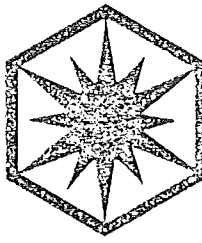


SERI NEWS



RECEIVED

Written by and for employees of the
Solar Energy Research Institute

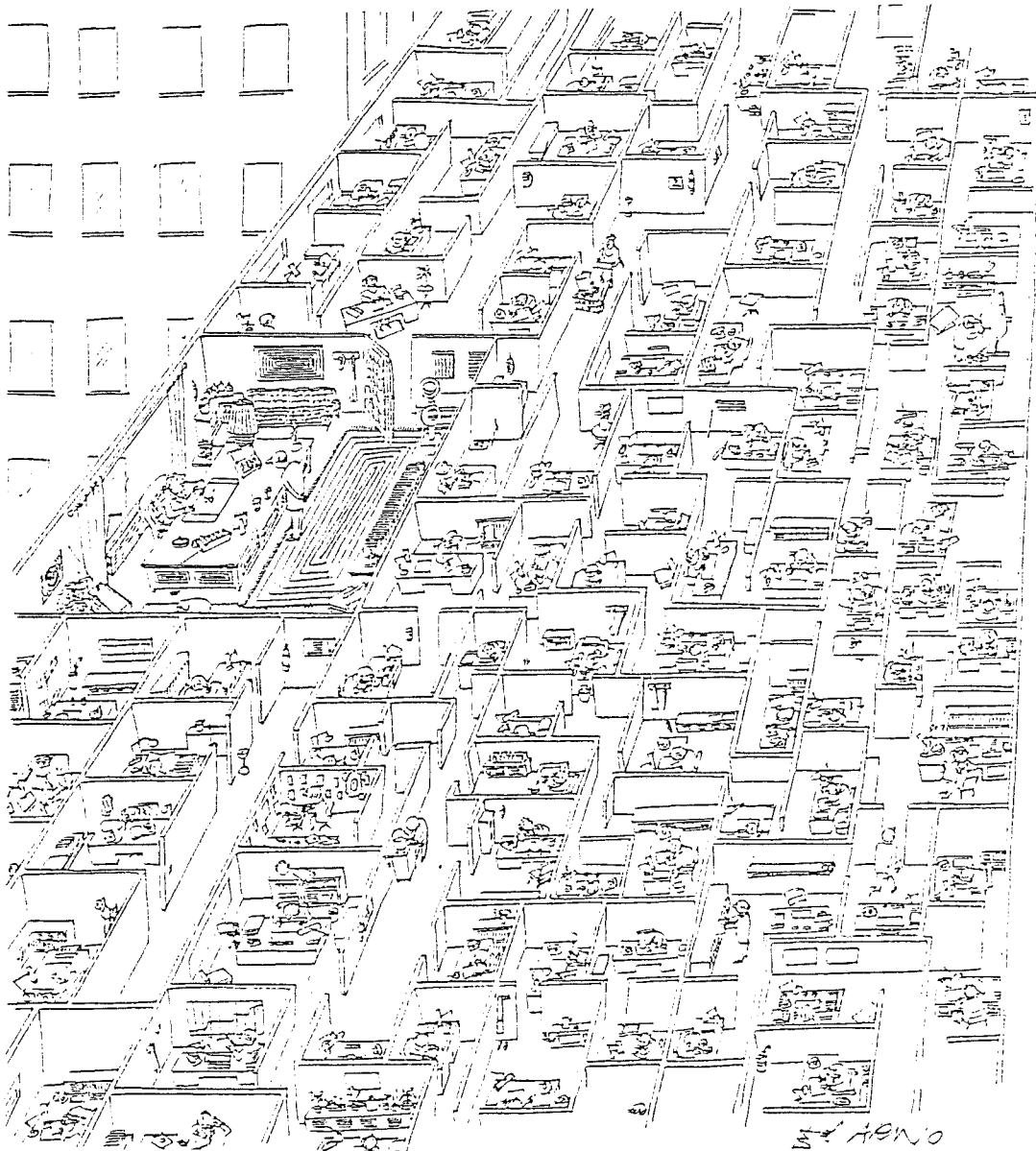
A Division of Midwest Research Institute

Vol. II-11 1979 March 29, 1978

SEIC

THORNE VISITS SERI

Acting Assistant Secretary for Energy Technology, Robert Thorne, was at SERI Friday to discuss SERI's mission and key roles, current staffing plans, accelerated development of permanent facilities, and new initiatives SERI could undertake in support of the national solar energy program. Thorne was briefed by the assistant directors and other staff members on the current status of SERI program activities.



BY ANNO

"I'm afraid a raise is out of the question, Benton, but in view of your sixteen years of service we are advancing you two spaces."

HOUSE HAPPENINGS

THREE NEW STAFFERS

Dr. John H. Ashworth, research analyst, joins SERI from MIT Energy Lab in Cambridge, Mass. where he was a postdoctoral research fellow.

Robert Odland, senior land use planner, was previously a planner with Sedway/Cooke, a land use and environmental consulting firm in San Francisco, Calif.

Kenneth O. Olsen, program manager, formerly was acting director of the Chemical Information Division in the Office of Toxic Substances at EPA in Washington, DC.

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SHERRIE MOORE transferred from Word Processing Center to the Library, where she is an Associate Librarian II.

GEORGE MORGAN addressed a group of law students at the University of Colorado, March 16 on legal problems of solar energy and the role of the lawyer in the developing solar legal field.

KEITH MASTERSON spoke on "Physics and the Role of Physicists at the Solar Energy Research Institute" at the University of Colorado on March 22.

GORDON GROSS was the luncheon speaker for the Denver Chamber of Commerce Energy, Environment & Transportation Council held March 22.

MEL SIMMONS spoke on the "Role of Government and Public Institutions in a Solar Society" at the University of California at Berkeley, March 14.

DENNIS HORGAN is attending the DOE Systems Study Workshop in Houston, Texas, March 27-30.

RON LARSON and BARBARA FARHAR are attending the Solar Energy-Utility Interface Workshop, sponsored by DOE, at George Washington University, Washington, DC, March 27-31.

PAUL RAPPAPORT is chairing a session of the American Physical Society in Washington, DC March 29, on "R & D activities at SERI." Also participating are CHARLIE GROSSKREUTZ, TOM REED, AND DAVE BENSON (sitting in for Barry Butler, who broke his leg skiing).

PAUL RAPPAPORT will be the colloquium speaker for the Center for Energy Studies at Brown University, in Providence, Rhode Island, March 30.

His presentation, entitled "The Future of Solar Energy for the United States," will explore the various options in solar energy that may contribute to preservation of fuel resources. The national solar programs, including the role and mission of SERI to develop the nation's solar potential, will also be discussed.

NOZIK EMPHASIZES PHOTOELECTROLYTIC PROCESSES

Dr. Arthur J. Nozik from the Materials Research Center of Allied Chemical Corporation presented a Research Seminar, March 22, entitled "Solar Energy Conversion Via Photoelectrochemistry." Although he reviewed the entire field briefly, his emphasis was on photoelectrolytic processes. Most work in this area involves the direct production of hydrogen in photoelectrolytic cells, but Nozik also suggested the possibility of converting nitrogen to ammonia and producing useful hydrocarbons by reducing carbohydrates.

Dr. Nozik is the inventor of the photochemical diode (a photoelectrolytic device which requires no external circuit and can be fabricated in the form of a small pellet). Thus, a major theme of his talk was his belief that photoelectrolytic devices (a one-step device) will ultimately produce hydrogen more efficiently than devices using solar cells and conventional electrolysis units in sequence (a two-step device). He based this belief on calculations which show that the theoretical efficiency of hydrogen production in one-step devices is 50% higher than that in two-step devices.

C A L E N D A R

April 6	10-5	Research Seminar Speaker: Maria Telkes, 1st floor conference room
April 10	8:30-5	STTF Users Association Executive Committee, Holiday Inn West
April 11-12	8:30-5	STTF Users Association, Holiday Inn West

GALLIMAUFRY

THE BOULDER SOLAR ENERGY SOCIETY will meet Wednesday, April 5, at noon, in the NCAR auditorium. Mike Kirkbride will speak on "A passive solar home: theory and application."

LOST: During a meeting last week, a carrying case for a Lanier pocket dictator was misplaced. If you can provide information on its whereabouts, please call Bev Rampey, ext. 333.

DOES YOUR HOME NEED A DOG? If so, an AKC registered basenji is available for adoption. The basenji is a small chestnut brown dog that rarely barks. Amos is male, 2 1/2 years old, good health, has vaccinations, housebroken, and likes children. If interested, contact Nancy Greer, ext. 249.

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POWER FROM THE OCEAN

The concept of using thermal gradients in the ocean as an energy source was discussed by two speakers at the SERI seminar series last week. The temperature difference between the warm surface waters and the deep, colder water of the ocean is used for powering a heat engine which could drive electrical utility generators.

Dr. Clarence Zener, University Professor at Carnegie-Mellon University, and former Director of Research at Westinghouse Laboratories, opened the session by developing the idea that conventional power plants, and nuclear in particular, have consistently cost over twice the original utility estimates by the time they were completed. This historic disparity between projections and actual installations should be considered when comparing alternate energy systems.

Dr. Zener traced developments in the technology of OTEC (ocean thermal energy conversion). Closed cycle approaches require costly heat exchangers; open cycle approaches eliminate heat exchangers, but require large conversion hardware. Dr. Zener's current research effort eliminates the need for both by using natural forces to lift water to great heights, so that it can be dropped in free-fall through a hydraulic turbine to create the energy for electric generating equipment.

Dr. Abraham Lavi, DOE Program Manager for OTEC power systems, gave a status report on the progress of the national OTEC program. He said the critical issues of heat exchanger rate and biofouling have achieved experimental resolution in an ocean test program.

Independent cost estimates from various contractors have resulted in a surprisingly narrow spread of system cost projections around \$1800/kW. Dr. Lavi indicated that plans are being discussed for (2) 10 megawatt size island pilot plants in the years 1980 and 1981. A full-size 100 megawatt plant is being planned for 1986. He emphasized that the time for market and commercialization planning to maximize the effectiveness of the pilot plants is now.

GOVERNOR SPONSORS SOLAR COMPETITION

In conjunction with Colorado's observance of Sun Day, Governor Richard Lamm is sponsoring a solar design competition. Contestants must design a highway weigh station planned for Platteville, Colorado as a solar facility. First, second, and third prizes of \$1,000, \$500, and \$200 respectively will be presented on Sun Day, May 3. The contest is open to all Colorado residents and students, with the exception of practicing architects, designers and engineers, and employees of the State of Colorado. Competition guidelines, building specifications, and typical plans are posted on the third floor bulletin board.

COVER TO COVER--NEWS FROM THE LIBRARY

The NEWEST MEMBER OF THE LIBRARY STAFF is Sherrie Moore. Before joining the Library, she worked in the word processing center here at SERI. She comes to her new job with 3 years experience in acquisitions at Stearns Roger, Inc.

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SPECIAL THANKS TO: Paul Rappaport and Larry Kazmerski for their recent contributions to the Library.

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METRIC UNITS OF MEASURE AND STYLE GUIDE prepared by the U.S. Metric Association is a twelve page brief guide to the metric system. A handy reference tool for your desk, it contains a short history of the metric system; definitions, symbols, and relationship of common metric units; the correct way such units should be cited in publications; a conversion table; a description of the 24-hour clock; tables of the International System of Units (SI); SI-Supplementary Units, SI-Decimal Prefixes, and SI-Derived Units. Copies of this booklet are available to all SERI staff; contact Bev Rampey (ext.333). The Library also has copies on reference for your review.

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DATA BASE OF THE WEEK: MAGAZINE INDEX

MAGAZINE INDEX is one of the newest databases on the Lockheed DIALOG systems. There are currently 25,000 citations to publications for 1977 with an estimated total for 1977 to be about 35,000. The file will be updated monthly with 5,000 citations per month. Magazine Index covers over 350 popular American magazines with subject coverage including:

<u>Subject</u>	<u>Examples of Journals Indexed</u>
Current Affairs	Atlas Newsweek Time
Consumer Product Evaluation	Consumer Report Money
Sports and Recreation	Backpacking Runnersworld Sports Illustrated Barrons Business Week
Environment	Mother Earth News

* * * *

THE LIBRARY LATEST:

BOOKS

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- Duckworth, W. E. A Guide to Operational Research. NY : John Wiley and Sons, 1977.
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Volume 5. Climates of Northern and Western Europe.
Volume 11. Climates of North America.
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- Nobile, Phillip, and Deedy, John, eds. The Complete Ecology Factbook. Garden City, NY: Doubleday and Co., Inc., 1972.
- The World of Learning. 28th Ed., London: Europa Publications Ltd., 1977.
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Volume 2. Selected NBS Papers on Temperature.
Volume 4. Selected NBS Papers on Electricity-Radio Frequency.
Volume 7. Selected NBS Papers on Radiometry and Photometry.
Volume 10. Selected NBS Papers on Image Optics.
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- Miami International Conference on Alternative Energy Sources. Proceedings of Condensed Papers. Miami Beach, December 5-7, 1977.
- A Survey of Passive Solar Buildings. AIA Research Corporation, U.S. HUD and ERDA.
- Congressional Quarterly Almanac. 33rd Annual, 95th Congress, 1st Session, 1977. Washington, D.C.: Congressional Quarterly, 1977.

JOURNALS

Bell System Technical Journal
Contractor
IEEE Spectrum
Consumer Reports
Journal of Polymer Science

