

## INDUSTRIAL APPLICATION EXPERIMENT SERIES

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## ABSTRACT

This paper discusses two procurements within the Industrial Application Experiment Series of the JPL Thermal Power Systems Project. The first procurement, initiated in April 1980 has resulted in an award to the Applied Concepts Corporation for the Capitol Concrete Experiment: two Fresnel concentrating collectors will be evaluated in single-unit installations at the JPL Parabolic Dish Test Site and at Capitol Concrete Products, Topeka, Kansas. The second procurement will be initiated in March 1981 through the release of an RFP titled, "Thermal System Engineering Experiment B." The objective of the new procurement is the rapid deployment of developed parabolic dish collectors. Two or more awards are intended. At least one award will be made to a team involving small business.

## INTRODUCTION

The Industrial Application Experiment Series assists industry-directed new initiatives in the commercialization of parabolic dish systems. Experiments funded through the Industrial Series utilize industrial involvement and expertise to the maximum possible degree. Industry is responsible for proposing collector system, application, and site. JPL does not specify site, application, or hardware. Each experiment results in the design, fabrication, verification testing, installation, check-out, operation, maintenance, and twelve-month evaluation of a collector system providing energy to a load at a user's site.

The Industrial Application Experiment Series' initial procurement took place in 1980 and resulted in the award of a contract to Applied Concepts Corporation for the Capitol Concrete Experiment. The second procurement will take place in 1981.

This paper discusses the first procurement, which resulted in the Capitol Concrete Experiment, and presents the implementation plan of the new procurement, to be initiated through the release of an RFP in March 1981.

## FIRST PROCUREMENT

JPL released an RFP on April 3, 1980, for procurement of Thermal System Engineering Experiments. Proposals were received on May 29. One award was made in December 1980. Although JPL intended to make multiple awards and entered into negotiations with three proposers, a combination of technical and cost factors led to the decision to make a single award. The experiment which resulted from the first Thermal System Engineering Experiment procurement is

called the Capitol Concrete Experiment. The user, Capitol Concrete Products, is a masonry block producer in Topeka, Kansas, where the collector will be operated to provide industrial process heat (IPH) in the form of hot water and steam at 150°C (302°F) for the autoclave curing of concrete blocks. The collector manufacturer, Power Kinetics, Incorporated, of Troy, New York, will provide one unit for installation by July 31 at the JPL Parabolic Dish Test Site for extended (14 months) verification testing and one unit for installation by September 30 at the Topeka site for twelve-month evaluation. The plant integrator for this experiment is the Applied Concepts Corporation. The purpose of the experiment is to prove the system feasibility of the PKI Fresnel concentrating collector in an operational industrial environment and in an application, IPH less than 290°C (554°F), suitable to its performance capabilities.

For more information on the Experiment and the collector, the reader is referred to other papers submitted to this conference: "A Fresnel Collector Process Heat Experiment at Capitol Concrete Products," and "A Fresnel Concentrating Collector-Power Kinetics, Incorporated."

#### SECOND PROCUREMENT

The second procurement in the Industrial Series will be initiated through the "Thermal System Engineering Experiment B" RFP to be released in March 1981. (An announcement of this RFP has been placed with the "Commerce Business Daily.")

The objective of the contract is to secure systems and services necessary for the planning, implementation and operation of an experiment involving one or more parabolic dish solar thermal collectors integrated with a load to establish the system feasibility of a relatively low cost, low risk system in a near-term application. JPL intends to make two or more awards, including one award to a small business. Each proposer should provide a system supplier, a system integrator, and a user.

The preliminary implementation schedule has the following major milestones: Release RFP-March 6, 1981; Receive Proposals-June 2, 1981; Award Contracts-December 1, 1981; Complete Installation at PDTS and Begin Verification Testing-September 1, 1982; Complete Installation at User's Site and Begin 12-Month Evaluation-January 1, 1983; Receive Final Report-May 1, 1984.

Since the first procurement resulted in an award for evaluation of an IPH application at an application temperature less than 550°F, it is preferred that the second procurement result in awards for more complex or higher temperature applications. Examples of such applications are agricultural pumping and processing, air-conditioning, emulsion pumping and processing, Enhanced Oil Recovery, fuel-grade alcohol production, furfural production, and water treatment and pumping. (This list is not intended to limit proposers. The RFP does not designate specific application categories.)

Users should be performing agricultural, commercial, or industrial functions in the public or private sector. Laboratories owned by or operated for the Federal government are excluded from participation.