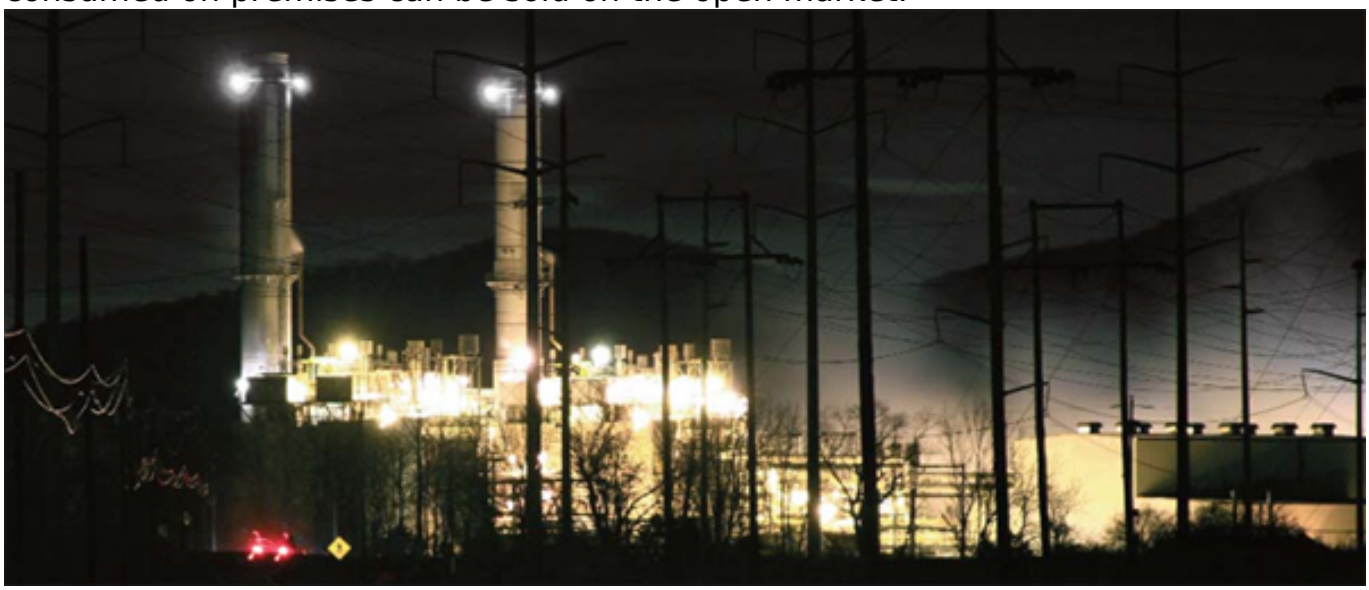
LED Obstruction Lighting Saves Energy, Reduces Maintenance

PPL Generation LLC works diligently to reduce its environmental impact and encourage the responsible use of energy through innovative technology, conservation initiatives, and educational programs both inside its facilities and in the surrounding communities. Like many Americans, the company recently discovered that changing out a few light bulbs to install Dialight's highly efficient LED-based obstruction lighting can make a big difference in reducing energy consumption and maintenance costs, while providing more reliable safety lighting to meet FAA requirements.

Lower Mount Bethel Energy (Bangor, PA) boasts two natural gas-fired turbine generators and one combined cycle steam generator capable of churning out some 600 megawatts of electricity. Well-known for its exceptional employee safety program, the facility is applying this year for the U.S. Occupational Safety and Health Administration's Voluntary Protection Program (VPP) as a "Star" worksite, the highest honor within the program, recognizing the company's efforts beyond compliance to protect worker health and safety.

In addition to its focus on safety, the LMBE facility emphasizes responsible energy consumption on-site, both for the environmental benefits and the cost savings. By conserving energy, the plant reduces its carbon footprint and each kilowatt not consumed on premises can be sold on the open market.



Look Up for Energy, Cost Savings

As part of its efforts to reduce energy consumption and cut back on maintenance costs for its twin 400-foot exhaust chimney stacks, the company turned to Fuellgraf Chimney & Tower Inc. to retrofit the stacks with Dialight's high-efficiency LED obstruction lighting. The result has been not only lower operating costs, but also

confidence in its ongoing compliance with Federal Aviation Administration standards for obstruction lighting requirements.

The Lower Mount Bethel chimneys' six Xenon medium-intensity bulbs were not only expensive to operate, but costly to replace and dispose of. Annual replacement bills ran about $12,000, with each lamp costing $1,500. In addition to the cost, safety was a factor, especially considering Lower Mount Bethel Energy's exceptional record.

Should one of the bulbs fail unexpectedly, FAA fines could top thousands of dollars per day for each light that is out. With few crews certified and available to perform this kind of maintenance, the fines could easily add up quickly if the short-lived Xenon bulbs aren't replaced immediately. Xenon bulb disposal was also an issue, with special handling required — another added cost.

Dialight Hi-Efficiency LED Beacons Save Energy, Meet FAA Specs

At Fuellgraf's recommendation, PPL installed six new Dialight L864/L865 dual LED obstruction fixtures in place of the antiquated Xenon fixtures. Powered by ultra-long life LEDs, the new Dialight LED beacons deliver the equivalent of 330-watt illumination from a 110/230VAC 50/60 Hz power supply with reliability for up to 10 years, in most cases. A solid state construction resists shock and vibration, while the fixture itself is much smaller, reducing wind load interference and damage.

The dual beacon uses 90 percent less electricity than traditional incandescent bulbs to reduce energy consumption and the plant's overall carbon footprint. Pursuant to the company's environmental stewardship, the Dialight beacons also meet the U.S. Fish and Wildlife Services' recommendation for the protection of migratory birds.

And, the new LED units are safer for humans, too: the Dialight L864/L865 LED beacons operate at a much lower voltage than traditional Xenon flashtubes, reducing the risk of injury due to electrical shock for installers and maintenance crews. The L864/L865 power supply/control box can be positioned at the base of the tower for added safety and convenience when servicing the units.

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