgated, which under the number 75 of the "Imperial code for the Czech Kingdom and countries represented in the Imperial council" established technical conditions for laying gas pipelines and constructing gas plants. This norm called "the first gas regulation", contained also penal sanctions for protecting the technology of distribution and consumption of heating gases.

The progressive development of the Czech gas industry is apparent also from the fact that in the year 1918 (creation of Czechoslovakia) there were on the territory of Bohemia, Moravia and Silesia – present Czech Republic – in total 79 gas plants. This progress required already in 1906 promulgation of the "Second gas regulation" norm and it is interesting, that this norm has not been till today cancelled by obligatory legal announcement, but it has been merely overcome by development and just some of its parts are kept in the present Czechoslovakian state norms.

In further development of the gas industry a very important factor became the law of the Czechoslovakian Republic number 177/1934, digest of 4. 7. 1934, which was the first gas law in the true sense, because among others:

- it legally defined the concept of a gas enterprise and acknowledged its "overall usefulness"
- it offered a gas company the right to use properties of other owners, including the possibility of expropriating properties or rights

Additional major development of the gas industry occurred after nationalization in 1945, when on the territory of the Czech Republic (CR) the association of gas plants was formed with headquarters in Prague, which was gradually transformed organizationally and technically (construction of transit gas pipe-lines, underground storages etc.) resembling the present state enterprise "Czech Gas Company" (CPP), which assumed all main commercial activities and further development of the gas industry in CR.

The superior organ of CPP is the Ministry for economic policy and development of the Czech Republic.

At the beginning of 1991 there were in the scope of the company established several regional divisions. In addition the government of CR decided to include CPP into the second stage of privatization, which is to take place in 1992. The main problem in this matter will be, as in all similar projects, the proper evaluation of the company's assets and deciding if the company will be denationalized or if other form of privatization will be used. Due to the favorable position of the company and its past successes this should become one of the most attractive investments in CR.

2. COMMERCIAL ACTIVITIES

Basic commercial activities of CPP can be divided into four main categories:

- 1) purchasing, storing and selling natural gas
- 2) operating a transit gas pipe-line across the territory of the Czech Republic
- 3) purchasing, storing and selling Propane Butane
- 4) purchasing, manufacturing, storing and selling illuminating gas

Furthermore a great amount of additional assisting services, mainly:

- 1) educational and social activities
- 2) consulting and repair services
- 3) projects development
- 4) construction
- 5) manufacturing, maintenance, assembling, installing of selected technical machinery and equipment
- 6) purchasing and selling some additional heating gases
- 7) housing and feeding services
- 8) installing and operating stations for compressed gas for driving motor vehicles
- 9) machinery manufacturing

3. GASPROJECT – PRAGUE

Of special interest is the division that operates under the name "GASPROJECT – PRAGUE" (PNP).

PNP concentrates on research, development, planning, engineering and automation controls in the gas industry. It employs experts in construction engineering, civil engineering, chemistry, geology, geodesy and economy.

It participates also in projects of construction works related to the gas industry in foreign countries. It has established close bilateral scientific and technical cooperation with gas institutions in Germany, the USSR, France, Italy, Denmark, Sweden, Algeria, Poland and Hungary. It has development into a highly specialized organization in the gas industry and is capable to undertake the most demanding technical jobs.

4. METHOD OF THE COMPANY'S OPERATION

Commercial activities are carried out by 14 section plants. Management of CPP determines for those plants basic principles of their activities, supervises the coordination and perspective planning of the entire company. Due to the high income and the volume of merchandise CPP belongs among the foremost enterprises in Czechoslovakia. Improving the effectiveness of CPP is directed towards a fast reorganization of all sections of the company.

In the course of this year all state subsidies were cancelled and therefore individual sectors are operating on the basis of economic independence with responsibility to cover their needs from their own resources.

The exception is the illuminating gas system, which is temporary subsidized by CPP in the interest of industrial purchasers and the population.

5. REORGANIZATION PLANS

CPP is working during this year on a privatization project. A partial project is in preparation for privatizing the machinery manufacturing and the Propane Butane enterprise, where a foreign capital participation is being considered. The reorganization of the gas pipe-line enterprise and its eventual privatization depends directly on accepting and realizing its own energy policy by the Czech Republic.

The reorganization of the transit gas pipe-line is considered according to the European example in the gas industry, by forming specialized organizations under the control of national gas companies of the Czech and Slovak Republic.

6. PROGNOSIS OF THE COMPANY

It is proposed to reorganize the transit pipe-line into a purposeful transit organization and furthermore to privatize some related gas activities, such as filling PB stations or machinery and equipment manufacturing.

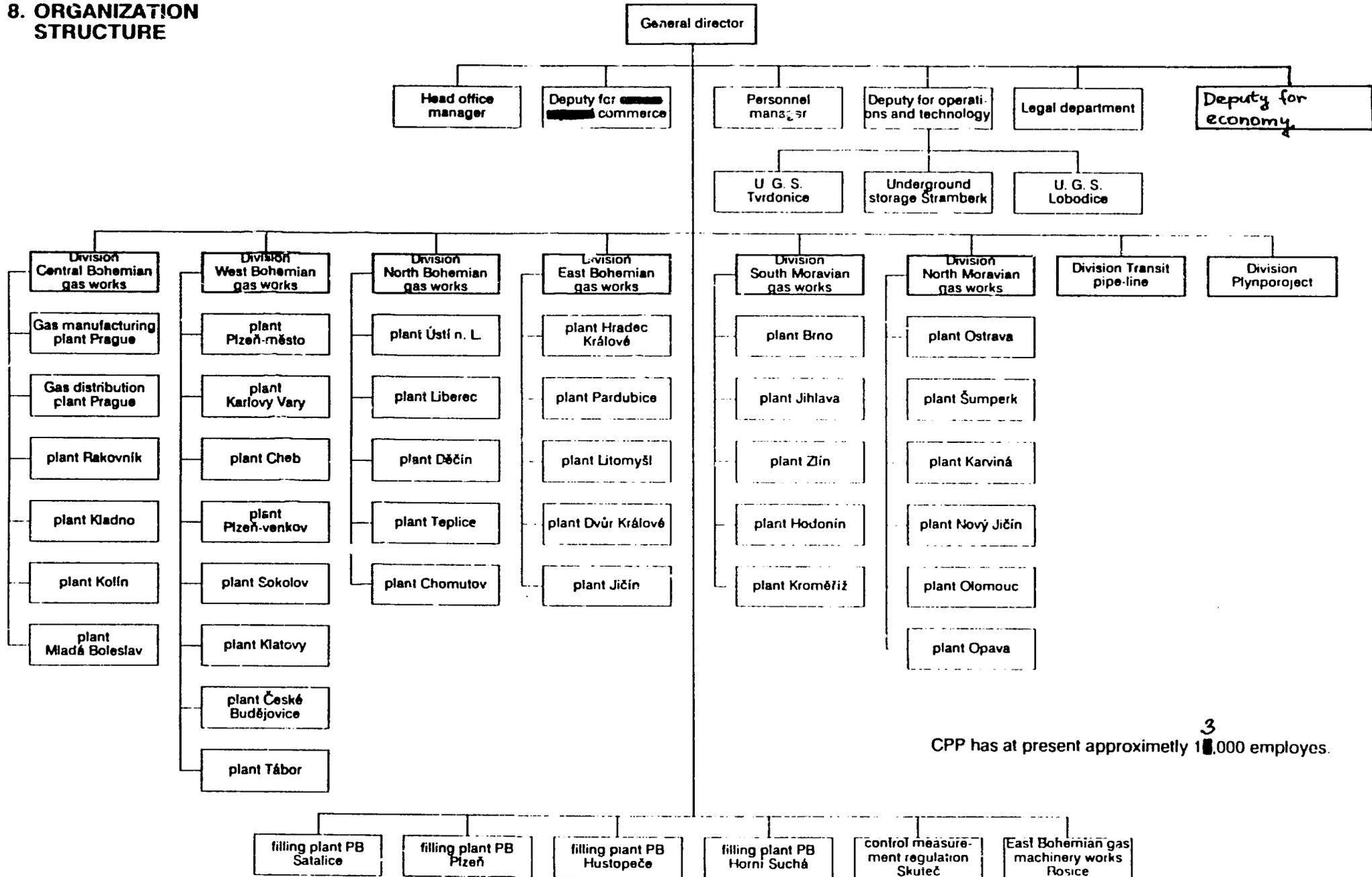
Preserving a single Bohemian-Moravian Gas company, which with assistance of commercial transport company and distribution companies would supply CR by gas, will best guarantee further development of the gas industry.

Conceptually, it is proposed to carry out wide methane synthesis of ecologically affected regions, mainly in North Bohemia, in the frame of ecological programs and with the help from the government of CR.

Further important change which is necessary for technical, ecological and economic reasons, is converting subsystems of illuminating gas to natural gas. Diversification of sources to natural gas for CR will secure steady supplies of natural gas and in case of problems with the present monopolistic supplier, i. e. SSSR.

In that regard, the quality of natural gas is coming even more in the forefront, which thanks to a single concept and gas distribution net of the European standard, is according to prognosis of the World Bank at the beginning of a period of further substantial development.

8. ORGANIZATION STRUCTURE



CPP has at present approximately 10³.000 employees.

17

9. BRIEF ANALYSIS OF MARKET CONDITION FOR NATURAL GAS IN THE CZECH REPUBLIC

During the past years, up to 1990, heating fuels were in CSSR included in the group of products for which the level of prices have been determined by the Federal office of prices, which applied to wholesale as well as to retail prices. The result of this pricing policy was the equal purchasing price of gas, so called centrally directed price. The level of this price was determined by the expected purchase price from the Soviet Union and by endeavouring to secure the stability of operating expenses for natural gas in the period of the five year state plan.

With collapsing of the central direction and from that also of single prices and strong pressure developed on improving the quality of the pricing policy for gas industry. So long as gas should retain its place on the market for supplying energy in CSFR, its price must provide these functions:

- a) ability to compete with other sources of energy (state regulation and the net back princip)
- b) the level of prices corresponding with purchasing ability of customers (nominal price high)
- c) the price structure must secure means for covering the needs of the gas industry (tarif prices and change to pricing covering longterm marginal expenses)

The company will certainly not make a mistake if it will commence from the assumption of surplus of particular sources of energy on the market in CSFR existing at this time. The strong increase in prices, for instance, resulted in the lower consumption of heating gases for about 30 % and by that in the surplus of the offer over demand. In the interest of objectivity it is however necessary to acknowledge, that the negative influence on the consumption of gas had also the reconstruction of the industry in correction with privatization and the lack of solvency of some wholesalers.

If we want to pursue the most important factor which a customer needs in deciding about the selection of heating materials, we must come back again to price, for the purpose of comparing the cost per MWh.

Average wholesale prices of basic energy media in CSFR

	Kčs/MWh
energy coal	117
natural gas	366
heavy heating oil	263
electricity	1,462

From the above table follows that the average price of natural gas is not (from the point of view of a consumer) able to compete with prices of coal and heavy heating oil, which is caused by the fact that ecological defect of those competing fuels had not yet in majority cases, any economic effect. Therefore, when the relation in price of heavy heating oil and natural gas in CSFR is approximately the same as in the developed countries, there is the lack of regulative provisions from the state, which would normalize the relation of those media.

This can be accomplished by two methods:

- 1) Establishing penalties for operating nondesulphurized plants
- 2) Establishing the energy tax with the objective of assisting in the development of gasification in view of advantageous characteristics of natural gas from the standpoint of natural environment and reliability of supplies.

The relation between the price of coal and natural gas in CSFR does correspond with world relations. The difference is not mainly in lower domestic production cost, but in the unfavourable exchange rate of the Czech Crown to foreign currencies, which is the result of the lower standard of the state. The assumption that the sole competition will lead to the proper relation of prices is not realistic, because in countries with developed market economies and private energy production "public utilities" are being assisted by state regulations.

The proof of it is the different ratio of the purchase price and manufacturing and distribution cost in CSFR and in the world.

On the other hand there can be no doubt that in setting up the pricing policy it is necessary to start as fast as possible from operating expenses of all energy categories. The question in this connection remains how high the prices should be. The difference among individual curves expressed from the stand-point of gas plants in Kčs/m³ is not on the first look substantial, but from the view of purchasers it represents sums in billions, which have to be covered.

The natural gas is ecologically pure fuel and simultaneously a convenient chemical raw material that has been continuously growing in importance among primary sources of energy in developed European countries, where its share of the market will be in the long run increasing with each year.

It is therefore apparent that with the view of a strong burden on the natural environment, CSSR has no other

choice but to continue on the road of the development of consumption of natural gas, which is verified by the opinion of the world bank, that in its recommendations projects the increase of 30 % for natural gas in relation to other primary energy resources up to the year 2000.

For this perspective program the gas industry has in CSFR very good existing starting assumptions:

- 1) integrated system of a single gas net according to European standards including underground storages and a transit gas pipeline
- 2) agreements for gas deliveries from SSSR
- 3) proposal from the Soviet government concerning increasing gas deliveries in exchange for shorter crude oil deliveries
- 4) increasing possibilities for barter trades of natural gas from SSSR at advantageous prices
- 5) advantageous geographic position, enabling connections with further sources of gas

However, it is not possible to assume that the process of favoring natural gas on the market from other energy media will develop on its own and automatically. The competition on the market must be organized by the state, as it is usually done in developed market economies in the context of their energy policy. In relation to the natural gas it is necessary to prepare the use of the following instruments:

- a) accepting legislative norms which would set up penalties for non desulphurized enterprises
- b) introduce an energy tax and include it in consumer prices of defective media
- c) organize competition of energy media in relation to purchasing ability of costumers
- d) cancelling present categories of costumers (wholesale, retail, population) and in the frame of liberalization of prices make possible a change to operational type of pricing
- e) establishing a regulating organ for securing the protection of consumers
- f) state subsidy for ecological projects, in further development of the gas industry

10. CONSOLIDATED BALANCE SHEET

(at 30. 6. 1991)

ASSETS

In USD at 1 USD to 30 Kčs

CURRENT

- Cash on hand and in bank	53,779,500	
- Investment in bank certificates (2)	16,666,660	
- Other investments (3)	3,589,870	
- Accounts receivables	125,147,640	
- Other receivables (4)	<u>23,678,370</u>	
		222,862,030

FIXED ASSETS (5)

at 31. 12. 1990

- Buildings	70,899,160	
- Structures	801,453,530	
- Electrical equipment	103,510,130	
- Manufacturing equipment	19,139,133	
- Specialized equipment	10,945,867	
- Transport equipment	6,454,367	
- Inventory	248,233	
	<u>1,012,650,420</u>	1,003,768,600
- Other fixed assets	<u>310,200</u>	1,004,078,800

OTHER ASSETS

- Work in progress	3,970,400	
- Supplies	149,217,530	
- Reserves of gas	116,933,530	
- Development and research	10,862,620	
- Allocation for income-tax (6)	<u>170,839,530</u>	
		451,823,610

TOTAL

1,678,764,440

LIABILITIES

CURRENT

- General accounts payable	57,464,066	
- Bank credits (7)	7,191,700	
- Miscellaneous obligations	<u>27,645,234</u>	
		92,301,000

LONG-TERM

- Bank loan (8)		225,258,560
-----------------	--	-------------

DEFERRED EXPENSES

- Reserved and other funds (9)	17,498,030	
- Income-tax	<u>170,839,530</u>	
		199,337,560

EQUITY CAPITAL (10)

984,993,360

SURPLUS (11)

187,873,960

TOTAL

1,678,764,440

11. NOTES TO BALANCE SHEET

1. This Balance Sheet is based on an adaptation of the present accounting procedures for state companies in CSFR to the system generally used in Western countries. It has not been audited according to western method, but it sufficiently presents the present financial position of the enterprise.
2. These represent short-term bank credits at the Bank of Commerce.
3. These include investments in various enterprises and from employees.
4. Those consist of payments from enterprises and company's employees.
5. The stated break-down is presented as an example which contains amortization till 31. 12. 1990. Since amortization is being calculated only annually these figures are not available at the first period of 1991. The total sum of USD 1,004,087,800 for that period is shown for the purpose of indicating the value of those assets at 30. 6. 1991.
6. Tax rate from profit for state companies is 55 % of the gross profit. However, it should be understood that in calculating it all paid as well as unpaid invoices must be added up, including paid and unpaid accounts, which often results in the pre-payment of the income-tax.
7. This represents a line of credit at the bank at 18,25% annual interest.
8. This is a loan due at the end of 2000 at 13% cumulative annual interest of 13 %.
9. Reserved and other funds, such as cultural etc. must be created by state companies according to the existing law.
10. This is the total amount of cash investment that the Czech Republic has in the enterprise.
11. Surplus consists of net profit for the first period, the undivided profit and reserves for distribution.

(at 30. 6. 1991)

	In USD at 30 Kčs : 1 USD	
REVENUES		
- From manufacturing activities	396,300,700	
- From non-manufacturing activities	2,868,666	
- Other revenues	467,434	
- Change in expenses, income and products	21,503,900	
- Special income	<u>361,560</u>	
TOTAL		<u><u>421,502,260</u></u>
EXPENSES		
- Used material	10,342,200	
- Fuel and energy	13,472,165	
- Repairs and maintenance	2,976,800	
- Transport	1,562,167	
- General overhead	5,217,567	
- Other expenses of material nature	<u>2,192,867</u>	
		35,763,766
Salaries, wages, employes benefits	11,092,766	
- Social taxes	8,727,267	
- Bank interests	6,451,667	
- Miscellaneous expenses	<u>109,800</u>	
		26,381,500
- Amortization of special equipment and supplies	1,376,633	
- Amortization of fixed assets	<u>30,277,900</u>	
		31,654,533
TOTAL		<u><u>93,799,800</u></u>
GROSS INCOME		327,702,460
INCOME TAXES		170,839,530
NET INCOME		<u><u>156,862,930</u></u>

13. NOTES TO PROFIT-LOSS STATEMENT

Revenues in the first period of 1991 have been affected in general favorably by the following developments: Effective from 1. 1. 1991 new prices for heating gases reflected on comparative results in earnings with the same period of last year.

From 1. 1. 1991 new prices for illuminating and natural gases and Propane-Butane to large purchasers were also determined. The negative income-tax, which has been valid till 31. 12. 1990, was cancelled and from 1. 1. 1991 till 30. 4. 1991 replaced with a price subsidy on revenues from households, heating energy operations and laundry-rooms in apartment buildings with capacity below 6 MW. New prices for households and manufacturing of heating energy for households are effective since 1. 5. 1991.

Revenue from the gas-pipeline which depends on transit fees, has improved due to the change in payments from Rubbles to US Dollars and by devaluating the Czechoslovakian currency to USD. Transit fees are in comparison with the last year higher by 5.147 mil. Kčs (USD 171,567,00), to countries of Western Europe, to SRN its eastern part, by 978.4 mil. Kčs (USD 32,613,330), and to Yugoslavia by 110.8 mil. Kčs (USD 3,676,666).

Financial resources of the company have been sufficient to use their portion of 500 mil. Kčs (USD 16,667,000), for purchasing certificates of the Commercial Bank in Prague for the term of 3 month at 9% interest, for the purpose of their optimal use. This financial operation brought an income from the said certificates of 11,250 thousand Kčs (USD 375,000).

Favourable financial position in the first half of this year was partly influenced by revaluing gas supplies at 1. 1. 1991 and by transferring credits to continual turnover of supplies in the amount of 6,575,575 Kčs (USD 225,258,560), to the Consolidation bank as mentioned; repayment of the credit is set here at the end of 1999.

Transport of natural gas by a transit system is carried out on the basis of quarterly protocols signed between Sojuzexport, PZO Metalimex, Czech Gas Company and Slovak Gas Industry.

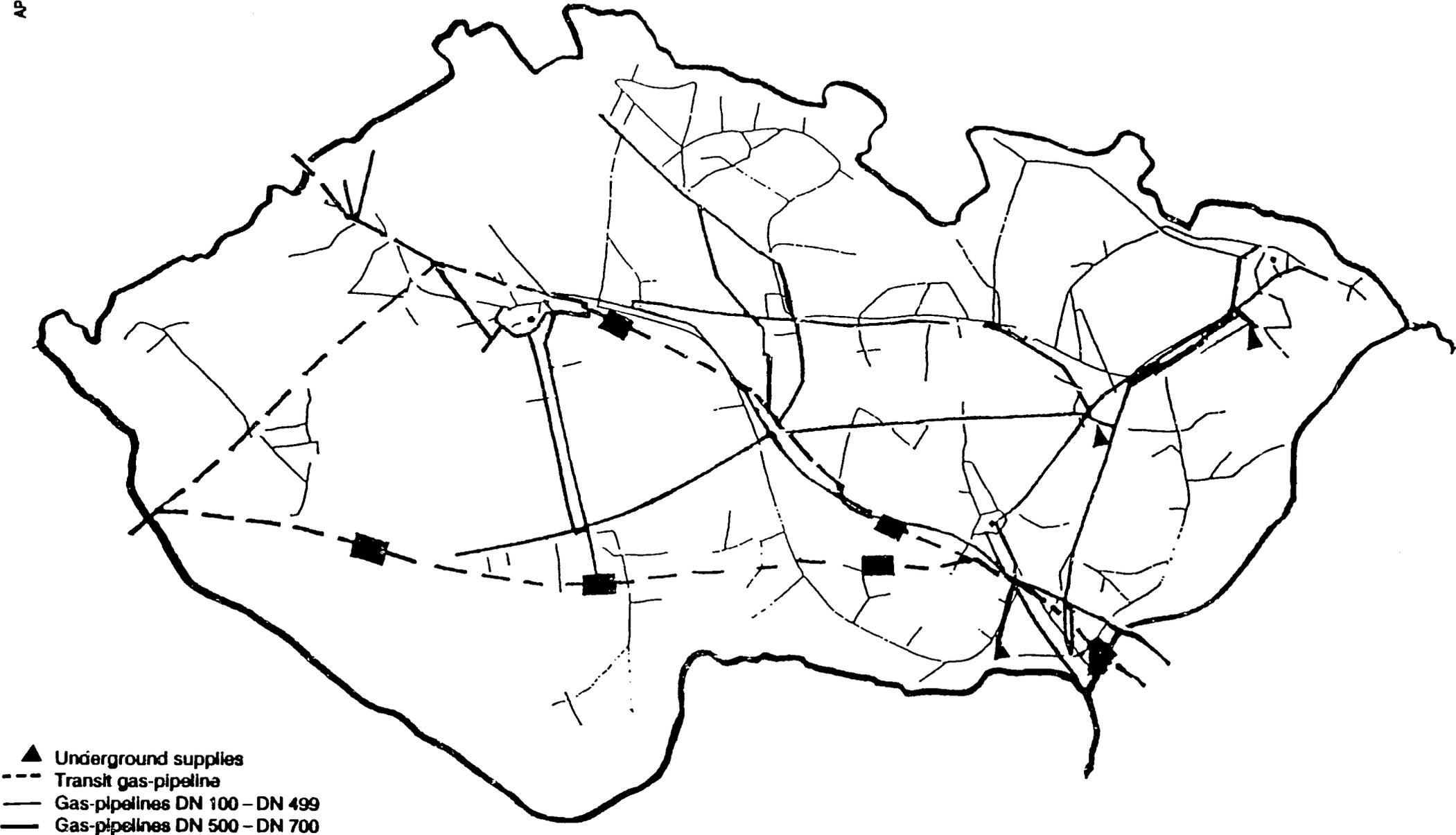
The carrying capacity of the system is 225.7 million m³/daily.

In the first half of 1991 34.67 billions m³ of natural gas were transported through the relay station of the transit system at Velke Kapusany, to CSFR through VPS 4.81 billions m³, to Western Europe, former SRN and Yugoslavia through HPS 02-04 29.63 billions m³. At the same time CSFR received through HPS Ruska 2.23 billions m³.

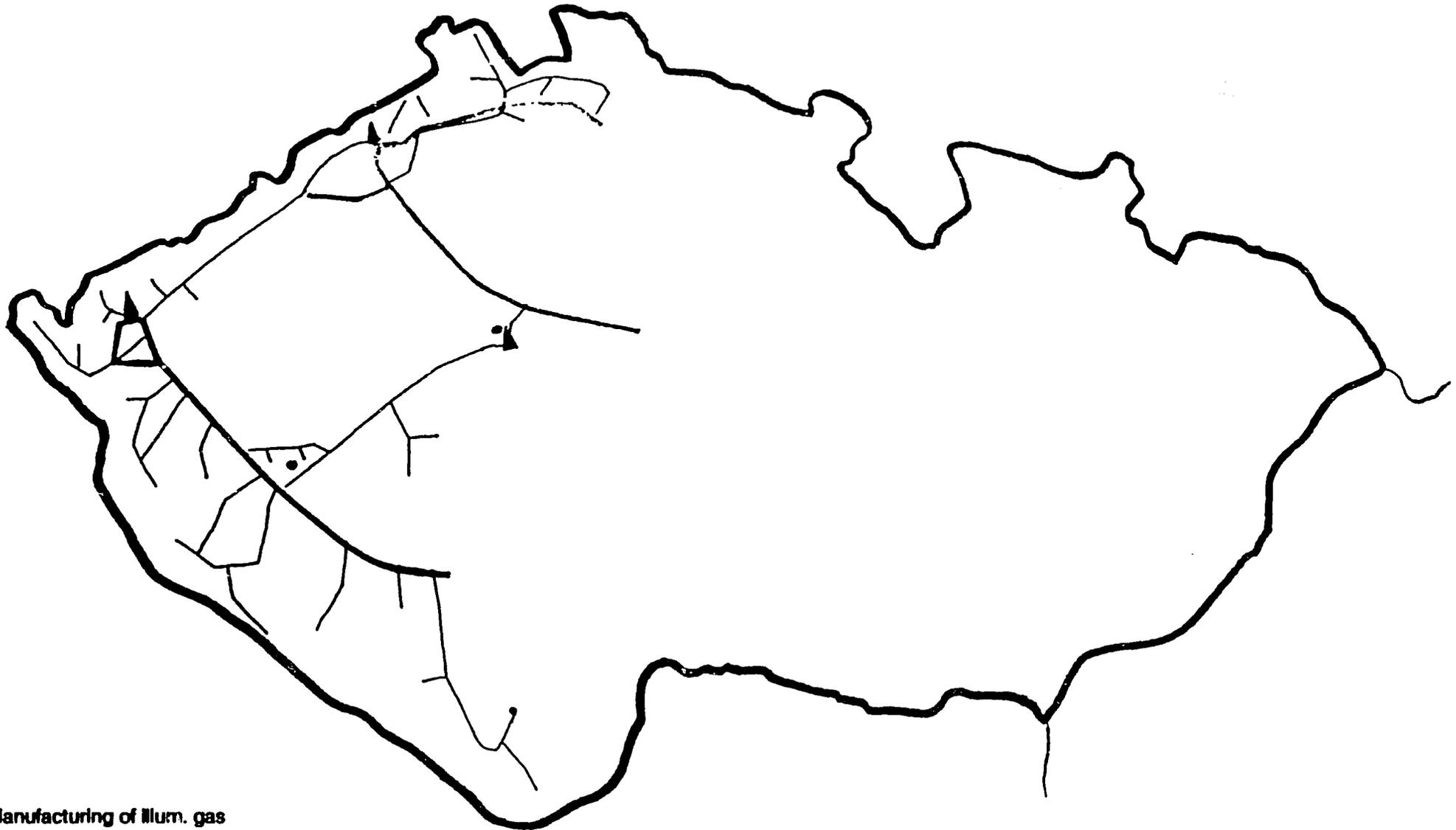
The accumulation in the transit system was on the average 275 million m³. The operation of compressor stations was with respect to economic operation directed according to transported volume and in relation with the level of accumulation.

During operation of the transit system no extraordinary situations occurred. The transit system supplied continuously and safely the entire gas system in CSFR and transported gas into countries of Western Europe without failures or stoppages.

**VERY HIGH AND HIGH PREASURE SUBSYSTEM OF NATURAL GAS
IN THE CZECH REPUBLIC**



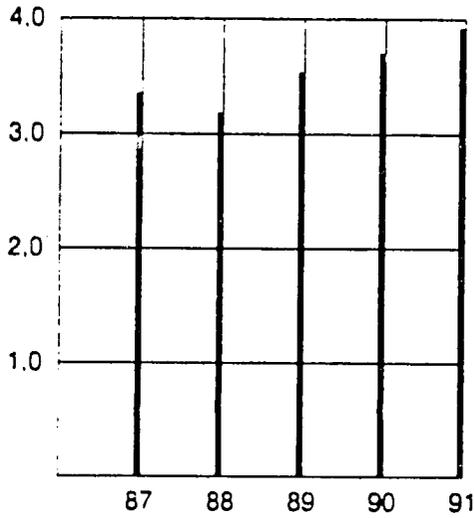
SUBSYSTEM OF ILLUMINATING GAS IN THE CZECH REPUBLIC



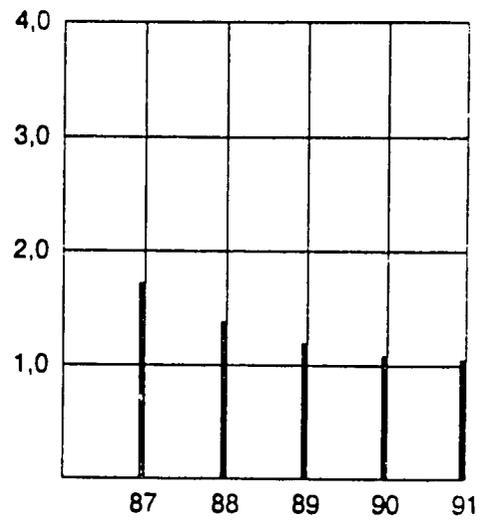
- ▲ Manufacturing of illum. gas
- Gas-pipelines DN 100 - DN 400
- Gas-pipelines DN 500 - DN 700

10)

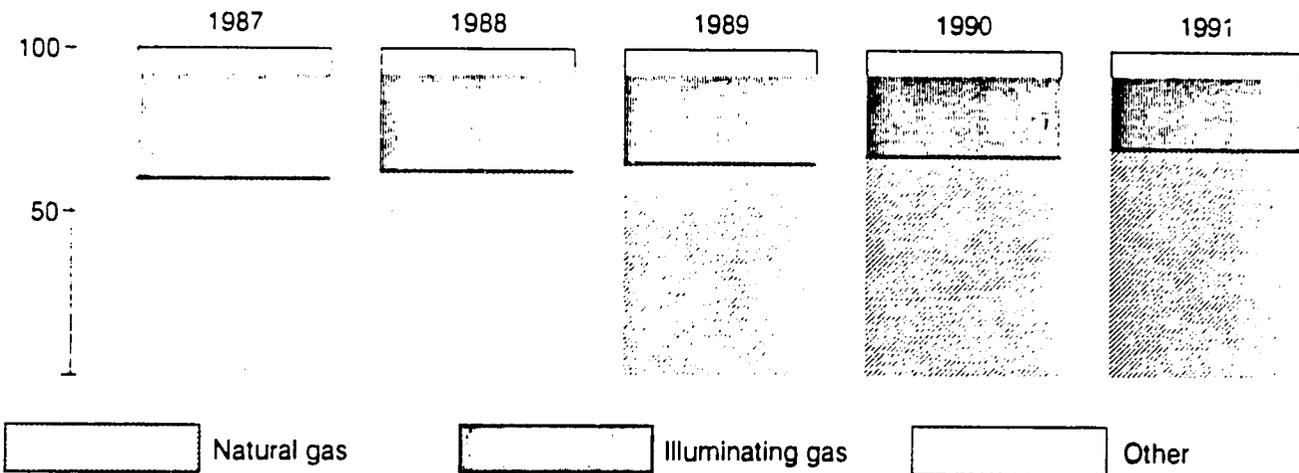
Gas purchased for period 1. - 6. month (bil. m³)



Natural gas Illuminating gas



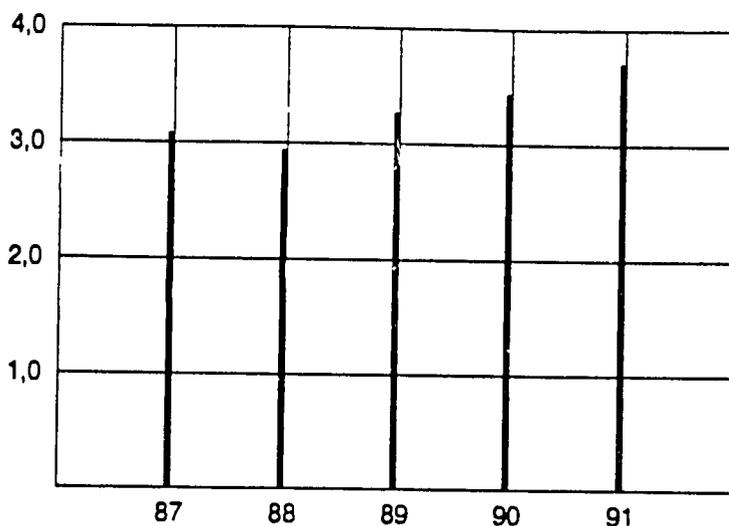
Structure of natural gas for the period 1. - 6. month



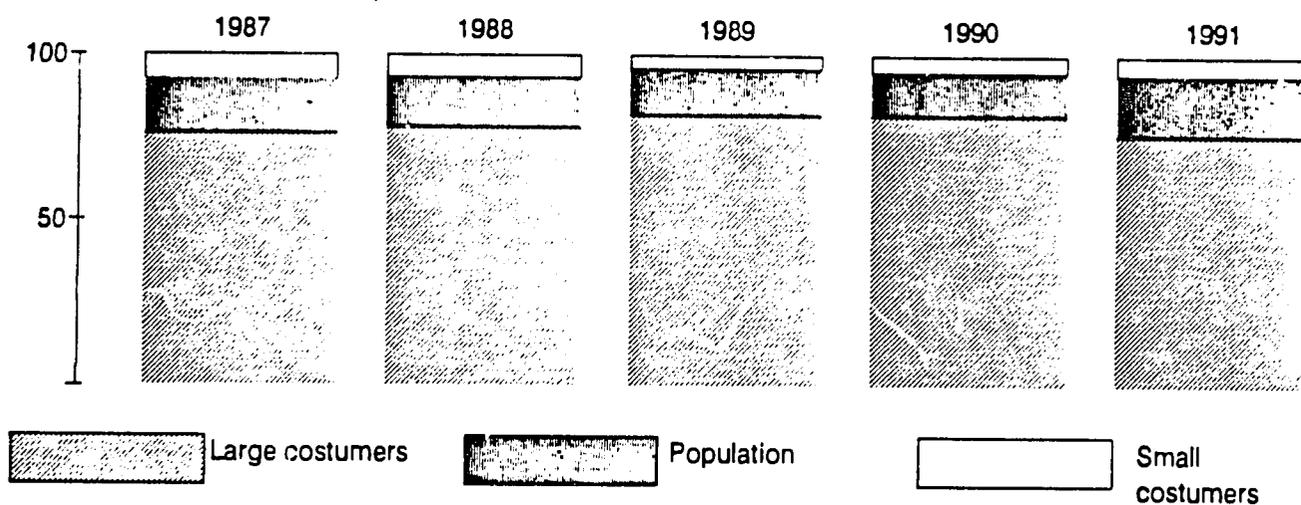
	1987	1988	1989	1990	1991
Illum. gas (mil. m ³)	1,708.4	1,352.6	1,202.6	1,029.3	1,024.9
From that manufactured (mil. m ³)	312.9	157.2	124.8	111.7	82.0
Natural gas (mil. m ³)	3,339.4	3,197.5	3,559.4	3,638.9	3,862.7
Coke oven gas (mil. m ³)	148.7	157.4	138.8	158.5	158.5
PB (thousand t ³) ^{a)}	43.2	41.9	43.3	43.5	41.1

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Sales of natural gas for the period 1. – 6. month (bil. m³)



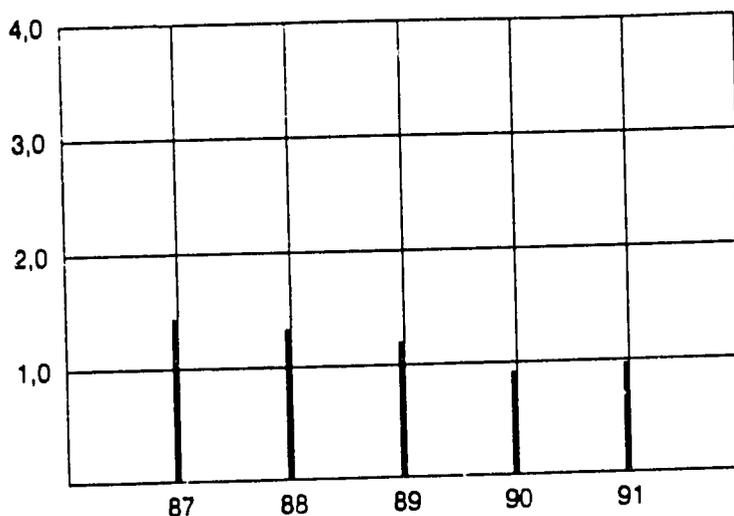
Structure of the secured gas in the period 1. – 6. month



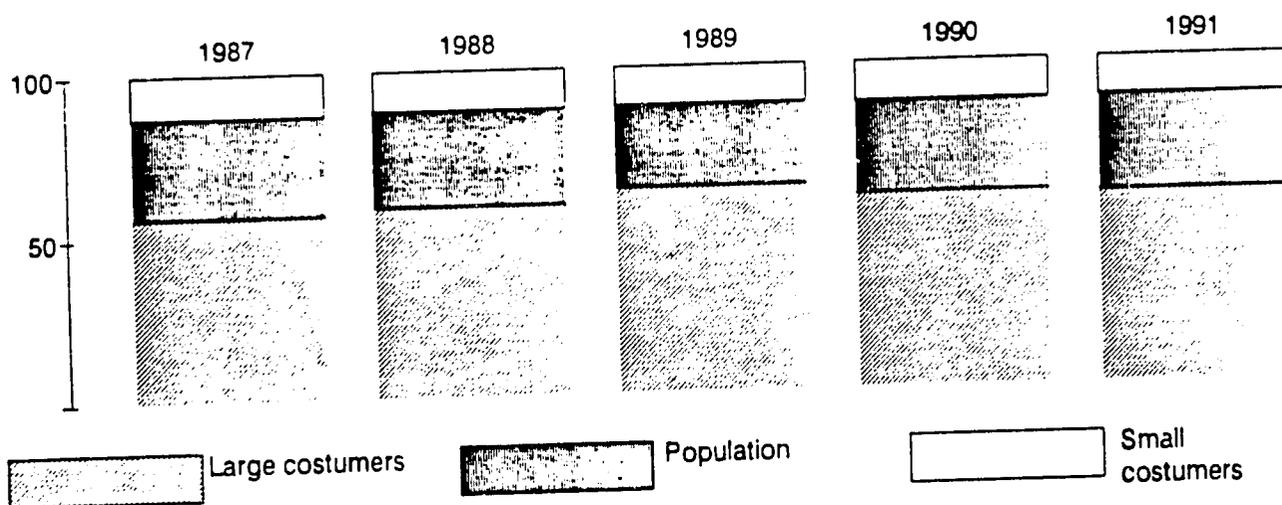
	1987	1988	1989	1990	1991
Large costumers (mil. m ³)	2,310.8	2,313.7	2,674.8	2,750.3	2,818.6
Small costumers (mil. m ³)	173.8	164.5	166.1	171.5	220.4
Population (mil. m ³)	550.8	497.4	507.4	573.2	779.8
Natural gas incl. export total	3,042.6	2,988.2	3,355.7	3,503.4	3,819.4

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Sales of illuminating gas for the period 1. - 6. month (bil. m³)



Structure of illuminating gas for the period 1. - 6. month



	1987	1988	1989	1990	1991
Large costumers (mil. m ³)	841.0	705.9	680.3	568.3	531.2
Small costumers (mil. m ³)	207.8	153.1	132.1	116.8	127.8
Population (mil. m ³)	502.1	367.0	306.8	277.3	288.3
Illum. gas total (mil. m ³)	1,550.9	1,226.0	1,119.2	962.4	947.3

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QUESTIONNAIRE

1. Official name of the organization:

Jihomoravské lignitové doly, státní podnik Hodonín
South Moravian lignite mines, state enterprise Hodonín

Address of the organization:

Jihomoravské lignitové doly, s.p. Hodonín
Koupelní 2
695 22 Hodonín
ČSFR

Tel: 0628 417

Fax: 0628 22 118

Contact person:

Ing. Košař Svatopluk - the deputy for production and trade

Ing. Šesták Josef - the deputy for technique

Number of employees on December 31st, 1991

Total: 2541

Organization of JLD s.p. Hodonín

The state enterprise consists of three collieries (mines),
a car transport centre, a building section and small
auxiliary plants.

2. We suppose the privatization of the coal plants

(2 collieries are going to be privatized, 1 colliery is in
liquidation). The activities that are not connected with
the coal output are going to be separated.

3. No.

4. Our organization has got no such status.

5. On the commercial base.

6. We would like to establish a working relationship in
preparation of coal for customers (ecologization of final
product).

7. The most important obstacle is the lack of the financial sources.
8. The major problems are:
Inconvenient proportion of using technology, qualitative composition of fuel and the level of their influence with ecology (contents of harmful substance).
9. Legislation of the new rules and regulations.
10. The projects that could be of interest to U.S. entities.
 - the works connected with preparation of combustion chambers of all outputs
 - the activities for improving of the composition of all kinds of fuel.

OSTRAVSKO-KARVINSKÉ DOLY
akciová společnost
OSTRAVA

Ing. Václav FORMÁNEK
předseda představenstva
generální ředitel

Ostrava, 26.3. 1992

Dear Sir,

You will find enclosed the questionnaire filled
in for your needs based on the request of Federal Ministry
of Economy of the Czech and Slovak Federal Republic.

Your sincerely



Eng. Václav F o r m á n e k
Chairman of Management Board
Managing Director of OKD Co.

Ostrava

HARZA Engineering Company
Mr. R. H. Staplin
Senior Vice President
Sears Tower

233 South Wacher Drive
CHICAGO, Illinois 60 606-6392

Poland

Please transmit urgently
to Mr. Robert Staplin

U.S. and Eastern Europe Engineering Community

Energy and infrastructure
Answers to questionnaire

1. Stowarzyszenie Inżynierów i Techników Mechaników Polskich
00-050 Warszawa, ul. Świętokrzyska 14 a.

General Secretary, Sobiesław Zbierski Eng.

tel. 27 17 68, tlx 813225, NOT PL, fax 272949.

At present it organizes about 40 000 members, assets - USD 9 million
annual turnover of economic activity ca. USD 6,7 millions.

Organization, purposes and goals of economic activity are presented
in enclosed guidebook and statute. Economic activity is realized
by means of the net about 100 economic units all over the
country.

2. No

3. Co-operation agreement with ASME and American Welding Society.

4. No

5. Yes

6a. Program "Engineer's Work"

6b. Program "Engineer - professional industrial and commercial
intermediator".

7. Lack of domestic and abroad markets. Lack of funds for indis-
pensable modernization of manufacturing processes.

8. As in item 7 and - lack of stable economic politics in the
country.

9. Blockade of markets

10. a and b item 6

Outline of Program "Engineer's Work"

1. Definition of a subject of the program

The program covers a stimulation of economic activity being
a result of engineer's work. In the contemporary economy profes-
sional specialities penetrate one another because of that we don't
limit our program to mechanical engineers and technicians' works.

2. Examples of engineer works

- . research and development works, planning design, programming,
- . manufacturing and testing of models and prototypes,
- . management,
- . engineering supervision, engineering receipt, conformity
certification,
- . technical advice and expertise, diagnostics,
- . trainings for specialists,
- . technical books, magazines and video,
- . technical marketing.

The mentioned works can be executed separately /as above/ or
together, for example:

- . creating of new enterprises,
- . setting up manufacturing of new product,
- . carrying on exploitation service of products,
- . creating of new product by carrying on research and development works,
- . complete assisting in practical application of inventions and guarantee of author rights.

3. What do we dispose of?

We have about 8 000 manufacturers of about 100 specialities. Their practical professional qualifications are verified in special verification way taking into consideration mainly their verified professional achievements. Experts are grouped around the net of 100 local centres all over the country which organize their work.

4. Goal of the program

Goals of program are as follow:

- achieving the highest level of executed works by means of:
 - . modernization of technique work,
 - . change of organization of labour directed towards shortening of a agreement preparing cycle and its realization.
- practical application of principles of "Total Quality Management",
- assurance of properly prepared flow of scientific and technical information,
- assurance of systematic flow of orders from all over the world by means of:
 - . developing of marketing services,
 - . creating of connections net with world firms of similar nature.

5. Conditions of further carrying on program

- carrying on intensive training program for experts in the range of an art of taking advantage of modern "shop of work" and creating of such a "shop".

At present - no financial means

- creating of modern marketing service and a net of world connections for assurance of a flow of work orders.

At present - no contacts

Outline of program

"Engineer - professional industrial and commercial intermediary"

I. Definition of a subject of program

Program covers stimulation of economic activity consisting in industrial and commercial intermediation realized with participation of qualified specialists.

2. Examples of intermediation acts

Intermediation covers wide range of acts of industrial and commercial nature, as for example: - marketing,

- advice in choice,
- organization of purchase,

installation and setting in motion,

- joing of cooperation in manufacturing processes,
- training of service staff.

Range of activity concerns electrical and engineering industry, widely taken, and all its products. Our intermediation in contacts with Russia and Bulgaria is also very important.

Taking into consideration the contemporary position of our country in the world industry, developing of specialization of the country in the following production areas is well-founded:

- instrumentation of production,
- production of components.

3. What do we dispose of?

We have about 20 000 active individual members of the Society all over the country who can undertake dealer functions.

We have points /places/ which can undertake the organization of dealer's work.

4. Goal of program

Goal of the program is assurance of professionalism in commercial activity. Filling the position of intermediary between being in need and supplier it exerts an influence on technical aspect of a transaction. That influence may be directed towards assurance, ^{of} for example:

- environment protection and work safety,
- efficiency of exploitation process and so forth.

5. Conditions of further carrying on the program

Setting up financial means for marketing in particular for advertising.



STOWARZYSZENIE ELEKTRYKÓW POLSKICH

- ОБЩЕСТВО ПОЛЬСКИХ ЭЛЕКТРИКОВ •
- ASSOCIATION DES ELECTRICIENS POLONAIS •
- ASSOCIATION OF POLISH ELECTRICAL ENGINEERS •
- VEREIN POLNISCHER ELEKTROTECHNIKER •

Mr. Robert Staplin, P.E.
Senior Vice-President
HARZA Engineering Company

Seas Tower
233 South Wacker Drive
Chicago, Illinois 60606-6322

CT/WZ/362/92

USA

17.02.9

Subject: USAID, Eastern Europe Energy and Infrastructure

Dear Sir,

I refer to the talks we have had during your visit to Poland on January 22 and 23.

You have information about our Association which was attached to my previous letter CT/SZ/67/92 dated 14.01.92. I think that it will be many opportunities to enhance the links between HARZA Co and SEP in the next future.

Now I submit you our Association proposal to bring into operation the programme which will be enable efficient cooperation of US and Polish power engineers on the various project within the framework of USAID activity in Poland.

1. Purpose and goal of the programme

To train a number of Polish engineers in order to get at disposal a staff of experienced technicians acquainted with US approach to engineer's job, US work organization and US technology.

2. Implementation of the programme

2.1. First Stage

One up-to two months training course in Poland for 20-30 Polish

Address
00-043 WARSZAWA, ul. Czackiego 3/5
Telex 813225

Secretary General pt. 26-86-01
Foreign Relations Department pt. 27-02-66

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power engineers chosen by our Association.

The course should cover:

- English technical terminology,
- chosen problems concerning power system operation, maintenance and development,
- economical principles of power generation and supply managing in free market condition,
- engineers work in US power company.

Attendants of the course should be engineers with some experience and adequate knowledge of English. Lecturers should be Polish and US experts. Course will be organized by SEP. Involved cost should be covered by USAID.

2.2. Second stage

Representatives of US power companies will choose and accept to work in US these trainees who successfully complete the course.

2.3. Third stage

Chosen trainees will work in US power companies for several months at the positions adequate to their capability.

2.4. Final stage

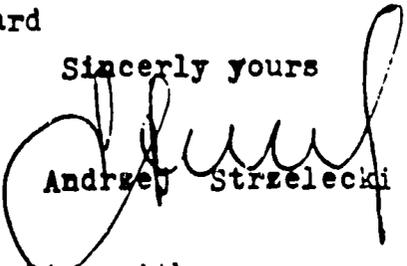
They will be considered as prospective Polish engineering staff to cover each project where US capital and/or technology is involved.

We consider this idea is worth thinking over. As soon as approved by USAID it will be worked out in details. IEEE could help in it.

I am really anxious to know your opinion about our proposal and I hope to hear from you soon.

With best regard

Sincerely yours


Andrzej Strzelecki

F.S. I understood that HARZA is also dealing with telecommunication infrastructure on behalf of USAID. If so, SEP is also the right organization to approach in this matter.



STOWARZYSZENIE ELEKTRYKÓW POLSKICH

Odznaczone Orderem Sztandaru Pracy I Klasy

CZŁONEK NACZELNEJ ORGANIZACJI TECHNICZNEJ

ZARZĄD GŁÓWNY – 00-043 Warszawa, ulica Tadeusza Czackiego nr 3/5

TELEX. NOT W-wa 813225

Skrytka pocztowa 903

Mr Robert H. STAPLIN
Senior Vice-President

HARZA
Engineering Company

Na pismo z dnia

Znak

Nasz znak
OT/SZ/67/92

Data 1992.01.14.

Sprawa:

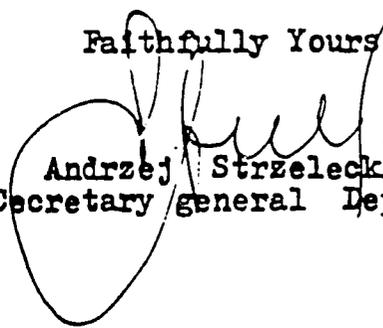
Dear Sir,

From Director S. Sitnicki PhD., Ministry of Environmental Protection, Natural Resources and Forestry we received copy of your letter dated December 17.1991 concerning your visit to Poland between 19 and 24 January 1992.

Enclosed is some information about our Association as per questionnaire attached to a/m letter, which I hope will be helpfull for you. Detailed problems mentioned in the questionnaire could be discused during direct meeting with you.

We are ready to cooperate with you on commercial basis offering at your disposal our facilities and contacts.

Faithfully Yours


Andrzej Strzelecki
Secretary general Deputy

3 encl.

Tel. 26 86 01 Sekretarz Generalny
27 38 79 Z-ca Sekretarza Gen.
27 39 79 Z-ca Sekretarza Gen. ds. Inwestycji
26 95 01 Dział Prezydialno-
27 56 19 Organizacyjny
27 02 65 Gł. Księgowy
27 02 66 Dział Prasowy i Współpracy z Zagranicą
27 57 14 Dział Techniki i Szkolenia
27 74 61 Centrala NOT

Adres telegraf.: SEP-Warszawa

Rachunek bankowy
NBP IV O/M Warszawa
Nr 1049-6611-132

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ASSOCIATION OF POLISH ELECTRICAL ENGINEERS
/STOWARZYSZENIE ELEKTRYKÓW POLSKICH /SEP/

1. SEP is an independent Association of electrical engineers established in 1919. It counts ab. 50000 members representing all branches of electrical engineering such as power engineering , electronics, telecommunications, computer technique, electrical equipment and appliances manufacturing, electrical instalation of all kinds etc.

SEP has 50 teritorial divisions all over the country and several specialised sections/in them power engineering section/ and technical committees.

SEP incorporates also Chamber of Experts /IRSEP/, which can be considered as bussiness branch of the Association. Scope of Chamber of Experts activity and possibility illustrates enclosed folder.

Another SEP agency is Quality Testing Office with authorized laboratories carrying out quality tests of varions electrical equipment.

SEP is patronizing edition of 11 periodicals dealing with sciantific and technical problems concerning electrical engineering

SEP cooperates closely with administration, industry, technical uniwersities, research centers and other entities dealing with electrical problems.

President of SEP Jacek Szpotański,

Secretary General Jan Grzybowski.

Head Office Warsaw Poland, 00-043 Czackiego str. 3/5,

tel.26-85-76 or 26-86-01, fax 27-29-49.

Enclosed is SEP folder in English however not up-to date but giving some more detailed idea about our Association.

Purpose of SEP activity is promotion of electrical science, engineering and technology in Poland. Actual goal to be achived is up-to-dating Polish electrical engineering according to the

standards of developed countries.

2. No change in purposes and goals of SEP due to the actual political, and economical changes in Poland was needed but the methods are being changed in order to be adequate to the actual condition of the country.
3. SEP has a close cooperation with Institution of Electrical and Electronic Engineers /IEEE/. Polish Branch of IEEE with its ab.200 members according to the agreement between IEEE and SEP is affiliated with SEP.

Similar relationship exists between SEP and Optoelectronic Engineers Association SPIE.

SEP is a member of several international organizations of engineers and takes active part in their works.



QUESTIONNAIRE

1. The Polish Energy Committee (PEC) of the Polish Federation of Engineering Associations; Address: Warszawa, ul. Czackiego 3/5; Contact person: Chairman Edward Radwański Ph.D., associate professor; Number of members: above fifty persons delegated by Engineering Associations; PEC is a consultative body of the Federation regarding areas of energy management, energy policy, energy security and energy development concentrated all energy problems in scale of the country, including also foreign energy exchange questions; Purposes and Goals: elaboration general opinions of the above mentioned problems.
2. Based on recent political and economic changes in Poland we do not change purposes and goals of our Committee, but we widen the range of these problems for instance: energy market, energy pricing, privatization of energy enterprises, protection of energy consumers, organization of the country's large energy systems, governmental and regional energy policy and their ranges, environmental protection.
3. Our Committee does not currently have a working relationship with a U.S. entity.
4. With regard to No. 3 - no answer.
5. Our Committee wants to develop future programs with U.S. entities
6. Future programs to be established with U.S. entities:
 - methodology of energy pricing,
 - methodology of energy investment costing,
 - creation of energy efficiency policy in scale of the country and region,
 - environmental friendly energy technologies, especially clean coal technologies,
 - energy research for development,
 - organization of regional energy utilities,
 - energy efficiency scholar and society education.
7. Current obstacles, which hinder the development of the above programs assuming that Polish economy is in a stage of transition to the market economy:
 - no experiences concerning the above mentioned problems,

- back of educated people in energy market economy.

- changing conditions with regard to economic development (current impact of economy regress),
- no clear targets of future social and economic development,
- lack of governmental center energy policy in the structure of state authorities.

8. The list in order of importance of major energy problems:

- methodology aimed at creation of energy policy and establishing decision taking place in the structure of state authorities regards to energy policy responsibility,
- methodology of energy pricing and energy investment costing,
- environmental friendly energy technologies development including clean coal technologies,
- organization, targets and rights of regional utilities,
- energy efficiency education,
- financing of perspective energy researches.

9. The list of the major obstacles preventing our country from addressing problems:

- unsteady state of authorities division in the government on energy problems,
- lack of a coherent perspective plan for large energy producers commercialization and ownership establishment directed to the market,
- there is no state energy research program subordinated to perspective energy progress,
- lack of energy policy governmental center.

10. The list of specific energy projects that could be of interest to U.S. entities:

- clean coal technologies,
 - education systems for employers in energy planning, costing, management, energy marketing and energy audits and also for public schools and society in domain of energy utilization,
 - elaboration of baseline for fiscal environmental policy in energy systems and for large energy industrial consumers,
 - rules of urban and regional energy management including institution of energy utilities.
- 12/2



INSTYTUT ENERGETYKI

Institute of Power Engineering

01-330 WARSZAWA, ul. MORY 8 • tel. 6021 627 • Telex: 813824 JEN-PL • Telegram: JENERG • Central: 76-75 51

Warsaw, 10 February, 1992

Mr. Henry H.Chen
PRINAT Project Director
Harza Engineering Company
Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6392
USA

Fax /312/ 831 - 3999

Dear Mr. Chen,

Last January we had a pleasure to welcome at our Institute Mr. Robert H.Staplin. On that occasion we had an interesting discussion concerning repowering some of our older coal fired power plants. Following Mr. Staplin's suggestion I would like to submit for your kind consideration some of our problems.

1. There is a need for precombustion coal cleaning and/or flue gas desulphurization in most of our coal fired utility power plants with 200 MW_e, 360 MW_e and 500 MW_e units.
2. There is also a growing need for repowering several coal fired power plants which are to old to be retrofited but there is a demand for power and/or combined heat and power /CHP/ in the surrounding area.
3. Repowering study which we are already conducting consists of investigating the technical feasibility and cost of clean power generation technologies from coal. Precombustion coal cleaning is an important option. The same regards modern pulverised coal fired boilers with flue gas cleanup devices /several options/. However we would like to investigate also;

- atmospheric fluidized bed combustors /AFBC/
 - pressurized fluidized bed combustors /PFBC/
 - integrated gasification combined cycle /IGCC/ /several options/.
4. We assume that site specific development of cost and performance predictions associated with above mentioned alternatives should be based on:
- anticipated quality and cost of coal which will be delivered to each of the power plants in the next 30 years
 - anticipated demand for electricity and heat.
 - required emissions reductions
 - the extent of required repowering.
5. The cost of repowering each power plant would be compared with:
- the plant's efficiency increase
 - emissions reduction
 - solid waste transportation and disposal /utilization/ cost
 - operating and maintenance cost.
6. The result of the study which we would like to conduct depends on the scope of data /information/ which we will collect. Implementation of process simulation and economic evaluation computer programs /like ASPEN/ would be useful.
7. The study is set up with the aim of selecting clean coal technology optimal for repowering each of the plants assigned for repowering.
8. The results of the study may be useful for considering implementation of modern clean coal technologies in Poland.
9. A carefully designed demonstration plant in Eastern Europe may prove the advantage of selected modern clean coal technology.

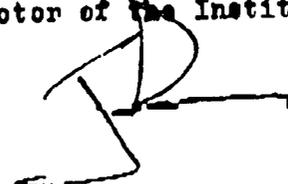
I would be glad to be able to collaborate with you in the future.

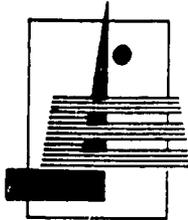
Sincerely yours

Annexes will be send
by normal post

copy
Mr. Robert H. Staplin
Senior Vice President
MARPAC Engineering Co.

J. Rakowski
Director of the Institute





ENERGOPROJEKT

HEAD OFFICE

6/14 KRUCZA STREET • 00-950 WARSAW • POLAND • P.O. BOX 184

HARZA ENGINEERING CO.
Sears Tower
233 South Water Drive
Chicago, Illinois 60606-6392
U.S.A.
Mr ROBERT H. STAPLIN, P.E.
Senior Vice President

Your reference

Your Date

Our reference

Date

NX/32/77/92

1992-02-07

Dear Sir,

With reference to your visit in Warsaw and talks held with Professor St. Kajfasz on 22nd January 1992 we send you questionnaire filled in according to your suggestions. I would like to enhance ones more, that according to our opinion in Poland exists a potential market for power industry investments which can be induced after involving adequate capitals. Similar but broad market exists in Russia, what can we say based on many years' cooperation with Russian's power engineers. Please take into your consideration is our good knowledge of this market and Russian language useful in the event of common ventures. We are interested in your opinion relative to our position.

Yours faithfully,

Jan Edward Kowalski

Deputy Managing Director

- Enclosures:
1. Questionnaire
 2. Energoprojekt's file
 3. Reference Letters

Copy to: Professor St. Kajfasz

BEST AVAILABLE COPY

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U.S. and Eastern Europe Engineering Community
Energy and Infrastructure

Questionnaire

1. Główna Biuro Studiów i Projektów Energetycznych "Energoprojekt" (Consulting Engineers * Power Engineering Study and Design Company "Energoprojekt") is the engineering organization dealing with study and technological projects being related to power industry (generation, transmission and distribution of electric and heat energy).
Energoprojekt is at present a state-owned enterprise with the Trade and Industry Ministry as the founding organ.
Energoprojekt's Head Office is situated in Warsaw:
00-950 Warsaw, 6/14 Krucza Street, P.O. Box 184
phone: (+48) 022-210281,
fax : (+48) 222-214892,
tlx : 612680 ep pl.
The person to contact: Ryszard Hardejewski (phone: 214891)
Energoprojekt employs 2.200 persons in general.
The enterprise includes 7 Branch Offices (situated in Gliwice, Katowice, Krakow, Poznan, Warszawa and Gdansk) and Research Works (in Poznan).
Energoprojekt's file and references are enclosed.
2. According to the trends consequent on the politico-economical changes in Eastern and Central Europe our enterprise has begun privatization process. The application for privatization and all necessary documents were filed to Trade and Industry Ministry and to Ministry of Ownership Transformation at the end of last year. Energoprojekt has proposed two steps way of privatization. The first step is to transform into a company owned by the State Treasury. The second step is to transform into a group of stock companies (holding).
Energoprojekt also fits its scope of activity and range of offered services to new economic situation of the country.
3. At present Energoprojekt doesn't make business with American firms, but it did a numerous one in the past. For instance in 1990 Energoprojekt worked out, for North American Energy Co. (P. Robert, C. Hart), the prefeasibility study for extension of three Polish power plants.
Energoprojekt has cooperated with TRW (El Segundo CA.) at research works concerning possibilities of applying a new kind of burner to coal combustion in power boilers.
Energoprojekt entertained in 1990 the representatives of a dozen or so famous American firms during their mission in Poland organized by State Department and U.S.A. Embassy in Warsaw.
4. There is no formal cooperation program between Energoprojekt and American entities. Energoprojekt think, that in case of reconstruction of seven Polish power plants with 200 MW units by WESTINGHOUSE, it will attend this venture.

5. See item 4.
6. Energoprojekt keep in touch with condition of power plants, combined heat and power plants, heating plants and power transmission and distribution grid in Poland. As the designer of all bigger power objects in Poland Energoprojekt has their completely documentation. Energoprojekt is qualified to carry out the study and projects for those objects as well as the whole energy system.
If American entities are interested in power industry investments Energoprojekt will be ready to cooperate with them.
7. Lack of financial resources is main difficulty to realize any possible ventures in spite of they may be profitable taking into consideration current prices of energy and their forecasted steady growth.
8. Most important problems:
 - 8.1. lack of capital.
 - 8.2. want of single organization dealing with power industry.
 - 8.3. current energy surplus as compared with industrial demand cause no pressing of industrial group and public opinion on energy system development.
 - 8.4. long operating time of existing power plants (great many of installed capacity is operated over 20 or 25 years).
 - 8.5. current efficiency of flue gas cleaning installations don't meet the new rules of air protection and should be modernized.
 - 8.6. possibility of combined energy production (by combined heat and power plants) is not fully utilized.
9. Energoprojekt think, that competent to give an answer for this question is proper organ of government administration, because energy sector is one of the most important in state infrastructure. Energoprojekt seems has no authorization to comment on government activity in this range.
10. According to our mind American entities shall be interested in:
 - modernization of existing power plants - brown and hard coal fired.
 - extension of existing combined heat and power plants and build of new one.

Warsaw, 1992-02-07

ENERGOPROJEKT

Consulting Engineers
Power Engineering Study and Design Company

ENERGOPROJEKT is Poland's major international consulting and design organization. Established in 1949, ENERGOPROJEKT employs near 3000 engineers and other technical staff in six offices throughout Poland.

ENERGOPROJEKT deals with :

- planning, designing, project managing and implementing technical progress of complete power plants, heat supplying systems, electricity transmission and distribution network and environmental protection systems,
- rehabilitation and modernization with existing power plants.
- reconstruction and expansion of energy transmission and distribution systems.

Over the past 40 years ENERGOPROJEKT has been responsible for the design of all Poland's power stations of total generating capacity about 32 000 MW as well as for all Polish transmission and distribution networks.

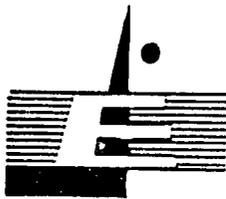
ENERGOPROJEKT has also extensive international experience in designing and construction supervising of a large number of thermal and diesel power stations, transmission networks and substations in over 25 countries in Europe, the Middle East and Asia.

ENERGOPROJEKT collaborates with many of the world's leading consulting engineers companies and manufacturers of power station equipment.

ENERGOPROJEKT is open for any kind of cooperation.

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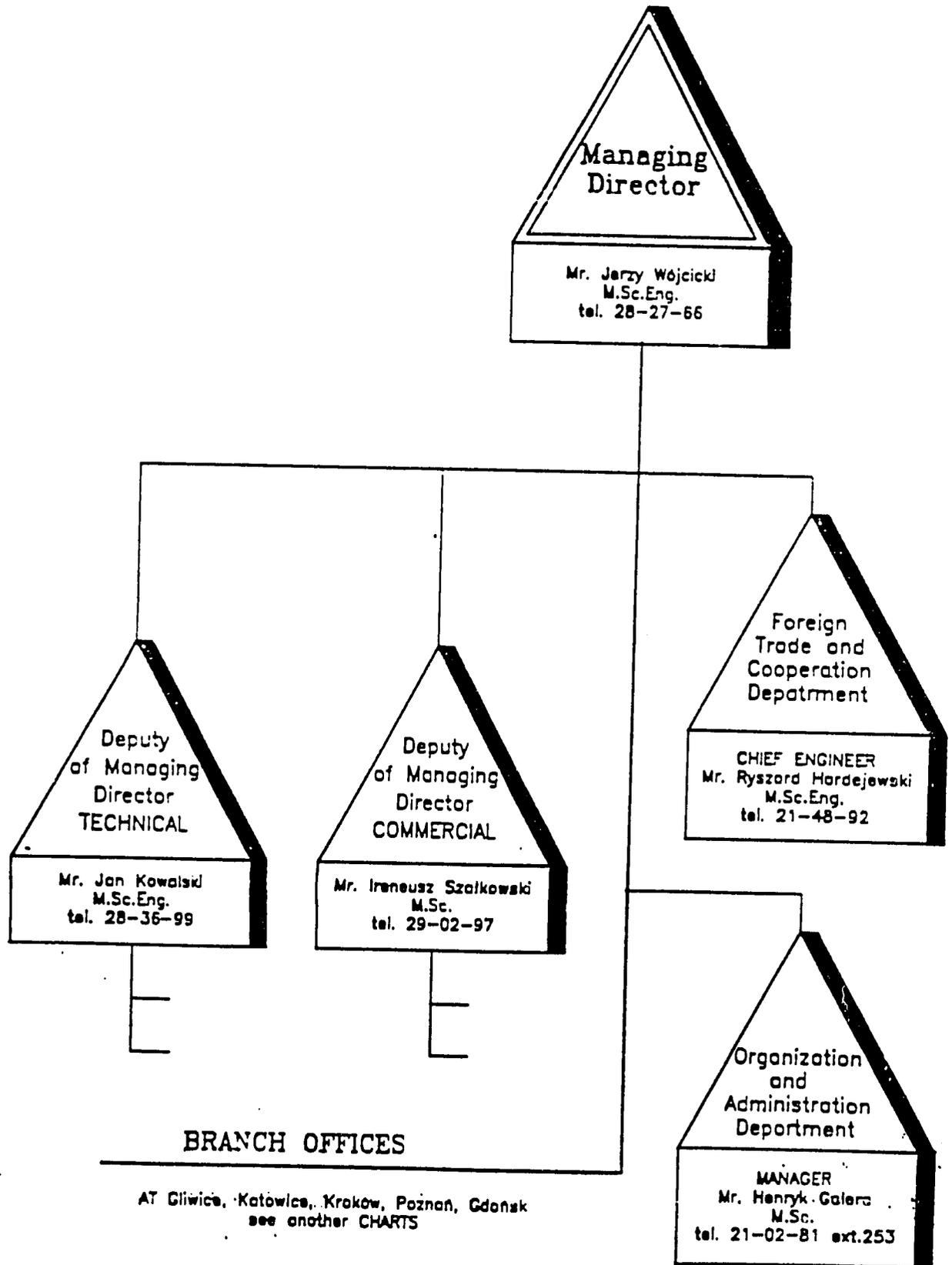
Head Office Warsaw - P.O. Box 184, 00-950 Warsaw,
6/14 Krucza St., phone: 21.48.92, telex: 812680
fax: 214892



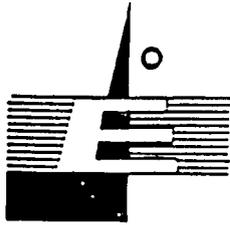
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HEAD OFFICE BUSSINES ORGANIZATION CHART

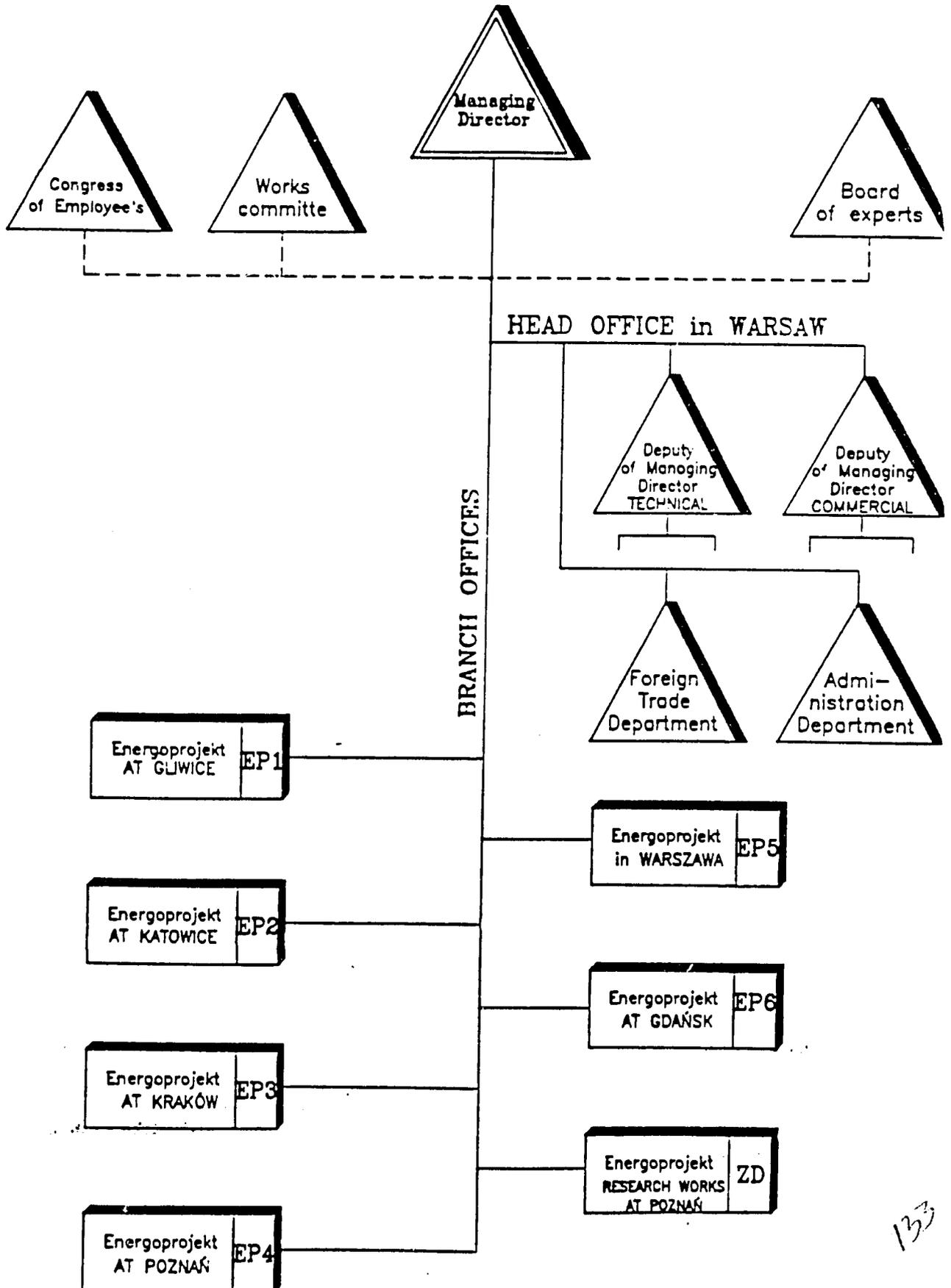


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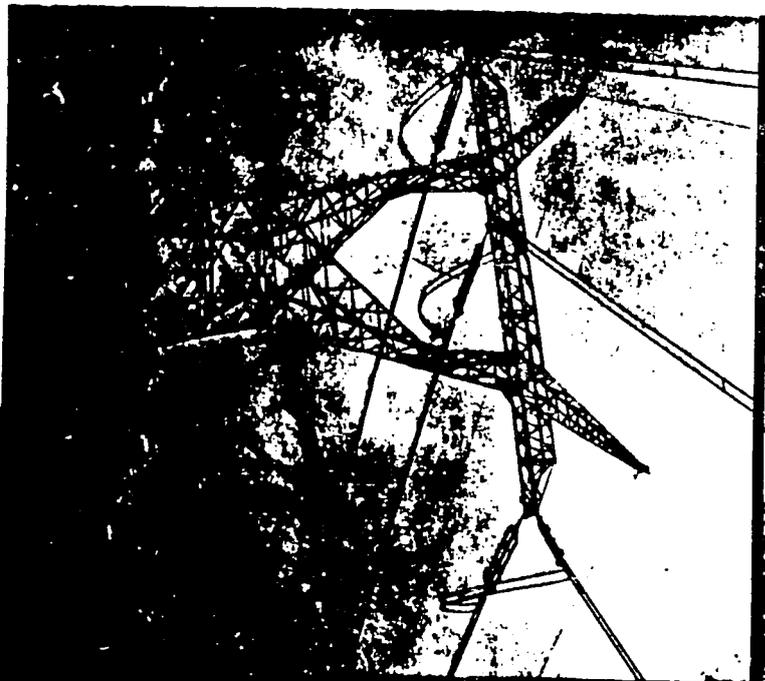
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BUSINESS ORGANIZATION CHART

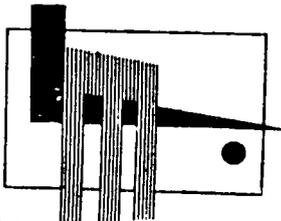


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TRANSMISSION LINES



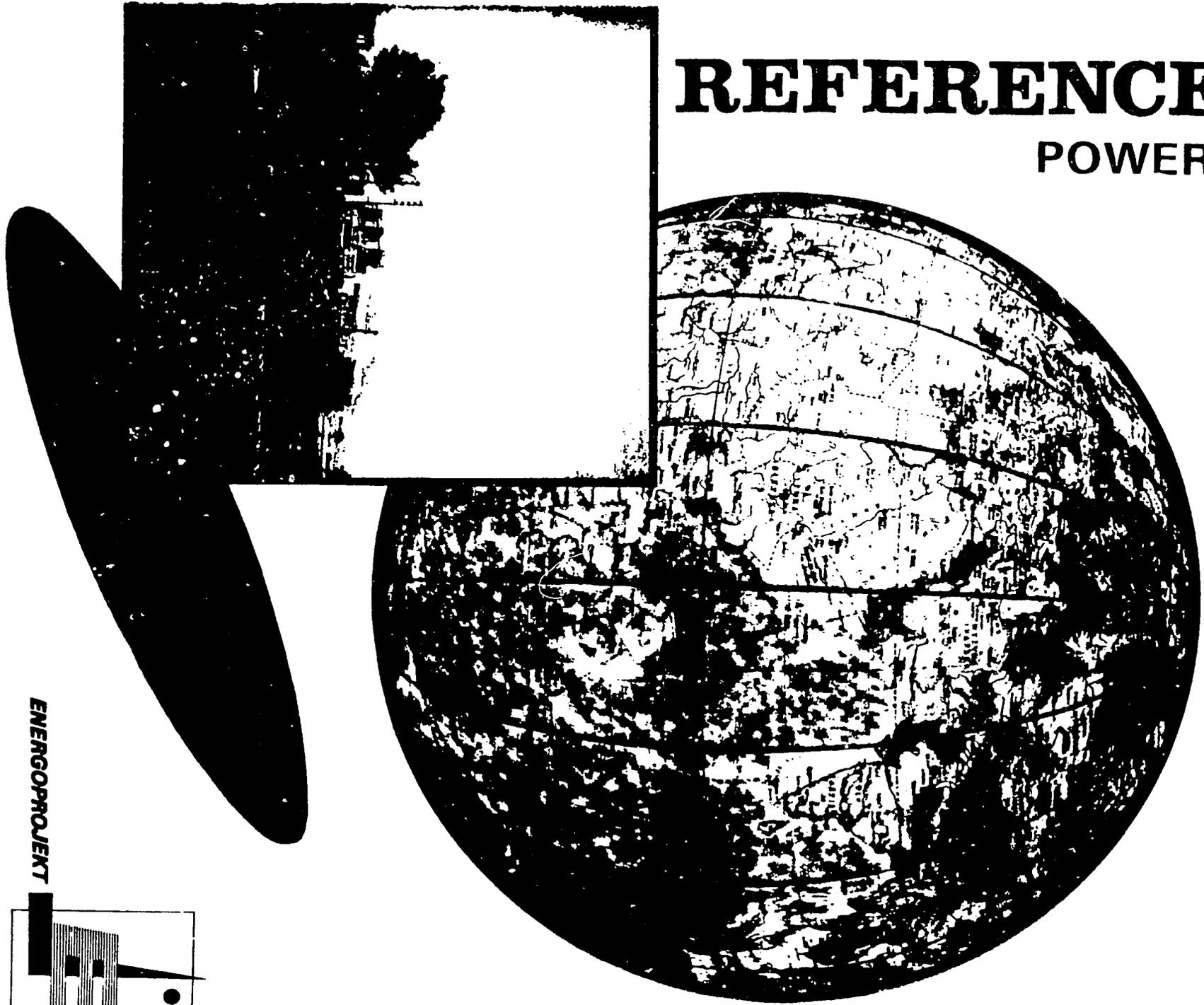
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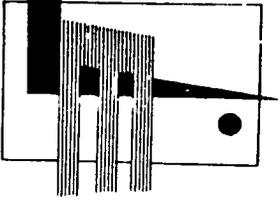
1991

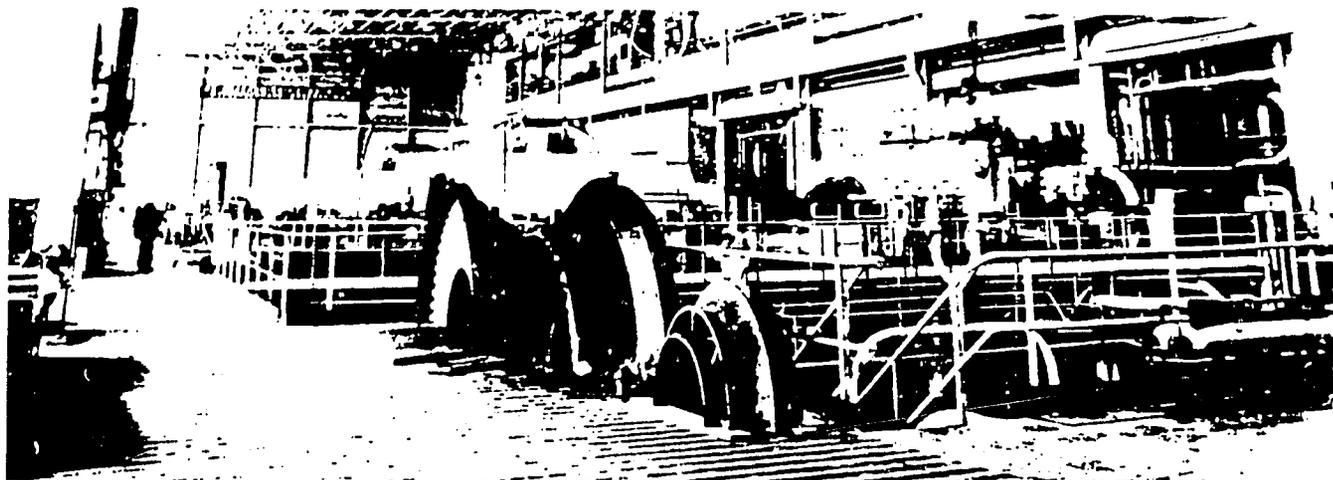
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POWER STATIONS



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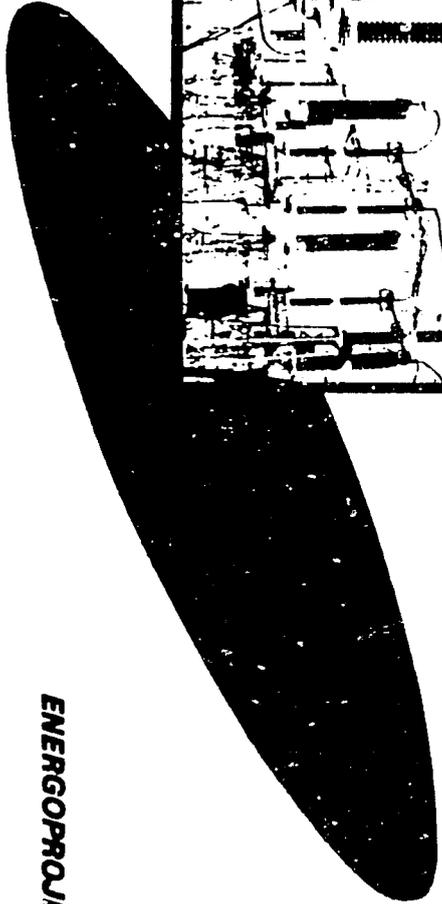
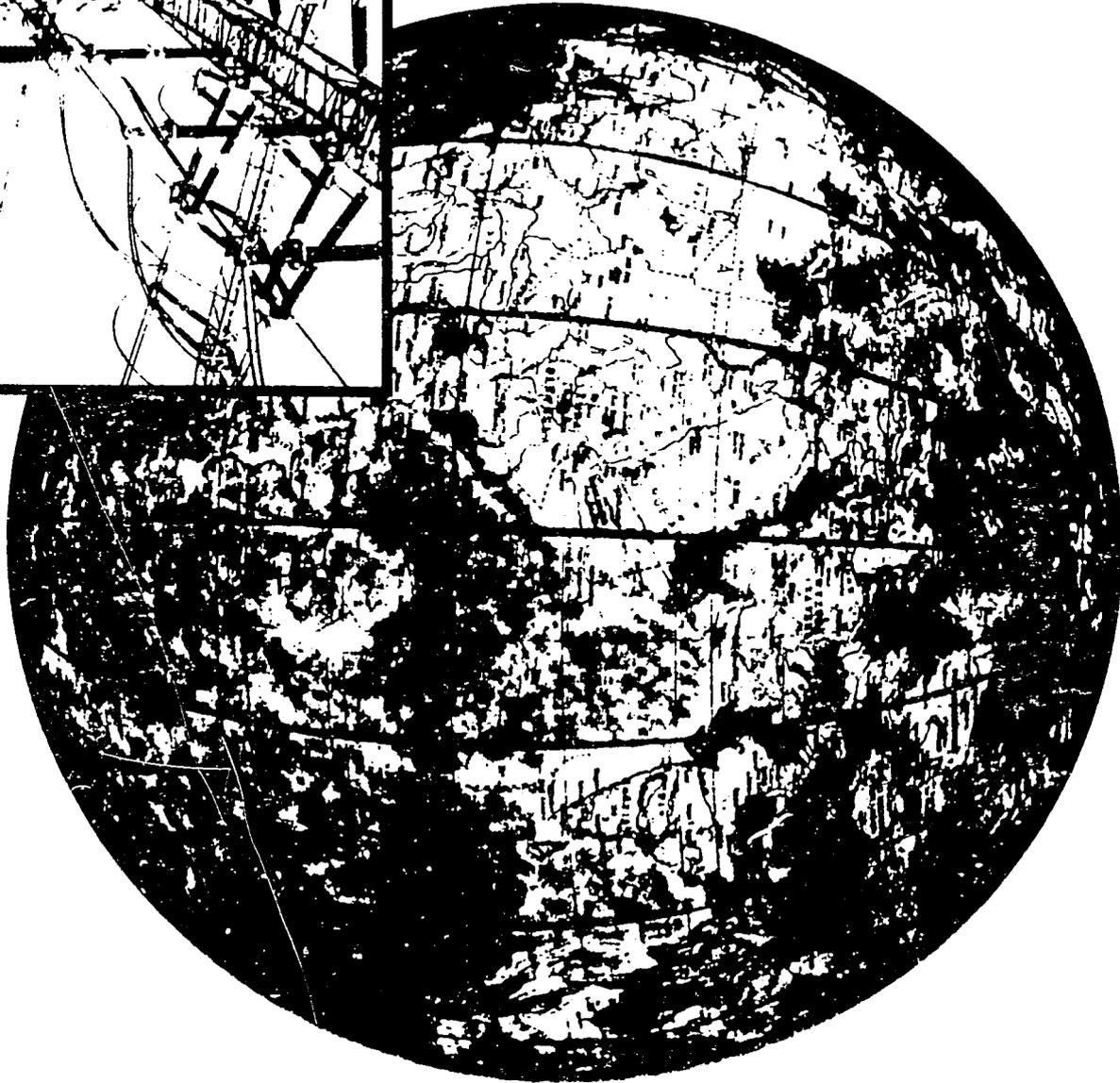
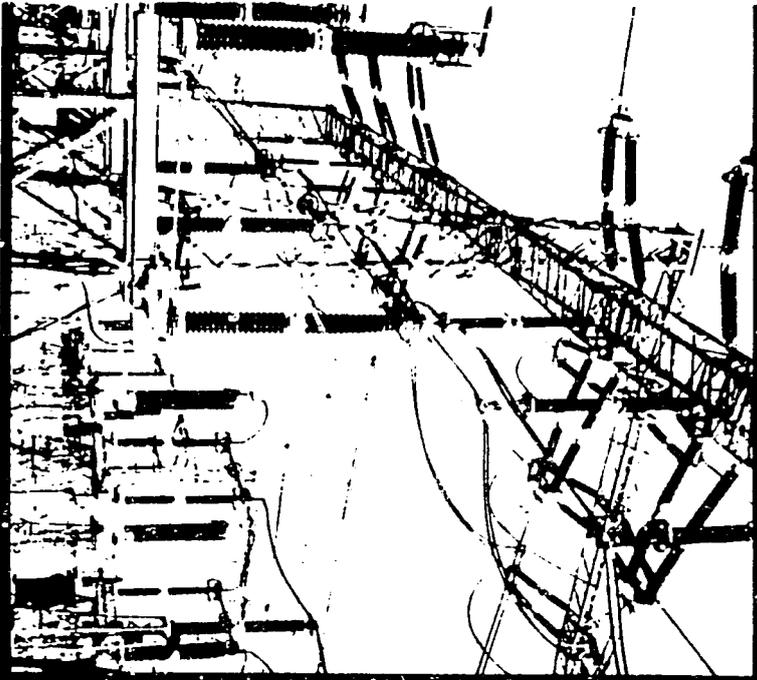
IN POLAND (main projects)

Thermal power station	Fired with C - coal L - lignite	Installed capacity MW	Put into operation
LAZISKA	C	105	1949-1951
		240	1967
		800	1972
CHORZÓW	C	90	1953
KONIN	L	583	1958-1965
designed in Polish-GDR cooperation			
POMORZANY	C	123	1960-1961
SIERSZA	C	260	1962
		480	1970
TURÓW	L	1400	1962-1965
		600	1970-1971
LAGISZA	C	240	1964-1965
		600	1969-1970
ADAMÓW	L	600	1964-1967
PĄTNÓW	L	1200	1967-1969
		400	1973-1974
DOLNA ODRA	C	1600	1974-1977
OSTROŁĘKA „B”	C	600	1972-1973
KOZIENICE	C	1600	1972-1975
		1000	1978-1979
RYBNIK		800	1972-1974
	C	800	1977-1978
JAWORZNO III	C	1200	1977-1978
POLANIEC	C	1600	1979-1980
BELCHATÓW	L	4320	1981-1986

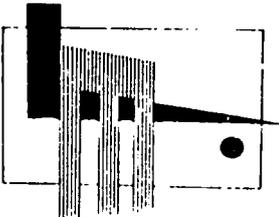
Thermal power station Country	Fired with C - coal L - lignite	Installed capacity MW	Put into operation
CHINA (ZENG TU) 	C	50	1963
INDIA (BARAUNI) 	C	110	1969-1971
YUGOSLAVIA TUZLA  designed and erected in Polish-Jugoslavian (Energoprojekt - Sarajevo) cooperation 3 stage 4 stage 5 stage 6 stage	L	200 200 210 1200	1971 1972 1978 1982
KOSOVO designed in Polish-Jugoslavian (Energoprojekt Belgrade) cooperation 5 stage	L	200	1975
TURKEY (TUNGBILEK II)  designed and erected in FRG-Polish-Turkish cooperation 2 stage	L	300	1978
YUGOSLAVIA OSLOMEJ  designed and erected in Polish-Jugoslavian (Beton- -Skopje) cooperation	L	125	1978
OBRENOVAC designed and erected in French (CEM-Paris) - FRG (EVT) - Jugoslavian cooperation 6 stage	L	308	1979
CZECHOSLOVAKIA (PRUNEROV) 	L	1050	1980-1982
YUGOSLAVIA (NIKOLA TESLA)  designed in French (AA-Paris) - FRG (EVT) - Jugoslavian cooperation	L	600	1982

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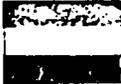
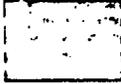
TRANSFORMER STATIONS

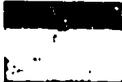
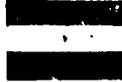
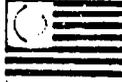
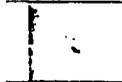


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COUNTRY	PROJECT	Voltage KV	Transformed power MVA	Completed
BANGLADESH				
	1 Barisal	33/11	10	1970
	2 Jamalpur	33/11	5	1970
	3 Kalihari	33/11	5	1970
	4 Muktagacha	33/11	5	1970
	5 Mymensingh	33/11	10	1970
	6 Natore	33/11	5	1970
	7 Netrakona	33/11	5	1970
	8 Savar	33/11	5	1970
	9 Mangla	33/11	5	1973
	10 Tong	132/11	75	1976
	11 Kaliganj	33/11	5	
	12 Sikalbacha	132/33	20	
	13 Sylhet	132/33	37	
	14 Joypurhat	132/33		1983
	15 Bogra	132/33		1987
16 Tangail	132/33			
EGYPT				
	17 Ashmoun	63/11	10	1970
	18 Abu Shousha	66	20	1971
	19 Bahr-Tira	66	10	1971
	20 Damanhour	66	20	1971
	21 El Balyana	66/11	20	1971
	22 Helopolis	63/10,5	40	1971
	23 New Qarabi	66	10	1971
	24 Serv El Aala	66	20	1971
	25 Vad. Hof	63/6,3	40	1971
	26 El Haram	63/10,5	40	1972
	27 El Tabbin	63/6,3	80	1972
	28 Abu Gundir	63/33/11	10	1973
29 Maaruf	63/10,5	40	1975	
ETHIOPIA				
	30 Elala Geda	132/15		
	31 Amibara, Bolhamo	66/15		
	32 Akaki	45/15		
33 Kaliti	132/45/15		1987	
GREECE				
	34 Rhodos	66/20/6,3	75	1975
35 Linoperamata	150/66	100	1977	

INDIA				
36 Barauni		132	120	1966
JORDAN				
55 48 Projects		33/0.4	10	1979
IRAQ				
37 South Baghdad		132/33		1973
38 Duhok		132/33/11	50	1974
39 Hammon Al-Alil		132/11		1974
40 Wazyriya		132/33	50	1974
41 Bakuba		132/33		1975
42 Mishraq		132/33/6.6	50	1975
43 Mosul		132/33/11		1975
44 Diwaniya Factory		33/11	30	1976
45 Erbil		132/33		1976
46 Shamiya		132/60/11		1976
47 Diwaniya		132/33/11	100	1977
48 Hilla		132/33/11	100	1977
49 Kirkuk		132/33/11	100	1977
50 New Runaila		132/33/11	50	1977
51 Petrochemical		132/33	150	1977
52 Ramadi		132/33/11	100	1977
53 Samarra		132/33/11	50	1977
54 Zubair		132/33/11	100	1977
MALAYSIA				
56 Ampang		132	90	1977
57 North Klang		132	90	1977
NIGERIA				
58 "OGUN"		33/0.4	100	1985
PAKISTAN				
59 Khanewal Road		132/11	13	1971
60 Shujawal		132/11	13	1971
61 Campbelpur		132/11	26	1973
62 Chichawatni		132/11	16	1973
63 Gujar Khan		132/11	13	1973
64 Kohat		132/66/11	50	1975
65 Lawrencepur		132/11	16	1975
TUNISIA				
66 Sfax		30/0.4	2.5	1967



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ENERGOPROJEKT



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INTRODUCTION

The installations are used in hard coal and lignite fired power stations, for ash disposal and furnace waste transport systems.

Pneumatic installations are used for the transport of fly ash of different size, but hydraulic installations also enable the transport of slag with granulation of up to 40 mm.

Pneumatic installations may be adapted to the transport of different built materials such as powdered stone, lime, dolomite, bauxite etc.

Pneumatic installations can also contain loading from intermediate hoppers or road, railway and water transportation facilities. Single line or pneumatic transport can achieve capacity up to 80 Mg/h and distance of up to 1300 m.

Hydraulic transport lines with slurry pumps achieve capacity of up to 500 Mg/h and distance of up to 6 km in one stage, but it is possible to use systems with several stages.

Lines with piston-diaphragm pumps achieve capacity of up to 800 Mg/h and distance of up to 40 km.

PNEUMATIC ASH HANDLING SYSTEM WITH FLUIDSLIDES AND TRANSPORT WITH AIR LIFT TO THE SILO

Diagram shows pneumatic ash handling system of electrostatic precipitators with fluidslides, nextly delivering ash to the silo with discharging possibility to the different transport facilities. Installation works in continuous manner using very low air pressure, and doesn't require compressors but only Root's type blowers.

Ash from electrostatic precipitators is discharged on fluidslides system situated below.

Each ash hopper of electrostatic precipitators is equipped with flat valve and level indicators. Main fluidslide gives ash to air lift.

Fluidslides are fed with air from radius fan. Air is filtered and heated to 80°C to facilitate good ash transport.

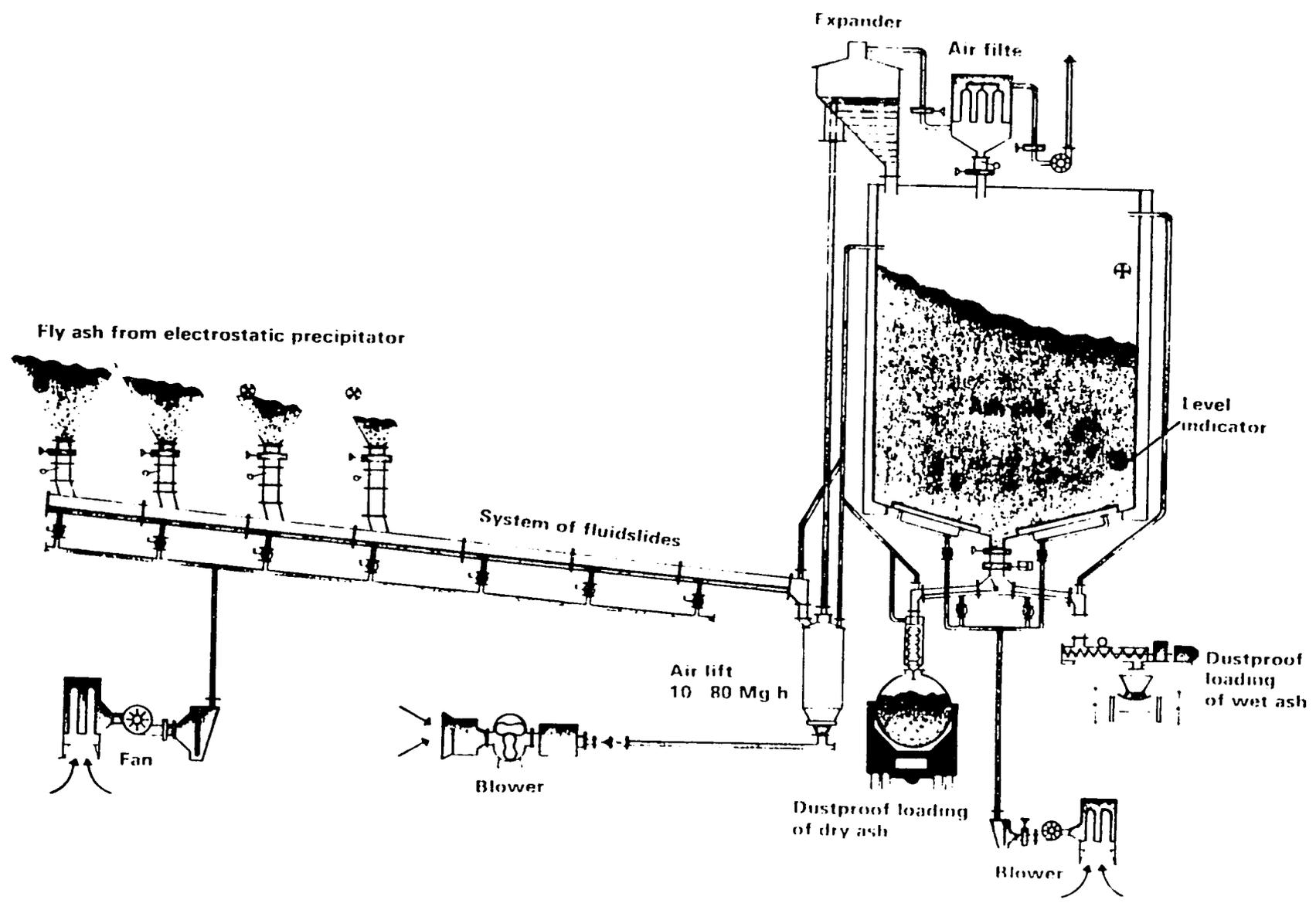
Air lift is used as a vertical ash transport facility from main fluidslide to the silo.

Lifting height may be about 50 m and capacity of one device (in case of need) $Q = 10-80$ Mg/h.

Air lift is fed with air from blower (with pressure about 0.03-0.06 MPa) chosen according to its technical parameters.

Ash silo is equipped with ash aeration system in its conical bottom (to facilitate easier ash discharging process) and with air cleaning system for air being discharged outside from the silo. Technical solution of this installation depends on place where air is discharged (outside from the silo or to the flue gas ducts before electrostatic precipitator).

Ash from the silo is discharged with pneumatic batcher and nextly ash transport may be realized in „dry state“ (for example with special „discharging sleeve“ to the railway car or truck“) or in „wet state“ (with two axle worm conveyor) to the different kind of wheel transport or belt conveyor.



PNEUMATIC ASH HANDLING SYSTEM WITH FLUIDSLIDES AND TRANSPORT WITH VESSEL PUMP TO THE SILO

The diagram shows a pneumatic ash handling system of the electrostatic precipitator with fluidslides, ash delivering to the intermediate hopper and nextly ash transport by vessel pump to the silo with a possibility of ash discharging to the different kinds of transport facilities.

Ash discharging from the electrostatic precipitator is realized with system of fluidslides situated below.

Each hopper of the electrostatic precipitator is equipped with a flat valve, flap valve and level indicators. Main fluidslide gives ash to the intermediate ash hopper. Fluidslide

des are fed with air from radius fan. Air is filtered and heated to 80 C to facilitate proper ash transport.

The intermediate ash hopper is vented to gas ducts before the electrostatic precipitator.

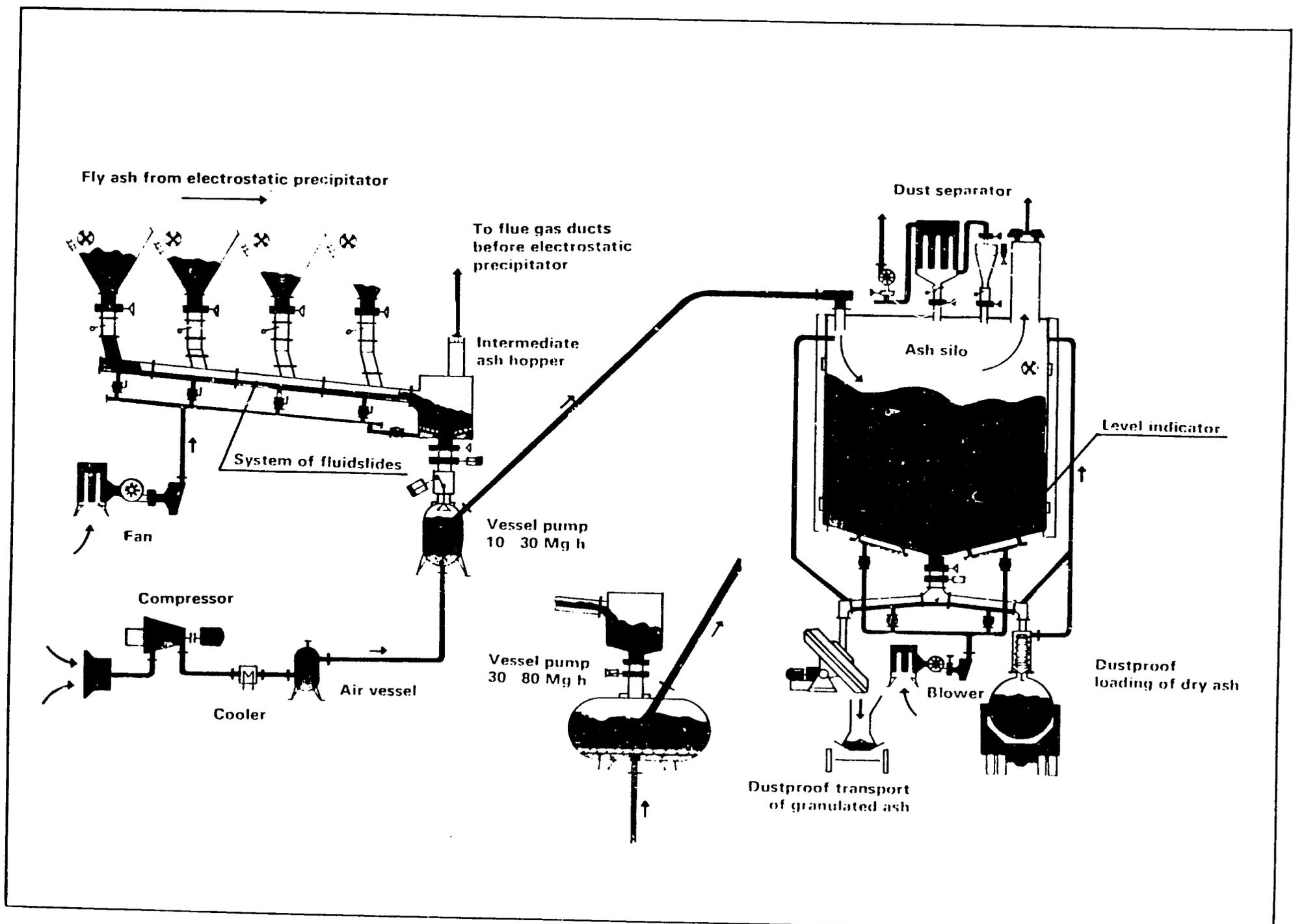
Pneumatic vessel pump works cyclicly and automatically. The capacity of the vessel pump depends on the distance of transport (length of transporting pipeline) and it's cubic capacity.

Vertical vessel pumps are delivered for lower capacity (about 30 Mg/h), for bigger capacity horizontal vessel pumps are made.

Transporting pipeline leading from vessel pump has a few stages of inside diameter. Exact counting is necessary for proper choice of diameters of the pipeline and it's stages.

It is possible to make such a modification of the scheme which allows work with two vessel pumps through one pipeline (alternative ly).

Ash silo is equipped with an ash aeration system in it's conical bottom (to make ash discharging process easier) and with an air cleaning system for air being discharged outside from the silo. The cleaning system has a battery or cyclones and a bag filter. Ash from the silo is discharged with pneumatic batcher and nextly ash transport may be realized in „dry state“ (for example with special „discharging sleeve“ to the railway car or truck) or in „wet state“ (with two axle worm conveyor to the different kinds of wheel transport or belt conveyor).



PNEUMATIC ASH HANDLING SYSTEM WITH BLOWING APPARATUSES AND TRANSPORT WITH VESSEL PUMP TO ASH SILO

Diagram shows pneumatic ash handling system of electrostatic precipitator with blowing apparatuses and ash transport with vessel pump to the ash silo with possibility of ash discharging to the different kinds of transport facilities.

This diagram is realized in the case when discharged electrostatic precipitators are low situated and it is impossible to use a system of fluidslides.

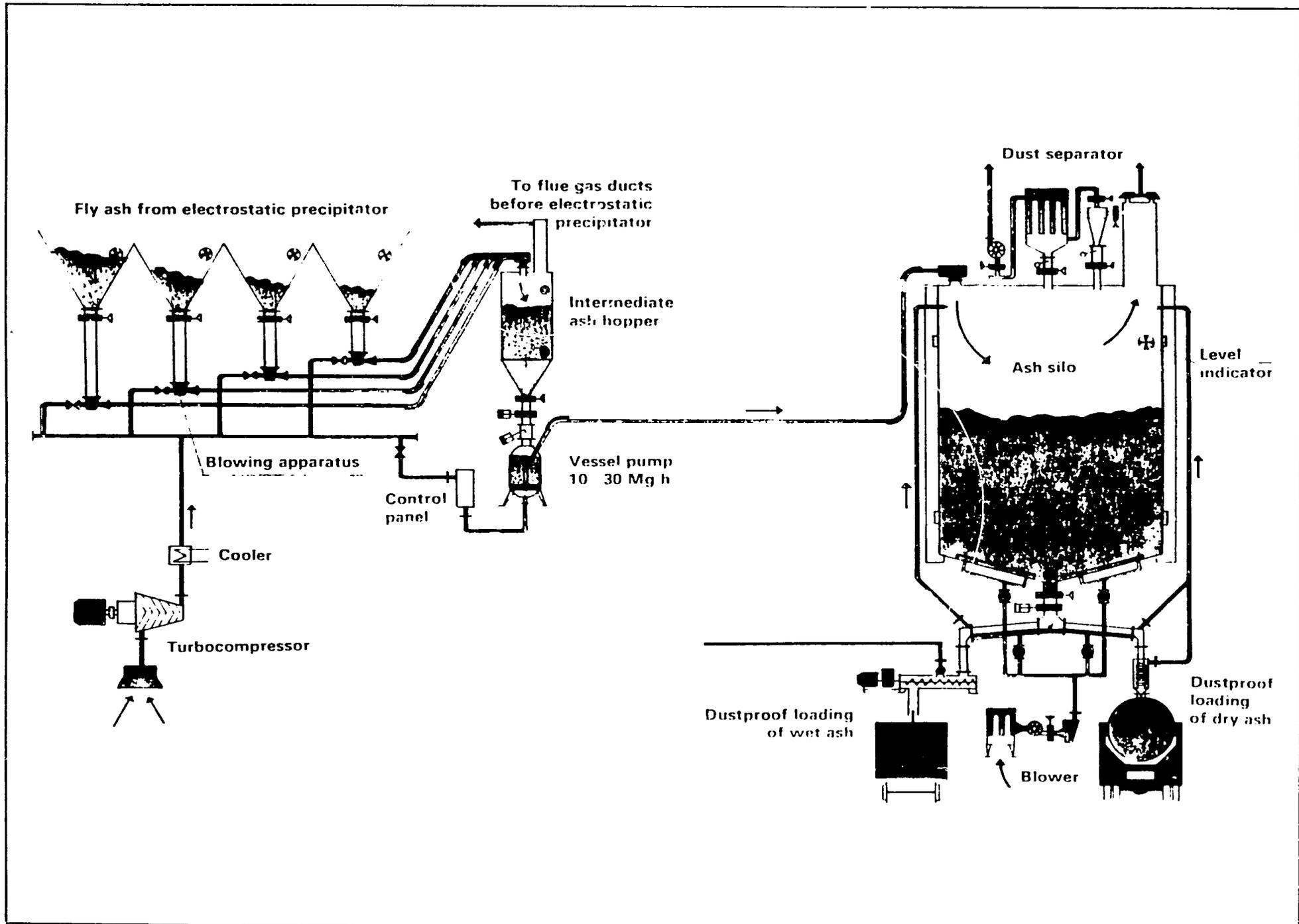
Each hopper of the electrostatic precipitator is equipped with a flat valve, blowing apparatus and level indicators

Each blowing apparatus delivers ash with individual pipeline to the intermediate ash hopper. Intermediate ash hopper is vented to flue gas ducts before electrostatic precipitator

Vessel pump situated under intermediate ash hopper works cyclically and automatically. Ash transport pipeline has a few stages of inside

diameter. Diameter stages and their length are chosen by exactly counting.

Ash silo is equipped with ash aeration system in its conical bottom (to facilitate proper ash discharging process) and with air cleaning system for air being discharged outside from the silo. The cleaning system has a battery of cyclones and a bag filter. Ash from the silo is discharged with pneumatic batcher and next ash transport may be realized in „dry state“ (for example with special „discharging sleeve“ to the railway car or truck) or in „wet state“ (with two axle worm conveyor) to the different kinds of wheel transport or belt conveyor.



PNEUMATIC ASH HANDLING SYSTEM WITH FLUIDSLIDES AND HYDRAULIC TRANSPORT TO WET ASH DISPOSAL AREA

Diagram shows pneumatic–hydraulic ash handling system of the electrostatic precipitator and hydraulic transport with slurry pumps to wet ash disposal area.

Each hopper of the electrostatic precipitator is equipped with a flat valve, flap valve and level indicators. Ash from each hopper is delivered via flap valves to the system of fluidslides. Main fluidslide delivers ash to intermediate ash hopper. The intermediate ash hopper is vented to gas ducts before the electrostatic precipitator. Fluidslides are fed with air from radius fan. Air is filtered and heated to 80°C to facilitate proper ash transport.

Ash is transported hydraulically with hydro jet pumps to sump reservoir of the slurry pumping station. Ash can be delivered from several electrostatic precipitators to the main channel connected with the slurry pumping station. The slurry pumping station is equipped with a minimum of two pump sets, one working – one on stand by. There is a metal separator and cut valve before each pump.

Transporting pipeline is led to wet ash disposal area, which is a kind of a big ground clarifier. Cleaned water is delivered through a special over flow device to return water to pumping station. Return water pumps have enough head pressure for delivering water to the power station and directly feeding hydro jet pumps – therefore creating a closed cycle.

→ Fly ash from electrostatic precipitators

Level control

To flue gas ducts before electrostatic precipitators

Intermediate ash hopper

System of fluidslides

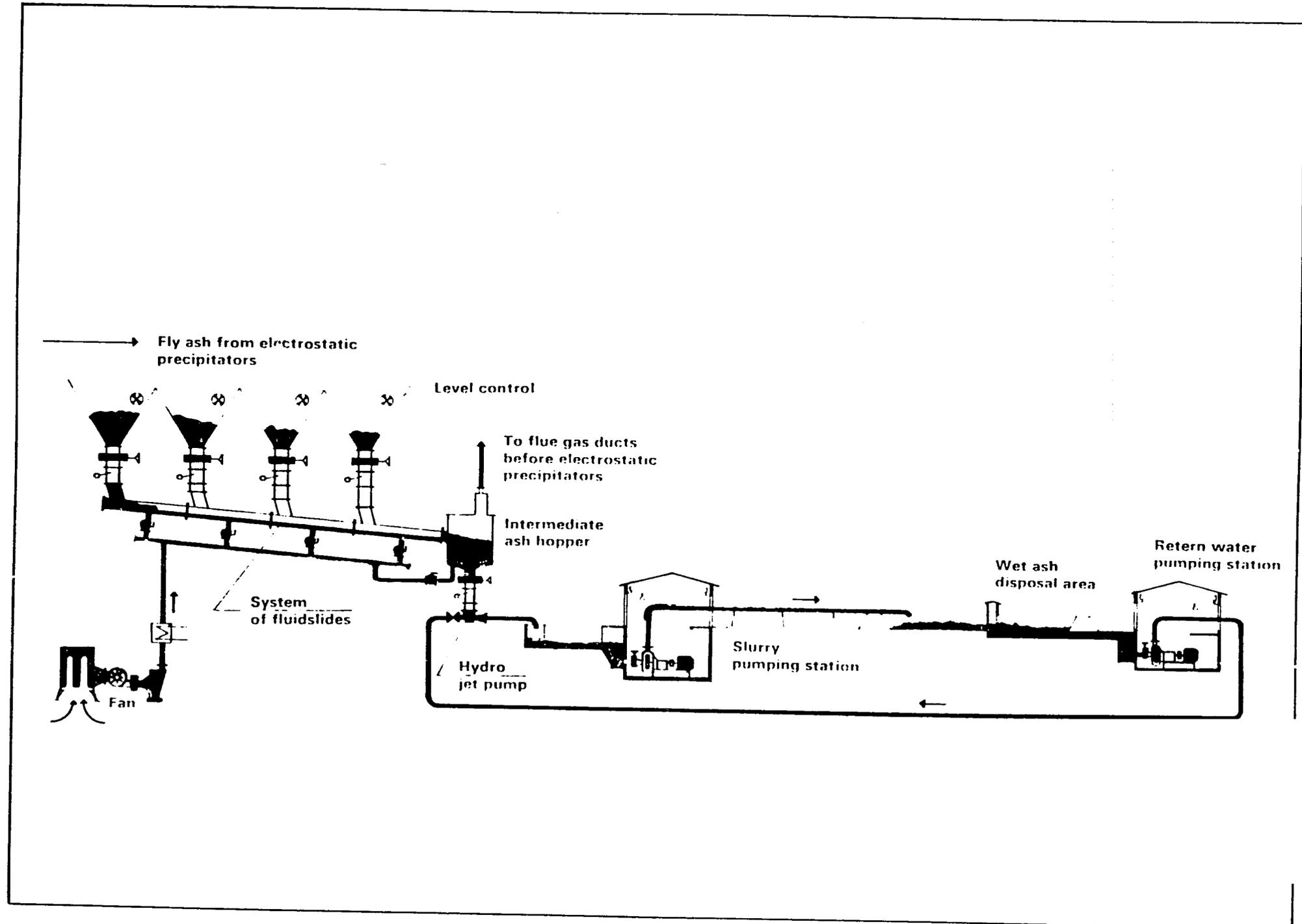
Fan

Hydro jet pump

Slurry pumping station

Wet ash disposal area

Return water pumping station



PNEUMATIC ASH HANDLING SYSTEM WITH FLUIDSLIDES AND HYDRAULIC TRANSPORT OF DENSE „PULP“ TO WET DISPOSAL AREA

Diagram shows pneumatic ash handling system of electrostatic precipitators with fluidslides, nextly delivering ash to the silo and transport of dense „pulp“ to wet disposal area.

The installation in its pneumatic part works in a constant manner at a very low pressure, doesn't require compressors but needs only Root's type fans and blowers. Hydraulic transport is realized with piston diaphragm-pump of high pressure. Due to this it is possible to obtain high concentration of ash and water mixture and transport for a distance of tens kilometers.

Ash from electrostatic precipitators is discharged on fluidslides system situated below.

Each ash hopper of electrostatic precipitators is equipped with a flat valve flap valve and level indicators. Main fluidslide gives ash to air lift. Fluidslides are fed with air from the radius fan. Air is filtered and heated to 80°C to facilitate proper ash transport .

Air lift is used as a vertical ash transport facility from the main fluidslide to the silo. Air lift is fed with air from the blower at a pressure of about 0.03 - 0.06 MPa chosen according to its technical parameters.

Ash silo is equipped with an ash aeration system in its conical bottom to facilitate a proper ash discharging process and with an air cleaning system for air being discharged outside from the silo.

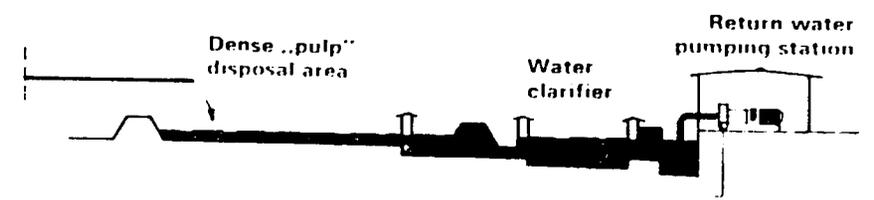
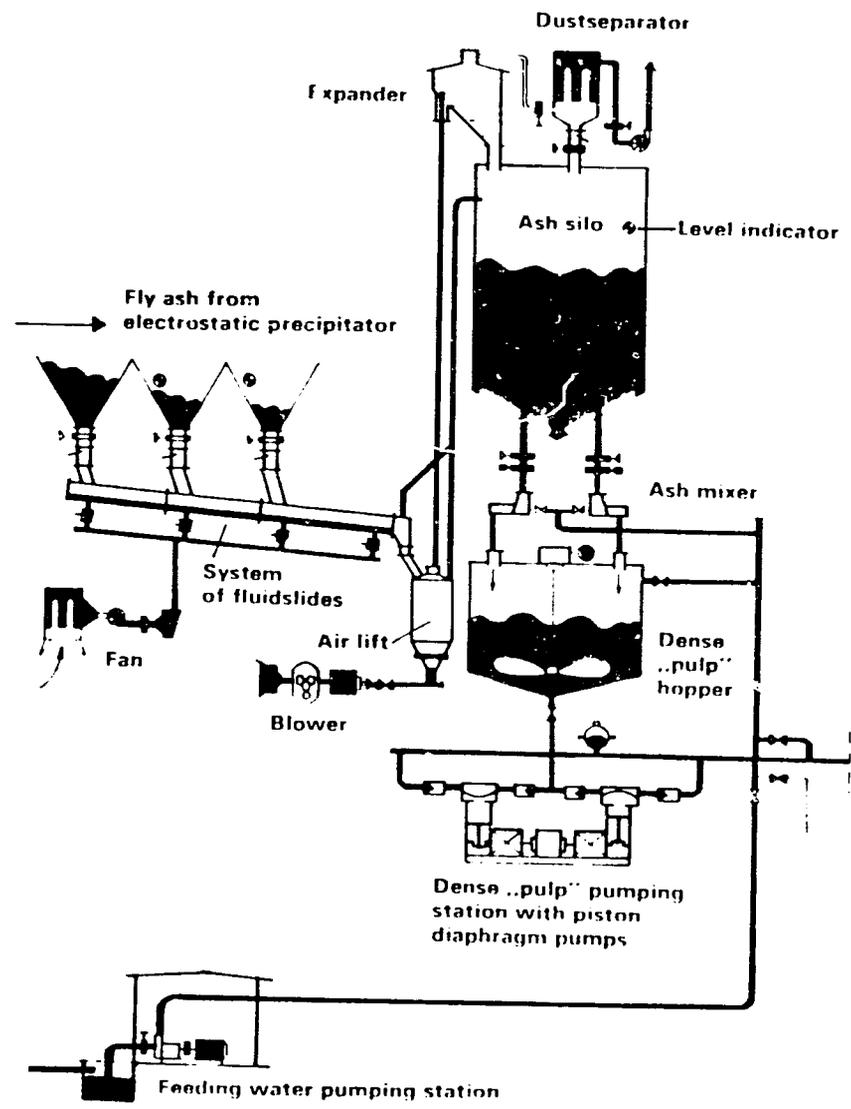
The installation for preparation dense „pulp“ of foreseen concentration (not less than one kilogram of ash per one kilogram of water) is situated under the silo.

Dense „pulp“ is delivered by pipeline to „long distance pumping station“. The pumping station is equipped with two sets of pumps (one working, the second on stand by). A pump set has a piston diaphragm pump, ball valves (one inlet and outlet), pressure stabilizer and electric motor.

The discharging pipeline goes to the wet disposal area.

Depending on the concentration of dense „pulp“ and hydrogeological earth conditions a partial closing of the water cycle may prove necessary. It means a part of return water from wet disposal area will be used for making dense „pulp“.

The main spring feeding installation of preparing dense „pulp“ is the flushing water pumping station on the premises of the power station



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ENERGOPROJEKT

is Poland's major international power engineering study and design company. Established in year 1949, employees near: 3000 engineers and

assistants in 7 offices:

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ENERGOPROJEKT KATOWICE Jesionowa 15 Str. tel. 59-72-61, tlx 0315666

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ENERGOPROJEKT WARSZAWA Krucza 6/14 Str. tel. 21-02-81, tlx 812680

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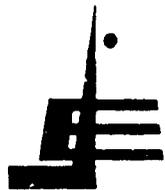
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Nearly all power plants (32,000 MW), combined heat and power plants (district heating plants), district heating networks, HV and MV transmission and distribution network in Poland, have been designed and supervised by Energoprojekt's designers.

ENERGOPROJEKT

offers:

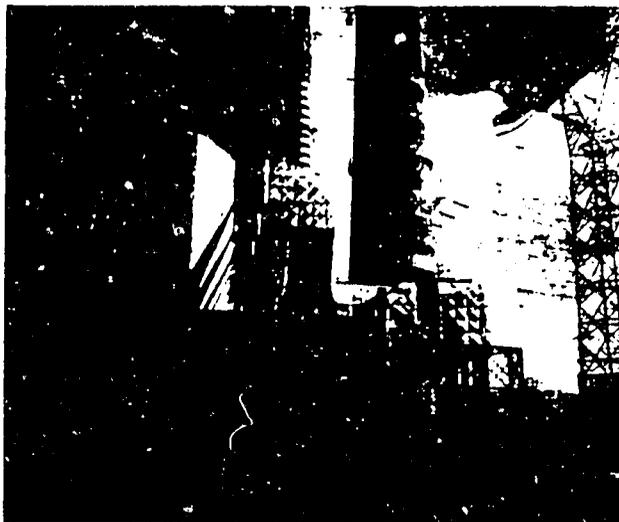
- study and prognosis of power industry development
- technical and economical analyses
- study of power plant location
- design of all power industry sectors as well as transmission and distribution network
- consulting services
- supervision of power plant erection, start up and trial run
- design and production of some special equipment for power industry



POWER ENGINEERING STUDY AND DESIGN COMPANY - HEAD OFFICE

ENERGOPROJEKT

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ENERGOPROJEKT offers design and completion in scope of the gas desulphurization (FGD), coal enrichment and another methods to limit harmful compounds in co-operation with well-known foreign companies

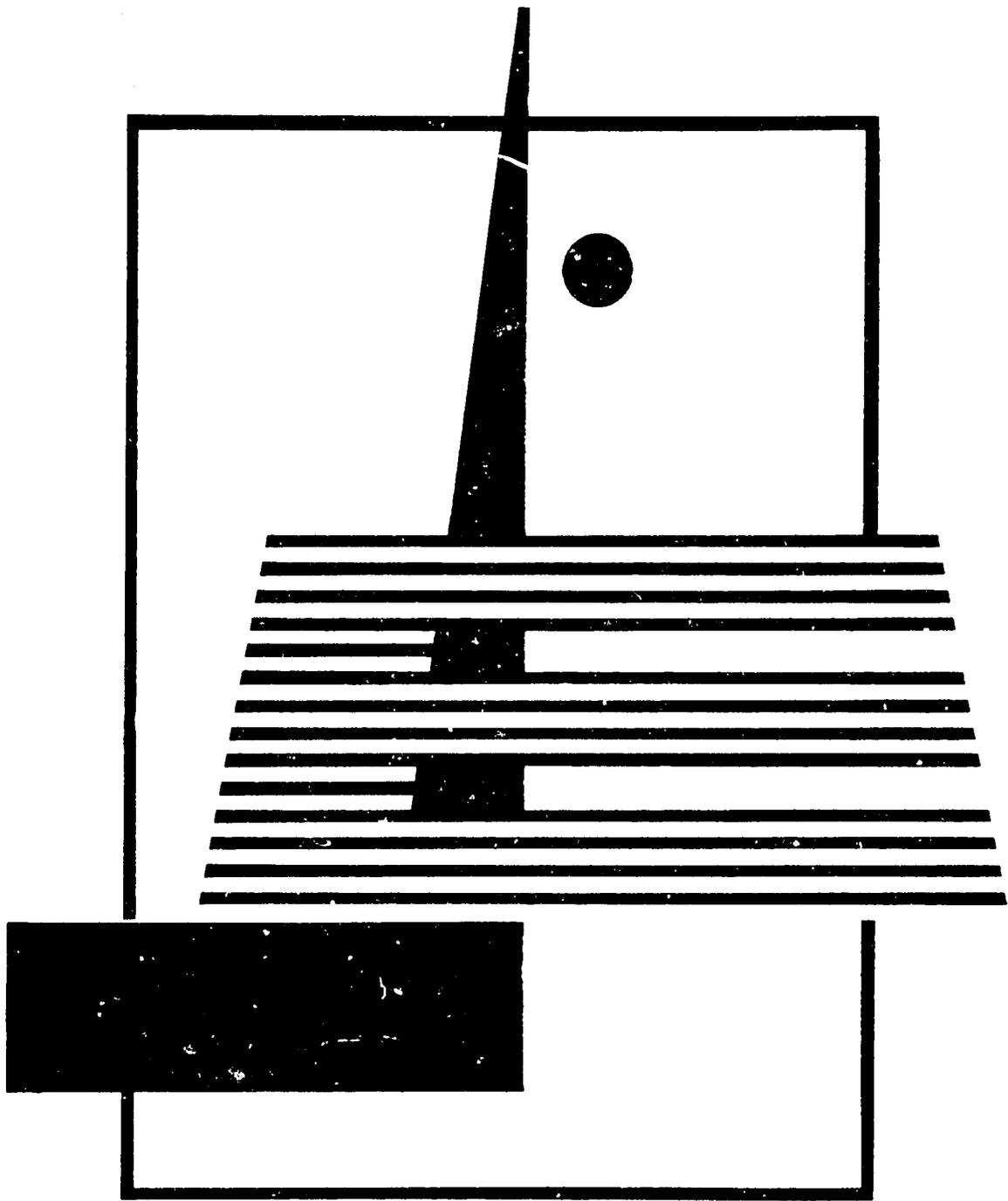
ENERGOPROJEKT

TAKES STEPS TO ADJUST POWER PLANTS AND DISTRICT HEATING PLANTS FOR NEW ENVIRONMENT PROTECTION RULES BY DESIGNING NEW ADDITIONAL INSTALLATIONS WHICH WILL MAXIMUM DECREASE THE ENVIRONMENT POLLUTION FROM POWER PLANTS

ENERGOPROJEKT

takes steps to adopt new technology for utilization of ash and FGD installation deposits

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ENERGOPROJEKT

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04 - 308 WARSZAWA
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fax 44-77-58

Regon P-012508321-94901005 59-2-893-01005
Bank: XIV O/PKO BP Nr r-ku 1645 - 66107 - 136

Warsaw, 9 February 1992.

Our sign: 3/en/92

HARZA ENGINEERING COMPANY

Senior Vice President
Mr. Robert H. STAPLIN
Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6392

Dear Mr Staplin,

Referring to our discussion in Warsaw and replying to your questionnaire I have the pleasure to send you following information:

- Item 1. A short description of my company is given in a separate attached information. We launched our activity on 1 August 1991. The contact person is the President of company Dr Jacek JANCZAK. We are organizing for each project a task force. In December 1991 our highly specialized staff was about 25 person. I am also sending you my brief C.V.
- Item 2. The main factor in this region is a very deep crisis in the economy. Nobody know how long it will take place. The prospects in my opinion are rather dark. We are and should be in the future very flexible in our activity.
- Item 3. Unfortunately no.
- Item 4. Not existing.
- Item 5. Yes.
- Item 6. Having very good knowledge of the energy, environment and economy problems in this region we could save a lot of money serving as consultant and cooperater for American companies, in finding solutions for energy problems.

- Item 7. a) Lack of knowledge and interest from US entity.
 b) Difficult financial situation of Polish Companies, very high interest rate for credit, unstable situation in the economy.
 c) Low level of understanding of the energy problems in the industry.

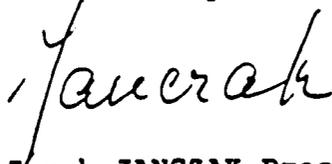
- Item 8. According to our knowledge we can list following problems:
1. Search for natural gas and possible oil, including future production.
 2. Energy conservation including better insulation of housing.
 3. Modernization of coal industry including coal cleaning.
 4. Modernization of town heating systems (most of large towns have heating power stations and town heat pipeline network)
 5. Modernization of electricity transmission lines and grid.

Item 9. See item 7. b and c.

Item 10. For each of problems mentioned in item 8 we could find at your request several specific projects even including environmental projects, for example such as desulphurization plants for large power stations or coal cleaning plants. But essential is financial part of the project and its profitability.

If you have any other questions dont hesitate and contact us. We will be happy to answer as soon as possible.

Yours sincerely



Dr Jacek JANCZAK President of DOMAT Co. Ltd.

DOMAT Co. Ltd.

ul. Lubieszowska 6
04 - 308 WARSZAWA
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DOMAT Ltd was founded by dr Jacek Janczak, formerly, for many years member of the secretariat of the United Nations in Geneva, dealing with environmental issues and influence of energy economy on the environment, adviser to the government of India and other Asian governments on environment and energy economy related issues, in Poland leading specialist in the field of Polish power industry and pioneer in the protection of the environment. Our collaborators are experienced specialists with important foreign practice, often holders of scholarships in worldwide renowned universities and institutes, who have formal qualifications in their field.

We are specializing in the following fields:

Protection of environment - complex solutions to environmental problems and design of equipment for protection of air and water as well as for waste economy. Appraisal of existing equipment and its modernization, which includes technical supervision. Full range of measurements both of the equipment efficiency and of the degree of pollution at the site. We design and, at the customer's demand supply measurement networks to control the pollution together with computerized gathering and evaluation of the results. Solutions to problems related to water economy together with design and research.

Organization of tenders according to the International FIDIC regulations - organization of tenders, analysis of the results and fulfillment of "engineer's supervisory function according to FIDIC". We can also take over from the customer the investment supervision as well as prepare agreements and contracts.

Construction and modernization of machinery and production processes - preparation of production process organization together with its automation, design with supply of automating and proportioning devices.

Rationalization of energy economy - limitation of use of energy in industry and municipal facilities as well as in private houses. New sources of energy.

Hydraulic engineering constructions - evaluation of technical conditions of facilities, design and modernization of such facilities together with research and measurements.

Introduction of computers into untypical processes - introduction of computers into specially designed systems. Special computer programs. We are a licensed dealer of ~~Ward~~ ~~Department~~ Corporation.

Preparation of documentation, records and translation, organization of conferences, interpretation, publishing - specialized publications, translation and complete preparation of documents, at request transcription of documents in special computer programs, organization of conferences with simultaneous translation and publication of documents, organization of exhibitions, training courses and seminars, etc.

Warsaw 8 February 1992.

Jacek JANCZAK Dr Sc.
Mech. Ing.
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02 -606 Warsaw
Poland
Tel/Fax 48-22- 44 77 58

Education: Warsaw Technical University (Politechnika Warszawska)
1945-1950 Mech. Dep., Master of Science 1951.
Doctor of Science 1964.

Experience: 1947-1951 Designer of thermal power stations,
1951-1958 "Energoprojekt" (polish main power design office)
Chief expert for thermal power stations,
1959-1961 Central Generating Board - Warsaw Chief engineer
for power stations and environmental problems,
1961-1969 Adviser to the Minister for Energy Policy,
1969-1972 Director of National Air Pollution Control Office,
1972-1974 Organizer and Director of Environment Protection
Institute,
1974-1979 United Nations - ECE Geneva staff member (environment
and energy problems, among others secretary for preparatory work
for Transboundry Pollution Convention, adviser to the Government
of India, etc),
1980-1983 Director of Energy R & D center in Warsaw,
1984-1986 Adviser to the Minister of Environment Protection and
Natural Resources,

1953-1972 Lecturer at Warsaw Technical University and University
of Warsaw (power station design, two phases flow, environmental
protection policy),
1974 Visiting professor at the summer school for energy and
environment problems organized by University of Paris and
Technical University of Lausanne,

1986-1991 Independent consultant,
1991- Organizer, Owner and President of "Domat Co. Ltd."
(DOMAT Spółka z o.o.) company dealing with energy and
environmental problems.

References in Canada:

Mr. Robert Connelly
address: 106 Coburn Ave
Kanata Ont.
K 21 G 3
Canada
phone home: 613 836 4969
office 819 997 2711

POLSKIE SIECI ELEKTROENERGETYCZNE S.A.
/ POLISH POWER GRID COMPANY /

ul. Mysia 2
Warszawa 00-496
tel: (48-2)-693-13-26
tlx: 81-46-11pdmp1
fax: (48-2)-628-59-64

TELEFAX TRANSMISSION

Date: March 5, 1992

Company:
HARZA Engineering Company
Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6392
fax: 0-01.312.831.3999

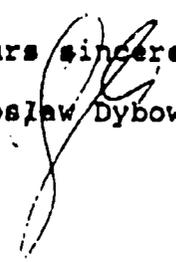
Attention to:
Mr ROBERT H. STAPLIN
Senior Vice President

Number of pages: 1-4

Dear Mr Staplin,

Please find herein the answers for your questionnaire.

Yours sincerely
Jarosław Dybowski



**USEC
EEEC**

U.S. and Eastern Europe Engineering Community

Energy and Infrastructure

Czechoslovakia, Hungary and Poland

QUESTIONNAIRE

Answers of Polish Power Grid Company

1. Polskie Sieci Elektroenergetyczne S.A.
/ Polish Power Grid Company / PPGC

Address:

2 Mysia street
00-496 Warsaw
tel: (48-22) 21.49.04
fax: (48-2) 628.59.64
telex: 81.46.11 pdm pl

Polish Power Grid Company is a joint-stock company fully owned by Polish Treasury represented by Ministry of Industry.

The company is operating in the territory of the Republic of Poland and has its headquarters in Warsaw and five branch offices in Katowice, Bydgoszcz, Poznań, Radom and Warsaw.

The goal of the company activity is to ensure the Polish Electrical System operation on the economic way, taking into consideration the energy supply quality for the final consumers.

The aims of the company business are:

- administration of the Polish Electrical System,
- management of the high voltage grid,
- domestic electricity trade,
- export and import of electricity,
- development of the high voltage grid,
- environmental protection against the harmful effect of the electricity production, transmission and distribution,
- construction of the HV facilities and pumped storage plants.

Furthermore the company executes the special tasks concerning management of the overall electrical sector in Poland, assigned by the Minister of Industry.

The total number of company employees is 770.
/An organization chart is attached/

2. On the way to the market economy Poland has started deep structural changes within Polish power sector. Power and Brown Coal Board, fully centralized organization, was finally dissolved on September 30, 1990. At present Polish power sector is divided into three economically and operationally interrelated subsectors which are as follows:

* generation - power and CHP plants representing 29 000 of total 32 000 installed capacity,

* transmission - total length 12 150 km consists of 750, 400 and 220 kV lines and 81 substations,

* distribution - 33 independent companies operating transmission and distribution networks of 110 kV and lower.

All enterprises belonging to above mentioned sectors are independent and directly subjected to the Ministry of Trade and Industry. Within 3 or 4 years all the enterprises should be transformed into state stock companies.

3. The company has a working relationship with several U.S. entities:

3.1 Working relationships regarding the USAID activities (Mr Robert Ichord), including partnership programme, seminars and consulting.

3.2 Joint-stock companies with US capital:
Destec Energy Co.

3.3 Consulting services
Harza Engineering Company
SEI

3.4 Suppliers
CD-Empros - Dyster
Alcoa Fujikura

3.5 US partners involvement to the Polish Generation Sector investments (United Energy Partners, ENRON)

4. As mentioned above.

6. Our goal is to develop the USAID programme. We are interested in necessary consulting. What concerns the US suppliers the international tendering rules are applied.

7. The current obstacles that would hinder the development of the above programs are as follows:

- * language,
- * market economy knowledge.

8. The list in order of importance the major energy and infrastructure problems facing our country:

- 8.1 Organization of all over electricity sector
- 8.2 Interconnection of Polish power system to the UCPTE system, upgrading the customer's service quality
- 8.3 Development of transmission capabilities
- 8.4 Improvement of generation efficiency
- 8.5 Reducing the environmental impact
- 8.6 Pricing

9. The major obstacles preventing our country from addressing these problems:

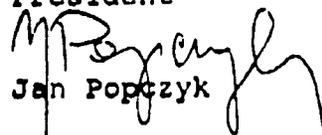
- * transient state to the market economy,
- * fuels and electricity prices are still controlled by the government,

10. The list of specific energy and infrastructure projects that could be of interest to US entities:

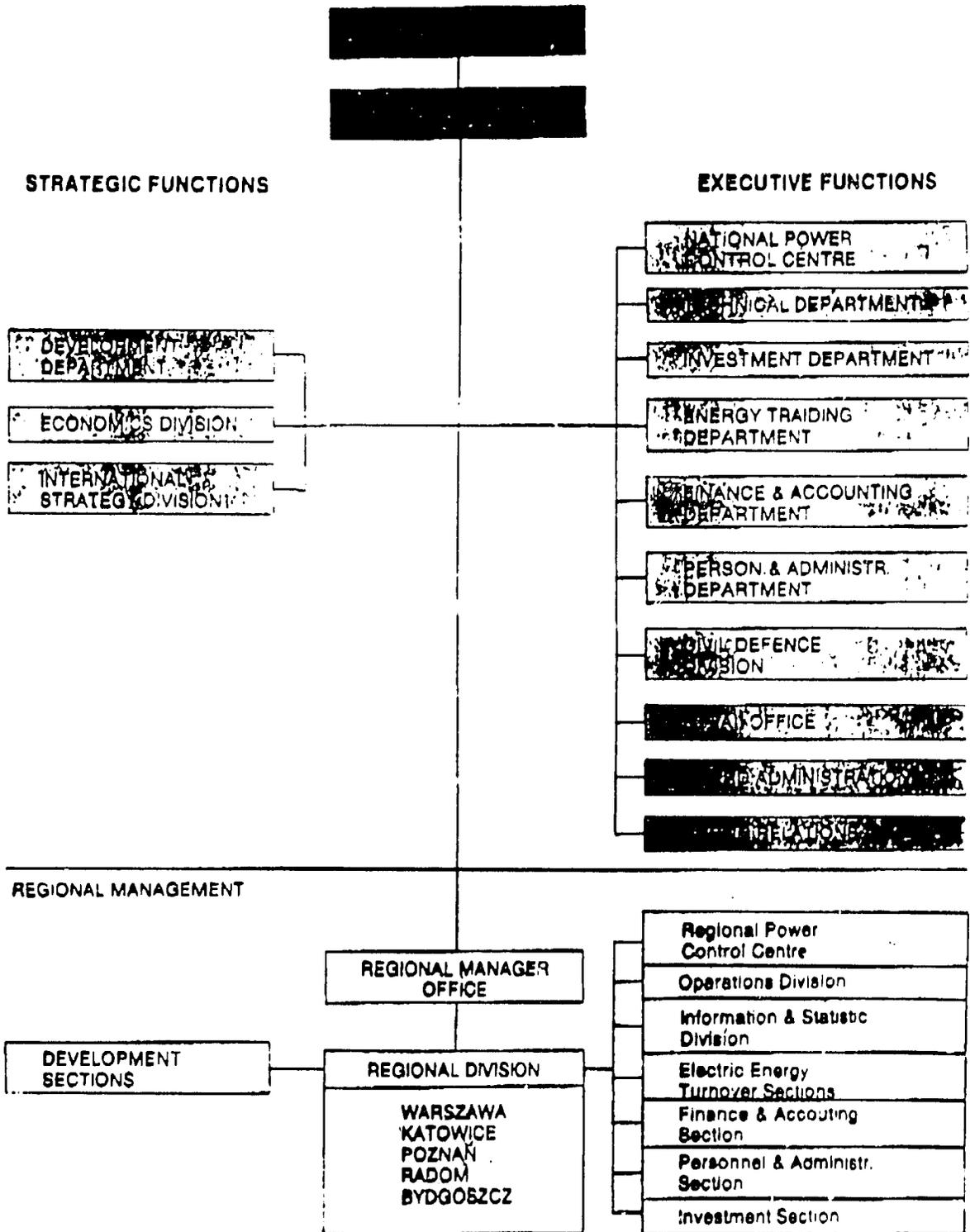
- * refurbishment of particular power plants,
- * upgrading of transmission system.

Detailed information are available in PPGC.

President


Jan Poptzyk

**POLISH POWER GRID COMPANY
ORGANISATIONAL CHART**



Subject: USAID Role of U.S. Engineering Organization
Eastern Europe Energy and Infrastructure.

QUESTIONNAIRE

1.

Name of Company: ELEKTRIM Towarzystwo Handlowe - Spółka
Akcyjna

Headquarters Address: ul. Chałubińskiego 8, 00-950 Warsaw

Form of Company: A joint-stock company

Description of Company: The Company's activities include, particularly, activities in power engineering, electrical machinery, and the electrotechnical, electronic and telecommunications industries. Company acts on its own account or in favour of third parties covering domestic and international trade, as well as manufacturing, rendering services and conducting financial operations, in Poland and abroad.

Major business of Power Project Division is the construction, on a turn-key basis, of power stations in a number of countries as well as imports of power plant equipment, FGD installations for Polish power plants.

Contact person: Z. Baszkowski, Senior Executive Manager
phone: 48 22 302108,

fax: (48) 38120437

2.

ELEKTRIM S.A. has started public offering of its shares.

3.

Our Power Project Div. has come into the Host Site Agreement on behalf of Skawina Power Plant with AirPol Inc. (Polish Retrofit Installation under the US DOE Program.

4. & 5.

We are interested to develop program of Lower Vistula Cascade project covering seven hydro-power plants of the total output approx 1,000MW. The project is still under prefeasibility study and due to the serious situation of economy and Polish Authorities not yet undertake decision to run the project. Therefore it is necessary to look for the public sources as

well as international capitals. In this giant project we may follow American Tennessee Valley Programs.

There are several U.S. entities preliminary interested in the Vistula Cascade Project. U.S.AGENCY FOR INTERNATIONAL DEVELOPMENT and World Bank has been informed about the said Project, too.

6.

6.1 Joint Venture

6.2 Public offering of shares

7.

7.1 Lack of financial sources

8.

8.1 98 % of Polish power plants are with hard coal and lignite fired boilers

8.2 a small amount of pump storage hydro-power plants

8.3 the number of Polish power plants (nearly 10,000MW) needs retrofit, after 20 - 30 years of operation.

8.4 lack of highways in Poland

8.5 high density of Vistula water's pollution

9.

9.1 considerable changes of Polish economy and lack of stabilization.

10.

No guess . To be discussed