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The Solar Ocean Energy Liaison

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US DEPARTMENT OF ENERGY ALLOCATES LOWEST OTEC BUDGET SINCE 1978...

Despite continued US dependence on foreign energy sources.

Despite federal laws directing DOE to accelerate OTEC development.

Despite state-of-the-art technological capability.

Despite multiple commitments of private industrial sector funds.

Despite multiple studies of economic superiority to conventional energy.

Despite trouble-free demonstration of technology by Mini-OTEC.

Despite increased OTEC funding by foreign governments and industry.

Despite established environmental and social benefits of OTEC energy production.

... AS LOCAL GOVERNMENTS AND PRIVATE INDUSTRY BACK THEIR CONVICTIONS OF OTEC’S READINESS WITH $ MILLIONS

The US Department of Energy’s continued down-playing of OTEC goes beyond the suggested rationales of budget pressure, resistance to change, and lack of imagination and foresight. Steadily and persistently the assorted grounds for minimal funding expounded by DOE have been addressed—as itemized above—yet only minimal funding continues.

For years now, one of DOE’s strongest objections to an accelerated OTEC program has been that “private industry has been feeding at the government trough”, implying that the private sector was prolonging R&D work in OTEC to extend its income from Government contracts. While never expressed publicly, this was the sole DOE explanation for low funding remaining as the others were put to bed.

Putting Money Where Their Mouths Are

That final, last-ditch objection to expanding and accelerating DOE’s role in progress toward OTEC commercialization has now been nullified: Private industry is now backing its convictions with its own money! The combined cost-sharing by private industry and local governments in bids for the Pilot Plant PON are in the hundreds of millions of dollars. [The Puerto Rico Government alone has committed a minimum of $30 million; see story in this issue.]

One firm has expended over $200,000 in preparing its part of its team’s PON bid. At least a dozen others have spent similar funds.

A Proliferation of Bids

At last count, between eight and fourteen bids on the PON are expected, including two from foreign consortiums. A summary of these bids follows this story. Concurrently, both the French and Japanese Governments are similarly negotiating with private industry in their respective countries toward the design and construction of OTEC pilot plants.

For the US Pilot Plant PON, the motivations of both the local governments and the private sector—including the conservative financial institutions backing them—are clear: The local governments want an abundant, cost-effective, non-polluting, and technically able energy source; and (continued on Page 2)
private industry wants to make a profit. Obviously, both are confident that OTEC will give them what they want.

Why, then, cannot or will not the US Department of Energy—with the mandate to maintain secure, economic energy for this country—see that OTEC will contribute substantially to fulfilling its mandate?
Design, long lead procurement and testing for at-sea testing of a 1/3-scale cold water pipe will be completed. Mooring systems tests will be planned and analyses conducted. Load stress testing of electric cables will be continued. .......... .......... $12,350,000

c. Engineering Test and Evaluation

OTEC-1 was operated with a first generation heat exchanger, which is cost effective for an island economy in FY 1981. Design and modification of OTEC-1 will be completed for the second deployment of OTEC-1 to test advanced, more cost effective heat exchangers. Either OTEC-1 or the Pilot Plant preliminary design will be deleted based upon Pilot Plant conceptual design results and OTEC-1 first deployment test results. .......... .......... .......... .......... $11,480,000

d. Advanced Research and Development

Development of advanced open cycle subsystems will be continued. Small scale waves and currents systems development will be continued. .......... .......... .......... .......... $2,450,000

e. Capital Equipment

The funding requested will provide for the necessary test equipment and instrumentation to conduct laboratory and field testing of ocean systems, components and subsystems .......... .......... $700,000


(continued on Page 4)
THE FOLLOWING INFORMATION ON BIDS IS EITHER UNCLEAR AND/OR UNCONFIRMED AS THIS ISSUE GOES TO PRESS:

SITE: Puerto Rico. General Electric is understood to be preparing a bid with Brown and Root as Systems Integrator. However, General Electric spokesmen will neither confirm nor deny this information.

SITE: Puerto Rico. A recent published newspaper story described a possible bid by the State of Maryland for plant construction in Maryland by Bethlehem Steel, with Bethlehem Steel as Systems Integrator and subcontractors including Martin Marietta (heat exchangers). This would be a floater, with the end product unknown at this time.

SITE: Alaska/Aleutian Islands. A rumor has been heard recently of a bid encompassing co-generation with geothermal resources in the Alaskan area, with some participation by the US Navy.

In addition, there is the likelihood of several foreign bids, possibly from Swedish and/or Japanese consortiums.

Further, some surprises not heretofore mentioned are always possible.

Shortly after the closing date for the pilot plant PON, February 27th, 1981, OE expects to report a complete wrap-up on bidders for the PON.

PUERTO RICO'S PILOT-PLANT PON RESPONSE

$30 Million Minimum

In a position paper issued in mid-December, the Commonwealth of Puerto Rico, the Puerto Rico Electric Power Authority (PREPA), and other Puerto Rican organizations set forth their policy regarding both their response to the US Department of Energy's Pilot Plant PON and their sweeping commitment to OTEC commercialization.

The Puerto Rican commitment and degree of determination are evidenced by the statement: "We are committed to support OTEC development till commercial OTEC Electric Power Generating Plants are an operating part of the Puerto Rico Electric Power System."

The position paper further states that PREPA (1) has already cost-shared some $500,000 in initial studies; (2) has submitted (to DOE in 1979) an unsolicited proposal for a 100 MW OTEC plant, with cost-sharing of 33% by PROA (the Puerto Rico Government or the assigned corporation), representing a commitment of $160 million; (3) guarantees a proposal from Puerto Rico on the Pilot Plant PON; (4) will cost-share a minimum of $30 million for that proposal; (5) offers the most suitable site for OTEC development; and (6) has already incorporated planning in the existing electrical system for commercial OTEC power.

The proposal for the Pilot Plant PON will be presented with the co-operation and commitment of services, funds, material, and support from PREPA, the Puerto Rico Office of Energy, the Center for Energy and Environment Research (CEER), the Puerto Rico Department of Natural Resources, the Puerto Rico Economic Development Administration, and participating industrial firms. The proposal will be presented under the umbrella title PRO-TEC II.

PROA (the Puerto Rico OTEC Authority) spelled out their strong positive response to the Pilot Plant PON in the position paper, including the promises that PROA would offer a minimum of one response to the PON, would act as prime contractor, would cost-share throughout all phases, and would support proposals for either a shelf-mounted platform, a floating platform, or a land-based OTEC plant.

For a copy of the position paper or further details, contact Mr. Jose Marina, Director, Planning and Engineering, Puerto Rico Electric Power Authority, GPO Box 4267, San Juan, Puerto Rico 00936, (809) 722-4705 or 725-4584.
MIAMI ALTERNATIVE ENERGY CONFERENCE HELD IN DECEMBER

The 3rd Miami International Conference on Alternative Energy Sources was held December 15th through 17th, with two sessions devoted to OTEC. Since it followed by only several days the National Conference on Renewable Energy Technologies held in Hawaii December 7th through 11th, and since many key personnel were making presentations, OE covered this meeting rather than the costly Hawaii meeting.

Both sessions on OTEC were commendably chaired by Dr. Gordon L. Dugger of the Applied Physics Laboratory of Johns Hopkins University. Key speakers included William Richards, Chief of DOE's Ocean Systems Branch; Dr. Donald Sasscer, Director of the OTEC Project at the Center for Energy and Environment Research of Puerto Rico; Dr. John Craven, Dean of Marine Sciences at the University of Hawaii; Malcolm Jones of Reynolds Metals; and Harry Foust of The Trane Company.

Attendance at the conference itself was sparse, influenced no doubt by the Hawaii conference that immediately preceded the Miami meeting. In the case of the OTEC sessions this may have been advantageous, since the session attendees numbered only about 30 persons, creating an atmosphere that prompted a good deal of interplay between the speaker and the listeners.

Bill Richards, in pointing out that the current DOE budget for OTEC is at the lowest funding level since 1978, also said that OTEC "can now effectively supply twice all US power usage in 1980." He also noted that response to the Plant PON was expected to be enthusiastic. The next thrust in OTEC development, Richards said, will be in instrumentation, including the use of undersea vehicles to inspect cold-water pipes, both inside and out.

Dr. John Craven voiced the innovative suggestion of pushing OTEC as a producer of synfuels, since this was the easiest way to capture the understanding and imagination of the American public so accustomed to liquid fuels. An example would be the shipment of coal to Puerto Rico, where OTEC-produced hydrogen could be added.

Aluminum Not Excluded

An extensive, informative, and sparkling presentation was made by Harry D. Foust, Manager of the Applied Technology Division of The Trane Company, La Crosse, Wisconsin. Sparkling because Foust utilized two projectors in a co-ordinated presentation.

Trane's development of brazed aluminum, plate-fin heat exchangers had received a "bum rap" at a meeting of the Aluminum Association held last fall when a DOE spokesman said that aluminum was not being considered as a candidate material for the PON. Although later denied, the comment was witnessed by a number of individuals.

When Bill Richards was asked about the supposed exclusion of aluminum, he said that the DOE COMMENTOR had no authority to make such a statement, and that aluminum was, in fact, a candidate material. However it was added — and acknowledged by Trane's Foust — that aluminum had not yet been qualified for use in a seawater environment.

"The Development of Ocean Energy in the Third World", a paper prepared by Fred Naef of Lockheed Missiles and Space Company, was presented by Richard Meyer of OE in Naef's absence. Naef suggests co-operative involvement between industrialized and Third World nations, where the bulk of the OTEC resources lie offshore, as the most rapid advancement toward commercialization. Laying out suggested means of such co-operation, Naef cited the example of Sweden building for Jamaica with OPEC funding from Mexico and Venezuela. NAEF is the representative for ocean energy to the United Nations Conference on New and Renewable Sources of Energy, to be held later this year.

US GOVERNMENT PROCUREMENT INVITATIONS AND CONTRACT AWARDS

Listed below are procurement invitations and contract awards related to OTEC in particular and ocean resources in general culled from the Commerce Business Daily.


- Dec 24: Innovative Wave Device Concepts: The Ocean Systems Program Office of the Solar Energy Research Institute is preparing a bidders list for a general wave-energy-device solicitation. The solicitation will make one or two awards in two categories. The first category would provide low-level funding allowing award recipients the opportunity to more fully develop their concepts. The deliverable item to SERI in return for the support would be a complete definition of the device technically and graphically. The second level of award would be greater than the former and its intent would be to allow for more detailed development such as in terms of life-cycle costing, system-maintenance analysis, numerical analysis, or limited experimental testing. In both cases SERI would reserve the right to withhold any award funds should the technical proposal review committee indicate that there were no innovative concepts received by the solicitation activities. Estimated date of solicitation mailing is early January. Receipt of a letter of interest requesting placement on a "subcontractors' bidding list" must be received by (in form authorized) DOE headquarters is required; solicitations will be issued. Letters of interest should be sent to Solar Energy Research Institute, Subcontract Branch, 1617 Cole Boulevard, Golden, Colorado 80401, Attention Kevin Wright 18/2.


- Jan 2: NOAA/NOSS Oceanic Data System Development: A two-phase procurement for the conceptual design, implementation, and initial operation of a ground data system which will provide oceanographic data and products to ocean users. This data system is part of the National Oceanic Satellite System (NOSS) limited operation demonstration program. The data system, known as the NOAA/NOSS Oceanic Data System (NNODS), will consist of the computer hardware, software, and communications required to (1) receive pre-processed data from the NOSS primary processing facility operated by the tri-agency team (NASA, DOC/NOAA, DOD /Navy) responsible for NOSS; (2) produce oceanic products, analyses, and forecasts; and (3) distribute the NOSS data and products to NOAA regional facilities and end users in the civilian community. In order to disseminate information to prospective offerors and obtain the benefits of industry and end-user comments, drafts of the system requirements document, statement of work, and initial products list are being made available to potential bidders and system users. Where feasible, taking into account the resources available, incoming comments and suggestions will be considered for inclusion in the NNODS RFP SA-81-TPA-0010. Comments on the draft documents are due January 30th, 1981. Copies of the documents may be obtained on request.
