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The Solar Ocean Energy Liaison

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JAPANESE MAINTAIN CONTINUITY IN OTEC DEVELOPMENT WHILE US PROGRAM REMAINS ON HOLD

Japan’s private industry, with the blessings and partial financial support of its Government, is proceeding with steady development of OTEC while the US OTEC program remains motionless pending final funding and other decisions.

The Japanese version of Mini-OTEC is about to go into operation. The 100-kilowatt demonstration plant (Mini-OTEC was 50 kilowatts) is now in the final stages of construction on the island republic of Nauru. Originally scheduled for operation in mid-September, the Tokyo Electric Power Services Company (TEPSCO) project will be operating “sometime in October”, according to TEPSCO’s Washington DC representative. A press release will be issued internationally, with pertinent facts relayed in OE’s next issue.

AS THIS ISSUE WAS GOING TO PRESS, TEPSCO ANNOUNCED THAT THE NAURU OTEC TEST PLATFORM HAD BEGUN OPERATION OCTOBER 14TH. SEE THE NEXT ISSUE OF OE FOR FURTHER DETAILS.

Also proceeding is the two-megawatt pilot plant by Mitsui-Toshiba, to be barged-mounted in Japan and floated to a South Pacific atoll, despite comments to the contrary by several Japanese representatives at the June Ocean Energy Conference. (Both projects were detailed in OE’s May issue.)

The US program remains on hold, as it has been since early 1981, when the Reagan Administration began budget cutting. As of mid-October, Congress had settled on $25 million for ocean systems, most of which is earmarked for OTEC; but final markup by the Appropriations Committee has not yet been scheduled. At this point, with additional budget cuts being pushed by the Administration, no one will venture a guess as to the date of finalization.

In the meantime, the DOE Ocean Systems Program Office has seen a reduction in personnel (see story in this issue), private industry has reassigned OTEC staffs to other areas, and private OTEC commercial ventures have been delayed. Reagan’s Office of Management and Budget (OMB) is also considering further reduction of loan guarantees and existing energy tax credits, though Congress is not expected to go along with these proposals.

US OTEC contractors are watching for final awards, hopefully through Phases I and II, of the Pilot Plant PON as the next major step in development. The original target date of October 17th for these awards is expected to continue to slip.

DOE’s OTEC Operations Moving Elsewhere

Much conjecture is now under way as to where ocean systems and other renewable-energy programs would be moved if Congress agrees to Reagan’s proposal to eliminate the US Department of Energy.

The Administration’s proposals include moving all solar programs to either the Department of Housing and Urban Development (HUD) or the National Science Foundation (NSF), the latter being where OTEC began in 1973, preceding the old Energy Research and Development Administration (ERDA), which was taken over by Carter’s DOE in October of 1977. Should ocean systems/OTEC be moved to the NSF, OTEC’s progress is expected to be slowed considerably. Therefore, efforts are under way by the Ocean Energy Council to recommend transfer to either NOAA (Department of Commerce) or MARAD (Department of Transportation), with most favoring the latter, but with the administration of OTEC regulations and licensing to remain with NOAA.

In the interim, we continue waiting — and watching Japan narrow the US lead in OTEC development.

NOAA SEeks DIRECTOR

The position of Director of NOAA’s Office of Programs and International Activities in its Office of Research and Development, is open, with a salary of up to $50,000 a year. Call Susan Cisar at (301) 443-8373.

LATEST WORD ON DOE BUDGET

In mid-October the Senate Appropriations Committee completed their budget deliberations, allowing $11.5 million for OTEC. Washington observers expect that the forthcoming conference of the Senate and the House (which had budgeted $29.3 million) will result in a compromise budget of around $20 million for FY 1982.

OCEAN ENERGY TECHNICAL COMMITTEE OF MARINE TECHNOLOGY SOCIETY HOLDS INITIAL MEETING SEPTEMBER 16TH

The initial meeting of the revitalized Ocean Energy Technical Committee of the Marine Technology Society was held in Boston in conjunction with the OCEANS 81 Conference September 16th through 18th. Organized by Robert J. Scott of Gibbs and Cox as OETC’s Chairman, its objectives were to (1) review the status of DOE’s ocean-energy program; (2) define the charter of OETC, define its goals, and determine its relationship to other MTS committees; and (3) determine both near-term and long-range objectives.

The attendees were few in number (less than a dozen), but represented an interested and enthusiastic group from industry, academia, and government.

A representative from DOE’s Ocean Systems Branch acknowledged that while all solar technologies were low on DOE’s priority list, it felt that private industry should be willing to continue ocean-energy development without federal funding. Also cited was the strong international interest in ocean energy, particularly of the Third World nations.

In reviewing the OETC’s aims, Scott noted that the Committee is not an advocacy group and should concentrate on technical issues of broad interest to the ocean-energy community.

Dr. Pat Wilde of the University of California at Berkeley noted that the Committee’s activities should not be limited to the immediate MTS environment, but should expand to become a focal point for the dissemination of ocean-energy technology.

It was agreed that the OETC should promote presentations on ocean-energy (continued on Page 2)
(continued from Page 1) technology at regional MTS meetings to further communication.

Discussion also arose regarding MTS’s managing future Ocean Energy Conferences, as was done last June, but it was pointed out that “this would require a commitment from DOE that MTS would have a strong hand in shaping the technical program”.

The final resolution was to promote the development of an ocean-energy bibliogra­phy, including “synthesizing the relative currency or usefulness of referenced documents”.

PERSONNEL CHANGES AT DOE’S OCEAN SYSTEMS BRANCH

Largely but not entirely because of the Reagan Administration’s budget cuts, several long-term members of the Department of Energy’s Ocean Systems Branch have left that agency. Dr. Robert Cohen, who has worked within the OTEC field since 1973, took an early retirement in mid-October. Eugene Kinelski has also left and is now with the Naval Academy.

Both Lloyd Lewis and Sig Gronich are expected to leave Ocean Systems within several months, most likely for transfer to other positions within DOE.

FISKE SWORN IN AS DOE UNDER-SECRETARY

Guy W. Fiske was sworn in as DOE’s Under-Secretary along with five other top-level officials in a ceremony held in Washington October 21st, presided over by Energy Secretary James B. Edwards.

Fiske’s responsibilities are as “chief operating officer of the department responsible for overall program planning and implementation”. From 1977 until his presidential appointment, Fiske was executive vice-president and director of the General Dynamics Corporation of Saint Louis.

RECENT PUBLICATIONS AVAILABLE FROM NTIS

The publications described below are now available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161.

Conceptual Designs for Modular OTEC SKSS, Final Report, by M. Rosenblatt and Son Incorporated, New York, 310 pages, is available as DOE/NOAA/OTEC-30 (V.2) for $17 paper copy and $3.50 microfiche.

OTEC SKSS Preliminary Designs, Volume 4, Appendices, Final Report, by M. Rosenblatt and Son Incorporated, New York, 351 pages, is available as DOE/NOAA/OTEC-30 (V.4) for $19 paper copy and $3.50 microfiche.

NOAA’S TECHNICAL GUIDANCE DOCUMENT NOW AVAILABLE

The following notice appeared in the October 2nd, 1981 issue of the Federal Register:

Availability of Technical Guidance Document for Meeting Environmental Requirements of Commercial Ocean Thermal Energy Conversion (OTEC) Licensing Regulations:

Agency: National Oceanic and Atmospheric Administration, Commerce.


Summary: The Ocean Thermal Energy Conversion Act of 1980 (Public Law 96-320: “the Act”) is intended to provide a stable legal system and streamlined licensing process to facilitate development of ocean thermal energy conversion (OTEC) facilities and plantships. The National Oceanic and Atmospheric Administration (NOAA) has the lead responsibility for implementing the Act, and has issued its final regulations, which were published at 46 FR 39388, July 31st, 1981. Availability of NOAA’s final environmental-impact statement was announced at 46 FR 39214, July 31st, 1981.

Among other things, the final regulations require an applicant for an OTEC license to prepare an environmental assessment of potential effects of OTEC operations (15 CFR 981.260). To assist OTEC license applicants in responding to this requirement, NOAA has developed a Technical Guidance Document (TGD), which is intended to provide guidance on the types of specific information and analyses an applicant might wish to provide. NOAA prepared a draft Technical Support Document (TSD) and announced its availability at 46 FR 27501, May 20th, 1981. A 30-day public-comment period was provided, and a public workshop was held on Friday, June 12th, 1981, in Washington DC. The draft TSD has been revised, taking into account comments received, and the final version is now available. Among other changes, the TSD is now referred to as the Technical Guidance Document (TGD). This notice announces the availability of the final TGD.

Date: The Technical Guidance Document is available as of September 30th, 1981.


MINI-OTEC MAY BE RE-DEPLOYED IN HAWAII

Mini-OTEC, which on August 3rd, 1979 made history by presenting the world's first demonstration of man’s extraction of net solar energy from the sea, may be re-deployed in Hawaiian waters.

Originally a joint project of the State of Hawaii, Lockheed Missiles and Space Company, Dillingham Corporation, Alfa-Laval Thermal, and other industrial firms, producing 50 kilowatts, the re-deployment is being steered by Lockheed and will include some new participants, possibly some foreign as well.

The re-deployment would produce hydrogen as well as electricity, demonstrating OTEC's potential in the production of energy-intensive products.

An announcement is expected in October.

OFFSHORE TECHNOLOGY CONFERENCE SETS NEW ATTENDANCE RECORD

While OTEC and other ocean-energy technologies are experiencing a slow but steady growth, the giant offshore industry is having a boom as never before.

This was evidenced by the 15% growth of attendance at the May 30th Annual Offshore Technology Conference (OTC) held in Houston, with a record 100,329 registrations. Over 11 acres of exhibit space were utilized at this country's largest annual conference.

The OTC's attendees and exhibitors are mostly involved in the offshore oil business, of course. But the demonstrated technologies are exactly those which could be called upon, together with the shipbuilding industry, for planned OTEC installations.

A problem not often realized by OTEC planners is the present all-time high in drill-rig construction, necessitating long-term (two- to five-year) scheduling for OTEC power-plant construction.

If you think the oil companies are making huge profits, you should visit next May's OTC meeting to see the unbelievable extravagances in exhibits and entertainment.

OTEC RESOURCE SENSING

OTEC developers will find the Fall 1981 issue of Oceanus of special interest in the determination of ocean thermal resources, since it deals entirely with the use of satellites for oceanography and remote sensing of ocean temperatures. Copies can be obtained from Oceanus, Woods Hole, Massachusetts 02543.

ELECTRIC BIOFOULING CONTROL RECEIVES ADDED SUPPORT

Although both the Mini-OTEC and OTEC-1 test platforms experienced far less biofouling than even the most optimistic researchers predicted, adequate biofouling controls are an integral part of planned OTEC plants.

Now researchers at Texas A & M University say that electrochemical pulsing changes the pH balance of heat-exchanger surfaces to produce hydrogen peroxide, resulting in the killing of more than 99% of the bacteria that produce fouling.

[The US Navy has had great success with biofouling control by electric current, as detailed in our January 1980 issue.]

Dr. John O'M. Bockris, leader of the Texas A & M research team, says "In 15 minutes we can reduce the number of bacteria by a magnitude of four."

The team's studies are funded—by more than $150,000—by both that university's Sea Grant College Program and the US Department of the Interior.

LOCKHEED UTILIZES THERMO-ELECTRIC TECHNOLOGY FOR DEEP-DIVING SUBMERSIBLE

While thermo-electric energy may be used in future OTEC plants to replace heat exchangers as costs are reduced (see the May 1980 issue of OE), thermo-electrics are being used today to cool Lockheed's deep-diving submersible Deep Quest.

Lockheed engineers say the new cooling system will be safer, quieter, and more power-efficient than the conventional Freon vapor-cycle refrigeration systems now used on some research and rescue submersibles.

An experimental array of hull-mounted heat-exchanger and thermo-electric cooling panels is being installed in Deep Quest for testing in San Diego Bay this fall.

The advantages of the new technology include the avoidance of conventional refrigeration systems' noise, vibration, and possible refrigerant contamination, as well as the saving of scarce on-board electricity.

Further details may be obtained from Lockheed's Roger Beall at (408) 742-6688.

NEW BOOK ON OCEAN ENERGY

OE has recently received a review copy of Energy and the Oceans, by Andre Brin, Deputy for Industrial Matters of the Mission Interministeriel de la Mer. Energy and the Oceans was first published in Paris in 1979, and the revised English edition was published this summer by Westbury House, PO Box 63, Bury Street, Guildford, Surrey GU2 5BH, England.

This profusely-illustrated book of 133 pages covers all forms of energy from the sea, including undersea coal mining, oil, nuclear—power sources in seawater, and the more natural sources like Ocean Thermal Energy Conversion, wind, tides, waves, biomass, and currents.

NEW OTEC STUDY RELEASED


OTEC RESOURCE DATA

For the most current data available on OTEC resources of the equatorial oceans, readers are urged to obtain the Tropical Ocean—Atmosphere Newsletter, published quarterly by the Joint Institute for Study of the Atmosphere and Ocean, University of Washington, AK—40, Seattle, Washington 98195.
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. This is not to be construed, however, as a complete list.


Sep 14: Marine Research Facility Program: The National Oceanic and Atmospheric Association’s Undersea Research Program Office is seeking scientific program proposals from academic institutions in the United States interested in participating in NOAA’s FY ’83 regional undersea research program involving manned undersea facilities. NOAA may award a co-operative agreement contingent upon funds being made available by Congress. The initial phase of this program began in 1978 at Saint Croix, US Virgin Islands, using NOAA’s undersea saturation laboratory system, HydroLab. The research conducted using the habitat at its present location has proven very productive. Recognizing the limited operating undersea facilities available for scientific research, NOAA wishes to determine if it may prove to be in the best interests of its undersea research program to relocate the undersea facilities and related support equipment now at Saint Croix. The Caribbean Regional Undersea Program, using the HydroLab facility, has been an integral part of NOAA’s undersea research program. It is operated under a grant from NOAA by the Wes Indies Laboratory of Fairleigh Dickinson University. The habitat is a surface-supplied air-saturation facility, having a maximum depth capability of 50 FWS and a minimum water-temperature requirement of 65°F Fahrenheit. The goal of NOAA’s co-operative regional undersea programs is to support NOAA in fulfilling its mandated ocean responsibilities for managing and protecting living marine resources and their habitats, monitoring and conducting research in marine pollution, and managing marine sanctuaries. Information which will contribute to planning decisions for possible future relocation (in FY ’83) of these undersea facilities is needed. Academic institutions are being queried regarding their interest in participating as the operational entity for this regional co-operative undersea research program. Interested institutions should respond with a letter of interest no later than October 30th, 1981. Elliott Finkle, Acting Director, NOAA Undersea Research Program Office, RD/SP-2, 6010 Executive Boulevard, Rockville, Maryland 20852, Attention William Rausch, (301) 443-8391.

Sep 17: Analysis of the Application of Synthetic Aperture Radar (SAR) Imagery for Monitoring the Modulation Structure of Ocean Waves: Negotiations are to be conducted with the Environmental Research Institute of Michigan, PO Box 8618, Ann Arbor, Michigan 48107. Office of Naval Research, 800 North Quincy Street, Arlington, Virginia 22217.


Sep 28: Determine the Coatings Compatibility with the Naval Environment: Negotiations are being conducted with the Midwest Research Corporation, Kansas City, Missouri. Naval Ordnance Station, Code 1141E, Indian Head, Maryland 20640.
