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Program Support for Solar Heating and
Cooling Research and Development
Branch

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PROGRAM SUPPORT FOR SOLAR HEATING AND COOLING
RESEARCH AND DEVELOPMENT BRANCH *

LAWRENCE BERKELEY LABORATORY
Contract Number
W-7405-ENG-48

Marlo Martin and Michael Wahlig

OCTOBER 1977 - SEPTEMBER 1978

OBJECTIVE

The objective of this report is to provide DOE headquarters with program support as required for two solar research and development program elements: Passive Cooling and Solar Controls. Specifically, support tasks to be provided under the terms of this contract are grouped into six categories as follows:

- a) Unsolicited proposal reviews
- b) Monitoring of outside contracts
- c) Summary reports to headquarters
- d) Preparation and evaluation of PRDAs and RFPs
- e) Assistance in program planning
- f) Inter-laboratory coordination

SUMMARY

A primary task of this contract was the technical monitoring of 16 DOE research and development projects in the solar controls and passive cooling areas. Two of these projects have been concluded and the remainder are now in their final stages of completion. A second major task to provide assistance in program planning included the preparation and review of several program element plans, participation at planning meetings and workshops, preparation of energy displacement projections, and a variety of supplementary administrative tasks. The review of unsolicited proposals was provided on a continuing basis and aid was supplied in the preparation and evaluation of PRDA and RFP solicitations as required by DOE headquarters.

TECHNICAL ACCOMPLISHMENTS

a) Unsolicited proposal reviews

Preliminary and formal unsolicited proposals in the areas of passive cooling and solar controls are received by headquarters at an unpredictable rate. Upon receipt they are logged and sent to LBL for technical review under the provisions of this program support contract. Proposals are reviewed by LBL staff and others as warranted. Recommendations are forwarded to headquarters based on technical feasibility, innovativeness, timeliness, potential contribution to the R&D program, and suitability of the proposed budget to perform the work.

In addition to reviewing unsolicited proposals on an individual basis (including proposals for follow-on contracts to work already in progress for DOE), LBL has responded to inquiries by individuals who were interested in submitting proposals but not yet in a position to finalize them. LBL staff members were also provided to participate in large-scale review sessions for unsolicited proposals held at LASL and Sandia Laboratories in February 1978.

b) Monitoring of outside contracts

One of the major tasks performed under this program support contract is to provide technical management for all DOE-funded solar controls and passive cooling contracts. This effort consists of evaluating monthly progress reports, and making site visits and phone calls to contractors as required. One site visit was made to each of the 16 contractors during the winter of 1978, and two special review sessions were held during the summer for three of the projects.

A solar controls contractors meeting was organized by LBL personnel on 28 February and 1 March 1978, and LBL staff participated in the Controls Workshop (23-25 May 1978) and Passive Solar Conference (15-19 March 1978), where contractors were encouraged to present results of their work. Two projects were redirected as a result of problems encountered during the course of their work.

c) Summary report to headquarters

LBL has responded to requests for summary reports by headquarters personnel, both for presentations outlining the present status of the overall DOE passive cooling and controls program elements, as well as for summaries of the various LBL in-house projects. Assistance was also provided by reviewing, correcting, and rewriting project summaries in the above-mentioned areas for the PRC document entitled "Solar Heating and Cooling Research and Development Project Summaries". Summary descriptions were also provided for LBL in-house projects for use by the International Energy Agency.

d) Preparation and evaluation of PRDAs and RFPs

Preliminary recommendations have been made to DOE headquarters outlining research that should be included in solicitations to be issued in FY 1979 in the passive cooling and solar controls areas. Comments have been provided on the preliminary plans for other RFPs planned for release by the Research and Development Branch during FY79. The only evaluation activities engaged in during FY 1978 involved the use of three LBL staff members for two weeks to review proposals submitted in response to the PON for Commercial Demonstration Projects.

e) Assistance in program planning

As requested by DOE headquarters LBL staff assists in program planning activities which can thus far be grouped into four categories:

1. National program plan preparation

- participated in a meeting to update and review the Interim Report on the National Program Plan for Research and Development in Solar Heating and Cooling (November 1977).
- participated in numerous meetings and took a major share of the responsibility for developing a Passive Program Plan.
- prepared draft version of a Solar Controls Program Plan for presentation at the Controls Workshop (May 1978).
- prepared draft version of a joint U.S.- Saudi Arabian five-year program for passive cooling.

2. Participation at meetings and conferences

- presented paper on the solar controls R&D program at the IEEE Conference on Decision and Control (December 1977).
- presented paper on the Passive Cooling program element at the Solar Cooling Workshop (February 1978).
- participated in the Solar Applications Field Meeting at DOE headquarters (February 1978).
- participated in the Conference on Performance Monitoring Techniques for Evaluation of Solar Heating and Cooling Systems (April 1978).
- reviewed abstracts, helped prepare agenda, and participated in the Solar Controls Workshop (May 1978).

3. Preparation of energy projections

- prepared projections of possible impact of passive cooling techniques for energy displacement in the 1985 time frame under an accelerated passive solar program scenario.

4. Administrative tasks

- received draft report of the PRC Management Plan Study.
- assisted in preparing final recommendations for funding unsolicited passive proposals and preparing procurement requests for initiating the contracts.
- interacted with SAN office and LBL management on the SAN/LBL draft administrative plan for field management of the controls and passive cooling program elements.

f) Inter-laboratory Coordinations

LBL participated in all the Support Lab Coordination meetings held during FY78. Numerous interactions occurred between LBL, NBS, LASL, SERI and PRC to develop performance evaluation factors, data acquisition requirements, and many other aspects of passive solar systems.

FUTURE ACTIVITIES

Due to the rapid growth of the DOE Solar Heating and Cooling Research and Development Program an effort is being made to decentralize management of the individual program elements to allow headquarters staff to concentrate on overall program planning. It is anticipated that this will require an increased level of involvement of LBL in implementing the program plans for the solar controls, passive cooling, and also the active solar cooling areas. A continuation of the efforts reported in this presentation is anticipated during FY 1979.

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