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Energy Research Programs

First Edition
1980



Edited by Jaques Cattell Press



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Energy Research Programs

Preface

The First Edition of *Energy Research Programs* marks the inauguration of a set of directories that will incorporate and expand the established format of *Industrial Research Laboratories of the United States*. The 16th Edition of *Industrial Research Laboratories*, published in the Fall of 1979, initiated a new service to users when its contents formed the research programs database. This new service features select retrieval capabilities for all information contained in the latest edition. *Energy Research Programs* marks the expansion of the database by including areas of research heretofore not covered by traditional *IRL* format.

Energy Research Programs is a multidisciplinary directory of energy-related programs, services, and industries. Included are 3,675 parent organizations having 5,900 research facilities. Coverage includes such new areas as federal, state, provincial and local government organizations in the United States and Canada; academic research units in the United States and Canada; select professional societies and agencies of the Government of Mexico; expanded coverage of the petroleum and mining industries; engineering firms; and energy-related firms whose traditional laboratory research is minimal, but whose contribution to the North American energy effort is substantial.

The editors established energy-related research as being inquiries into the development of energy production, experimentation, exploration, management, conservation, application, consultation, and transmission. This allowed the editors freedom to include a wide range of organizations whose conscientious endeavors contribute to solving the energy puzzle.

Listings were solicited by the questionnaire method. Firms listed in *Industrial Research Laboratories*, whose research indicated energy-related applications, were sent proofs of their listings, and were asked to formulate an "energy" research statement, revise personnel, and add affiliates that were applicable to the format of the directory. Those firms that did not respond to either questionnaires or proofs had listings constructed through public sources by the editors whenever it was reasonable to do so. Entries with data obtained from other than a direct source are marked with an asterisk.

The editors have made every effort to include all material submitted as accurately and completely as possible within the confines of format and scope. However, the publishers do not assume and hereby disclaim any liability to any party for loss or damage caused by errors or omissions in *Energy Research Programs* whether such errors or omissions resulted from negligence, accident or any other cause. In the event of publication error, the sole responsibility of the publisher will be the entry of corrected material in succeeding editions.

The editors would like to acknowledge the many people in the public, private and academic sectors for taking thousands of manhours to complete and return our questionnaires; the United States Departments of Energy, Transportation and Commerce for providing essential information to the project; and S. J. Lovejoy and his staff at the American Association of Small Research Companies for their continuing assistance.

This First Edition is a representative sampling of energy-related activities in North America. The editors realize that every organization involved in energy-related activities will not be found in this edition. We welcome the submission of nominations, reports of errors, or comments; these should be addressed to The Editors, *Energy Research Programs*, Jaques Cattell Press, P.O. Box 25001, Tempe, AZ 85282.

Philip S. Mongeau, *Editorial Assistant*
Anne Rhodes, *Managing Editor*,
Information Directories
Steve Nichols, *General Manager*
JAQUES CATTELL PRESS

June, 1980

Format and Content of Entries

The directory presents an alphabetical listing of principal, or parent, organizations. Corporate information is followed by a central research and development center, if any, and then by an alphabetical listing of all divisions and subsidiaries. Academic information lists colleges/divisions in alphabetical order with various departments and institutes within their respective colleges/divisions. Governmental units follow the same pattern with administrative units followed by departments/divisions in alphabetical order. Units whose administration reports directly to the principal organization have entries preceded by one dash. Units which report to units other than the principal organization are preceded by two or more dashes. This system identifies the administrative structure of each entry.

Preceding each principal name is an identification code, consisting of three parts: 1) the letter of the alphabet under which the organization is alphabetized, 2) a number which indicates the entry's position within the alphabetical grouping, and 3) a decimal which numbers each facility within an organization sequentially. These identification codes are used in the *Geographic*, *Personnel*, and *Subject Indexes* to refer the user to the proper text entry.

In general, the basic content of individual entries follows the same pattern established in *Industrial Research Laboratories of the United States*. For principal organizations, listings provide name, address, telephone, TWX, telex numbers, and cable addresses, officers of the organization and, if the entry has no subsidiaries or divisions, a statement of chief R&D activities. This is then followed by the name and address of each division and/or subsidiary reporting research with the names and titles of administrators and research personnel. Continuing with the number of professional staff and number having doctoral degrees, the entry also lists the scientific disciplines they represent and the number of supporting staff. Each entry ends with a statement of chief R&D activity.

An asterisk appearing after an organization's name indicates that information did not come from the facility itself. In this case, data was obtained from public sources.

To the right of each R&D facility entry are small letter codes that designate the research services available. See the following table.

The directory concludes with three indexes. All facilities are in-

cluded in the *Geographical Index* under the city and state/province in alphabetical sequence. The *Personnel Index* contains an alphabetical arrangement of all persons included in the entries. The *Subject Index* serves as an important key to the general R&D activities at each installation. Numbers in all the indexes refer to the number of the text entry (identification code), *not* the page number.

Detailed items do not appear in every entry since all organizations are not structured identically and some have policies which restrict publishing certain information.


RESEARCH ACTIVITY CODES USED IN THE TEXT

- p — R&D for principal organization only
- f — Contract R&D for others
- c — Consulting for others

ABBREVIATIONS USED IN THE TEXT

Admin—Administration, Administrative	Mgr—Manager
Asst—Assistant	N—North
Assoc—Associate	Pl—Place
Ave—Avenue	Pres—President
Bldg—Building	R&D—Research and Development
Bldg—Boulevard	Rd—Road
Chmn—Chairman	Rte—Route
Dept—Department, Departmental	Secy—Secretary
Dir—Director	Sr—Senior
Dr—Doctor	S—South
E—East	St(s)—Street(s)
Exec—Executive	Supt—Superintendent
Gen—General	Supvr—Supervisor
Hwy—Highway	Treas—Treasurer
Jr—Junior	VChmn—Vice Chairman
Lab(s)—Laboratory, Laboratories	VPres—Vice President
	W—West

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Energy Research Programs

First Edition

A

AABERLIN & EVANSON DIVISION

See T A B Engineers, Inc

- A1 DON AADLAND ENGINEERING**, PO Box 340, Scottsdale, AZ (fc)
85252. Tel: 602-946-5165
Chmn & Chief Exec Officer Donald I Aadland; *Engineering Technician* Ronald I Bacon
Professional Staff: 2—Building acoustics, electrical engineering, engineering physics, mechanical engineering, solar heating, ventilating and air conditioning engineering, ultrasonic devices. Technicians & Auxiliaries 1
Fields of Energy Research: Solar heating, ventilating, and air conditioning systems and components

AAI CORPORATION

See United Industrial Corp

AAIR

See Aquatic-Agriculture Institute for Research

A & P COOP COMPANY

See Angelo Industries, Inc

- A2 AARDVARK AIR INC**, 7000 Prospect, Kansas City, MO 64132. (c)
Tel: 816-444-7120
Pres Bruce Smith
Fields of Energy Research: Ground coil heat pump systems; water-to-air heat pumps; phase change passive solar hot water heaters; solar assisted heat pumps
- A3 ABACUS CONTROLS INC**, 93 Readington Rd, PO Box 893, (pf)
Somerville, NJ 08876. Tel: 201-526-6010
Pres & Chief Exec Officer George A O'Sullivan
Fields of Energy Research: Research on deep submergence motor controllers using digital control techniques, including constant voltage transformers, ferroresonant transformers, uninterruptible power supplies, alternating current supplies, frequency converters, and direct current to alternating current inverters; conversion of solar cell energy to alternating current power that is fed back into utility lines
- A4 ABBOTT TRANSISTOR LABS, INC**, 1224 Anderson Ave, Fort (p)
Lee, NJ 07024. Tel: 201-224-6900
Gen Mgr Greg Gottlieb
Fields of Energy Research: Standardized power supplies, including direct current to alternating current inverters, alternating current to direct current converters, direct current to sine wave inverters, and standard and customized power transformers
- A5 ABCO TECH TECHNOLOGY CORP**, 151-23 34th Ave, Flushing, (fc)
NY 11354. Tel: 212-463-2100
Pres M Valenzano; *Mgr* Charles Hutcheon
Professional Staff: 2
- .1 -Solar Fab Energy Related Prods Mfg & Dist Co**, 151-23 34th (fc)
Ave, Flushing, NY 11354. Tel: 212-463-2100
Pres M Valenzano; *Mgr* Charles Hutcheon
Professional Staff: 2

Fields of Energy Research: For both locations—Photo cells; electric heat; passive hot air; swimming pool solar heating blankets

ABEX CORPORATION

See IC Industries

ABRAMS CONSTRUCTION COMPANY

See Super Ion Corporation

- A7 ABT ASSOCIATES INC**, 55 Wheeler St, Cambridge, MA 02138. (fc)
Tel: 617-492-7100; TWX: 710-320-1382
Pres Dr Clark C Abt; *VPres for Operations* Peter Miller; *VPres for Contract Management* Franklin Smith; *Public Relations Officer* Jeff Stuke; *Librarian* Linda Webb; *VPres* Wendell Knox; *Sr Analyst* Larry C Kerpelman; *Dir of Marketing* Gene Fax; *Sr Analyst* Philip Tabas; *Marketing Coordinator, Economics & Environmental Analysis Area* Louise Strayhorn
Professional Staff: 800 (Doctorates 110)—Policy analysis
- .1 -Energy Research Group**, 55 Wheeler St, Cambridge, MA 02138. (fc)
Tel: 617-492-7100; TWX: 710-320-1382
Dir Marketing, Energy Research Group & Sr Environmental Scientist R Dennis Reinhardt
Professional Staff: Engineering, policy analysis
Fields of Energy Research: Energy policy research linked to the evaluation of alternative energy systems especially passive solar; quality in the delivery of energy services to rural communities (nationwide investigation); energy transportation systems related to the preparation of a National Energy Transportation Plan; environmental, social and economic analysis of communities impacted by energy development; energy resource studies on Indian tribal lands; incentives and regulation in energy conservation programs
- A8 ABUCUS ENGINEERING LTD**, 3600 12 St NE, Calgary, AB (pfc)
T2E 6N1, Canada. Tel: 403-276-7918; Cable: ABACUS CGY
Chief Exec Officer I MacGregor; *Corporate Research Officer* R Sukovieff
Professional Staff: 10—Fired equipment, gas, oil
Fields of Energy Research: Combustion using unsteady flow devices; delta wing wind turbines
- A9 ACADEMIA DE LA INVESTIGACION CIENTIFICA*** (p)
(Academy of Scientific Research), Avda Revolucion, 8, Mexico City, Mexico. Tel: 905-563-9681
Pres Agustin Ayala-Castanares
Fields of Energy Research: Scientific research
- A10 ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA**, 19th & Benjamin Franklin Parkway, Philadelphia, PA 19103. Tel: 215-299-1000
Pres Dr Thomas Peter Bennett
- .1 -Division of Limnology and Ecology**, 19th St and the Parkway, (pfc)
Philadelphia, PA 19103. Tel: 215-299-1080
Dir Dr James L Peterson
Professional Staff: 72 (Doctorates 23)—Algology, aquatic biology, environmental planning, freshwater & estuarine ecology, ichthyology, malacology, physiology, toxicology, water chemistry. Technicians & Auxiliaries 63

2 ACF INDUSTRIES INCORPORATED

Fields of Energy Research: Research and consulting related to fresh and estuarine waters, including short-and long-term biological, chemical and physical studies to assess and monitor water quality, productivity and ability to assimilate waste; bioassays on physiologic effects of sublethal contaminants; environmental inventories; systematics and ecology of aquatic organisms; bioenergetics of aquatic ecosystems; effects of chemical, mechanical and thermal stresses from industry on the aquatic environment; watershed management

- .2 **-Benedict Estuarine Research Laboratory**, Benedict, MD 20612. (pfc)
Tel: 301-274-3134

Pres, Chief Research Officer & Recruiting Contact Dr Louis E Sage;
Estuarine Ecologist Dr Kenneth L Heck; *Physiologist* Dr Dennis T Burton;
Phycologist Dr Kent Mountford

Professional Staff: 28 (Doctorates 4)—Aquatic biology, chemistry, estuarine ecology, fishery biology, invertebrate biology, physiology, toxicology. Technicians & Auxiliaries 17

Fields of Energy Research: Research and consulting related to effects of power plant operation (thermal discharge, residual biocides, entrainment of plankton) on ecosystem; abundance and distribution of organisms in the estuary relative to power plants

- .3 **-Stroud Water Research Center**, RD 1 Box 512, Avondale, PA 19311. Tel: 215-365-3405 (pfc)

Pres, Chief Research Officer & Recruiting Contact Dr Robin L Vannote;
Microbiologist Dr Thomas L Bott; *Organic Chemist* Dr Richard A Larson;
Phycologist Dr Charles F Rhyne; *Invertebrate Zoologist* Jay W Richardson;
Invertebrate Ecologist Dr Bernard W Sweeney

Professional Staff: 7 (Doctorates 5)—Aquatic entomology, bioenergetics, geomorphology, invertebrate zoology, microbiology, organic chemistry. Technicians & Auxiliaries 10

Fields of Energy Research: Community structure, production and utilization of energy as affected by land use and geomorphic processes; community succession and recovery rate following physical disturbance

- A11 **ACF INDUSTRIES INCORPORATED**, 750 Third Ave, New York, NY 10017. Tel: 212-986-8600; Telex: 12-5491; Cable: ACFUSA
Chmn of the Board John F Burditt; *Pres* Henry A Correa; *Dir of Communications* Curtis L Anders

- .1 **-ACF Petroleum Company Inc**, 750 Third Ave, New York, NY 10017. Tel: 212-968-8600 (p)

Fields of Energy Research: Oil and natural gas exploration and production

- .2 **-Carter Automotive Group**, 9666 Olive St Rd, Saint Louis, MO 63132. Tel: 314-997-7400 (p)

VPres & Gen Mgr Robert A Johnson; *Dir of Engineering & Research* John L Niebrzydowski

Fields of Energy Research: Applied research and application engineering related to automotive fuel systems, emission control systems and heater-air conditioning system components

- .3 **-W-K-M Valve Group**, PO Box 2117, Houston, TX 77001. Tel: 713-499-1511 (p)

VPres & Gen Mgr Ivan A Burns; *Dir Engineering & Research* Alton M Williamson

Fields of Energy Research: Research on oil field and pipeline control valves and operators

- .4 **-WKM Wellhead Systems Inc**, Suite A100, 1500 N Market St, Shreveport, LA 71107. Tel: 318-222-3254 (p)

Fields of Energy Research: Oil field equipment

- A12 **ACHESON COLLOIDS CO**, 1637 Washington Ave, Port Huron, MI 48060. (p)

Fields of Energy Research: Fuel additives

- A13 **ACL-FILCO CORPORATION***, 3333 W Warner Ave, Santa Ana, CA 92704. Tel: 714-979-5500; TWX: 910-595-1548 (f)

Gen Mgr Edward Ravin

Fields of Energy Research: Nuclear energy thermal conditioning; instrumentation and control systems

- A14 **ACME-CLEVELAND CORPORATION**, 802 Bond Court Bldg, PO Box 5617, Cleveland, OH 44101. Tel: 216-431-4500; Telex: 98-0679; TWX: 810-421-8342; Cable: COX CLEVELAND

Pres & Chief Executive Officer W Paul Cooper; *VPres & Chief Operating Officer* H A Gardner; *Public Relations Officer* Harry H Leckler

- .1 **Acme-Cleveland Development Company**, 625 Alpha Dr, Highland Heights, OH 44143. Tel: 216-473-0300 (p)

Gen Mgr & Head of Lab Robert L Nekola; *Corporation Mgr of Manufacturing R&D* R W Barrett

Corporation Mgr of Engineering Planning O A Ewing; *Corporation Mgr of New Products R&D* T W Lenhart; *Corporation Mgr of Administrative Services* N W Marrotte; *Corporation Mgr of Materials R&D* T J Skingle; *Corporation Mgr of Electrical R&D* N R Traffis; *Corporation Mgr of*

Computer Assisted R&D W N Bangham; *Recruiting Officer & VPres of Personnel* J E Munger; *Librarian* Irena A Johansonas; *Safety Officer* F A Foster

Professional Staff: 25 (Doctorates 1)—Chemistry, electrical engineering, industrial engineering, mechanical engineering, metallurgical engineering, physics. Technicians & Auxiliaries 52

Fields of Energy Research: New products in the field of electrical controls; manufacturing methods; material development and testing; product testing

ACM SOLAR SYSTEMS, INC

See Advance Cooler Mfg Corp

- A15 **ACORN STRUCTURES INC**, PO Box 250, Concord, MA 01742. (pf)
Tel: 617-369-4111

Energy Systems Engineer Mark E Kelley; *Public Relations Officer* Rosemary Waugh

Professional Staff: 3

Fields of Energy Research: Cost sharing program for development of passive and hybrid solar manufactured houses; development of active solar space heating system

- A16 **ACRA ELECTRIC CORP**, 3803 N 25th Ave, Schiller Park, IL 60176. Tel: 312-678-8870 (p)

Pres D W Browne; *Chief Engineer* Matthew Hummel

Professional Staff: 2—Electrical engineering. Technicians & Auxiliaries 2

Fields of Energy Research: Electrochemical development of inorganic, dielectric materials and high temperature, class H, resistance type, electrical heat elements in low temperature environments

- A17 **ACRES CONSULTING SERVICES LTD TORONTO**, 480 University Ave, Toronto, ON M5G 1V2. Tel: 416-595-2063; Telex: 06-217815 (p)

Librarian Michele L Miles

Fields of Energy Research: Economics; engineering; transportation

- A18 **ACROLL PETROLEUMS LTD***, 574, 330-5th Ave SW, Calgary, AB T2P 0L4, Canada. (p)

Pres G N Ross

Fields of Energy Research: Holds working and royalty interests in both producing and undeveloped oil and gas acreage in western Canada, the Arctic Islands, and elsewhere

- A19 **ACTION***, 5761 Elkridge Heights Ave, Elkridge, MD. (Mailing Add: PO Box 8695, Baltimore-Washington International Airport, Baltimore, MD 21240.) Tel: 301-796-2317 (f)

Pres Melvin G Gordon

Fields of Energy Research: Operations analyses; systems analyses; information retrieval; energy conversions; design and development in man-powered devices; man-generated energy conversions; solar and wind actuated devices

- A20 **ACTION INSTRUMENTS CO, INC**, 8601 Aero Dr, San Diego, CA. Tel: 714-279-5726; TWX: 910-355-2030 (p)

Fields of Energy Research: Electronic modules for measurement and control that provide measurement and control for petro-chemical processing, gas and electric supply, and a variety of other temperature, pressure, and flow processes

- A21 **ACUREX CORPORATION**, 485 Clyde Ave, Mountain View, CA 94042. Tel: 415-964-3200; Telex: 34-6391; TWX: 910-379-6593 (fc)

Pres & Chief Exec Officer Noel J Fenton; *Librarian* Cindy Hutchinson;

Public Relations Officer John Dennis

Professional Staff: 214 (Doctorates 37)—Aeronautical engineering, chemical engineering, electrical engineering, mechanical engineering, metallurgical engineering, systems analysis. Technicians & Auxiliaries 125

Fields of Energy Research: Coal-oil mixtures; coal-derived liquids; coal gasification; wood waste gasification; energy conservation and management; pollution analysis and control technology; source assessment; control analysis; combustion research; solar; wind; geothermal

- .1 **-Aerotherm Group**, 485 Clyde Ave, Mountain View, CA 94042. (fc)
Tel: 415-964-3200; Telex: 34-6391; TWX: 910-379-6593

Gen Mgr J G Thompson; *Librarian* C Hutchinson; *Recruiting Contact* Ton Conway

Professional Staff: 211 (Doctorates 38)—Aeronautical engineering, chemical engineering, electrical engineering, fluid mechanics, mechanical engineering, metallurgical engineering, solid mechanics. Technicians & Auxiliaries 115

Fields of Energy Research: Applied and product-oriented research in heat transfer; aerodynamics; aerothermochemistry; solid mechanics; fluid mechanics; environmental pollution monitoring and control; alternate energies (solar, geothermal, wind, nuclear); combustion; fuels; energy conservation

ADALET-PLM DIVISION

See Scott & Fetzer Co

- A22 HENRY ADAMS INC,*** PO Box 10657, Baltimore, MD 21204. (fc)
Tel: 301-296-6500
Pres John F Grice
Fields of Energy Research: Consulting engineers to architects, hospital, commercial, industrial and institutional clients on mechanical and electrical systems for building; preparation of feasibility reports, energy conservation studies, economic analyses, design and preparation of construction contract documents
- A23 ADAMS RESOURCES & ENERGY, INC*** (Formerly ADA Resources, Inc), 6910 Fannin St, Houston, TX 77025. Tel: 713-797-9966 (p)
Fields of Energy Research: Coal exploration; oil recovery
- A24 ADCOLE CORPORATION,*** 330 Bear Hill Rd, Waltham, MA 02172. Tel: 617-890-3400 (pf)
Pres A D Cole
Professional Staff: 18 (Doctorates 2)—Electrical engineering. Technicians & Auxiliaries 65
Fields of Energy Research: Research on sun sensing systems
- A25 ADVANCE AIR CONDITIONING,** 5400 SW 122 Ave, Miami, FL 33175. Tel: 305-226-7213 (c)
Proprietor Richard J Soehn
Professional Staff: 1—Energy efficiency, heat transfer, thermodynamics
Fields of Energy Research: Mechanical retrofit of existing buildings and manufacturing processes, especially vapor compression refrigeration and air conditioning
- A26 ADVANCE COOLER MFG CORP,** Solar Park, Clifton Park, NY 12065. Tel: 518-371-3730, 371-2140 (p)
Chmn & Chief Exec Officer Ed J O'Hanlon; *Pres & Chief Operating Officer* Robert A Miller; *Corporate Research Officer* James E Niles; *Public Relations Officer* George Kelishian
- .1 -ACM Solar Systems, Inc,** Rte 146, Solar Park, Clifton Park, NY 12965. Tel: 518-371-2140 (p)
Pres & Chief Operating Officer Ed J O'Hanlon
Professional Staff: 2 (Doctorates 1)—Heat transfer, insulation, physics thermo, solar, zerothermics. Technicians & Auxiliaries 5
Fields of Energy Research: Energy conservation; food preservation; Zeroenergy₇ construction; solar systems; heat utilization
- A27 ADVANCED ASSEMBLY SERVICES,*** 433 Magnolia Ave, Glendale, CA 91204. (p)
Fields of Energy Research: Power factor control systems and equipment
- A28 ADVANCED COMBUSTION SYSTEMS,** 8625 SW Tualatin Rd, Tualatin, OR 97062. Tel: 503-638-8475 (f)
Pres E J O'Gieblyn; *Chief Operating Officer* Alfred Oekerman
Professional Staff: 1
Fields of Energy Research: Wood and waste utilization equipment
- A29 ADVANCED KINETICS, INC,** 1231 Victoria St, Costa Mesa, CA 92627. Tel: 714-646-7165; Cable: ADKINUSA (fc)
Pres & Dir of Research Ralph W Wanick
Professional Staff: 14 (Doctorates 5). Technicians & Auxiliaries 35
Fields of Energy Research: Research in high magnetic fields and industrial applications; metal forming; laser physics and applications; plasma physics; far-infrared physics and applications; electromagnetic radiation; electronics; cryogenics
- A30 ADVANCED MECHANICAL TECHNOLOGY, INC,** 141 California St, Newton, MA 02158. Tel: 617-965-3660 (pfc)
Chmn & Chief Exec Officer Dr Walter D Syniuta; *VPres & Corporate Research Officer* Dr Joseph Gerstmann; *Dir of Research* Dr Lawrence Hoagland; *Librarian* Linda Arseneault
Professional Staff: 18 (Doctorates 4)—Dynamics, heat pumps, heat transfer, lubrication, materials, mechanical engineering, thermodynamics. Technicians & Auxiliaries 3
Fields of Energy Research: Integrated gas boiler/hot water heater; domestic gas hot water heater; water source heat pump; residential heat pump
- A31 ADVANCED RESEARCH AND APPLICATIONS CORP (ARACOR),** 1223 E Arques Ave, Sunnyvale, CA 94086. Tel: 408-733-7780 (fc)
Pres & Chief Exec Officer R A Armistead; *VPres & Public Relations Officer* S T Workman
Professional Staff: 41 (Doctorates 15)—Electrical engineering, mechanical engineering, operations research, physics, solid-state electronics
Fields of Energy Research: Applied research in civilian and military nuclear technology; system safety and nuclear effects, including long-term health effects; applied research on measurements of ionizing radiation and magnetic fields; solid-state physics and electronics; semiconductor device evaluations and processing procedures
- A32 ADVANCE RESEARCH & DEVELOPMENT,*** 1743 S Douglass Rd, Anaheim, CA 92806. (p)
Fields of Energy Research: Power factor control systems and equipment
- A33 ADVENTURES, INC,** 535 N Lennox, Casper, WY 82601. Tel: 307-235-6437
Pres & Chief Operating Officer Kenneth O Huff
- .1 -Cuttings Sample Master Division,** 535 N Lennox, Casper, WY 82601. Tel: 307-235-6437 (p)
Pres & Chief Operating Officer Kenneth O Huff
Professional Staff: 1. Technicians & Auxiliaries 2
Fields of Energy Research: Applied and product oriented research and development of procedures and equipment used for formation sampling in rotary drilled holes in both the petroleum and mining industries
- A34 THE ADVERTISING COUNCIL INC,** 825 Third Av, New York, NY 10022. Tel: 212-758-0400 (p)
Chmn Barton A Cummings; *Pres* Robert P Keim; *Campaign Mgr, Energy Conservation Campaign* Collingwood Harris; *Dir of Public Affairs* Benjamin S Greenberg
Fields of Energy Research: The Advertising Council is a private non-profit organization chartered to produce public service advertising campaigns in the public interest. Among the twenty-eight public service advertising campaigns we presently produce and distribute, is a campaign on energy conservation on behalf of The Alliance to Save Energy based in Washington, D.C. The spokesman for this campaign, appearing in broadcast and print media is actor, Gregory Peck. The campaign slogan is "Let's Not Blow It America"
- A35 AEC POWER LTD,*** 1100, 10621-100 Ave, Edmonton, AB T5J 0B3, Canada. (p)
Chmn Arnold Larsen; *Pres* J G Armstrong
Fields of Energy Research: Operates 260 megawatt Syncrude Utilities plant which is being operated by Syncrude; The plant is supplying the steam, electric power and process water required to operate the entire Syncrude project
- A36 AEGIS ENERGY SYSTEMS, INC,** 607 Airport Blvd, Doylestown, PA 18901. Tel: 215-348-7662 (p)
Pres Alan B Shalleck; *VPres of Development* Mitchell Rosenbaum
Professional Staff: 5—Communications, computer science, electronics
Fields of Energy Research: Computer based energy management systems
- AENCO, INC**
See Cargill Inc
- A37 AER-AQUA LABORATORIES INC,** 211 E Shaw, Pasadena, TX 77506. Tel: 713-477-8101 (fc)
Pres & Chief Operating Officer J Parker Forsman
Professional Staff: 6 (Doctorates 1)—Chemistry. Technicians & Auxiliaries 5
Fields of Energy Research: Water and wastewater treatment and analysis; air monitoring and analysis; coal analysis and testing
- A38 AERODYNE RESEARCH, INC,** Crosby Dr, Bedford, MA 01730. (fc)
Tel: 617-275-9400
Pres Dr Morton Camac; *Dir-Applied Sciences Divisions* Dr James Stark Draper; *Technical Dir-Applied Sciences Division* Dr Charles E Kolb; *Public Relations Officer* Dorothy Brooks; *Librarian* Carolyn Duston; *Dir, Center for Chemical & Environmental Physics* Dr Gerald Stewart; *Dir, Center for Computer Applications* Dr John Schroeder
Professional Staff: 60 (Doctorates 25)—Chemical kinetics, combustion, diagnostic instrumentation, fluid mechanics, radioactive transfer, systems analysis. Technicians & Auxiliaries 20
- .1 -Applied Sciences Division,** Crosby Dr, Bedford, MA 01730. Tel: 617-275-9400 (fc)
Dir ASD & Recruiting Contact Dr James Stark Draper; *Technical Dir* Dr Charles Kolb; *Dir, Center for Chemical & Environmental Physics* Dr Gerald Stewart
Professional Staff: 45 (Doctorates 25)—Chemical kinetics, combustion, diagnostic instrumentation, fluid mechanics, radiative transfer, systems analysis. Technicians & Auxiliaries 10
Fields of Energy Research: For both locations—Characterization of magnetohydrodynamic coal combustion plasmas; plasma chemical and physical effects of open cycle MHD generators; measurement and analysis of the chemistry of NOx cleanup processes; fluid mechanics and combustion chemistry of internal combustion engines; coal combustion chemistry; modeling and analysis of advanced coal system process stream cleanup; environmental and efficiency analysis of advanced coal fired systems

4 AERO-ELECTRIC ASSOCIATES

- A39 AERO-ELECTRIC ASSOCIATES**, Flying Point, Freeport, ME (fc)
04032. Tel: 207-865-4086
Pres David N Whitten; *Research Dir* Raymond Esposito; *Engineering Dir* David Hahn
Professional Staff: 3 (Doctorates 1)—Chemical engineering, electrical engineering, mechanical engineering
Fields of Energy Research: Solar control; heat exchanger design; gas detection systems; data telemetry application

AEROJET ENERGY CONVERSION COMPANY
See The General Tire & Rubber Company

AEROJET-GENERAL CORPORATION
See The General Tire & Rubber Company

- A40 AEROLITE OF COLUMBUS**, 234 Cleveland Ave, Columbus, OH (pfc)
43215. Tel: 614-221-3626
Pres John Smith; *VPres* Jack McClaskie; *Corporate Research Officer* Paul Rinehart; *Public Relations Officer* Sally Smith; *Researcher* George Cochran
Professional Staff: 5—Active solar, commercial building, commercial design, insulation, passive solar, residential building, residential design, wind energy
Fields of Energy Research: Retrofit residential and commercial buildings; passive, active, solar assisted hot water and heating systems; self-sufficient living systems

- A41 AERONAUTICAL RESEARCH ASSOCIATES OF PRINCETON, INC.**, 50 Washington Rd, PO Box 2229, Princeton, NJ 08540. Tel: 609-452-2950, Ext 67; TWX: 510-685-2380; Telecopier 609-452-2856
Pres & Senior Consultant Dr Coleman du Donaldson; *VPres Aerophysics* Dr E Stokes Fishbourne; *VPres, Data Management Systems* K Evan Gray; *VPres, Mathematics* Roger D Sullivan; *Public Relations Officer* Sylvia M Harrington; *Librarian* Lois Ridgway
Professional Staff: 48 (Doctorates 26)—Aeronautical engineering, applied mathematics, ceramic engineering, chemistry, civil engineering, computer science, electrical engineering, mechanical engineering, meteorology, physics, sociology. Technicians & Auxiliaries 4
Fields of Energy Research: Pure and applied research and consulting services in gas dynamic flowfield phenomena; optical communications; radiation emission, absorption, transmission and scattering; atmospheric turbulence; wave propagation including solitons; acoustics; aeroelasticity; fluid dynamics; vehicle stability and control; unsteady aerodynamics; high-speed impact effects on solids and structures; data management and retrieval services; software

- A42 AEROPHYSICS COMPANY,*** 3500 Connecticut Ave NW, Washington, DC 20008. Tel: 202-244-7502
Pres Dr Gabriel D Boehler

- .1 -Aerophysics Energy Division**, 3500 Connecticut Ave NW, Washington, DC 20008. Tel: 202-244-7502; Telex: 248504 (pfc)
Mgr Dr Francis C W Fung; *Librarian* Ingrid Boehler; *Energy Expert* Louis Denis; *Instrumentation Engineer* Thomas G Lee; *Design Engineer* William F Foshag
Professional Staff: 5 (Doctorates 2)—Acoustical engineering, aerospace engineering, chemical engineering, electronic engineering, mechanical engineering. Technicians & Auxiliaries 11
Fields of Energy Research: Waste heat recovery; cogeneration; district heating; biomass energy; solar energy; wind and ocean energy

AEROQUIP CORPORATION
See Libbey-Owens-Ford Company

AERO SERVICE DIVISION
See Litton Industries, Inc

- A43 THE AEROSPACE CORPORATION**, PO Box 92957, Los Angeles, CA 90009. Tel: 213-648-5000; Telex: 67-4297; TWX: 910-348-6640
Pres Dr Eberhardt Rehtin; *Dir Information* M H Portz
- .1 -The Ivan A Getting Laboratories**, PO Box 92957, Los Angeles, CA 90009. Tel: 213-648-6036 (pfc)
VPres & Gen Mgr, Lab Operations Dr Max T Weiss; *Recruiting Contact* Dr Stephen L Robinson; *Librarian* Edythe Moore; *Safety Officer* D L Galbraith
Professional Staff: 320 (Doctorates 137)—Aerodynamics, chemistry, electronics, mechanical engineering, materials sciences, mathematics, physics. Technicians & Auxiliaries 120
Fields of Energy Research: Applied research in space physics, electronics, laser physics, physical chemistry, material sciences and fluid mechanics
- A44 AEROSPACE INDUSTRIAL ASSOCIATES, INC.**, PO Box 878, Purcellville, VA 22132. Tel: 703-338-7134 (fc)
Pres & Chief Operating Officer William L Still

Professional Staff: 8—Aeronautics, electronics, geophysics. Technicians & Auxiliaries 12
Fields of Energy Research: Applied research in mining and engineering geophysics; drilling instrumentation in earth probing radar, extremely low frequency propagation and scattering fields for geophysical applications; development, operation and test of complete field systems including all support and peripheral equipment, instrumentation and services

- A45 AEROSPACE RESEARCH CORPORATION**, 5454 JAE Valley Rd SE, Roanoke, VA 24014. Tel: 703-342-2961 (f)
Pres & Chief Operating Officer Joseph T Hamrick; *VPres of Research & Safety Officer* Leslie C Rose; *Librarian* Marlene Webb
Professional Staff: 4 (Doctorates 2)—Chemical engineering, mechanical engineering. Technicians & Auxiliaries 15
Fields of Energy Research: Gas generators and combustion mechanisms; centrifugal pump research and development to reduce energy losses due to inefficiency and inefficient usage of centrifugal pumps; secondary oil recovery systems using downhole steam generators; wood burning research
- A46 AEROSPACE SYSTEMS, INC.**, 121 Middlesex Turnpike, Burlington, MA 01803. Tel: 617-272-7517 (p)
Pres J Zvara
Professional Staff: 40—Aeronautics, astronautics, mathematics
Fields of Energy Research: Modeling and simulation techniques and preparation of systems specifications for solar and wind energy systems
- A47 AERO TESTING & BALANCING**, 315 N May St, Chicago, IL 60607. Tel: 312-666-3097 (p)
Chief Exec Officer Michael Senese; *Chief Operating Officer* John Comforte; *Corporate Research Officer* Harry Wilgus; *Supt* Ronald Metz
Professional Staff: Air conditioning, heating, ventilation. Technicians & Auxiliaries 8
Fields of Energy Research: Redesign of ventilating equipment and controls
- A48 AEROTHERM, INC.**, 5084 Olympia Dr, Indianapolis, IN 46208. (fc)
Tel: 317-297-1386
Pres & Public Relations Officer James H Schweiker; *VPres of Engineering of Engineering* Edwin L Whitelaw
Professional Staff: 2—Architecture, ecology, energy audits, energy consultation, energy engineering, HVAC
Fields of Energy Research: Practical applications of infrared scanning
- A49 AEROVIRONMENT, INC.**, 145 Vista Ave, Pasadena, CA 91107. (pfc)
Tel: 213-449-4392
Pres Dr Paul MacCready; *VPres Environmental Programs* Dr Ivar Tombach; *VPres Aerosciences* Dr Peter Lissaman
Professional Staff: 25 (Doctorates 8)—Aeronautical engineering, chemical engineering, civil engineering, electrical engineering, environmental engineering, mathematics, meteorology, physics, radiology. Technicians & Auxiliaries 37
Fields of Energy Research: Applied research in air quality measurement, analysis, and impact assessment, as well as air quality model development; wind energy; ocean energy; environmental aerodynamics

AEROVOX INDUSTRIES, INC
See RTE Corporation

- A50 AERO-WEST** (The Alternative Energy Resources Organization), 323 W Alder, Missoula, MT 59801. Tel: 406-549-0756 (c)
Chmn of the Board of Dirs Gary Decker; *Administrator* J Gordon Porter; *Research Librarian* Marta Porter
Fields of Energy Research: We are a citizens organization that has Montana's third largest alternative and renewable energy library; services include an alternative energy course offered at University of Montana, hands-on construction workshops, seminars, conferences
- A51 AES, INC.**, 625 Perimeter Place NW, Atlanta, GA 30339. Tel: 404-952-9522 (c)
Principal & Exec VPres Edwin F Coxie PhD; *Principal* Robert H Fulford; *Assoc* Ronald L Aylor; *VPres* Ronald T Helton; *Assoc* Ted Hill
Professional Staff: 5 (Doctorates 1)—Energy audits, mechanical systems, power generation, steam generating systems. Technicians & Auxiliaries 3
Fields of Energy Research: Feasibility of cogeneration at NRMCC, Charleston, South Carolina; design and construction of coal-fired steam plant for Cranston Print Works, Fletcher, North Carolina; feasibility and economic analysis of wood burning boiler at Fort Stewart, Georgia; development of cost model for steam generation systems for the Mitre Corp/DOE; study for wood fired boiler at Harriman Paperboard, Harriman, Tenn
- A52 AESIR ENGINEERING CORPORATION,*** 4111 2 D St, South Charleston, WV 25303. Tel: 304-744-2033 (pc)
Gen Mgr J E Jones
Fields of Energy Research: Research and consulting in civil and mining

engineering, including coal preparation and computer programming in these fields

- A53 AESOP INSTITUTE**, PO Box 880, Sebastopol, CA 95472. Tel: 707-525-1117 (p)
Chmn & Pres Mark Goldes; *Admin Asst* Barbara Mason; *Librarian* Donamaria Forbes; *Consulting Scientist* David Jacuzzi
Professional Staff: 2—Chemistry. Technicians & Auxiliaries 3
Fields of Energy Research: Hydrogen; solar-electric power; wind generators; energy storage systems
- .1 -SunWind Ltd.**, PO Box 880, Sebastopol, CA 95472. Tel: 707-525-1111 (pf)
Chmn & Pres Mark Goldes
Fields of Energy Research: Aerodynamics; hydrogen; alcohol fuel; solar and wind energy conversion; decentralized power grid; steam engines; propulsion systems
- A54 AETNA CHEMICAL CORP.**, Wallace St, Elmwood Park, NJ 07047. (p)
Fields of Energy Research: Fuel additives

AFFINITY MINING COMPANY

See Eastern Gas and Fuel Associates

- A55 AFTCO-BERGER INC.**, 140-70 Burden Crescent, Jamacia, NY 11435. Tel: 212-657-3454 (p)
Chief Exec Officer Paul D Berger
- A56 AGA BURDOX, INC*** (Subsidiary of AGA AB of Sweden), 3300 Lakeside Ave, Cleveland, OH 44114. Tel: 216-696-2400 (p)
Pres S Michael Loveman; *Public Relations Officer* R D Gutin
- .1 -Precision Gas Products, Inc.*** 681 Mill St, Rahway, NJ 07065. (p)
 Tel: 201-381-7600
Dir of Labs Dr H N Maier; *Safety Officer* D P DeCoster
Professional Staff: 4—Chemistry. Technicians & Auxiliaries 3
Fields of Energy Research: Product-oriented research in the field of gas analysis, methods development
- A57 AGES CORP.**, 215 S Broad St, Philadelphia, PA 18107. Tel: 215-545-5343 (p)
Pres & Chief Operating Officer A A Fungaroli
Professional Staff: 9 (Doctorates 7)—Biological engineering, environmental engineering, soils engineering. Technicians & Auxiliaries 2
Fields of Energy Research: Development of systems for recovery of methane gas from solid waste landfills

AGI

See American Geological Institute

- A58 AGNEW LAKE MINES LIMITED,*** PO Box 91, Commerce Court W, Toronto, ON M5L 1C7, Canada. (p)
Fields of Energy Research: Uranium exploration
- A59 AGRICULTURAL GROWTH INDUSTRIES, INC.**, 7671 Hansom Dr, Oakland, CA 94605. Tel: 415-632-1698 (p)
Pres Dr Richard H Matherson; *Public Relations Officer* B Woods; *Field Investigator* M Zeisloft; *Engineer* E Rossman
- .1 -Geothermal Agricultural Systems**, 7671 Hansom Dr, Oakland, CA 94605. Tel: 415-676-2326 (p)
Pres Dr Richard H Matherson
Professional Staff: For both locations 18 (Doctorates 3). Technicians & Auxiliaries 14
Fields of Energy Research: Design, develop, construct, study and operate multiphase, agriculturally-oriented, geothermal, nonelectrical developments; alcohol and cogeneration heat usage; combined animal usage; confinement and by-product utilization via geothermal heat
- A60 AGRICULTURE CANADA,*** Sir John Carling Bldg, 930 Carling Ave, Ottawa, ON K1A 0C5, Canada. Tel: 613-995-5222 (p)
- .1 -Engineering Statistical Branch,*** Ottawa, ON K1A 0C6, Canada. (p)
 Tel: 613-994-9561
Chief Exec Officer Gordon Timbers
Fields of Energy Research: Install and evaluate a straw burner that can use large round bales, six feet by six feet, as a fuel source
- A61 AGRIPOST INC.**, 990 SW First St, Miami, FL 33130. Tel: 305-324-8298 (p)
Pres Paul Faske; *Exec VP* Edward West; *Librarian* Maria Pollack; *Dir of Research* Howard Burr
Professional Staff: 4 (Doctorates 2)—Aerobic chemistry, agronomy, bacteriology, micro-biology. Technicians & Auxiliaries 3
Fields of Energy Research: Developing natural nutrient substitutes for

petroleum-based chemicals used in commercial fertilizers, especially conversion potentials of solid and sludge wastes

- A62 AGRO-CITY INC.**, Rte 1, Box 861, Cedar Hill, TX 75104. Tel: 214-296-2401 (fc)
Dir Dr Geoffrey Brian Stanford; *Public Relations Officer* Nadine Simon
Professional Staff: 4 (Doctorates 2)—Agronomy, architecture, biology. Technicians & Auxiliaries 12
Fields of Energy Research: Basic and applied research including regional planning for energy conservation; co-recovery of municipal wastes; wastewater management, design and planning for small municipalities

AGUIRRE ASSOCIATES

Now John Aguirre Associates

- A63 JOHN AGUIRRE ASSOCIATES*** (Formerly Aguirre Associates), 8 Miraleste Plaza, Rancho Palos Verdes, CA 90274. Tel: 213-832-5818 (f)
Pres John Aguirre
Fields of Energy Research: Environmental studies and seismic design; environmental studies and assessments in industrial complexes, housing, transportation, urban renewal, airfields, and harbor facilities; seismic design in building code preparation; seismic engineering; architectural studies; residential solar application
- A64 AGWAY INC.**, 333 Butternut Dr, PO Box 4933, Syracuse, NY 13221. Tel: 315-477-6395 (p)
Exec VP & *Gen Mgr* Ronald N Goddard
- .1 -Agway Petroleum Corp.**, 333 Butternut Dr, DeWitt, NY 13214. (p)
 Tel: 315-447-6244
Chief Operating Officer G Steele
Fields of Energy Research: Petroleum exploration and production
- .2 --Texas City Refining Inc.**, PO Box 1271, Texas City, TX 77590. (p)
 Tel: 713-945-4451
Fields of Energy Research: Petroleum refining
- A65 AIDCO MAINE CORP.**, Orrs Island, ME 04066. Tel: 207-833-6700 (pfc)
Pres R K Multer
Professional Staff: 1—Algaeculture, biomass, solar electricity, solar heat, solar industrial energy, solar ponds
- .1 -AIDCO Maine Corp.**, Airport Plaza, Hwy 36, Hazlet, NJ 07730. (pfc)
 Tel: 201-739-0040
Pres R K Multer
Professional Staff: 1
Fields of Energy Research: For both locations—Designing and building all types of solar heating systems; monitoring to develop improved data for designs, especially concentrating on salt-gradient non-convective solar ponds
- A66 AIDE ENGINEERING & DESIGN, INC.**, PO Box 6746, Greenville, SC 29606. Tel: 803-244-6123 (fc)
Pres George Lytle; *VP* John Bartus; *Corporate Research Officer* W Lon McBee; *Public Relations Officer* Mark Lytle; *Librarian* Ruth LaBoone
Professional Staff: 11—Architecture, chemistry, electricity, mechanics, structures
Fields of Energy Research: Architectural, chemical, electrical, mechanical and structural engineering and design
- A67 AIRAN CONSULTANTS, INC.**, 145 Madeira Ave, Coral Gables, FL 33134. Tel: 305-446-8277 (p)
Chief Exec Officer Damodar S Airan PhD; *Corporate Research Officer* Thomas H Maxwell; *Librarian* Sue Richard
Professional Staff: 2 (Doctorates 1)
Fields of Energy Research: On site heat recovery from incineration

AIR BALANCE ENGINEERING

See Environmental Energy Management System

- A68 AIRCO, INC** ((Subsidiary of BOC International Ltd)), 85 Chestnut Ridge Rd, Montvale, NJ 07645. Tel: 201-573-0800; Telex: 134-307; TWX: 710-990-7270 (p)
Pres & Chief Operating Officer Donald Reich; *Dir of communications* Donald L Maher
- .1 -Airco Cryogenics Division**, 1900 SE Main St, Irvine, CA 92713. (pfc)
 Tel: 714-540-3010; TWX: 910-595-1559
Pres Richard D Olson; *VP* of Operations Ronald C Welsh; *Mgr of Quality Assurance* T Carey; *Mgr of Field Service & Testing* R McCaslin; *Safety Officer* W Tunstall; *Librarian* R V Evleth
Professional Staff: 16—Chemical engineering, electrical engineering, industrial engineering, mechanical engineering. Technicians & Auxiliaries 75
Fields of Energy Research: Product-oriented research in development of cryogenic equipment for production of industrial gases; manufacture of

6 AIR CONDITIONING ENGINEERING & EQUIPMENT CO

equipment for petrochemicals; liquefied gas handling at central plants, and ship-to-shore handling of liquids and gases; turbomachinery; centrifugal and reciprocating pumps and compressors

- .2 -Airco Industrial Gases Division,** 575 Mountain Ave, Murray Hill, NJ 07974. Tel: 201-464-8100; TWX: 710-984-7992
Pres David W Troast
- .3 --Analytical Laboratory,** Union Landing Rd, Riverton, NJ 08077. (pfc)
Tel: 609-829-7878; TWX: 710-941-0451
Plant Mgr Kenneth E Kinsey; Gen Mgr of Rare & Specialty Gases & Recruiting Contact Henry A Grieco; Quality Control Mgr Franklin J Kramer; Development Mgr John P Borzio; Technical Mgr Stephen G Wechter; Laboratory Supvr Douglas C King
Professional Staff: 14—Chemical engineering, chemistry, electrical engineering
Fields of Energy Research: Product-oriented research in development of specialty gas mixtures and calibration gases; development of new analytical techniques and instrumentation
- .4 --Commercial Development Laboratory,** 100 Mountain Ave, (p)
Murray Hill, NJ 07974. Tel: 201-464-8100
Mgr & Recruiting Contact M J Matthews
Professional Staff: 35 (Doctorates 2)—Chemical engineering, chemistry, electrical engineering, mechanical engineering, metallurgy. Technicians & Auxiliaries 6
Fields of Energy Research: Applications development oriented toward industrial gases; wood pulp delignification; heat treatment atmospheres; combustion technology

- A69 AIR CONDITIONING ENGINEERING & EQUIPMENT CO,** (p)
52 First St, Cambridge, MA 02141. Tel: 617-547-2700
Chief Exec Officer R A Sheffield
Professional Staff: 2
Fields of Energy Research: Blowers; incinerators; smoke pipe heat savers; air conditioning; coal burning furnaces
- .1 -Anti Pollution Incinerator Systems,** 52 First St, Cambridge, MA (p)
02141. Tel: 617-547-2700
Owner R A Sheffield
Professional Staff: 2. Technicians & Auxiliaries 2
Fields of Energy Research: Burning waste without polluting the air
- A70 AIR DISTRIBUTION ASSOCIATES INC,*** 955 Lively Blvd, (p)
Wood Dale, IL 60191. Tel: 312-595-8800
Fields of Energy Research: Power factor control systems and equipment

AIRESEARCH INDUSTRIAL DIVISION

See The Signal Companies, Inc

- A71 AIR LOGISTICS CORPORATION,** 3600 E Foothill Blvd, (pf)
Pasadena, CA 91109. Tel: 213-795-9971
Pres J F Schirtzinger; Chief Engineer D L Buckley; Dir R&D R W Slocum; Dir of Personnel H Van Orden
- .1 -Sea Log Corporation,** 3600 E Foothill Blvd, Pasadena, CA 91109. (pfct)
Tel: 213-795-9971
Pres J F Schirtzinger; Dir of R&D R W Slocum
- A72 AIR POLLUTION SYSTEMS, INC,** 18642-68th Ave S, Kent, (pfc)
WA 98031. Tel: 206-251-5330; Telex: 32-1102
Pres Jack Cooper; VPres Dan Norman
Professional Staff: 35—Physics, electrical engineering, chemical engineering, mechanical engineering, environmental engineering, civil engineering. Technicians & Auxiliaries 12
Fields of Energy Research: Applied research and product development in areas including aerosol physics; fine particulate and gaseous air pollution control; optical data links; fluid and soil level indicators; energy management and control devices; solar and other energy related research
- A73 AIR PRODUCTS AND CHEMICALS, INC,** PO Box 538, (p)
Allentown, PA 18105. Tel: 215-398-4911; Telex: 84-7416; TWX: 510-651-3686; Cable: AIRPROD
Chmn & Chief Exec Officer E J Donley; Pres & Chief Operating Officer D F Baker; VPres Research J R Lovett; Dir of Public Affairs W J Kendrick; VPres Employee Relations J O Boyce
- .1 -Linwood Laboratories,** PO Box 427, Marcus Hook, PA 19061. (pfc)
Tel: 215-485-1135; TWX: 510-669-3196
Technical Dir S L Alekman; Mgr of Technical Planning L Friedman; Mgr of Engineering S Gussow; Dir of R&D Process Products M M Mitchell; Dir of R&D Performance Chemicals J W Pervier; Dir of R&D Chemical Additives R L Mascioli; Mgr of Analytical, Physical and catalyst Testing Services R S Mayo
Fields of Energy Research: Applied and product-oriented research and development on catalysis, chemicals, and processes for petroleum and petrochemical industries; engineering and technical service covering petroleum processes

- .2 -Specialty Gases Laboratories,** PO Box 351, Tamaqua, PA 18252. (pfc)
Tel: 717-467-2981; Telex: 84-7416
Mgr Specialty Gases R&D A J Woytek
Fields of Energy Research: High purity calibration, forming, doping, electronic, and biological gases; gas handling equipment and instrumentation
- .3 -Trexlerstown Area Laboratories,** Rte 222, Trexlerstown, PA 18087. (pfc)
(Mailing Add: PO Box 538, Allentown, PA 18105.) Tel: 215-398-4911
VPres Research J R Lovett; Gen Mgr Process Systems Group R&D L S Gaumer; Dir Process Systems Group Research E J Greskovich; Dir Corporate R&D G W Roberts; Dir Corporate Research Services C McKinley; Mgr Technology Acquisition M L Spector; Dir Plastics R&D J H McMakin; Dir Scientific Affairs W M Smith; Dir Long Range Development J G Santangelo; Mgr Research Planning & Coordination Gases & Equipment M G Zellner; Dir Contract Research J B Wetherington; Mgr Applied R&D D A Domchek; Dir Chemical Process Technology J A Sykes; Dir polymer Chemicals T A Manuel; Technical Dir Industrial Chemicals J T Wharton
Fields of Energy Research: Cryogenic engineering research, including development of thermodynamic properties of fluids, low temperature distillation, heat transfer, fluid flow and related component and process development; applied research and development to create new markets for the use of industrial gases in the petroleum industry; energy research in coal technology, high temperature gas generation, gas and liquid absorption processes; wastewater treatment; microbiological processes; catalysis

- A74 AIRTECH SYSTEMS, INC,*** 365 Central St, PO Box 686, (p)
Stoughton, MA 02072. Tel: 617-344-0467
Pres John A Nichols; Researcher Angelo Nichols
Professional Staff: 4—Electrical engineering, mechanical engineering. Technicians & Auxiliaries 4
Fields of Energy Research: Air pollution control; heat recovery; drying engineering and testing plus manufacturing of heat exchange units; gas firing dryers
- A75 A I S RESOURCES LIMITED,*** 1603, 1455 Sherbrooke St W, (p)
Montreal, PQ H3G 1L2, Canada.
Pres & Gen Mgr Harry Workman
Fields of Energy Research: Oil and gas exploration
- A76 AJAX MAGNETHERMIC CORP,** 1745 Overland Ave, Warren, (p)
OH 44482. Tel: 216-372-8511; Telex: 098-2482; Cable: MAGNETHERM
Pres John A Logan; VPres R&D Mario Tama; Public Relations Officer & Mgr of Advertising J A Chance; Personnel Dir R E Turner; Librarian I Tama
Professional Staff: 8—Electrical engineering, electronics engineering, mechanical engineering, metallurgy. Technicians & Auxiliaries 11
Fields of Energy Research: Induction heating and melting; solid-state frequency converters and power controls
- A77 AKASABA RESOURCES LTD,*** 501, 25 Adelaide St W, Toronto, (p)
ON M5H 1N7, Canada.
Pres M K Duggan
Fields of Energy Research: Oil and gas exploration
- A78 ALABAMA A&M UNIVERSITY,*** Normal, AL 35762. Tel: 205-859-7011
Pres Dr R D Morrison
- .1 -Department of Natural Resources & Environmental Studies,*** 212 (p)
Carver Complex S, Normal, AL 35762. Tel: 205-859-7410
Coordinator John Herschelmann
Fields of Energy Research: Analyze operational modifications necessary to re-over some of the above-ground woody biomass from hardwood stands in a conventional harvesting system

ALABAMA POWER COMPANY

See The Southern Company

- A79 ALASKA ELECTRIC LIGHT & POWER CO,*** 134 Franklin St, (p)
Juneau, AK 99801. Tel: 907-586-2222
Pres W Corbus
Fields of Energy Research: Publicly owned utility

ALASKA POWER ADMINISTRATION

See United States Department of Energy

- A80 ALASKA POWER & TELEPHONE CO,*** 702 Water St, PO Box (p)
222, Port Townsend, WA 98368. Tel: 206-385-1733
Chmn of the Board A Garrett
Fields of Energy Research: Publicly owned utility

- A81 ALASKA WIND & WATER POWER**, PO Box G, Chugiak, AK (pfc)
99567. Tel: 907-688-2896
Owner & Corporate Research Officer Francis Soltis; *Public Relations Officer* Deborah Soltis
Professional Staff: 1. Technicians & Auxiliaries 1
Fields of Energy Research: Low cost development of low head hydroelectric sites with emphasis on home building and installing; power generation range of .5 to 50 kilowatts
- A82 ALBANY DEPARTMENT OF PUBLIC WORKS,*** Albany, NY (p)
12207. Tel: 518-472-8125
Chief Exec Officer Harry F Maikels
Fields of Energy Research: Produce refuse-derived fuel (RDF) from municipal solid waste; recover materials for recycling, primarily ferrous metals; generate steam from refuse-derived fuel
- A83 ALBANY OIL & GAS LIMITED,*** 500, 3 Lombard Place, (p)
Winnipeg, MB R3B 1N4, Canada.
Pres Frank Brown
Fields of Energy Research: Oil and natural gas exploration
- A84 ALBERTA DEPARTMENT OF ENERGY & NATURAL RESOURCES**, 9th floor, Petroleum Plaza South, 9915 108th St, (p)
Edmonton, AB T5K 2C9.
Librarian Carole Dawson
Fields of Energy Research: Forestry; alternate (renewable) energy sources; energy resources and conservation; public lands
- A85 ALBERTA DEPARTMENT OF THE ENVIRONMENT**, 14 floor, (p)
Oxbridge Place, 9820-106 St, Edmonton, AB T5K 2J6. Tel: 403-427-6131; Telex: 037-2006; TWX: 610-831-2636
Fields of Energy Research: Air, water and land pollution, especially regarding Atlanta, ecology, land use planning
- A86 ALBERTA ENERGY COMPANY LTD,*** 1200,10707-100 Ave, (p)
Edmonton, AB T5J 0B3, Canada.
Pres & Chief Exec Officer D E Mitchell
Fields of Energy Research: Energy and industrial-related development
- .1 -Alberta Oil Sands Pipeline Ltd,*** 1200,10707-100 Ave, Edmonton, (p)
AB T5J 3M1.
Pres N J Lashuk
Fields of Energy Research: Owns and operates a pipeline which transports synthetic crude oil produced by Syncrude project
- A87 THE ALBERTA GAS TRUNK LINE COMPANY LIMITED,*** (p)
2800, 205-Fifth Ave SW, PO Box 2535, Calgary, AB T2P 2N6, Canada.
Chmn H J S Pearson; *Pres & Chief Exec Officer* S R Blair
Fields of Energy Research: Owns and operates natural gas pipeline, and through subsidiaries produces and markets gas, manufactures pipeline equipment and is engaged in chemical manufacturing operations
- .1 -Alberta Gas Chemicals Ltd,*** 400, 11456 Jasper Ave, Edmonton, (p)
AB T5K 0M1, Canada.
Fields of Energy Research: Constructs facilities for the production of methanol
- .2 -The Alberta Gas Ethylene Company Limited,*** 2200, 205-Fifth (p)
Ave SW, Box 9150, Calgary, AB T2P 2W4, Canada.
Fields of Energy Research: Owns and operates an ethylene manufacturing plant near Red Deer, AB
- .3 -Algas Engineering Services Ltd,*** 2800, 205-Fifth Ave SW, PO (p)
Box 2335, Calgary, AB T2P 2N6.
Fields of Energy Research: Organizes certain engineering and operations training services which are provided to other companies
- .4 -Algas Mineral Enterprises,*** 2800, 205-Fifth Ave SW, PO Box (p)
2535, Calgary, AB T2P 2N6, Canada.
Fields of Energy Research: Engaged Primarily in the acquisition of natural gas reserves
- .5 -Algas Resources Ltd,*** 2800, 205-Fifth Ave SW, PO Box 2535, (p)
Calgary, AB T2P 2N6, Canada.
Fields of Energy Research: Engaged Primarily in the acquisition of natural gas reserves
- .6 -Foothills Pipelines Ltd,*** 1600, 205-Fifth Ave SW, PO Box 9083, (p)
Calgary, AB T2P 2W4, Canada.
Chmn K H Gibson; *Pres* S R Blair
Fields of Energy Research: Construct a large diameter, natural gas pipeline from Prudhoe Bay in Alaska, through Yukon and western Canada, to southern markets
- .7 -Pan-Alberta Gas Ltd,*** 350, 202-Sixth Ave SW, Calgary, AB T2P (p)
2L9, Canada.
Fields of Energy Research: Contracts for purchase of surplus natural gas
- .8 -Q & M Pipe Lines Ltd,*** 2800, 205-Fifth Ave SW, PO Box 2535, (p)
Calgary, AB T2P 2N6, Canada.
Fields of Energy Research: Formed to study feasibility of constructing and operating a gas pipeline to extend the present system of natural gas pipelines in Canada from Montreal to service Quebec, New Brunswick and Nova Scotia
- A88 ALBERTA NATURAL GAS COMPANY LTD,*** 3rd floor, (p)
240-4th Ave SW, Calgary, AB T2P 0H5, Canada.
Chmn R A Mackimmie; *Pres & Chief Exec Officer* H Booth
Fields of Energy Research: Owns and operates natural gas pipeline
- ALBERTA POWER LIMITED**
See IU International Corporation
- A89 ALBIA LIGHT & RAILWAY CO,*** 10 N Main St, Albia, IA (p)
52531. Tel: 515-932-2186
Chmn of the Board V Ehlers
Fields of Energy Research: Publicly owned utility
- ALCOA CONDUCTOR PRODUCTS CO**
See Aluminum Company of America
- ALCOA LABORATORIES**
See Aluminum Company of America
- A90 ALCOLAC INC**, 3440 Fairfield Rd, Baltimore, MD 21226. Tel: (p)
301-355-2600
Chmn of the Board & Chief Exec Officer Miloul Blinoff; *Pres* Charles N Anderson Jr
- .1 -Wapora, Inc**, 6900 Wisconsin Ave NW, Washington, DC 20015. (pfc)
Tel: 301-652-9520
Pres Dr J I Bregman
Professional Staff: 200 (Doctorates 15)—Aquatic toxicology, architecture, biology, biosystematics, botany, chemistry, conservation development, ecology, economics, energy, engineering, entomology, geology, land use planning, mathematics, oceanography, resource development, water resources, wildlife management, zoology. Technicians & Auxiliaries 4
Fields of Energy Research: Applied research in environmental management, including water and air pollution control, noise abatement, solid waste disposal, environmental impact studies and resource management, with special emphasis on the pulp and paper industry and electric utilities
- A91 ALCOR, INC**, 10130 Jones Maltsberger Rd, San Antonio, TX (pft)
78284. (Mailing Add: PO Box 32516, San Antonio, TX 78216.) Tel: 512-349-3771; Telex: 76-7470
Pres A Hundere; *VPres & Chief Research Officer* H G Buschfort; *Admin VPres & Public Relations Officer* Myriam Sprinkle Hundere; *Personnel Mgr* Ken Colvard; *Safety Officer* Phil Fruin
Professional Staff: 2—Mechanical engineering. Technicians & Auxiliaries 9
- A92 ALCORN STATE UNIVERSITY,*** Lorman, MS 39096.
Pres Dr Walter Washington
- .1 -Department of Biological Science,*** Lorman, MS 39096. Tel: (p)
601-877-3711
Assoc Professor of Biology A Latif
Fields of Energy Research: Develop process to produce methane from alligator weeds
- A93 ALCO STANDARD CORPORATION,*** Rte 363, Valley Forge, (p)
PA 19482. Tel: 215-666-0760
Chmn & Chief Exec Officer Tinkham Veale II; *Pres & Chief Operating Officer* Ray B Mundt
- .1 -Barnes & Tucker Company**, The Irwin Bldg, Rte 363, King of (p)
Prussia, PA 19406. Tel: 215-649-7440
Pres & Chief Exec Officer A DiGiovanni
Fields of Energy Research: Coal mining
Also Locations in Barnesboro and Haverford, Pa
- .2 --Usphur Coals Corporation**, PO Box 578, Buchannon, WV 26201. (p)
Tel: 304-472-2900
Pres Frank E Williams III
Fields of Energy Research: Bituminous, steam and metallurgical coal
- .3 -Vaughan Industries,*** Tampa Industrial Park, PO Box 9275, (p)
Tampa, FL 33674. Tel: 813-971-6262
Pres & Chief Operating Officer John T Vaughan
- .4 --Ipsen Industries,*** PO Box 6266, Rockford, IL 61125. Tel: (p)
815-332-4941
Pres & Chief Operating Officer Louis D Clay
Fields of Energy Research: Gas atmosphere heat treating furnaces;

8 ALDONA MINES LIMITED

- vacuum heat treating furnaces; fast fire kilns; furnace rollers; formed refractories; insulating brick; induction heating equipment
- .5 --Modern Equipment Company,*** Box 266, Port Washington, WI (p)
53074. Tel: 414-284-9431; TWX: 910-260-3642
Pres & Chief Operating Officer Richard N Olmstead
Fields of Energy Research: Water-cooled cupolas; induction melting and duplexing furnaces; hot blast heaters; cupola charging systems; pouring ladles; air pollution control equipment; gas atmosphere generators; fuel fired and electrically heated industrial furnaces; petrochemical processing plants; gas manufacturing plants
- .6 -V V Companies,*** Maylee Bldg Room 301, 2490 Lee Blvd, (p)
Cleveland Heights, OH 44118. Tel: 216-321-6700
Pres & Chief Operating Officer G W Veale IV
- .7 --Industrial Products Companies,*** PO Box 835, Valley Forge, PA (p)
19482. Tel: 215-666-0300
- .8 ---Schroeder Brothers Corporation,*** PO Box 72, Nichols Ave, (p)
McKees Rocks, PA 15136. Tel: 412-771-4810
Pres & Chief Operating Officer William E Schroeder
Fields of Energy Research: Hydraulic pressure and return line filters; suction devices; coal mining machinery; coal handling equipment; hydraulic test benches
- A94 ALDONA MINES LIMITED,*** 930, 1 Place Ville Marie, (p)
Montreal, PQ H3B 2A5, Canada.
Pres Murray Cooper
Fields of Energy Research: Engaged in exploration and development of oil and gas
- A95 JODY ALESIAN,** 4247 NE 92nd, Seattle, WA 98115. Tel: (p)
206-524-0915
Fields of Energy Research: Integrated system of renewable resource and energy conservation measures which are available for use by any urban household. The project will involve keeping records on household consumption of energy and energy related goods and services; providing publicity, personal tours, written articles, and providing plans; a bibliography of useful publications and resource listings and recipes for those visiting the site. Energy conservation measures at the home include a passive solar greenhouse, raised bed, intensive/ companion/succession planting garden with rain barrel-drip irrigation; aerobic and anaerobic composting; wood stove heat; recycling and reuse of paper, metal and glass; and other energy saving techniques for electricity, natural gas and petroleum.
- A96 ALETA RESOURCE INDUSTRIES LTD,*** 2880 Arbutus St, (p)
Vancouver, BC V6J 3Y7, Canada.
Pres M Powell
Fields of Energy Research: Holds uranium claims in southeastern British Columbia
- A97 ALFA-LAVAL, INC., ENERGY SYSTEMS DIVISION** (f)
(Subsidiary of Alfa-Laval AB, Sweden), PO Box 106, South Deerfield, MA 01373. Tel: 413-665-7051; Telex: 955357
Managing Dir Dr Bernard Hoffman; *Admin Dir* Jay E Yoffo; *Technical Dir* Dr James W Connell; *Asst Technical Dir* William Rowan
Professional Staff: 10 (Doctorates 1)—Chemical engineering, heat transfer, mechanical engineering, ocean engineering, structural engineering
Fields of Energy Research: Ocean Thermal Energy Conversion using Plate Heat Exchangers
- A98 ALFRED UNIVERSITY,** Alfred, NY 14802. Tel: 607-871-2162
Pres N Neville; *University Relations* Martin Moore; *Librarian* June Brown
- .1 -Alfred University Research Foundation,** Alfred University, Alfred, (pfc)
NY 14802. Tel: 607-871-2162
Dir William B Crandall
Professional Staff: 10 (Doctorates 1)—Coal characterization, coal slurry, furnace refractories, waste utilization, water slurry. Technicians & Auxiliaries 6
Fields of Energy Research: Coal/water slurry, high solids content, coal grinding, coal pumping; coal slag/refractory interactions
- A99 ALKAN USA, INC,*** 235 Loop 820 NE, Hurst, TX 76053. Tel: (p)
817-589-2451
Gen Mgr Kent Goldsmith
Fields of Energy Research: Wind energy research and development
- ALLEGANY BALLISTICS LABORATORY**
See Hercules Incorporated
- A100 ALLEGHENY POWER SERVICE CORPORATION,*** Cabin (p)
Hill, Greensburg, PA 15601. Tel: 412-837-3000
Fields of Energy Research: Publicly owned utility
- A101 ALLEGHENY POWER SYSTEM INC,*** 320 Park Ave, New (p)
York, NY 10022. Tel: 212-752-2121
Pres C B Finch
Fields of Energy Research: Publicly owned utility
- .1 -The Potomac Edison Co,*** Downsview Pike, Hagerstown, MD (p)
21740. Tel: 301-731-3400
Exec VP & *Gen Mgr* J M McCardell
Fields of Energy Research: Hydroelectric production; publicly owned utility
- .2 -Monongahela Power Co,*** 1310 Fairmont Ave, Fairmont, WV (p)
26554. Tel: 304-366-3000
Exec VP & *Gen Mgr* D E Hollen
Fields of Energy Research: Publicly owned utility
- A102 ALLEN & HOSHALL, INC,** 2430 Poplar Ave, Memphis, TN (fc)
38112. Tel: 901-327-8222
Pres Robert W Barbee; *Gen Mgr* Frank B Gianotti; *Corporate Research Officer* W Lewis Wood Jr; *Public Relations Officer* Roger E Mauzey
Professional Staff: 70—Architecture, civil engineering, electrical engineering, gas pipeline engineering, mechanical engineering, process engineering. Technicians & Auxiliaries 60
Fields of Energy Research: HVAC systems; retrofit; total building energy planning and design; energy audits; resource recovery systems and design; electrical transmission; cogeneration; load management; natural gas systems; biomass; solar; cellulose to ethanol; municipal and joint energy utilization
- A103 ALLEN-BRADLEY COMPANY,*** 1201 S Second St, Milwaukee, WI 53204. Tel: 414-671-2000; Telex: 1-6699; TWX: 910-262-3451; Cable: ALBRADLEY MIL
Chmn & Chief Exec Officer I Andrew Rader; *Pres & Chief Operating Officer* C R Whitney; *Research Dir* Harold Roth; *VP* Advanced Products & Technical Division Edward M Michalak; *VP* of Personnel Relations John W Matheus
- .1 -Industrial Control Division,*** 1201 S Second St, Milwaukee, WI (p)
53204. Tel: 414-671-2000
VP & *Gen Mgr* Claude R Whitney; *Dir of Industrial Control Development* Kenneth L Paape
Fields of Energy Research: Contactors; motor starters; motor control centers; high-voltage starters; push buttons; limit and proximity switches; disconnects; safety switches; energy management; solid-state systems and components
- A104 ALLEN CORPORATION OF AMERICA,** 401 Wythe St, (fc)
Alexandria, VA 22314. Tel: 703-548-4200
Pres & Chief Exec Officer A Carl von Sternberg; *Sr VP* & *Technical Dir* Dr Raymond E Reilly; *VP* of Technical Operations Dr W M Hinton Jr; *Sr Research Scientist* Dr Dennis G Faust; *Librarian* Lucile N Kurtz; *Sr Research Scientist* James F Logan; *Principa*; *Research Scientist* Dr Geo Menzer; *Principal Research Scientist* Harry F Walbrecher
Professional Staff: 28 (Doctorates 5)—Engineering psychology, experimental psychology, industrial engineering, mechanical engineering
Fields of Energy Research: Training research; program development and evaluation; training equipment design and evaluation; training materials production—all pertaining to a diverse range of industrial and governmental requirements
- A105 ALLEN DRERUP WHITE,** 334 King St E, Studio 505, Toronto, (pc)
ON M5A 1L7, Canada. Tel: 416-368-2821
Partner Greg Allen; *Partner* Elizabeth White; *Partner* Oliver Drerup
Fields of Energy Research: Design and engineering of energy-efficient and solar heated buildings; prototype design and development of low-cost, highly insulative building systems and heat-reclaim equipment; passive solar and hybrid heating systems for residential applications
- A106 ALLEN SCIENCE RESEARCH, INC,** 123 W Seventh St, (pfc)
Charlotte, NC 28202. Tel: 704-376-1015
Pres John L Allen Jr; *Librarian* Eileen Vollmer
Professional Staff: 10 (Doctorates 2)—Chemistry, electronics, instrumentation and automation, physics physics. Technicians & Auxiliaries 4
Fields of Energy Research: Energy utilization and sources
- A107 ALLIED CHEMICAL CORPORATION,** Columbia Rd & Park Ave, PO Box 1057R, Morristown, NJ 07960. Tel: 201-455-2000
Chmn of the Board John T Connor; *Pres & Chief Exec Officer* Edward L Hennessy Jr; *Group VP* Corporate Technology L James Colby Jr
- .1 -Eltra Corporation,** 2 Pennsylvania Plaza, New York, NY 10001. (p)
Tel: 212-695-1600
Chmn & Chief Exec Officer J A Keller; *Pres & Chief Operating Officer* R B Loynd; *VP* of Technology Dr R A Swalin
Professional Staff: Ceramic engineering, chemistry, computer science, electrical engineering, metallurgy, software engineering