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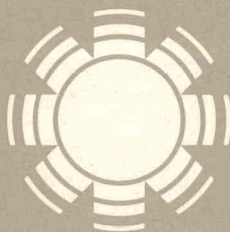
October 1978

Department of Energy
Contract No. EG-77-C-01-4042

**Host for
International Visitors**

**Progress Report
January 1 - June 31, 1978**

MASTER



SERI

Roy B. Bracken

Solar Energy Research Institute

1536 Cole Boulevard
Golden, Colorado 80401

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HOST FOR INTERNATIONAL VISITORS

PROGRESS REPORT
JANUARY 1 - JULY 31, 1978

ROY B. BRACKEN

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Solar Energy Research Institute

1536 Cole Boulevard
Golden, Colorado 80401

A Division of Midwest Research Institute

Prepared for the
U.S. Department of Energy
Division of Solar Technology
Under Contract EG-77-C-01-4042

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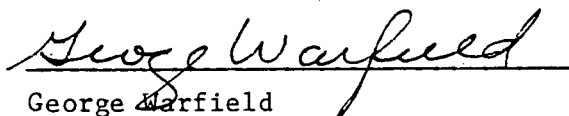
PREFACE

This program plan task was performed in compliance with Contract Number EG-77-C-01-4042 for the Division of Solar Technology of the U.S. Department of Energy. The task was authorized by letter, U.S. ERDA, Division of Solar Energy, H.H. Marvin, Director, dated July 1, 1977, and is included in the Preliminary Draft of the SERI FY78 Annual Operating Plan as Task 4308 for the International Programs Branch. The report was prepared by the professional staff of the International Programs Branch of the Solar Energy Research Institute, a Division of Midwest Research Institute.

Members of the Information, Education, and International Programs Division involved in formulating this report were Carol Shea and Roy B. Bracken (Task leader).

Approved for:

SOLAR ENERGY RESEARCH INSTITUTE



George Warfield
Assistant Director
Information, Education, and International Programs

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ABSTRACT

This report sets forth the rationale and need for the task. It provides SERI's program statement, activities engaged in, and a discussion of the several visits with accompanying names of international visitors. Approximately 80 international visitors representing 38 countries visited SERI for purposes of information exchange during the reporting period.

SECTION 1.0

INTRODUCTION

During the period January 1 through July 31, 1978, the Solar Energy Research Institute received and hosted approximately 80 international visitors representing 38 countries. These visitors came singly and in groups, and included scientists, engineers, industrial representatives, and government officials of every rank from mayors of cities to persons at the ministerial level of their countries. These visits clearly have shown that international cooperation in solar energy activities will continue to increase, and is of immense value to the United States' ongoing effort to remain a world leader in the development and perfection of solar technologies. Additionally, the visits in and of themselves manifest the regard and esteem in which this Nation's research and technical capabilities are viewed by other members of the world community. The Republic of Korea has expressed an interest that the Solar Energy Research Institute of Korea and SERI-USA establish and maintain a strong and viable working relationship. We have observed an increasing interest in solar activities worldwide and a corresponding increase in solar programs and budgets in many nations.

SERI has, through these efforts, provided valuable assistance to the Department of Energy in meeting with foreign visitors on a personal basis. We expect to see increased activity in the solar field between the United States and its Latin American neighbors as a result of the number of visitors from South and Central America.

SECTION 2.0

PROGRAM STATEMENT

The hosting of international visitors has provided major opportunities for technical and programmatic information exchange. In terms of substantive benefits to the United States it is clear that agreements such as that concluded with Saudi Arabia help maintain the technological pre-eminence of the United States. The continuation of these visits will further enhance SERI's ability to promote active solar R&D cooperation on the international level, to discuss the many problems that will require resolution if technology commercialization and transfer are to take place, and to negotiate effective international agreements.

This function will give SERI insights into the many practical problems associated with the coupling of U.S. and foreign solar development activities, with integration of solar systems into the energy development programs of developed and developing countries and the institutional problems that will be encountered during such integration, and with the potential role of the various solar energy technologies. It should provide an assessment tool to define the role that solar energy can play in U.S. international relations.

SECTION 3.0

SUMMARY

During the reporting period, SERI hosted approximately 80 foreign visitors from 38 different countries. The continents and numbers of countries they represented were as follows: Africa, 3; Asia, 7, Europe, 10; North America (Canada), 1, South and Central America, 15; Australia, 2. (See Appendix A.) For each visit, the Institute attempts to present a standard program which consists of a general overview of the organization of SERI, a discussion of our international programs, and a slide presentation of the various solar technologies, prior to dealing with areas of specific interest to the visitors. We have received assistance from many sources in making this a successful program. We would like to express our gratitude for the fine assistance and cooperation we have received from the many agencies and people interested in, and concerned about, international visitors. A list of visitors to SERI during the reporting period is contained in Appendix B.

SECTION 4.0

DISCUSSION OF VISITS

The following is a synopsis of each visit. The sponsoring (contact) organization is listed after the date.

- January 12, 1978--Organization for Economic Cooperation and Development (OECD), Paris, France.

Dr. Ferenc J. Juhasz, Principal Administrator of OECD's Environmental Directorate, visited Alex Kotch and Dennis Schiffel. SERI's organization and missions were discussed. Dr. Juhasz explained that OECD is not directly involved in solar activities, but is affiliated with the International Energy Agency which has several solar projects.

- February 3, 1978--Agency for International Development/Labor Department, Taiwan.

Hong-Ting Yih, Section Chief, Energy Policy Committee, Ministry of Economic Affairs, met with several SERI staff to discuss commercial and competitive aspects of solar cooling of buildings.

- March 7, 1978--U.S. Department of State/Institute of International Education, Brazil.

Octavio A. DeBrito, Deputy Secretary, Department of Science and Technology, University of Minas Gerais, met with Roy

Bracken and Don Hardy. Several solar technologies were discussed. Emphasis was on the potential of wind energy for centralized uses and for decentralized applications: agriculture, rural electrification, mining, and in light industrial centers. Dr. Hardy discussed wind technology in the United States--types of wind machines being developed, the DOE National Wind Energy Program, and major laboratories involved.

- March 9-10, 1978--U.S. Treasury Department/Department of Energy/Saudi Arabia National Center for Science and Technology.

A delegation of seven Saudi Arabian scientists, led by Dr. Rida Obaid, director of the Saudi Arabian National Center for Science and Technology, visited SERI as part of the planning process for the joint U.S./Saudi Arabia Agreement for Cooperation in the Field of Solar Energy. The delegation was escorted on tour of the Small Wind Power Test Site at Rocky Flats and the experimental solar homes at Colorado State University. They were entertained at the pioneer solar home of Dr. George Lof in Denver and at a reception given by Dr. Paul Rappaport at the Hiwan Country Club in Evergreen. One day of the visit was devoted to discussions on solar technologies with SERI staff and to exchange of views as to the Joint Agreement program.

- March 16, 1978--The African-America Institute, Ghana.

Dr. Frank Obend Kwami, Dean, Faculty of Engineering, University of Science and Technology, Kumasi, met with Jack Stacy, Darian Diachok, George Warfield, and Gary Nuss, and discussed solar R&D at the university and industrial level.

- April 1978--Royal Institute of Technology, Sweden.

Bengt Hidemark of the Swedish Center for Building Technology in Stockholm met with Ron Judkoff to discuss passive solar and energy conserving design.

- April 5, 1978--Istituto di Fisica dell' Universita, Rome, Italy.

Professor Andrea Frova met with Roy Bracken and discussed photovoltaics and the infrastructure relative to all technologies.

- April 7, 1978--U.S. Department of State/Institute of International Education, Japan.

Yasunari Magami, political reporter for ASAHI SHIMBUN, Tokyo, visited several SERI staff members. An overview of SERI was provided and the U.S. energy situation was discussed.

- April 1978--Research Development Institute/Kibbutz Industries Association, Israel.

Dr. Uri Marchaim, Project Director, met with Dan Jantzen and Tom Reed. Digestion of farm wastes as a total energy source was discussed.

- May 1-31, 1978--University of Western Ontario

Professor James Bolton was at SERI during May as a consultant to the Bio/Chemical Conversion Branch. He presented a 10-lecture series: "Photochemical Conversion and Storage of Solar Energy to Electricity and Fuels."

- May 1,2,5, 1978--U.S. Department of State/Institute of International Education

On May 1, 1978, SERI hosted a delegation of 15 Koreans lead by the Minister of Energy, Mr. Yie-Joon Chang. As a result of this meeting, Minister Chang modified the travel schedules of Professor Tae Soon Yim, President of the Solar Energy Research Center of Korea and Dr. Won-Hoon Park, of the Korea Institute of Science and Technology, in order that they could meet with several members of the SERI staff. During May 1,2, and 5, Dr. Park and other members of the delegation met with Mr. Bracken of the International Programs Branch and indicated that Korea is desirous of establishing a sister laboratory relationship between SERI and SERC. Professor In Kil Hwang, Vice President of the Korean Association of Colorado has been appointed Korea's liaison to SERI.

- May 15, 1978--International Communication Agency, New Zealand.

Mr. Louis W. Patterson, Public Affairs Specialist with the American Embassy, met with Roy Bracken and Bill Stephenson. Solar technologies were discussed, specifically biomass and domestic heating and cooling.

- May 16, 1978--African-American Institute, Niger.

Dr. Abdou Moumouni, Director, Office of Solar Energy, Niamey, met with several SERI staff. Solar equipment (reflector materials and solar concentrators) and economics of distributed collectors were discussed in relation to agricultural applications.

- May 18, 1978--Iran.

Mr. Saeed, Consulting Engineer, met with Ron Larson, Murrey Goldberg, and John Ashworth, and discussed commercialization of solar energy.

- May 19, 1978--Utkal Automobiles, Ltd., Jamshedpur, India.
Dinesh Parikh visited with Roy Bracken and Dave Feasby. Commercialization of solar energy equipment, cost effective hot water and space heating/cooling were discussed.
- May 22, 1978--Eidg. Institut für Reaktorforschung, Würlingen, Switzerland.
M. Real and R. Minder met with several SERI staff members and discussed cost/performance of solar thermal central receiver and distributed electric power systems. Research and development in solar thermal technologies in both the U.S. and Switzerland, as well as techniques for evaluating and ranking solar technologies were discussed. An overview of the Analysis and Assessment Branch's work in social research was presented. Ron Larson discussed national choices between solar technologies.
- May 22, 1978--Massachusetts Institute of Technology/ U.S.S.R.
Mr. Vadim Andronov, a fellow at the Alfred P. Sloan School of Management, met with SERI staff. Economics of solar energy, energy policy in the U.S.S.R., and management of energy resources, primarily fossil fuels, were discussed.
- May 25, 1978--International Communication Agency/Institute of International Education.
A delegation of visitors representing Central and South America countries visited SERI. An overview of SERI, including the slide/tape presentation, was given. Topics discussed included bilateral and multilateral agreements and educational/institutional exchanges.
- June 5, 1978--Central American Research Institute for Industry, Guatemala.
Ricardo Garcia met with Dennis Horgan and Tom Reed and discussed passive solar crop dryers for rural applications.
- June 5, 1978--International Communication Agency/Institute of International Education, Finland.
Dr. J. Routti, an Eisenhower Fellow, visited SERI.
- June 12, 1978--Instituto De Investigaciones Technologicas, Colombia.
Mr. J. Ayala Ramirez, Director, visited Darian Diachok. IIT's alternative energy data bank and possibilities for cooperation between IIT and SERI were discussed.

- June 19, 1978--Ben Gurion University, Israel, Institute of Desert Research.

Dr. B. Givoni met with several SERI staff. He was provided with an overview of SERI and IPB. Passive (hybrid) systems for heating and cooling of buildings, and research in Israel and at SERI were discussed.

- June 20, 1978--Agency for International Development, Bolivia.

Robert Adams, Chief Engineer, visited SERI and discussed solar greenhouse construction and possible solar projects for Bolivia with several SERI staff and Dr. Mark McCray of the Domestic Technology Institute

- June 20, 1978--Administrative Staff College, India.

Dr. R.K. Pachauri visited Tom Milne and Ron Larson and discussed the U.S. solar program, solar projections, and energy policies. Dr. Pachauri described a program starting in India involving hydrocarbon plants suitable for arid and semi-arid land.

- June 20, 1978--Promon Center of Technology, Brazil.

Dr. Sergio C. Trindade, Executive Director, visited SERI. He discussed his organization's solar energy work: commercialization; contract research studies on solar heating and cooling; solar drying of cassava chips, prior to use for fuel alcohol distillation; passive solar water heating systems; study of solar thermal steam generation for food processing in remote areas, for the cassava-alcohol process. Trindade discussed funding in Brazil. FINEP is the chief government funding agency. The National Solar Program has been very successful. FINEP has a hydrogen production project and the largest commercial program of biomass conversion for alcohol.

- June 26, 1978--Contech Ltd., Perth, Australia.

Mr. Darian Sampey visited SERI and discussed his company's evaluation of solar ponds for electricity generation facilities in Iran. Another of Contech's projects is a solar desalinization plant on the coast of Iran. Ken Brown, J. Jayadev, and Ben Shelpuk discussed work being done on shallow solar ponds in the U.S.

- June 27, 1978--International Communication Agency/Institute of International Education, Poland.

Andrzej Zalewski of Polish National Radio and Television met with Ken Brown and Dan Jantzen. Forms of solar energy for agriculture applications (specifically Biomass Conversion, Wind and Solar Thermal) and energy conservation measures on the farm were discussed.

- July 6, 1978--International Communication Agency/Institute of International Education, Greece.

Marinos Yeroulanos, National Council for Physical Planning and the Environment of the Ministry of Coordination, Athens, met with Ron Larson, John Ashworth and Eleanor Ramsey. Land use planning, energy, and the U.S. solar program were discussed with emphasis on aspects of the program that might be applicable to Greece. A solar village, to be built on Crete with U.S. assistance, was also discussed.

- July 10, 1978--University of New South Wales, Australia.

John Ballinger of the Department of Architecture met with Ron Larson and other staff members. Passive solar heating of buildings, funding of projects, Australian Government support of solar projects, and solar cooling of buildings were discussed.

- July 27, 1978--Dutch National Energy Council, Netherlands.

Dr. A.P. Oele, Mayor of Delft, and Chairman of the Dutch National Energy Council, met with Ken Brown and Gordon Gross. The structure and organization of SERI's Research Division, major topics of research and research priorities such as process heat, were described to Dr. Oele. Passive design and energy conservation were also discussed.

- July 31, 1978--Institute of International Education/Multiregional Project on Energy Research and Technology.

A group of 14 visitors from 11 countries visited SERI. An overview of the Institute and IPB was provided by Murrey Goldberg. Ben Shelpuk, Don Hardy, Tom Milne, Dan Jantzen, and Ken Brown presented SERI's activities in OTEC, Wind Energy Conversion, Biomass Conversion, and Solar Agricultural Applications. SERI's budget, relationship to Department of Energy, and goals were discussed.

- July 31, 1978--Israel.

Dr. Gideon Oron, Environmental and Water Resources Engineering Technician, Haifa, met with Dan Jantzen and discussed SERI's relationship to the Department of Energy, and research in Bio/Chemical Branch. He was especially interested in energy from crop residues.

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APPENDIX A
SUMMARY TABLE

GROUPS OF INTERNATIONAL VISITORS DURING REPORTING PERIOD

<u>DATE</u>	<u>SPONSOR</u>	<u>NUMBER OF VISITORS</u>	<u>NUMBER OF COUNTRIES REPRESENTED</u>
May 25	International Communication Agency, Institute of International Education	17	14
July 31	Institute of International Education--Multi-Regional Project on Energy Research and Technology	14	11

INDIVIDUAL VISITORS

<u>DATE</u>	<u>SPONSOR/COUNTRY REPRESENTED</u>	<u>NUMBER OF VISITORS</u>
January 12	Organization for Economic Cooperation and Development--France	1
February 3	Taiwan	1
March 7	U.S. Department of State/Institute of International Education--Brazil	1
March 9-10	Department of Energy/Treasury Department--Saudi Arabia	7
March 16	African-American Institute--Ghana	1
April	Sweden	1
April 5	Italy	1
April 7	U.S. Department of State/Institute of International Education--Japan	1
April	Israel	1
May 1-31	Canada	1
May 1,2,5,	Korea	15
May 15	International Communication Agency/New Zealand	1
May 16	Africa-American Institute/Niger	1
May 18	Iran	1

<u>DATE</u>	<u>SPONSOR/COUNTRY REPRESENTED</u>	<u>VISITORS</u>
May 19	India	1
May 22	Switzerland	2
May 22	MIT/U.S.S.R.	1
May 19	India	1
May 22	Switzerland	2
May 22	MIT/U.S.S.R.	1
June 5	Guatemala	1
June 5	International Communication Agency/Institute of International Education--Finland	1
June 12	Colombia	1
June 20	Agency for International Development-- Bolivia	1
June 20	India	1
June 20	Brazil	1
June 26	Australia	1

APPENDIX B
NAMES OF INTERNATIONAL VISITORS

The names of the sponsoring or contact organizations is listed first, followed by the date of the visit to SERI and the names of the visitors.

Organization for Economic Cooperation and Development (OECD)--January 12, 1978.

1. Dr. Ferenc J. Juhasz, Principal Administrator, Environment Directorate, OECD, 2 Rue Andre Pascal, 75775 Paris CEDEX16.

Agency for International Development/Labor Department--February 3, 1978.

1. Hong-Ting Yih, Section chief, Energy Policy Committee, Ministry of Economic Affairs, 109 Hankow-Street, Section 1, Taipei, Taiwan.

U.S. Department of State/Institute of International Education--March 7, 1978.

1. Octavio A. DeBrito, Deputy Secretary, Department of Science and Technology, University of Minas Gerais, 30.000 Belo Horizonte, Minas Gerais, Brazil.

U.S. Treasury Department/Department of Energy/National Science Foundation--March 9-10, 1978.

1. Dr. Farek Al-Akail, P.O. Box 6100, Jeddah, Saudi Arabia.
2. Dr. Saleh A. Al-Athel, Vice Rector, University of Riyadh, Riyadh, Saudi Arabia.
3. Dr. Fayez S. Anan, University of Riyadh, Riyadh, Saudi Arabia.
4. Dr. Fahad H. Dakhil, Vice Rector, University of Petroleum and Minerals, Dhahran, Saudi Arabia.
5. Dr. Rida Obaid, SANCST, Riyadh, Saudi Arabia.
6. Dr. Jaafar A. Sabbagh, Vice Rector, King Abdul-Aziz University, Mecca Branch, Mecca, Saudi Arabia.
7. Dr. Hashim Yamani, University of Petroleum and Minerals, Dhahran, Saudi Arabia.

The African-American Institute--March 16, 1978.

1. Dr. Frank Obend Kwami, Dean, Faculty of Engineering, University of Science and Technology, Kumasi, Ghana.

Royal Institute of Technology--April, 1978.

1. Bengt Hidemark, Swedish Center for Building Technology, Royal Institute of Technology, Stockholm, Sweden.

U.S. Department of State/Institute of International Education--April 1, 1978.

1. Mr. Yasunari Magami, c/o ASAHI SHIMBUN, Yuurakuchoo, Chiyoda-Ku, Tokyo, Japan.

Research Development Institute/Kibbutz Industries Association--April, 1978.

1. Dr. Uri Marchaim, Project Director, Research and Development Institute/ Kibbutz Industries Association, 27 Hayarden Street, Ramatgan, Israel.

University of Western Ontario--May 1-31, 1978.

1. Professor James Bolton, Department of Chemistry, University of Western Ontario, London, Ontario, Canada N6A5B7.

U.S. Department of State/Institute of International Education--May 1,2,5, 1978.

1. Joon-Ho Ahn, Assistant Director, Nuclear Safeguards Directorate, Ministry of Science and Technology, Seoul, Korea.
2. Jai Won Cho, Director of Planning, Lucky Development Co., Ltd., Lucky Building, 282, Yang-Dong, Chunk-Ku, Seoul, C.P.O. Box 8345, Seoul, Korea.
3. Yie-Joon Chang, Minister of Energy and Resources, Seoul, Korea.
4. Sirk Young Koh, Director, Planning Board, Dong Ah Group, Dongha Construction Ind. Co., Ltd., The Korea Express Co., Ltd., C.P.O. Box 383, Seoul, Korea.
5. Young Dal Kwon, Chief, Planning Division, Ministry of Energy and Resources, Seoul, Korea.
6. Gun Yung Kim, Hyundai International, Inc., 200 Dangjung-Ri Nam-Myun Siheung-Gun Kyunggi-Do, Korea.
7. Bong Suh Lee, Assistant Minister, Ministry of Energy and Resources, Seoul, Korea.
8. Jung-Ho Lee, General Manager of Project Division, Lucky Ltd., 282, Yang-Dong, Chunk-Ku, Seoul, Korea.
9. Kap Joong Lee, Samsung Electron Devices Co., Ltd., Kong-Bang Building 250, 2KA Taepyung-Ro Chunk Ku, Seoul, Korea.
10. Sang Up Lee, Assistant Chief, Planning Division, Ministry of Energy and Resources, Seoul, Korea.
11. Dr. Won-Hoon Park, High Temperature Process Lab., Korea Institute of Science and Technology, 39-1 Hawolgokdong, Sungbuk-Ku, P.O.B. 131, Seoul, Korea.

12. Mr. Do Kyung Sung, Assistant Director, Technical Cooperation, Bureau Ministry of Science and Technology, Seoul, Korea.
13. T.S. Yim, President, Solar Energy Research Center, Korea Institute of Science and Technology, P.O. Box 131, Dong Dae Mun, Seoul, Korea.
14. Suk Koo Yoon, Director, Ministry of Energy and Resources, Seoul, Korea.
15. Mr. Hee-Yul Yu, Section Chief, Program Development and Promotion Bureau, Ministry of Science and Technology, Seoul, Korea.

International Communication Agency--May 15, 1978.

1. Mr. Louis W. Patterson, c/o American Embassy, ICA Wellington, New Zealand.

African-American Institute--May 16, 1978.

1. Dr. Abdou Moumouni, Director, Office of Solar Energy, Niamey, Niger.

African-American Institute--May 18, 1978.

1. Mr. Saeed, Iran.

Utkal Automobiles, Ltd., Jamshedpur, India--May 19, 1978.

1. Dinesh Parikh, Utkal Automobiles, Ltd., P.O. Box 31, Jamshedpur-831-001, India.

Eidg. Institut für Reaktorforschung, Würenlingen, Switzerland--May 22, 1978.

1. M. Real, Eidg. Institut für Reaktorforschung, Institut Fédéral de Recherches en Matière de Reacteurs, 5303 Würenlingen, Switzerland.
2. Dr. R. Minder, Elektrowatt Ingenieurunternehmung, Bellerivestr. 36, Ch 8022 Zurich, Switzerland.

Massachusetts Institute of Technology--May 22, 1978.

1. Mr. Vadim Andronov, Dolgoprudny, 6 Tsiolkovski Street, Moscow, U.S.S.R. (In U.S.: Alfred P. Sloan School of Management, MIT, 50 Memorial Drive, Cambridge, MA 02139.)

International Communication Agency/Institute of International Education--May 25, 1978.

1. Dr. J.L. Aburto Avila, Coordinator of the Technical Secretaria, National Electricity Commission, Mexico City, Mexico.

2. Carlos Aquirre Bastos, Director of Science and Technology, Ministry of Planning and Coordination, La Paz, Bolivia.
3. Mr. O.E.A. Calcagno, National Director of Fuels, Ministry of Economy, Buenos Aires, Argentina.
4. Dr. I.C. Castillo, Director of Energy Conservation and Alternatives, Hydraulic and Electrical Resources Institute, Panama City, Panama.
5. A.L. Celestin, Chief of Diesel Power Plants, Electricity Company of Haiti, Port Au Prince, Haiti.
6. Dr. A. Chiquillo A., Director of Research and Special Projects, National Power Company, San Salvador, El Salvador.
7. H. Correa, Deputy Director of Finance, Atlantic Coast Electric Corp., Barranquilla, Colombia.
8. R.S. Dodds, Vice Minister of Energy and Mines, Lima, Peru.
9. Mr. Jose Francisco Freda, Secetraria De Estado De Energia y Minería, Director, Nac. De Hidrocarburos, Av. Judio A. Roca 651-7º Piso, Buenos Aires, Argentina.
10. G. Hernandez, Director, Engineering and Construction Department, Quito Electrical Co., Quito, Ecuador.
11. M. Hidalgo, Deputy Director for Energy, Costa Rican Institute for Electricity, San Jose, Costa Rica.
12. Mario Lionel Zenteno, Director of Planning, National Electric Company, Santiago, Chile.
13. Mr. Joel Mendes Pinto, Senior Advisor Ministry of Mines and Energy, Brasilia, Brazil.
14. Cecilia A. Montesinos, Planning Specialist, Office of Energy Planning, Ministry of Energy and Mines, Caracas, Venezuela.
15. H.C.L.T. Neto, Senior Advisor for Energy Affairs, Financing Organization for Studies and Projects, Secretary of Planning, Brasilia, Brazil.
16. Jose Vega Pereira, Vice President for Operations and Engineering, National Light and Power Company, Nanagua, Nicaragua.
17. Rodolfo Santizo, Operations Manager, Guatemala Electric Company, Guatemala City, Guatemala.

Central American Research Institute for Industry--June 5, 1978.

1. Ricardo Garcia, Director, Food Technology, Central American Research Institute for Industry (ICAITI), P.O. Box 1552, Av. La Reforma 4-47, Zona 10, Guatemala City, Guatemala.

International Communication Agency/Institute of International Education--
June 5, 1978.

1. Dr. D. Routti, Lutherinkatu 2B18, SF-00100, Helsinki-10 Finland.

Instituto De Investigaciones Technologicas--June 12, 1978.

1. Jaime Ayala Ramirez, Director, Instituto De Investigaciones Technologicas, Avenida 30 N. 52-A-77, Apdo. Aereo 7031, Bogota, D.E., Colombia.

Ben Gurion University--June 19, 1978.

1. Dr. Baruch Givoni, Institute for Desert Research, Ben Gurion University of the Negev, P.O.B. 653, Beersheva, 84120, Israel.

Agency for International Development--June 20, 1978.

1. Robert D. Adams, Chief Engineer, Div. Engineering and Transportation, A.I.D., La Paz, Bolivia.

Administrative Staff College, India--June 20, 1978.

1. Dr. R.K. Pachauri, Administrative Staff College of India, Bella Vista, Hyderabad 500475, India.

Promon Center of Technology--June 20, 1978.

1. Dr. Sergio Trindade, Executive Director, Promon Center of Technology, Praia Do Flamengo 154, 20000 Rio De Janeiro, Brazil.

Contech Ltd., Perth, Australia--June 26, 1978.

1. Mr. Darian Sampey, Contech Ltd., Perth, Australia.

International Communication Agency/Institute of International Education--
June 27, 1978.

1. Andrzej Zalewski, Manager Inz Roinik, Komentator TV, DTV, P. Powstancow F, Warsaw, Poland.

International Communication Agency/Institute of International Education--
July 6, 1978.

1. Marinos Yerolanos, National Council for Physical Planning and the Environment, Ministry of Coordination, Secretariat, Platia Syntagmatos, Athens, Greece.

University of New South Wales--July 10, 1978.

1. John Ballinger, Department of Architecture, University of New South Wales, P.O. Box 1, Kensington, New South Wales, Australia.

Dutch National Energy Council/City of Delft--July 27, 1978.

1. Dr. A.P. Oele, Mayor, Delft, Netherlands.

Institute of Internatioanl Education/Multi-Regional Project on Energy Research and Technolgy--July 31, 1978.

1. Dr. Abdallah Eassa Albabbagh, Deputy Director, Research Institute, University of Petroleum and Minerals, Dhahran, Saudi Arabia.
2. Mr. Aldo Fanchiotti, Department of Mechanical Engineering, University of Rome, Rome, Italy.
3. Mr. Ko-Kung Hwang, Chief, Energy Resources Division, Mining Research and Service Organization, Industrial Technology Research Institute, Taipei, Taiwan.
4. Mr. Ji-Peng Chien, Director, Institute of Energy Research, Taipei, Taiwan.
5. Dr. Juan Lecuna Torres, Chairman, Chemistry Department, Simon Bolivar University, Caracas, Venezuela.
6. Dr. Jaime Baudillo Axel Moragues, Director of Solar Energy, National Atomic Energy Commission, Buenos Aires, Argentina.
7. Mr. Fausto Munos, Secretary General, Atomic Energy Commission of Ecuador, Quito, Equador.
8. Dr. Gianfranco Occupati, Professor of Chemistry and Researcher, Institute of Metallurgical Research, Simon Bolivar University, Caracas, Venezuela.
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