Pitfalls and Troubleshooting

delamping properly.

by Michael Lane LC

new retrofits.

Lighting manufacturers are responding to the energy crisis on the West Coast with new lamps and ballasts for greater energy savings. Here are a couple of new systems.

GE Lighting
T8 Watt-Miser Ultra — a 30W T8 lamp with full light output and 80+CRI

Osram / Sylvania
"Extreme Lighting System" — a 2-lamp 49W lamp/ballast system producing 'normal' light output, and a 30,000 hour lamp life rating

In these days of energy capacity shortage on the West Coast, many businesses are looking for ways to quickly and inexpensively shed electric load. One of the most popular solutions is to take out some of the existing fluorescent light bulbs (properly called lamps). This technique is called "delamping". Delamping of fluorescent luminaires is a possible energy saving solution. There are **2 main questions** to ask before delamping any fluorescent luminaire.

• What will happen to my light level and will this new light level be adequate for the task?

The simple answer is that the IESNA (Illuminating Engineering Society of North America) has developed recommended light levels for most lighting tasks. If the delamping does not reduce the light level below these recommended light levels then it is a good idea to delamp.

If the delamping does reduce the light level below recommended levels then productive and worker safety can be compromised. As a rule of thumb for office and schools: Do not delamp the luminaire if in doing so will reduce the number of lamps to fewer than two 4-foot lamps for every 64 square feet.

The following is a rough guide and actual light levels will vary depending on reflectance values, partition heights and locations, age of lamps.

If upon examination there are 3-lamps lighting 64 square feet then one lamp could be removed without reducing light levels below IESNA recommendations.

If upon examination there are 4-lamps lighting 64 square feet then two lamps could be removed without reducing light levels below IESNA recommendations. Remember, this is a rule of thumb and field conditions (reflectance, room size, dirt) need to be considered.

• Does it make a difference what kind of ballast I have now?

There are series and parallel wired ballasts. Most magnetic ballasts are series wired. It is about 50/50, series to parallel when using electronic ballasts.

With series wired ballasts, when one lamp is removed from the ballast the other lamp will not light properly and will fail if left running. The non-removed lamp will probably not light or will flicker or produce very little light. So, in a series wired ballast we need to remove all of the lamps from the ballast. The ballast will continue to use energy, 3 to 6 watts for magnetic and 0 to 10 watts for electronic. I have heard conflicting reports on delamping series wired electronic ballasts, that this may cause the ballast to fail if left for a prolonged period. I therefore recommend that the power to the ballast be terminated. Magnetic ballasts are very bullet proof and will not fail if left energized, however they will still use some energy.

Parallel wired ballasts can be delamped without too many problems and are often rated by the manufacturer to run one less lamp than the label rating (be sure to check with the manufacturer if the ballast is rated to run fewer lamps than the label states). If you check the ballast list (on our website) you will notice some 2-lamp ballasts running 1-lamp, 3-lamp ballasts running 2-lamps, and 4-lamp ballasts running 3-lamps, that are rated by the manufacturer to operate properly delamped.