

## Submersibles (Continued)

to disaster sites to rescue crews of disabled fleet submarines down to 5,000 feet. DSRV was successfully demonstrated in a British Royal Navy/U.S. Navy operation in which crewmen descended in one submarine and surfaced in another.

## ENERGY SYSTEMS

Ocean Thermal Energy Conversion -- LMSC led a State of Hawaii/industry team that designed, assembled, and operated the world's first successful Ocean Thermal Energy Conversion (OTEC) plant that generated useable amounts of electric power by using temperature differences in the ocean water to drive the generator. Called Mini-OTEC, the plant operated in Hawaiian waters for more than three months during 1979 and further operation is planned in 1981. In other OTEC work, LMSC has been engaged in engineering and economics studies since mid-1974 for government agencies.

Dam-Atoll -- Lockheed is now developing a device called Dam-Atoll that will convert the stored energy of ocean waves into electricity. It looks like an inverted bowl equipped with vanes which direct ocean waves into a central core where a vortex or whirlpool action is created. The work is being done under contract with the Solar Energy Research Institute (SERI).

Solar Power -- LMSC has been a leader in solar array technology since the beginning of the United States space efforts. The company has developed for NASA a family of solar array designs to meet the energy needs of a wide variety of spacecraft missions envisioned for the 1980s. LMSC is now building a multi-kilowatt Solar Electric Propulsion (SEP) array for an early Shuttle flight to prove that solar arrays can generate substantial amounts of electrical power.

Solar energy systems for the heating and cooling of buildings are being investigated under several contracts by LMSC at its solar test facility in Palo Alto, California. LMSC is evaluating solar collectors for commercial companies and for the Department of Energy. The company's Huntsville Research and Engineering Center (Ala.) is developing solar heating systems for commercial greenhouses, lumber kilns, and crop-drying.

## REMOTELY PILOTED VEHICLES (RPVs)

Lockheed is designing and developing new types of "mini-RPVs" -- small remotely controlled aircraft -- that can be used to fly military surveillance, reconnaissance, target acquisition, and target designation missions. These unmanned aircraft are launched by catapult and guided by signals from manned ground-control stations. TV cameras mounted on the RPVs relay real-time information to the ground stations via a data link.

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