

RECENT DEVELOPMENTS -- PKI SQUARE DISH
FOR THE SOLERAS PROJECT

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In 1983, Power Kinetics, Inc. fabricated, tested and shipped 18 PKI "Square Dish" solar collectors for the SOLERAS Project in Saudi, Arabia. The installation uses 730°F syltherm 800 to power a desalination facility.

In the course of completing the project, the PKI Square Dish was subjected to rigorous design attention regarding corrosion at the site, and certification of the collector structure to meet A.I.S.C. codes. The microprocessor controls and tracking mechanisms were improved in the areas of fail-safe operations, durability, and low parasitic power requirements (less than 1 kw hr per day). Prototype testing required by the project contract demonstrated performance efficiency of approximately 72% at 730°F outlet temperature.

This project provided an opportunity for PKI to make significant studies including developing formal engineering design studies including developing formal engineering design drawing and fabrication details, establishing subcontracts for fabrication of major components, and developing a rigorous quality control system. The improved design has proven to be more cost effective to produce and the extensive manuals developed for assembly and operations/maintenance result in faster field assembly and ease of operation.

The PKI factory, established in early 1983 at Green Island, New York, is now capable of producing 100 to 250 collectors per year with expansion capacity to over 500 per year. At 500 units per year, cost per unit is expected to be \$35,000.