

The second, more reliable prototype was installed as part of a joint LBL and Pacific Gas and Electric (PG&E) demonstration project. Five hundred IOTA ballasts, 500 Stevens ballasts, and 500 electromagnetic ballasts were installed on three respective floors of PG&E's main office building in San Francisco. LBL monitored the energy use and reliability of the ballasts. The demonstration data confirmed the earlier laboratory testing result of a 25% reduction in energy consumption with the solid-state ballasts. The demonstration also led to the identification of some design faults that produced a considerable number of ballast failures. These faults were corrected, and in 1979 the much improved solid-state ballasts captured the interest of several companies. Beatrice Foods, Inc., purchased IOTA's concept and patent rights and formed a division, E Tech, to produce the ballasts. Stevens Electronics sold their exclusive rights to Luminoptics, a company established to produce the Stevens design (Verderber, 1988).

A second demonstration project (sponsored by DOE and a Veterans Administration medical facility) began in 1979. In this demonstration over 400 prototypes of an advanced dimmable ballast were installed and monitored. As a result of the demonstration, the Veterans Administration Office of Construction became the first federal agency to specify the use of solid-state ballasts in its facilities.

All of the major firms in the ballast industry had considered and rejected the possibility of introducing a solid-state ballast either before or approximately when the DOE Lighting Program came into existence. The ballast industry is very similar in structure to other sectors of the lighting industry. It is a mature, stable industry dominated by four to six large companies with many small companies that account for a very small percentage of sales. Although Census data are not available and