Pacific Gas & Electric, Fremont California

Lighting Controls Find a Place in PG&E's Energy Saving Plans

Few companies know energy better than Pacific Gas & Electric. Serving a territory that covers 70,000 square miles in northern and central California and includes more than 13 million people, the utility also looks for ways to cut its own energy consumption. One of the projects PG&E recently implemented was a lighting and controls retrofit in its Distribution Center, a 125,000 square-foot warehouse in Fremont, California, that featured a variety of lighting controls by The Watt Stopper.

The facility operates around the clock during the week and is closed on weekends. A staff of 100 employees ensures that the entire PG&E system receives the materials and supplies necessary for smooth operation.

To reduce the facility's lighting usage, the company decided to replace the existing HID lighting with high-efficiency T5 fluorescent lights. In addition, it deployed a diverse yet integrated series of lighting controls. "By selecting a number of different lighting controls, we were able to use the control technology that was best suited for each type of space," notes Mike Smith, PG&E Senior Project Manager. The controls included an ELC exterior lighting control panel, passive and ultrasonic occupancy sensors, and digital time switches.

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For controlling warehouse rack aisleway lighting, PG&E used PIR occupancy sensors. By selecting the specialized aisleway lens for the CX-100 (-3 and -4 lenses), the sensor's coverage could be precisely defined to avoid false triggers by workers in adjacent aisles. The project team decided to equip each fixture with individual sensors, mounted using MB-1 brackets, to ensure adequate coverage. Sensor time delays were set for ten minutes. PIR sensors also control lighting in the main and cross aisles with longer time delays of 30 minutes to ensure these higher-traffic aisles receive adequate illumination.

For controlling lighting in the shipping and receiving area, the project team used The Watt Stopper's ELC control panel combined with TS-200-24 low-voltage digital time switches. The panel ensures that lighting is off during non-work hours. At the same time, the TS-200-24 switch provides a manual override for individual workers entering or leaving the area unexpectedly.

The project team found that other areas of the facility were well-suited to a variety of lighting controls. For instance, office storage spaces are equipped with TS-200-24 switches and set for 15-minute intervals, so that employees entering the area can easily activate the push-button switch for lighting in order to retrieve supplies or file documents.

Completed in late 2000, the project has generated impressive results. PG&E estimates it has reduced its lighting usage by 54% with the implementation of measures including the T5 fixtures and lighting controls. Overall, the company has reduced the facility's total electrical load by 33%.

The project team included Mike Smith of PG&E; Leslie Kramer of Brown, Vence & Associates and Stan Walerczyk (formerly with Alamo Lighting and currently with Sun Industries) who together performed the energy audit and designed the retrofit; First Source Lighting, fixture manufacturer; and JH Cover/Controlled Energy, who performed the installation.