

# LMA HEAVY INDUSTRY PROGRAM

## Casey Printing: Lighting System Upgrade



Casey Printing's production area equipped with T-8 fluorescent lamps

The Casey Printing facility in King City, California was previously lit by a combination of T-12 fluorescent lights in the offices and 400-watt metal halide fixtures in the production area and warehouse. Additionally, T-12 lamps with magnetic ballasts were used to provide light to the print machines. The production and warehouse fixtures operated on a 24/5 schedule, despite limited occupancy during the night—the continuous operation is due in part to the long warm up time associated with the metal halide lamps.

LMA energy engineers conducted an audit of the facility and came to the conclusion that a substantial reduction in energy usage may be realized by retrofitting the existing lighting with more efficient units. The metal halide lamps in the production areas and the warehouse were replaced with T-8 linear fluorescent lamps. The T-12 lamps on the print machines were also replaced with T-8 lamps equipped with electronic ballasts. These new lamps are not only more energy efficient than their outdated counterparts, but they also provide a more uniform and “comfortable” light within the various work areas.

To minimize the hours of lamp operation, occupancy sensors were installed in the variable occupancy spaces. These areas include restrooms, offices, shared offices, conference rooms, and break rooms. Additionally, modular controls were installed in the office, allowing employees to select between having only one lamp per fixture on, or all three on.

### Goals:

- Reduce energy usage associated with facility lighting

### Strategies:

- Replace metal halide lamps with T-8 fluorescents
- Install motion sensors on lights to minimize hours of operation
- Utilize wall mounted controls to allow employees to select the desired level of lighting (offices)

### Benefits:

- Annual energy savings of 131,029 kWh/year
- Less frequent lamp replacement
- Improved light quality and uniformity

### Equipment Installed:

- T-8 fluorescent fixtures with electronic ballasts
- Occupancy sensors
- Wall-mounted modular controls

Continued on reverse ...

This measure saves energy in two manners. The first is that the total demand (kW) is reduced due to the lower wattage draw of the new lights. The second is that the total hours of operation of the lights is substantially reduced due to the occupancy sensors, thus dramatically decreasing the amount of energy (kWh) used. An additional benefit of the occupancy sensors is that the lamps require less frequent replacement due to the decrease in daily operation.

In all, the retrofit has the potential to save over \$12,401 annually. In addition, LMA was able to award a \$11,792.61 incentive for this project, reducing the payback period to just over a year.



Wall mounted controls allow the employees to select the desired level of lighting. Here, only one lamp per fixture is on .

#### Financial Analysis:

- **Total Install Cost:**  
**\$34,533.20**
- **Incentives Awarded:**  
**\$ 11,792.61**
- **Energy Savings:**  
**\$12,401.89**
- **Simple Payback in :**  
**1.2 years**

#### Project Team:

- **Pacific Gas and Electric Company**
- **Lockheed Martin Aspen Systems Heavy Industry Program**

#### For Further Information About Our Services, Contact:

Phone: (415) 402-0406  
Fax: (415) 402-0613  
Or visit our website:  
[www.lma-pge.com](http://www.lma-pge.com)

It is our objective to assist PG&E heavy industry customers in:

- Improving their competitive position
- Identifying process-focused energy improvements and other opportunities (e.g. demand response)
- Facilitating electricity and natural-gas energy efficiency equipment and demand reduction upgrades
- Reducing operating costs per unit of product
- Improving product quality and production rate
- Reducing waste, pollutants, and Green House Gas emissions

***Remember that increased production efficiency = lower production costs***

The Heavy Industry Efficiency Program is managed and facilitated by Lockheed Martin Aspen Systems (LMA), and is funded by California utility ratepayers, under the auspices of the California Public Utilities Commission. The program objective is to identify and facilitate the implementation of major process-orientated and other energy-efficiency upgrades for PG&E's heavy industry customers. Customers that install energy efficient systems receive incentives based on the annual kWh or therm saving achieved.

Lockheed Martin Aspen Systems Corp. Phone: (415) 402-0406  
311 California Street, Suite 430 Fax: (415) 402-0613  
San Francisco, CA 94104



**WE NEVER FORGET WHO WE'RE WORKING FOR®**