Regs Report: Complying with Lighting Standards

Kimberley Schmitt, Associate Editor

***Chem.Info*'s recurring Regs Report feature presents new and emerging regulations and enables readers to better achieve compliance. In this installment, we explore new lighting regulations released as part of the Energy Independence and Security Act of 2007.**

The U.S. Department of Energy's (DOE) Energy Independence and Security Act of 2007 (EISA 2007) was introduced to move the country toward a greater energy independence over a wide range of industries. The lighting portion of the legislation requires 25 percent greater efficiency for light bulbs, a standard that will be phased in from 2012 through 2014.

"This affects a variety of different types of lighting products including incandescent household, reflector and linear fluorescent bulbs," says Don Cattoni, product development manager for Shat-R-Shield. "Bulbs will still be available, but they must be the newer, more efficient versions."

The new, more efficient versions must have a maximum wattage producing the same amount of lumens as the bulb it is replacing. "For example, if you are going to replace a 100W incandescent bulb you will need to use a lamp that has no more than 72W to produce the equivalent lumens," Cattoni says.

As a result, many manufactured bulbs will be discontinued and replaced with the more efficient options.

NEW ENERGY EFFICIENCY WATTAGE GUIDELINES TO REPLACE CURRENT BULBS

Traditional Wattage	New Maximum Wattage	Lumens	Implementation Date
100	72	1490-2600	1-Jan-11
75	53	1050-1489	1-Jan-12
60	43	750-1049	1-Jan-13
40	29	310-749	1-Jan-13

Developing a Lighting Plan

Creating a plan is always crucial when updating facilities to comply with new mandates. Cattoni offers processors several suggestions for becoming compliant under EISA 2007.

“You must be aware of the EISA 2007 legislation, know the dates for compliance, and the bulbs that are affected,” he says. “Next, processors should check all of their current lighting to see what bulbs and fixtures are affected.”

Cattoni notes that it is important for processors to understand the lumen equivalents and life spans of the various replacement options. They will want to explore the variations between light emitting diode (LED) vs compact fluorescent lamps (CFLs) vs halogen.

During the stages of implantation, processors must determine if their current lighting units can be retrofitted or if it will need complete replacement to be compliant. “There are many situations where lighting retrofits will be compliant and save a significant amount of money in the long run,” Cattoni says. “Many of the older lighting technologies of the T12, T8, 32W and metal halides are prime candidates for retrofits that will have to be replaced to meet new standards.”

A variety of options are available to complete retrofits depending upon the application such as high bay, low bay and refrigeration.

While retrofits will be sufficient for some lighting, others will need to be completely replaced. “Some lighting in commercial buildings will have to be completely replaced to accommodate the new energy efficient lamps and ballasts,” Cattoni says.

Cattoni recommends that processors revisit current lighting needs determining the appropriate solution.

Associated Costs, Additional Benefits

LIGHT BULBS THAT ARE AFFECTED BY LEGISLATION

Phased out Date	Bulb	Replacement Options		
GENERAL PURPOSE AND DECORATIVE BULBS				
1/1/2012	100W A19	72w Halogen	23w CFL	20W LED
1/1/2013	75W A19	53W Halogen	19W/20W CFL	14W LED
1/1/2014	60W A19	43W Halogen	13W CFL	12W LED
	40W A19	28W Halogen	10W CFL	8W LED
	60W B10	40W Halogen	9W CFL	4W/6W LED
	60W G25	40W Halogen	14W CFL	8W LED
DIRECTIONAL BULBS				
7/14/2012	50W PAR20	39W PAR20 Halogen	14W R20 CFL	8W R20 LED
	50W PAR30LN	39W PAR30 Halogen	16W BR30 CFL	15W LED
	75W PAR30LN	60W Halogen	16W BR30 CFL	
	50 PAR30	39W PAR30 Halogen	16W BR30 CFL	10W LED
	75W PAR30	60W Halogen	23W BR40	
	80W BR40	60W Halogen	23W BR40	
	45W PAR38	39W PAR38 Halogen		
	50W PAR38	39W PAR38 Halogen		10W or 15W LED
	75W PAR38	60W Halogen	23W CFL	18W LED
	90W PAR38	70W Halogen	23W CFL	
	100W PAR38	70W Halogen		
	120W PAR38	80W Halogen		
	65W BR30	50W Halogen	15W CFL	12W BR30 LED
	65W BR40	50W Halogen	23W CFL	18W BR40 LED

When making significant changes to a facility, some initial costs may be greater than expected. However, overtime processors will see several benefits as a result of the lighting changes. “Over time, the energy savings will pay for the equipment,” Cattoni says. “It may also offer additional return on their investment. Lighting retrofits not only improve the quality of light, but it also results in less heat in the building reducing HVAC run times.”

He recommends processors perform an energy evaluation using lighting cost savings calculators. “This will not only take into account the savings on energy, but it will also consider the longer life of the retrofit bulbs as well as the maintenance cost savings to replace them less frequently,” Cattoni says.

Processors can also explore additional savings through International Revenue Service (IRS) tax incentives along with utility rebates and incentives. Additionally, processors can show their commitment to the environment by embracing the opportunity to use energy-saving lighting.

Cattoni suggests processors consider exploring the use of lighting controls, such as occupancy sensors and timers, to assist in cost savings.

Along with the financial benefits, processors will also see an improvement in the quality of light. “The lighting levels will be increased,” Cattoni says. “It has been proven that improved lighting technology can increase worker productivity, safety and morale.”

While the new light bulbs offer increased lighting levels, the risk of accidentally breaking bulbs remains, and some bulbs, such as linear fluorescent and CFL's, contain mercury. "If they were to break, the cleanup process identified by the Environmental Protection Agency is involved and can be costly," Cattoni says. "Shat-R-Shield offers a protective coating for all types of bulbs that virtually contains the glass and toxic materials in the event of breakage."

The final stage of implementation will occur July 14, 2014, when the manufacturing of all T8 products will come to an end. As processors keep the deadline in mind, they can move their facilities forward in achieving energy-efficient lighting while cross-referencing manufacture guides for replacement options.