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The Solar Ocean Energy Liaison

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Solar OCEAN ENERGY Liaison

INCORPORATING
The OTEC Liaison

VOLUME 4 NUMBER 7
July 1980

PRESIDENT CARTER SIGNS OCEAN THERMAL ENERGY CONVERSION ACT OF 1980

On August 4th President Carter signed the Ocean Thermal Energy Conversion Act of 1980 into law. This followed his signature July 17th of the Matsunaga-Fuqua bill, HR 7474, known as the Ocean Thermal Energy Conversion, Research, Development, and Demonstration Act—now Public Law 96-310. (See the June issue of OE.) Thus, within only two weeks, two major cornerstones for OTEC implementation were established.

The law signed in July (PL 96-310) establishes within the US Department of Energy an accelerated research and development program for OTEC, principally through the establishment of near-term and long-range goals, as well as providing authorization for funding of two OTEC pilot plants. However authorization is only the first step, as the actual appropriation of funds remains to be accomplished. Efforts toward that end are already being made by the Ocean Energy Council and others, but efforts to contain the national budget and competition for federal dollars from many others will make it an uphill fight.

The second giant step in OTEC legislation just signed, originally known as the Studds-Inouye bill and now PL 96-320, addresses the second of the two major hurdles to OTEC commercialization: large-scale systems integration and demonstration, and removal of legal and other institutional uncertainties that would otherwise become barriers to OTEC commercialization.

The earliest form of PL 96-310, HR 6154, was introduced in the House on December 14th, 1979 by Representative Gerry Studds of Massachusetts; and the companion bill, S 2492, was introduced in the Senate on March 27th, 1980 by Senator Daniel Inouye of Hawaii. The Senate duly passed S 2492 by unanimous consent on July 2nd, and the House passed HR 6154 by voice vote on July 21st. While there was still the possibility of a Presidential veto, this was viewed as doubtful since, along with the obvious merits of the bill, Senator Inouye was head of the Rules Committee at the Democratic Convention, with Senator Kennedy's bid for the nomination largely in the hands of that Committee.

FOR IMMEDIATE RELEASE

AUGUST 4TH, 1980

Office of the White House Press Secretary

THE WHITE HOUSE

STATEMENT BY THE PRESIDENT

I have signed into law S. 2492, the Ocean Thermal Energy Conversion Act of 1980 sponsored by Senator Daniel Inouye. This new bill establishes a licensing and permitting program within the National Oceanic and Atmospheric Administration (NOAA) for the Ocean Thermal Energy Conversion (OTEC) industry, and authorizes use of the Maritime Administration's loan-guarantee authority for the construction of ocean-energy facilities once this technology has been successfully demonstrated.

Ocean Thermal Energy Conversion is a new energy technology that when developed could contribute greatly to our goal of meeting 20% of US energy needs from solar and renewable sources by the year 2000. Just two weeks ago, I signed into law the Ocean Thermal Energy Conversion Research, Development, and Demonstration Act. That law authorizes an ambitious program of OTEC technology research and development. S. 2492 is another step in the process of bringing OTEC technology into the mainstream of our energy marketplace.

OTEC technology is still in its infancy. Therefore we must be careful to ensure that the loan guarantees for commercialization activities provided by S. 2492 are made only if they are necessary and appropriate and only after this technology has been demonstrated. S. 2492 recognizes the need for such prudence by requiring that the authority for a loan guarantee be conditional on certification by the Secretary of Energy that the OTEC technology to be used in the facility in question has been successfully demonstrated on a scale sufficient to establish the likelihood of economic success. Moreover, the guarantee authority provided by S. 2492 is discretionary. If events indicate that financial assistance is not needed, or that another form of Federal financial assistance is more appropriate than loan guarantees for commercializing OTEC technology, S. 2492 does not foreclose the proper course of action.

The nation's energy security demands that we pursue renewable energy resources that are secure from foreign interdiction. S. 2492 provides a licensing program and a financing tool that may be of substantial assistance in applying OTEC technology after it has been demonstrated in years ahead. It is with pleasure that I sign this bill into law.

PL 96-320 establishes a federal one-stop licensing system with time limits for decision making administered by the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) for commercial OTEC facilities and plant ships; specifies which federal and state laws apply to OTEC facilities and plant ships licensed under the Act; and provides that OTEC facilities and plant ships be treated

as vessels for most purposes under US law.

The Act also makes OTEC facilities and plant ships eligible for capital-construction-fund tax treatment, and makes commercial and demonstration OTEC facilities and plant ships eligible for federal-vessel mortgage-obligation guarantees of up to 87½% of the private-industry cost under Title XI of the Merchant Marine act of 1936.

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Solar OCEAN ENERGY

Liaison

INCORPORATING

The OTEC Liaison

AN INTERNATIONAL NEWSLETTER
ENGAGED AS LIAISON FOR ALL
FORMS OF SOLAR ENERGY FROM
THE SEA, INCLUDING:

OTEC

(OCEAN THERMAL
ENERGY CONVERSION)
WAVE - TIDAL - CURRENT
OFFSHORE WIND - BIOMASS
SALINITY GRADIENTS

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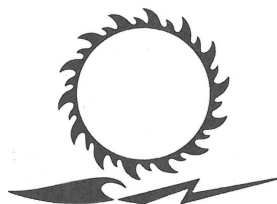
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Solar OCEAN ENERGY Liaison

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SOLAR OCEAN ENERGY

PRESIDENT CARTER SIGNS OCEAN THERMAL ENERGY CONVERSION ACT OF 1980

(continued from Page 1)

Private Investment Opportunity

These and other tax implications involving future OTEC plants are becoming an increasingly-attractive feature for potential investors. Various financial institutions as well as private groups are now actively investigating this investment opportunity.

Credit is due to the initiators and supporters of PL 96-320, as well as to Congress, for the foresight to establish the criteria necessary to encourage private industry to accelerate its commitment to OTEC demonstration. It is not unusual for a delay of up to seven years to occur between introduction of regulatory legislation and issuance of final regulations to implement it after enactment.

Some Barriers Remain Unresolved

PL 96-320, while going a long way toward removing institutional barriers to OTEC commercialization, does not contain any specific provisions regarding insurance, though it is likely that maritime insurance would be available at commercial rates. Also, the bill does not deal with the institutional difficulties of forming industrial organizations from the many diverse types of companies which must work together to design and construct large-scale integrated OTEC systems. Finally, the Act does not address the question of performance guarantees, which could become an institutional barrier to deployment of full-scale OTEC facilities.

[OE wishes to acknowledge the aid of Richard D. Norling, Staff Director of the House Subcommittee on Oceanography, in the preparation of this article, as well as his major contributions to the enactment of PL 96-310.]

BOB DOUGLAS ACCEPTS NEW POSITION WITH TRW

Robert Douglas has headed the ocean-systems/OTEC project at TRW for many years, bringing his expertise and enthusiasm for OTEC to the entire program.

Bob has accepted a position with the Military and Command Control Division of TRW, and therefore will no longer be in ocean systems. However Bob will continue his OTEC activities with the Ocean Energy Council as a member of its Board of Directors.

While we regret the loss to the OTEC program that Bob's departure will bring, we all wish him well in his new position.

OCEAN ENERGY COUNCIL EXPANDS ITS BOARD OF DIRECTORS

At a meeting held concurrently with the Seventh Ocean Energy Conference, the Board of Directors of the Ocean Energy Council decided to expand its membership to seven directors.

The new Board, to serve for one year, includes Eugene Barsness (Westinghouse), Robert Douglas (TRW), Evans "Bud" Francis (Applied Physics Laboratory of Johns Hopkins University), Malcolm Jones (Reynolds Aluminum), Richard A. Meyer (*Ocean Energy*), Fred Naef (Lockheed), and Jay Yaffo (Alfa-Laval). Affiliations are shown for identification purposes only.

Myron Nordquist (Nossaman, Krueger, and Marsh) continues as legal counsel and registered lobbyist.

The Ocean Energy Council is a non-profit organization with about 75 members. Further information is available from Box 57198, Washington DC 20037.

JAPANESE FORMING OTEC ADVOCACY GROUP

An aggregation of industrial firms in Japan are in the process of forming a group similar to the American-based Ocean Energy Council.

The new group will be called the Japan Ocean Thermal Energy Forum (JOTEF), and finalization of its structure is expected to take place around mid-October. The group is delaying its official founding until after formal establishment of The New Energy Development Organization in Japan, expected to take place around October 1st. Around 90% of the latter group are Japanese Federal Government personnel.

Both groups will advance the development of alternative energy sources and will co-operate with private industry in Japan and the Japanese Government.

The principals of JOTEF are communicating and exchanging information with the Ocean Energy Council.

WHEN THE PON?

Although the announcement by DOE on July 1st indicated that the PON for one or more OTEC pilot plants should be forthcoming "on or about August 1st", that target date as well as several others that have replaced it have gone by with no clear evidence of when the PON will be on the street.

Our most recent information, from a highly-placed individual in DOE's Ocean Systems Branch, is that the PON may be issued around the first week of September.

However this editor remembers the repeated (month by month) delays regarding the awarding of the OTEC-1 contract. The earliest issue date expected for the PON, based on past DOE slippage, is late September or early October.

INTERNATIONAL CALENDAR

Listed below are conferences and symposiums pertinent to solar ocean energy. These have been gleaned from various solar, energy, and oceanographic publications. Major meetings recently completed are still listed for the benefit of readers who may wish to contact conference organizers for reports of proceedings.

Jun 21-28: Seventh Massachusetts Institute of Technology-Harvard Law Seminar on Ocean Policy: Law, Technology, and Management, Cambridge. The program will examine the legal, technical, and policy aspects of ocean resources management. Info: Gerald Bernstein, Administrative Director, 186 Alewife Brook Parkway, Cambridge, Massachusetts 02138.

Jun 23-26: Third World Hydrogen Energy Conference, Tokyo. Info: Tokyo Ohta, Conference Chairman, Japan Convention Services Incorporated, Nippon Press Center Building, 2-2-1, Uchisaiwal-cho, Chiyodaku, Tokyo 100, Japan.

Aug 6-9: 1980 National Marine Education Association Conference, Salem, Massachusetts. Celebration of the "Year of the Coast" with the theme "Our Coast: Heritage, Conflict, and Challenge". Info: James Centorino, Marine Science Institute, Salem State College, Salem, Massachusetts 01970.

Aug 25-28: International Short Course on Design Elements for Offshore Structures, Texas A&M University, College Station, Texas. Co-sponsored by Texas A&M's Ocean Engineering Program and Sea Grant College Program. Fee \$450. Info: John M. Niedzwecki, Ocean Engineering, Department of Civil Engineering, Texas A&M University, College Station, Texas 77843, (713) 845-4515.

Sep 8-10: Oceans '80, Seattle, Washington, an international forum on engineering in the ocean environment in the next decade. Sponsored by the Institute of Electrical and Electronic Engineering and others. Info: Oceans '80, Institute of Electrical and Electronic Engineering, Incorporated, PO Box 9847, Queen Anne Station, Seattle, Washington 98109.

Sep 15-18: 42nd Annual Meeting of the Sea Horse Institute, Wrightsville Beach,

North Carolina. Info: W. W. Kirk, Director, LaQue Center for Corrosion Technology, PO Box 656, Wrightsville Beach, North Carolina 28480.

Sep 24-25: Intermarltec '80-International Conference on Marine Sciences and Ocean Engineering, Hamburg, Federal Republic of Germany. Info: Hamburg Messe und Congress GmbH., Congress-Organisation, Postfach 30 23 60, D-2000, Hamburg 36, Federal Republic of Germany.

● **Oct 6-8:** Marine Technology Conference and Exposition, Shoreham Americana Hotel, Washington DC. Theme: Decade of the Oceans. Info: MT '80, Marine Technology Society, 1730 M Street Northwest, Washington DC 20036.

Nov 11-13: 11th Annual Underwater Mining Institute, Savannah, Georgia. Co-sponsored by the Sea Grant College Programs of the University of Wisconsin and University of Georgia and the Marine Science Institute of the University of Texas. Info: Barbara Arnold, University of Wisconsin, Sea Grant Advisory Services, 1815 University, Madison, Wisconsin 53706.

● **Dec 8-11:** National Conference on Renewable Energy Technologies, Honolulu, Hawaii. Sponsored by the Department of Energy. Provides a forum for interchange of latest information on major DOE programs and projects in renewable energy technologies. Theme: island self-sufficiency as a model for regional energy planning in such areas as biomass, wind energy, solar energy, and ocean thermal energy; field trips to various islands to view demonstration projects on wind, geothermal, solar, OTEC, and biomass also included. Info: Donni S. Hopkins, Conference Co-ordinator, Hawaii Natural Energy Institute, University of Hawaii at Manoa, 2540 Dole, Holmes Hall 246, Honolulu, Hawaii 96822, (808) 948-6379.

Dec 15-18: Third Miami International Conference on Alternative Energy Sources, Miami Beach, Florida. Topics include biomass, ocean thermal energy, wind energy, wave energy, tide power, and conservation. Info: T. Nejat Veziroglu, Director, Clean Energy Research Institute, University of Miami, PO Box 248294, Coral Gables, Florida 33124.

OTEC site in Puerto Rico. EG&G, working with the Lawrence Berkeley Laboratory of the University of California, will take comprehensive current measurements using a moored array and hydrographic measurements to be effected on five cruises. EG&G will use a research vessel owned by Puerto Rico's Department of Natural Resources for both the mooring and hydrographic work.

CORRECTION

In our June issue we incorrectly identified Dr. Jeffrey H. Rumbaugh in our cover photo. Dr. Rumbaugh is with DOE's Office of Electrical Energy Systems/Resource Applications.

US GOVERNMENT PROCUREMENT INVITATIONS AND CONTRACT AWARDS

Listed below are contract awards and procurement invitations related to solar ocean energy culled from the Commerce Business Daily. This is not to be construed as a complete list.

July 11: An Open-End Contract for Environmental Studies in Hawaii and Pacific Areas Including But Not Limited to Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Commonwealth of the Northern Marian Islands: Services under this contract will include field investigations and preparation of environmental assessments or environmental statements. Primary emphasis of the field investigations will be terrestrial and freshwater aquatic biology, with secondary emphasis on other biological studies. Services will be implemented through individual work orders. The cumulative total of all work orders issued for the one-year contract period will not exceed \$250,000, and no individual work order will exceed \$25,000. The contract may be extended for an additional one-year period at the option of the Government. The Government obligates itself to obtain no less and no more than \$5,000 in services during the term of the contract. The contract will include the schedule of overhead and wage rates upon which costs of work orders will be based. Criteria used in selection will include relevant experience (including experience within appropriate geographic areas), availability of personnel (including in-house staff), and the ability to respond promptly to work requests. Among administrative criteria impacting upon selection of the A-E will be the involvement of minorities in the firm and its consultants. Firms desiring consideration must submit a Standard Form 254, if not already on file, and a Standard Form 255 within 14 calendar days from the date of this announcement. Submit required information to Chairman, A-E Pre-Selection Board, US Army Engineer Division Pacific Ocean, Building 230, Fort Shafter, Hawaii. For further information contact Dr. James Maragos, (808) 438-2263. This is not a request for proposal. US Army Engineer Division Pacific Ocean, Building 230, Fort Shafter, Hawaii 96858.

● **July 14: Hydrogen Derived From Solar Energy:** Negotiations are being conducted with SRI International, 333 Ravenswood Avenue, Menlo Park, California 94025, for Solicitation DE-AC-03-80-ER-10190, a study to determine whether hydrogen derived from solar energy will be cheap and will find a role in the US energy economy quickly. Six-month effort: estimated cost not to exceed \$40,000. Helen Field, (415) 273-6097. US Department of Energy, San Francisco Operations Office, 1333 Broadway, Oakland, California 94612.

July 14: Modification, Repair, and Refurbishment of Pre-Prototype SPE Water

EG&G JOINS DOE

ON TWO OTEC PROGRAMS

The EG&G Environmental Consultants Division of Wellesley, Massachusetts is now working with DOE's Ocean Systems Branch on continuing development of OTEC technology, with estimated first-year funding of \$840,000.

The first program involves the field testing of a closed-cycle OTEC system aboard OTEC-1, which is about to begin testing operations off Hawaii's Big Island. The 45-month study will include physical, chemical, biological, and meteorological measurements.

The second program deals with physical oceanographic measurements at a proposed

Electrolysis Subsystem: Negotiations are to be conducted with the General Electric Company, Direct Energy Conversion Programs, 50 Fordham Road, Wilmington, Massachusetts 01887, for RFP 9BC73-3-0-88P. NASA, Lyndon B. Johnson Space Center, BL5/Procurement Operations Office, Houston, Texas, (713) 483-4512.

July 21: Non-Technical Consequences of Malevolent Acts Against DOE Resources and US Energy Resources: RFP RP-01-80-DP-30224. All requests must be in writing. US Department of Energy, PO Box 2500, Washington DC 20013, (202) 376-9290.

July 21: Continuation of Testing and Performance Reporting on Government-Owned Experimental Anti-Fouling Specimens in Miami Bay, Florida: Negotiations are being conducted with Miami Marine Test Station for Solicitation N00167-80-R-0162. David W. Taylor Naval Ship Research and Development Center, Bethesda, Maryland 20084, Attn: N. A. Teasdale, Code 5321.1, (202) 227-1077.

July 21: Management and Technical Support Services for Energy Technology Overrun Due to Supplying of Additional Man-Hours With 10% DPMH Threshold: Negotiations are being conducted with TRW Incorporated, Energy Systems Group, 8301 Greensboro Drive, McLean, Virginia 22102, Solicitation AC-01-78-ET-60033 (formerly ET-78-C-01-3168).

July 22: Characterize and Develop Analytical Techniques to Measure Selected Metals in Seawater: The National Oceanic and Atmospheric Administration (NOAA), in concert with its responsibility of measuring certain metals in seawater in support of the Flower Garden Reef data acquisition, additionally needs to have rapid and accurate analyzing techniques that are currently lacking, for the determination in seawater of barium, aluminum, chromium, zinc, and vanadium. The planned closing date is August 28th, 1980. Requests for copies of the RFP should be sent Attn: SA-RSD-88-8242TC. US Department of Commerce, Research Contracts Branch, Office of Acquisitions and Grants, 14th and Constitution Avenue NW, Washington DC 20230.

July 24: Continued Research on Ocean Engineering Sensors and Mooring Dynamics: Negotiations are to be conducted with the Charles Stark Draper Laboratory Incorporated, 68 Albany Street, Cambridge, Massachusetts 02139. Office of Naval Research, 800 North Quincy Street, Arlington, Virginia 22217.

July 24: Analysis of "Ocean Disposal State-of-the-Art and Associated Environmental Considerations Relevant to Disposal of Manganese Nodule Processing Rejects": Perform an analysis to describe current and emerging ocean disposal techniques including use of ocean dumping and ocean outfalls potentially applicable to the disposal of the waste and rejects remaining after extraction of value metals from manganese nodules and to assess the environmental impacts of each technique. RFP SA-RSD-80-0249 EFM. Proposed issue date July 31st, 1980, closing date September 3rd, 1980. US Department of Commerce, Research Contracts Branch Office of Acquisitions and Grants, Washington DC 20230.

July 30: Energy Economic Data Base: Contract DE-AC-02-78-ET-33020.A003, for \$411,269, awarded to United Engineers and Constructors Incorporated, 30 South 17th Street, Philadelphia, Pennsylvania. US Department of Energy, 9800 South Cass Avenue, Argonne, Illinois 60439.

July 30: A Market Analysis Methodology for Solar and Conservation Technologies: Contract DE-AC-03-80-CS-10064, for \$148,706, awarded to Applied Decision Analysis Incorporated, 3000 Sand Hill Road, Menlo Park, California 94025. US Department of Energy, 1333 Broadway, Oakland, California 94612.

July 31: Feasibility Studies for Alternative Fuels Production: The purpose and objective of this effort is to provide incentive and support for feasibility studies leading to the construction and operation of commercial-scale alternative-fuel production facilities. Pursuant to the Supplemental Appropriations Bill for FY 1980 a total of \$100 million is available for this program, with no individual grant to exceed \$10 million. It is DOE policy to insure that small and disadvantaged business, women-owned business, and Indian tribes are afforded a reasonable opportunity to become equitably involved in its financial assistance programs, including those involving the growing alternative-fuels industries. Accordingly, the Department encourages proposals from such groups and urges that other proposers make a special effort

to substantively involve such businesses in projects offered for support under this solicitation. Teaming arrangements, joint ventures, or subcontracting are methods of such involvement. Organizations that were on the mailing list for the previous alternative fuels program solicitations need not submit another request to receive this solicitation. Firms desiring a copy of Program Solicitation DE-PS-01-80-RA-50412 must submit their requests in writing to US Department of Energy, Resource Applications, Room 3500, Mail Station 3344, 12th and Pennsylvania Avenue NW, Washington DC 20461, Attn: Alternative Fuels Task Force.

July 31: Program Solicitation for Proposals for Co-operative Agreements in Alternative Fuels Production: The purpose and objective of this solicitation is to provide incentive and support through the issuance of co-operative agreements leading to the construction and operation of commercial-scale alternative-fuel production facilities. Pursuant to the Supplemental Appropriations Bill for FY 1980 a total of \$200 million is available with no cooperative agreement to exceed \$25 million in federal support. It is DOE policy to insure that small and disadvantaged business, women-owned business, and Indian tribes are afforded a reasonable opportunity to become equitably involved in its financial assistance programs, including those involving the growing alternative-fuels industries. Accordingly, the Department encourages proposals from such groups and urges that other proposers make a special effort to substantively involve such businesses in projects offered for support under this solicitation. Teaming arrangements, joint ventures, or subcontracting are methods of such involvement. Organizations that were on the mailing list for the previous alternative fuels program solicitations need not submit another request to receive this solicitation. Firms desiring a copy must submit their requests in writing to US Department of Energy, Resource Applications, Room 3500, Mail Station 3344, 12th and Pennsylvania Avenue NW, Washington DC 20461, Attn: Alternative Fuels Task Force.