5-1-1980

Volume 4, Number 5 (May 1980)

The Solar Ocean Energy Liaison

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COUSTEAU, ARIYOSHI, AND FUQUA TO SPEAK AT
7TH OCEAN ENERGY CONFERENCE JUNE 2–5

Captain Jacques Cousteau will address attendees of the 7th Annual Ocean Conference in Washington DC at the Conference Banquet on Tuesday evening, June 3rd. Other luminaries to speak at the meeting are Governor George Ariyoshi of Hawaii and Congressman Don Fuqua of Florida, Chairman of the House Committee on Science and Technology. Both will speak at the luncheon on Monday, June 2nd.

On November 2nd, 1979 Representative Fuqua introduced HR 5796, "The Ocean Thermal Energy Conversion Research, Development, and Demonstration Act", a bill to provide for accelerated research and development programs to achieve early application of OTEC systems. Governor Ariyoshi has actively supported his state's activities in ocean energy, which will be reviewed in his talk.

Captain Cousteau, in addition to his international renown as an oceanographer and environmentalist, is an avid proponent (continued on Page 2)

Appearing above is an illustration depicting the hybrid bottom-mounted OTEC concept for Puerto Rico and the Caribbean, prepared by J. Ray McDermott, Incorporated of New Orleans in conjunction with their work with NOAA. See story on BOTTOM-MOUNTED OTEC PLANTS in this issue. (Page 5)
Captain Jacques Cousteau, an avid supporter of OTEC/ocean energy, will address attendees of the Seventh Ocean Energy Conference at the Conference Banquet 7 pm Tuesday, June 2nd. (Photo credit: The Cousteau Society.)

COUSTEAU TO SPEAK AT OCEAN ENERGY CONFERENCE
(continued from Page 1)

of solar ocean energy (see the October 1979 issue of OE).

Attendance at last year’s Annual Ocean Conference was around 600, and at least 800 are expected for the June meeting this year, as well as a larger number of exhibitors.

For further details contact the Conference organizers, Gibbs and Cox, 2341 Jefferson Davis Highway, Arlington, Virginia 22202,(804) 380-5800, attention Robert Scott.

Patent Number 4,170,738, “Energy Device Powered by the Motion of Water Beneath Waves”, has been issued to E. Quimby Smith, Camarillo, California, assignor to the Q Corporation of Camarillo.

OCEAN ENERGY COUNCIL COCKTAIL PARTY PLANNED FOR JUNE CONFERENCE

Although it may not appear in the official program of the Seventh Annual Ocean Energy Conference June 2nd-5th at the Shoreham Hotel in Washington DC, the Ocean Energy Council invites all attendees of the meeting to a cash-bar cocktail party to be held at the Shoreham on Monday evening.

The Ocean Energy Council is an independent, non-profit organization incorporated in Washington DC with membership composed of individuals and organizations in the international OTEC/ocean energy community.

The year-old organization has been effective in many areas in working toward the advancement of ocean energy, especially toward moving OTEC legislation through the US Congress.

Information on the location and time of the cocktail party will be available at the registration desk at the June conference.
ON US OTEC LEGISLATION

While we indicated in our February issue that a complete review of currently pending legislation on OTEC would appear prior to the June Ocean Energy Conference, to do so thoroughly would have completely precluded our ability to bring you any other news and information.

We intend to provide our readers with not only summaries of the legislation itself (there are four bills pending, two each in the Senate and the House), but also listings of those presenting testimony; highlights of their testimony, including direct quotes; and dialogue between witnesses and committees, as well as tracing the movement of the bills through Congress.

This would so dominate our pages that we instead refer readers to presentations on this subject at the June 2nd–5th meeting, particularly the presentation of Richard Norling, senior staffer of the Subcommittee on Oceanography, Committee on Merchant Marine and Fisheries, 1:30 pm Wednesday, June 4th, at the Shoreham Hotel in Washington DC.

In addition, Congressman Donald Fuqua (who introduced H.R. 5796 in November) will speak at the conference luncheon at noon Monday, June 2nd, directly on pending OTEC legislation.

In the interim, however, a brief review follows:

Both Senate Bill 1830 (Matsunaga) and House Bill 5796 (Fuqua) were introduced to (1) establish a series of national OTEC goals, (2) direct construction of at least two demonstration plants, and (3) direct a comprehensive commercialization strategy.

Both Senate Bill 2492 (Inouye) and House Bill 6154 (Studds) were introduced to (1) establish a licensing regime, and (2) make OTEC eligible for MARAD loan guarantees.

The Carter Administration/OMB/DOE testimony on these bills is summarized as follows:

**S. 1830: October 15th, 1979**

Opposed passage because of need for results of OTEC-1 test on cleaning of heat exchanger and heat-transfer coefficients. While supporting intent of bill, premature to look into specific development pattern.

**H.R. 6154: February 27th, 1979**

Opposed passage of permitting title on ground of being “premature”. Recognized, however, early need to develop licensing and regulatory procedures, so that planning for construction of commercial facilities will not be impeded by uncertainties.

In addition, spokesman expressed concern about designation of NOAA as lead agency.

Opposed financial title. Although such financial incentives required in the future, technology and economics were still considered uncertain.

**S. 2492: May 1st, 1980**

Same reasons as H.R. 6154 above, plus: Opposed financial regime on grounds that Administration was restraining Federal credit programs.

**H.R. 5796: Hearings expected soon.**

Just what is behind the Carter Administration—which directs the OMB (Office of Management and Budget) and DOE—exhibiting a persistent stream of opposition to OTEC (as well as other solar energy) advancement is not clear.

It is clear, however, that until the US Government—still viewed internationally as a world leader—proceeds to take action to diminish dependence on fossil fuels as the principal source of world energy, the increasingly evident deterioration of the world’s economy, environment, and well-being will continue.

The general belief of many individuals within (and without) the OTEC community is that the opposition is due to either (1) the lack of belief in the viability of alternative energy technologies, or (2) the relationships between the Administration and conventional energy producers.

The editor of this publication believes it is a combination of both.

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**DISPLACEMENT OF $38 BILLION IN PETRO-DOLLARS BY 2000 SEEN AS IMPACT OF PENDING BILLS**

**OTEC Cost-Benefit Analysis**

Late in 1979, following the introduction of Senator Matsunaga’s Bill S. 1830, William Richards, Chief of the Ocean Systems Branch of DOE, initiated a study of its impact regarding the displacement of petro-dollars, should the national goals of S. 1830 be achieved.

The study was prepared by Dr. James R. Roney, the head of Ocean Engineering of Princeton, New Jersey, and was recently released. The cost of petroleum used in the study was based on the then-current rate of $22.50 per barrel. As this issue goes to press, OPEC members are charging as much as $38.50 per barrel.

We have doubled Roney’s figures, on the assumption that the price of oil will certainly reach $45 per barrel by early 1981, if not before. (Projections for the year 2000 range from $100 to $200 per barrel.)

Assumptions used in the OTEC Cost-Benefit Analysis (payback calculation using displaced petroleum cost) are as follows:

1. **400 MWE (NET) OTEC PLANTS,**
   **COST $800 MILLION EACH**

2. **COST OF OPEC OIL**
   **$45 PER BARREL**

3. **PLANT LIFE AT 30 YEARS**

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**SEA ENERGY CONFERENCE**

A one-day conference on Renewable Energy Sources from the Sea will be held on May 30th at the Annenberg School of the University of Southern California in Los Angeles. Speakers will include Robert Douglas, TRW; Duane Morrow and Leslie Wirt, Lockheed; Arnold Bryce, GE; and Byron Washom, Advanco. Details are available from the University of Southern California Sea Grant Advisory Services, 100 West Water Street, Wilmington, California 90744.

[Editor's note: It's a case of ill planning that this meeting has been scheduled immediately before the June 2–5 Ocean Energy Conference in Washington at the opposite end of the country, precluding attendance by many who plan to be in the Capitol just two days later.]
UNITED NATIONS ACTIVATES OCEAN ENERGY PURSUITS

Conference Set for 1981

As the negative effects, both economic and environmental, of the industrial world's dependence on oil and other fossil fuels are increasingly felt internationally, it is encouraging to see definitive action being taken by the United Nations toward their amelioration.

In March 1979 the UN General Assembly adopted a resolution (33/149) authorizing a Conference on New and Renewable Sources of Energy, to be held in 1981. The scope of the Conference includes solar energy, tidal power, wave power, and "thermal gradient of the sea", as well as other sources such as fuel wood, oil shale, tar sands, and hydropower.

Naef Attends Paris Conference

On November 5th through 9th the first session of the Technical Panel on Ocean Energy was held in Paris. Participants were in three groups, the first being experts representing five countries: Takeaki Miyazaki of the Japan Marine Science and Technology Center; Fred Naef of Lockheed, representing the US; Jean Claude Pujol of the Center for Exploitation of the Oceans, representing France; A. N. Singh of the Central Electric Authority, representing India; and Sergio Varas of the Energy Division of the Institute of Technological Investigation, representing Chile.

US STATE DEPARTMENT AND DOE TO STUDY OTEC POTENTIAL FOR DEVELOPING NATIONS

The US Department of State and the US Department of Energy are jointly funding a study of OTEC potential for developing nations. The level of effort will be about two professional man-years. For further information refer to Request for Proposal (RFP) 1751-000321 when writing to the Supply and Transportation Division, Department of State, PO Box 9244, Rosslyn Station, Arlington, Virginia 22209, attention Robert J. Day, Jr.

The second group was composed of UN personnel: Mohammed Gherab, Secretary General of the forthcoming Conference; Derek Lovejoy, Jan-Pierre Levy, and Lawrence Neuman, all members of the United Nations based in Paris.

The third group was composed of seven representatives of specialized agencies and observers, including representatives from UNESCO in Paris and research institutions from Austria and Japan.

The report of the meeting has been received by OE, and is quite detailed; however highlights are reported below.

With Mr. Pujol acting as chairman, the panel was hosted by the Intergovernmental (continued on Page 5)

Appearing on this page are photographs of a model of a floating OTEC aluminum-processing plant, prepared by TRW, which was first exhibited at the Offshore Technology Conference (OTC) in Houston in May. The model was prepared with the assistance of Reynolds Metal Company.
Oceanographic Commission at UNESCO headquarters with emphasis on OTEC, although wave and tidal energy received moderate attention. Lumped together as "other sources of ocean energy" were ocean currents, salinity gradients, offshore winds, marine biomass, and ocean-thermal.

Site evaluations of all ocean energy resources were discussed, as well as the magnitude of the potential resources; but it was pointed out that these were theoretical, with the suggestion that lower figures of estimated practical recoverable quantities be determined, along with what quantities of given resources could be extracted without adverse environmental effects.

For OTEC site requirements specifically, the French agency for oceanography (CNEXO) used three basic criteria for defining minimum requirements for OTEC development: (1) a delta-T greater than 18°C, (2) a 1000-meter isobath within five kilometers of the coastline, and (3) proximity to a coastal community of at least 20,000 persons, or an equivalent site corresponding to a power demand of 10 MW. Similar parameters of DOE were provided the panel.

There was general agreement that "no one option could be chosen over another for every case", and that there would be "advantages of different configurations" for proposed OTEC plants. The French and US experts concluded that the technical feasibility exists to commence a 10 MW OTEC plant at this time (1979) and to have it deployed and functioning by 1983.

The role of developing countries was expounded on, noting that they were "well endowed from the resource point of view", and thus might take part in ocean energy development. (See inset on the US State Department's study on this subject.) A major agenda item for the panel was the discussion of OTEC-derived hydrogen, ammonia, aluminum processing, desalination, and mariculture.

The meeting closed with the assignment of responsibilities to individual panel members, largely in the area of the release of various reports to the group to expand the information base.

A paper is scheduled to be presented on the work of the United Nations toward implementation of ocean energy resources at the June Ocean Energy Conference.

OTEC AND THE 200-MILE ZONE

The US State Department is closely observing the growing potential of OTEC not as an energy source, but rather as a possible source of conflict with our international neighbors. The State Department in fact gave testimony to this effect on the Studds Bill (H.R. 6154), and an RFP is out for further study.

A possible indication of the direction of US leanings appears in a letter dated April 10th, 1980 written by Elliot L. Richardson, Ambassador at Large of the US State Department and chief negotiator of the Law of the Sea Conference:

"George Aldrich and I have discussed with our colleagues from time to time the bearing of the perspective LOS treaty on OTEC activities beyond the 200-mile exclusive economic zone, and concur in your conclusion that "such operations would be a reasonable use of the high seas". The regime which would govern the exploitation of deep seabed resources would have no application to the water column or to the energy resources therein contained."

However, a United Nations spokesman recently told OE that Richardson's opinion on this matter is not universally accepted in the international community.

BOTTOM-MOUNTED OTEC PLANTS: THE FIRST COMMERCIAL OTEC?

It is becoming increasingly apparent that OTEC planners are leaning more heavily toward making the world's first commercial OTEC plant bottom-mounted. Despite the general tendency of DOE, major contractors, and the fertilizer industry toward floating designs, the activities of others toward bottom-mounted designs have been increasing steadily during the last year.

Both General Electric and J. Ray McDermott have evidenced this in their recent work (see photos and illustrations in this issue).

The French design is near-shore and bottom-mounted, as is the plan for a commercial plant for Abidjan, Ivory Coast. Studies in Taiwan indicate a preference for land-based OTEC plants.

At the June 1979 OTEC Conference, the Minority Group Report of the Ocean Engineering Workshop pointed out that existing deep-water structural technologies such as the guyed tower, tension-leg platforms, and bottom-based platforms developed by the offshore oil industry would have distinct advantages for OTEC plants.

These include solutions to the problems of the cold-water pipe and cable dynamics as well as boarding problems associated with floating OTEC concepts. Even DOE's Bill Sherwood acknowledged in the final plenary session of the 1979 Conference that he felt that the first OTEC plants would be bottom-mounted.

The history of offshore oil production illustrates the logic in this regard. Initially, as oil was discovered in marisy, near-shore sites, the petroleum producers altered their previous exclusive method of extraction of oil from dry land. Later, oil rigs were built in very shallow offshore locations, primarily in the Gulf of Mexico. As the search for oil expanded, structures began to be built in deeper and deeper waters, so that today 35% of the world's oil comes from offshore. (It is predicted that this will reach 60% to 75% within 10 years.)

While parallel efforts in both floating and bottom-based OTEC plants should obviously be pursued, it is the conviction of OE's editor—especially based on recent worldwide activities—that the first commercial OTEC plant will indeed be near-shore and bottom-mounted.

OTEC FLOATERS: BEWARE OF HURRICANE TERRITORY!

The following article is quoted in its entirety from a New Orleans newspaper. With planners considering proposed OTEC plants displacing up to 500,000 tons, this points up the anchoring concerns when a much smaller "floater" breaks loose in an area frequented by hurricanes. Of course, floating OTEC plants would be suitable in more benign waters. (The emphasis is that of the editor.)

6,000-TON SHIP WASHED ASHORE

Perdido, Florida (AP) — An unusual piece of debris washed up on the Gulf shore Thursday after the passing of Hurricane Frederic—a 455-foot-long, 6,000-ton ship.

Eglin Air Force Base officials said the converted minesweeper now used for airborne gunnery practice apparently broke away from its mile-long anchor line while the storm was raging.

"It's been out there at least two years," said Eglin spokesman John Turner. "It had very extensive anchoring."

He said the ship, known as the USS Ozark during its active service, had been anchored 28 miles out in the Gulf.

The Navy, Turner said, was assessing the situation.

PUBLICATIONS RECENTLY MADE AVAILABLE FROM NTIS

Two publications of interest to OTEC-watchers have recently become available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161.

- Selected Legal and Institutional Issues Related to OTEC Development, by V. P. Nanda of the Solar Energy Research Institute in Golden, Colorado, is available as SERI/TR-62-204 for $7 paper copy or $3.50 microfiche from NTIS (see address above).

- Proceedings of the Ocean Thermal Energy Conversion (OTEC) Biofueling and Corrosion Symposium, by R. H. Gray of the Battelle Pacific Northwest Laboratory in Richland, Washington, is available as PNL-SA-7115 for $24 paper copy or $3.50 microfiche from NTIS (see address above).

Solar OCEAN ENERGY Liaison Chicago 60605 May 1980
THE THERMOELECTRIC OTEC CONCEPT: A TECHNOLOGY WORTH WATCHING

OE's Ad Hoc Panel's Conclusion: "It Shows Promise"

This editor first became interested in the use of thermoelectric technology as applied to OTEC at last year's Sixth OTEC Conference, when a foreign visitor asked me what I thought of its potential. Acknowledging my unfamiliarity with the concept, I endeavored to look into its OTEC applications.

Thermoelectric technology (explained below) is not new, nor is it undeveloped. The Third International Conference on Thermoelectric Energy Conversion, held March 12th through 14th of this year at the University of Texas, was attended by more than 80 persons from nine countries. Firms such as General Atomic, 3M, Lockheed, Borg-Warner, and Westinghouse are involved, as are DOE and many international organizations.

What is relatively new is the thermoelectric OTEC concept, with research in this area pursued primarily by T. S. Javadov, D. K. Benson, and M. S. Bohn—all of the Solar Energy Research Institute (SERI) in Golden, Colorado. A paper on thermoelectric OTEC applications entitled "Thermoelectric Ocean Thermal Energy Conversion" (SERI/TP-35-254) was presented at OTEC-6 and is available from SERI, whose address appears at the end of this article. We include excerpts in this issue.

Current Applications

Over the last twenty years, thermoelectric energy generation has become the preferred method for producing electric power where reliability and maintenance-free operation is essential. Radioisotope-heated thermoelectric generators power orbiting satellites, remote radio transmitters, space probes (Pioneers 10 and 11 and Viking Mars Landers), deep-sea sonar sounding buoys, and the like. Fossil-fueled thermoelectric generators provide reliable cathodic protection for remote pipelines, bridges, and the like, and large-scale industrial thermoelectric cooling is becoming a commercial reality in France.

In the 1960s the attempts of thermoelectric researchers to compete with steam turbo-generators were not realized. But much-lower-temperature heat sources—such as OTEC—do appear to compete favorably.

No Evaporator, Condensor Needed

If proven applicable to OTEC, thermoelectrics will need no working fluid, offering greater simplicity, reliability, and safety than conventional closed-cycle designs. The simple design relies on a thin-layer, solid-state generator. The system requires no evaporator, condensor, working-fluid pump, pressure vessel, or turbo-generator; these components are replaced by power modules consisting of compact heat exchangers integrated with thermoelectric generators. (See Figure 1.)

Thermoelectric generation makes use of a bulk phenomenon: the Seebeck Effect—the same phenomenon that makes a thermocouple operate. A temperature gradient across any material tends to drive charge carriers from the hot side to the cold side and produce a voltage proportional to the temperature difference. In a thermoelectric OTEC system—using advanced materials under current development—a gross conversion efficiency of 2% is anticipated, with efficiency comparable to closed-cycle systems. New alloys of bismuth, antimony, and tellurium are being studied. These elements are byproducts of lead, gold, and copper processing, and are available in considerable abundance. (See Figure 2.) New materials such as amorphous semiconductors and organic semiconductors also show promise.

The simple designs of the modules suggest suitability for large-scale mass production, in contrast to the expensive and labor-intensive assembly needed for the tube-and-shell exchangers normally considered for closed-cycle OTEC.

Figure 1. Comparison of system schematic designs for closed-cycle OTEC and thermoelectric OTEC.

Figure 2. Detail of heat exchanger-thermoelectric generator configuration.

OTEC Industry/Research Comments

The editor of OE is not an engineer. To obtain unbiased evaluation of the potential of thermoelectric technology for OTEC applications, we forwarded copies of the June 1979 SERI report to various individuals for their comments. While these individuals are not identified herein, we will gladly act as liaison in response to inquiries from subscribers.

The president of a private firm engaged (continued on Page 7)
Figure 3. Preliminary power module design. This early design utilized a cross-flow plate-and-fin heat exchanger. Later analyses showed that performance of parallel-plate heat exchangers was comparable. Note size of man adjacent to 32 KW (net) module, indicating compactness.

THE THERMOELECTRIC OTEC CONCEPT: A TECHNOLOGY WORTH WATCHING

(continued from Page 6)

In OTEC heat-exchanger research believes that thermoelectric plants would be both heavier and more costly than closed-cycle plants. However, for electrolytic purposes, thermoelectric generation should be ideal.

A senior researcher of heat exchangers under contract to DOE feels that thermoelectric OTEC applications show promise, though he had doubts regarding current cost estimates. Their application to cogeneration from the waste water of conventional (fossil-fueled and nuclear) power plants seemed to him a bad idea.

Both TRW and Lockheed researchers expressed interest in thermoelectrics, but no specific comments have been made to date.

A university researcher long involved with OTEC heat exchangers also expressed doubts as to the cost evaluations of thermoelectric heat exchangers in the SERI paper. He was “basically attracted by the simplicity of the thermoelectric cycle”, but expressed doubts as to its viability and cleanliness in the ocean. He anticipated preliminary reliance on chlorine for bio-

fouling control:

“The other techniques that have been proposed for cleaning this configuration—ultrasonic devices or abrasive slurries—would seem to pose serious problems here because of the possible sensitivity of the surface to ultrasonic vibration on one hand and the relative softness of cupronickel on the other.”

Japan and France Watching

Of possible significance is the fact that both the Japanese and the French are closely watching and researching thermoelectric OTEC applications. Recently, in fact, a French firm initiated commercialization of air-conditioning equipment using thermoelectrics.

As further developments in thermoelectric applications for OTEC evolve, OE will relay them. In the meantime, further information may be obtained from:

David K. Benson
Principal Scientist
Solar Energy Research Institute
1536 Cole Boulevard
Golden, Colorado 80401
(303) 231-1162

Journal of Solar Engineering
American Society of Mechanical Engineers
345 East 47th Street
New York, New York 10017

K. R. Rao, Chairman, Third International Thermoelectric Conference
Electrical Engineering Department
University of Texas at Arlington
Arlington, Texas 76019
(817) 273-2671

We conclude this article with a direct quote from the university researcher mentioned above:

“All in all, I think the thermoelectric OTEC cycle is one deserving of further limited study at this time. I would advise you to keep a close eye on it—not only because of its intrinsic value, but also to keep reminding your readers that there are probably some tricks in this business that we haven’t discovered yet.”

Figure 4. Comparison of closed-cycle and thermoelectric OTEC costs.

Comparison of OTEC Capital Costs

(1980 $/kW Net)A

<table>
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<th>WBS Cost Elements</th>
<th>Ammonia Closed-Cycle</th>
<th>Thermoelectric</th>
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<tr>
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<tr>
<td>Average</td>
<td>2659</td>
<td>2620</td>
</tr>
</tbody>
</table>

A) All costs have been inflated to 1980 values using the Chemical Engineering Plant Cost Index.
B) WBS = work breakdown statement elements from DOE system definition.
C) Ammonia closed-cycle OTEC costs are based on estimates from 400 MWe conceptual plant designs by Gibbs and Cox (G&C), Lockheed Missle and Space Corporation (LMSC), and M. Rosenblatt and Sons (MR&S). The original cost estimates have been modified by J. J. McMullen Associates to make the cost comparison as uniform as possible.
D) The J. J. McMullen analysis did not include the power system; consequently, the cost estimate for this component is uniformly based on an EPRI-commissioned study of a 50 MWe module.

Solar Engineering, a monthly magazine devoted to all solar technologies, includes in its February 1980 issue an article on OTEC by Don Petty of the Solar Energy Research Institute (SERI) entitled “The OTEC Connection: Power From the Sea”. The issue is available from Solar Engineering, 8435 North Stemmons Freeway, Suite 880, Dallas, Texas 75247. Specify Volume 5, Number 2.

Petty is also preparing a new brochure for SERI entitled “The Ocean Option”, expected to be available for distribution at the June Ocean Energy Conference in Washington DC.

Solar OCEAN ENERGY Liaison Chicago 60605 May 1980 Page 7
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.


- Apr 2: Studies on Acute Toxicity of OTEC Plant Components on Selected Marine Animals From the Gulf of Mexico: Modification A002, Contract DE-AC-02-78-ET-20512, for $100,000, awarded to the Gulf Coast Research Laboratory, Ocean Springs, Mississippi 39564, US Department of Energy, 9800 South Cass Avenue, Argonne, Illinois 60439.


- Apr 14: Further Research on Remote Sensing of Coastal Waters: Contract N00014-75-C-0192, 2 Apr 80 (no RFP), for $200,000, awarded to Louisiana State University, Baton Rouge, Louisiana 70803.

- Apr 14: Additional Research on Microbiological Corrosion: Contract N00014-76-C-0071, 27 Mar 80 (no RFP), for $130,000, awarded to the University of Miami, PO Box 8007, Coral Gables, Florida 33124.


- Apr 14: South Atlantic Outer Continental Shelf Physical Oceanography Year 3 Program: Contract AA851-CT0-12, estimated at $689,837, awarded to Science Applications Incorporated, 1200 Prospect Street, La Jolla, California 92038, US Department of the Interior, Bureau of Land Management, Code 851, 18th and C Streets NW, Room 2447, Washington DC 20240.


- Apr 22: Performance and Test Evaluation of Prototype Wave-Energy Converter: The Solar Energy Research Institute, a prime contractor for the Department of Energy, is seeking sources to test a prototype wave-energy converter. The test should be conducted utilizing a fixed offshore platform, wave tank, and wind tunnel or other similar test hardware which could provide a sustained fluctuating airflow-volume displacement of 150m^3 in a period of 5 to 10 seconds. The wave device contains an air turbine which drives an AC generator to produce a net electrical output of 125 KW at design conditions. Both shake down and performance measurements will be made of the device to validate performance predictions. The hardware, which is designed to mount on the hull of a ship, is self-contained on a platform measuring 8 by 15 feet and weighing 9 tons. Firms should submit a description of their facilities and forecast of availability, as well as any other specific information pertinent to their facilities and capabilities for this type of work. Replies should be sent with in 20 days of CBD publication. Statements of capability will be screened for the potential of fulfilling the requirements of the planned work. Respondents are reminded that this request is for information and planning purposes. This is not a request for proposal. M. Kaminski, Solar Energy Research Institute, 1617 Cole Boulevard, Golden, Colorado 80401.


- Apr 24: Grants will be competitively awarded by the Office of Marine Pollution Assessment of the National Oceanic and Atmospheric Administration in response to applications addressing one or more of the following areas: research with respect to the possible long-range effects of pollution and man-induced changes of ocean ecosystems; and research and development and monitoring projects or activities which are needed to meet priorities set forth in the Five-Year Federal Plan on ocean pollution. Guidance for applications for assistance can be obtained from below. Telephone requests will be honored at (516) 751-7002. Office of Marine Pollution Assessment, NOAA, Old Biology Building, State University of New York, Stony Brook, New York 11794.


- May 2: Study of the Domestic Social and Economic Impacts of Ocean Thermal Energy Conversion (OTEC) Commercial Development: Solicitation RP01-80-CS-80002, 100% SBHSA.


OTEC RESOURCE REPORTS AVAILABLE

The following reports on the OTEC resources for various areas outside the US are available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161, at $4.50 each for a paper copy and $3.00 each on microfiche. All of these reports are by W. A. Wolff of Ocean Data Systems Incorporated, Monterey, California. Specify by title and number.


OTEC Thermal Resource Report for Western Coastal Mexico: HCP/T2898-01/5.


DON'T FORGET TO ATTEND THE SEVENTH ANNUAL OCEAN ENERGY CONFERENCE IN WASHINGTON DC JUNE 2ND THROUGH JUNE 7TH.

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Solar OCEAN ENERGY Liaison Chicago 60605 May 1980