8-1-1978

Volume 2, Number 8 (August 1978)

The OTEC Liaison

Follow this and additional works at: https://nsuworks.nova.edu/nsudigital_otec-liaison

Part of the Energy Policy Commons, Environmental Studies Commons, Natural Resources Management and Policy Commons, Oceanography Commons, Oil, Gas, and Energy Commons, Science and Technology Studies Commons, and the Water Resource Management Commons

NSUWorks Citation
https://nsuworks.nova.edu/nsudigital_otec-liaison/12

This Newsletter is brought to you for free and open access by the NSU Digital Collections at NSUWorks. It has been accepted for inclusion in The OTEC Liaison by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.
The fourth annual Oceans '78 Conference, co-sponsored by the Marine Technology Society (MTS) and the Institute of Electrical and Electronics Engineers, was held at the Sheraton Park Hotel in Washington DC September 6th through 8th. The meeting was attended by approximately 750 persons (compared to 460 at the last OTEC meeting) and included the presentation of technical papers, exhibits, and open policy sessions. OTEC was well represented, with extensive displays by TRW, Lockheed, Dames and Moore, Hydronautics, and Tracor Marine, as well as branches of the Navy Department and NOAA.

Principal speakers were Richard Frank, Administrator of NOAA; Juanita Kreps, Secretary of Commerce; and Cecil Andrus, Secretary of the Interior. Public policy sessions were held on Outer Continental Shelf and Coastal Zone Management Use, Deep Ocean Mining, Fisheries, and Ocean R&D, among other topics.

One session of papers titled Large-Scale Development of Ocean Energy Resources and chaired by Owen M. Griffin of the Naval Research Laboratory was attended by over 200 persons, with standing room only at the back of the room. A key paper entitled Environmental Considerations for Siting an OTEC Early Testing Platform at Four Proposed Areas was well presented by M. Dale Sands of Interstate Electronics and Pat Wilde of Lawrence Berkeley Laboratories. While it is unfair to sum up such a fine paper with so few words, the main conclusion reached, to quote Wilde, was that negative environmental factors in such a platform were "not significant".

(continued on Page 2)

While several earlier dates for the awarding of the contract for the OTEC-1 platform have come and gone, Sig Gronich told TOL on September 11th that DOE's Assistant Secretary for Energy Technology, Robert D. Thorne, would make the final selection between Lockheed, Global Marine/TRW, and OCEO no later than the end of this month, due to the ending of the fiscal period. All three contending teams have presented signed contracts to Thorne, who will make the final selection with the aid of a panel committee. The original schedule was for the announcement in July and go-ahead in September (see the March issue of TOL). A complete account of the contract award will appear in the September issue of TOL.

The representation at the left of an OTEC Plant Ship was distributed by Lockheed Missiles and Space Company at the Oceans '78 Conference held in Washington DC.

Lockheed's design has heat exchangers immersed in the sea to provide buoyancy, and they can be detached from the hull and floated to a base for servicing. The shiplike shape of the platform simplifies the cold-water pipe and position-keeping system. According to Lockheed's literature a single 400-megawatt plant ship producing ammonia can save 38 million cubic feet per day of natural gas.
(continued from Page 1)

Solar Ocean Energy/OTEC has become an ocean technology that most attendees were well aware of, in contrast to just several years ago, when OTEC was relatively unknown. The forthcoming letting of the major contract for OTEC-1, anticipated momentarily; the near-term advent of MINI-OTEC, to be operational in late spring off Hawaii; and increased awareness among the oceanographic community all mark the US OTEC program with enthusiasm, as was evident at this conference. However several clouds of concern were expressed by certain individuals to the TOL representative in Washington.

Representatives of some of the larger industrial firms active in OTEC expressed concern that funding for construction of a 10-MWe plant was not yet firmly in the DOE budget for the next fiscal year. Also mentioned by several conference attendees was the apparent growing opposition to OTEC, most probably from advocates of the development of nuclear and coal as prime energy sources.

On the other hand, engineers and contractors assured this writer that Hawaii’s MINI-OTEC would provide a clear demonstration of OTEC’s potential, since it would definitely have a net energy output—in contrast to Claude’s crude plant off Cuba almost 50 years ago. A detailed press release on MINI-OTEC is expected within 30 days, and will be printed in TOL as soon as it becomes available.

EUROPEAN OTEC DEVELOPMENT PLAN DUE IN OCTOBER

TOL received word in late August from J. A. Constans, Deputy Director General of the EUROCEAN OTEC Group (see the February issue of TOL), that a detailed development plan will be ready in early October. Preparation is now in the final stage.

The forecasted development studies are divided into two sub-areas: an R&D area which covers mainly component studies (theoretical and experimental) and a Feasibility Study area dealing mainly with system studies. Full details will appear in an early issue of TOL.

SIXTH ANNUAL OTEC CONFERENCE DELAYED UNTIL SPRING

Shortly after the completion of the Fifth OTEC Conference held in February in Miami, plans were made to hold the sixth meeting in Washington DC in November. This would have been ideal, since next year’s federal budget and DOE funding undoubtedly have been favorably influenced by the Conference. The meeting was later moved up to January, with plans for it to be hosted by George Washington University in the capital. However DOE personnel could not agree with the University on terms, the hotel could not hold the time open any longer, and the plans were scuttled. Bob Cohen told TOL in early September that tentative plans now are to hold the meeting in May or June, but still in Washington. He said arrangements would be finalized by the end of this month.
THREE FIRMS SELECTED FOR OTEC HEAT-EXCHANGER DESIGN

The Department of Energy has selected three firms to design advanced OTEC heat exchangers.

Contract negotiations will begin with:
- General Electric Company, Schenectady, New York (subcontractors Sea Solar Power, York, Pennsylvania, and Worthington Pump, Harrison, New Jersey);
- Lockheed Missiles and Space Company, Sunnyvale, California (subcontractor Alfa-Laval Thermal, South Deerfield, Massachusetts);
- TRW Incorporated, Redondo Beach, California (subcontractors Linde Division of Union Carbide, Tonowanda, New York, and C. F. Braun, Alhambra, California).

DOE expects to award contracts of approximately $1 million to each of these three firms.

The heat exchangers to be designed by the three firms will be based on so-called "shell-less" technology, a concept that is used by the automobile radiator. Last summer DOE selected three firms to design OTEC heat exchangers using more conventional "shell and tube" configurations. The shell-less concept may have potential benefits in both cost and size.

During the next nine months, each firm will develop conceptual and preliminary designs for an 0.2-megawatt (electric) heat exchanger and for a complete OTEC power module, which would link 50 individual 0.2-megawatt heat exchangers into a complete generating system producing 10 megawatts of electricity. Future large-scale OTEC systems would comprise several of the 10-megawatt modules.

Each contract will require a comprehensive design review by DOE at the end of three months. At the conclusion of the Government design reviews, DOE will assess whether the designs, which include several innovative concepts, can achieve the high heat-exchanger performance estimated by the contractors.

When the designs are complete, DOE plans to select at least one of the firms to prepare engineering designs leading to the fabrication of the 0.2-megawatt unit for testing on board the OTEC-1 ocean test platform.

LARGE COLD-WATER PIPE TESTS BEGIN

An 800-foot (five-foot diameter) highly instrumented cold-water pipe will be built and suspended from an existing tension-leg offshore-drilling test platform off the California coast. The at-sea test program is being conducted by Deep Oil Technology and funded by the Department of Energy.

The program is unique: No pipe this size has ever been suspended from a platform. October 1st is the expected starting date for the tests, scheduled to run for one month as part of the Ocean Thermal Energy Conversion (OTEC) program. They will be used to verify existing computer programs.

A FURTHER REPORT ON THE FORMATION OF AN OTEC COUNCIL

Two additional meetings on the possible formation of an OTEC Council/Trade Association were held in the Washington DC area August 14th and 28th. Among those attending were Charles Matthews, President of the National Ocean Industries Association (NOIA); Evans (Bud) Francis of the Applied Physics Laboratory of Johns Hopkins University; Fred Naef of Lockheed; Phillip Eisenberg, President of Hydronautics and immediate past president of the Marine Technical Society; Robert Leamer of TRW; Dr. Robert Cohen of DOE; and Ambassador Sol Linowitz, senior partner of Coudert Brothers and former head of Xerox. Each of these individuals, however, did not attend every meeting.

A general consensus based on an ongoing telephone poll and personal conversations with OTEC contractors, researchers, and government personnel by the editor of TOL indicates strong enthusiasm for such an organization. Therefore a mailing including a questionnaire to obtain feedback will go out to all TOL subscribers and others within 30 days, including minutes of the above meetings. In the interim, comments and suggestions are encouraged.

NEW REPORT ON JAPAN'S OTEC PROGRAM JUST RECEIVED

Just prior to the closing of this issue, an up-to-date report was received by TOL from The Energy Division, Electrotechnical Laboratory (ETL) in Tokyo, under the auspices of Japan's Ministry of International Trade and Industry (MITI), the branch of the Japanese Government that audits the relationship between industry and government. The report is in the form of a paper entitled Ocean Thermal Energy Conversion R&D Status and Plan in Japan, and will be presented by Takenobu Kajimkawa and Takuya Homma of ETL at the Fifth International Ocean Development Conference, to be held in Tokyo September 25th through 29th. Abe Lavi of the Carnegie-Mellon University, representing DOE, will present a paper on US progress at that meeting.

The 17-page Japanese report is highly detailed and illustrated, providing complete information, in a clearly understood English translation, on the firms and organizations participating in Japan's OTEC program, conceptual designs of 100-MWe plants, cost evaluations, aspects of site selection, platform structure, cold-water-pipe and underwater-cable specifications, mariculture, environmental aspects, power generation and heat-exchanger test results, corrosion and biofouling, future dated planning, and an outline of Japan's plan for a 1-MWe test facility at sea.

Report Available to Readers

TOL will provide readers with copies of this complete report upon receipt of $4 to cover copying, handling, and postage costs. Excerpts from the report will appear in the September issue.

The OTEC Liaison Chicago 60622 August 1978
(continued from Page 5)

phase of a three-phase three-year effort covering a broad range of energy technologies. The period of performance is estimated to be one year for each phase and will involve four or five assessment projects each year. The specific technologies to be assessed have not yet been determined. The Government intends to enter into a cost-plus-fixed-fee contract for only Phase One of this project, which will require approximately 8.5 person-years of effort. Continuation of work into Phases Two and Three, through future contractual actions, will depend on satisfactory performance and the results of each preceding phase, as well as the availability of funds. The RFP will be available on or about 1 Sep 78. Persons wishing to receive a copy of RFP EJ-78-C-03-2115 should submit their requests in writing accompanied by two self-addressed labels. Steve Bonde, Secretary, Contractor Evaluation Board, Department of Energy, 1333 Broadway, Oakland CA 94612.

Aug 25: Amendment of Electric Utility System Planning Studies for OTEC Power Integration: On Page 4 of the RFP, the first sentence of the second paragraph is revised to read as follows: If you desire to submit a proposal, six (6) copies of your proposal must reach the Panel Secretary no later than 4:00 pm local time, at the address indicated below, by 2 Oct 78. RFP ET-78-R-02 0019. Correction to PSA-7098. US Department of Energy, Chicago Operations Office, Contracts Management Office, 9800 S. Cass Ave., Argonne IL 60439.


Aug 29: Study of US Water and Land Resources and the Feasibility of Their Use in Supporting Biomass Production and Energy Farming: Negotiations are being conducted with Stanford Research Institute, Menlo Park CA 94025, for Contract ET-78-C-01-3142. E. Berry.


Sep 6: Further Research on Remote Sensing of Subsurface Temperature and Salinity: Negotiations are to be conducted with Computer Genetics Corp., 18 Lakeside Office Park, Wakefield MA 01880.

Sep 6: Further Research on Shock Response to Submerged Shell Structures: Negotiations are to be conducted with Southwest Research Institute, 8500 Culebra Rd., San Antonio TX 78284.

Sep 6: Structural Analysis of Both Submerged and Floating Structures: Negotiations are to be conducted with Weidlinger Associates, 110 E. 59th St., New York NY 10022.

Sep 6: Review and Analysis of Upper-Ocean Models: Negotiations are to be conducted with Science Applications Inc., 1200 Prospect St., PO Box 2361, La Jolla CA 92038.


Sep 11: Study of Existing and Planned DOE Energy Information Centers: Negotiations are being conducted with McManis Associates, Washington DC 20036, for Contract EU-78-4-01-5487. Procurement agent is Susan Shorter.

Sep 11: An Evaluation of Educational Implications of DOE-Sponsored Research and Development at Institutions of Higher Education: Negotiations are being conducted with Mitre Corp., Metrek Division, McLean VA 22101. The contract specialist is Vince Neutton.

Sep 13: Further Research on Marine Growth Removal: Contract N00014-77-C-0387, 15 Aug 78 (no RFP), $923,310, has been awarded to Daedalean Associates, Inc., 15110 Frederick Rd., Woodbine MD 21797.


Sep 14: Task Order Support Services to Provide Technical Assistance to the Information Systems Evaluation Division: Tasks will include development and execution of methodologies for assessing the cost-effectiveness of DOE Energy Information Systems. RFP ET-78-R-01-6525 (9) will be available on or about 11 Sep 78. Requests should be in writing. No telephone requests will be honored. (Telecopier 202/376-4993) US Department of Energy, Office of Procurement Operations, 400 1st St. NW, Washington DC 20545.

Another view of Lockheed’s Oceans ‘78 exhibit.

Aug 7: Evaluation of Vibration Monitoring Techniques for Non-Destructive Evaluation of Offshore Platforms: Negotiations are being conducted with Aero­


Aug 8: Operation and Management of Solar Energy Research Institute: Contract EG-77-C-01-4042 (contract modification for $1,596,371) awarded to Midwest Research Institute Sun Division, Kansas City MO 64110.


Aug 14: Technical Support for Vulnerability Assessment: This assessment will include a wide range of threats in the area of ship, aircraft, and missile (platform vulnerability, electromagnetic radiation blast, fragments, shock, conductive contaminants, and fire. Emphasis will be on integrating platform vulnerability from single threats into combined vulnerability designs. Revisions will be traded off against threats so that those selected must enhance system survivability. Indefinite Quantity Type Contract RFP N60921-78-R-A166. Contracting Officer, Naval Surface Weapons Center, Dahlgren VA 22448.


Aug 18: International Regional Assessment Studies for Solar, Electric Applications for the North Central, South Central, and Northwest Regions of the United States: Perform three individual Regional Assessment Studies (RAS) for the potential deployment of solar electric (SE) generation options for the North Central, South Central, and, and Northwest Regions of the United States. The North Central Region consists of Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Ohio, Pennsylvania, West Virginia, and Wisconsin. The South Central Region consists of Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas. The Northwest Region consists of Alaska, Hawaii, Idaho, Montana, Nebraska, North Dakota, Oregon, South Dakota, Washington, and Wyoming. Each RAS shall investigate the SE options of solar thermal systems, ocean thermal—energy conversion (OTEC) (with the exception of the North Central Region), photovoltaic energy—conversion systems, wind energy—conversion systems (WECS), total energy systems (thermal and electric), and electric generation from biomass. Central and dispersed (SE option located at point of use) applications of the SE options shall be considered in the RAS. Each RAS shall identify (1) potential SE options expected to be available within the North Central Region in the 1980—2000 time frame; (2) how and when each option might be employed by particular user groups (utilities, industrial and commercial firms, developers, home owners, and Federal, state, and local government agencies); (3) key demonstrations and other actions that should be taken to facilitate solar electrification in the Region; and (4) a strategy for implementing these options including specific actions by all affected parties. The Solar Energy Research Institute intends to award a single, separate subcontract for each of the three regions. Interested organizations should request a copy of RFP RD-8-1866 for the North Central Region, RFP RD-8-1862 for the South Central Region, and RFP RD-8-1863 for the Northwest Region. If an organization desires to propose on more than one region, separate and complete proposals must be submitted in response to each RFP. To be considered for these RFPS, requests must be received at SERI no later than 21 days from publication of this notice. The RFPS may be obtained by writing (no phone calls) to Solar Energy Research Institute, 1536 Cole Boulevard, Golden CO 80401, Attn: W. P. Painter, Subcontracts Administrator.

Aug 18: Oceanic (and Selected Non-Oceanic) Area System Improvement Studies (OIASS): RFP LGR-8-0256. Negotiations will be conducted with SRI International, Menlo Park CA.


Aug 22: Support Services for Energy Market Development: Contract EF-78-R-01-06520 (63). Requests should be in writing. No telephone requests will be honored. (Teletype 202-376-4993)


Aug 22: Ocean Forecasting and Objective Analysis: Contract N00014-76-C-0571, 1 Aug 78 (no RFP), $99,427, to Science Applications Inc., PO Box 2035, LaJolla CA 92038.


Aug 23: Industrial Assessment of Status and Objectives of Private-Sector Energy Technology Development: This procurement involves the provision of assessment services to assist DOE in the eventual commercialization of new energy technologies. The overall objective of these research projects will be to assist private-sector energy-related research, development, and engineering (RD&E) and the underlying rationale of corporate business objectives in developing and marketing related technologies. This work is the fifth (continued on Page 4)
Global Marine Unit Gets Ocean Energy Contract

By a WALL STREET JOURNAL Staff Reporter

LOS ANGELES—Global Marine Inc. said its unit, Global Marine Development Inc., received a $25 million contract from the Department of Energy to design and deploy an experimental floating test platform for extracting energy from ocean waters. The company said TRW Inc. will be a major subcontractor.

Under the contract, Global Marine will convert a government-owned ship into a floating test platform designed to harness a portion of the energy represented by the difference in temperatures between warm ocean surface waters and the near-freezing waters found at great depths. Most of the work under the initial contract will be performed next year.

Global Marine said that follow-on operating contracts are expected starting in 1980. The Department of Energy said it expects the planned three-year testing phase in waters off Hawaii to cost about $17 million.

(Reprinted with permission of The Wall Street Journal, © 1978, Dow Jones and Company, Inc. All rights reserved.)

Another view of TRW's Ocean Energy exhibit.