

State to Warn About Halide Light Dangers

January 31, 2005

Oregon schools, warehouses and businesses will soon be getting a state safety warning about the potential danger of ultraviolet exposure from cracked metal halide lights.

State officials said they will also notify the federal government about an unusual but very real danger of severe "sunburn" and irritated eyes that can come from such exposure.

The warnings follow a November incident that left about 80 Lake Oswego teachers suffering a range of symptoms after being exposed to ultraviolet radiation from a cracked metal halide bulb burning in a school gym.

It was similar to a 2000 incident in which several spectators at a junior high basketball game in Sutherlin suffered from sore eyes and skin rashes that resembled sunburn.

An environmental specialist hired by the state estimated that those sitting directly under the cracked light in Lake Oswego would have received a full day's exposure to ultraviolet radiation in just eight minutes.

Metal halide lights are common in large spaces because of the bright, white rays they emit.

But a 1980 federal Food and Drug Administration directive says only metal halide bulbs that self-extinguish when cracked should be used in places where people could be exposed for more than a few minutes, unless other safety precautions are in place.

The FDA also ordered that warnings be placed on the packaging of metal halide lights that don't self-extinguish.

Last week, the Oregon office of the Occupational Safety and Health Administration concluded an investigation that found many school districts and other employers are not aware of the danger of ultraviolet radiation.

The Lake Oswego incident happened when a metal halide light in the Bryant Elementary School gym in Lake Oswego was struck by a volleyball Oct. 18. The district maintenance staff didn't change the bulb because, although cracked, it was still emitting light.

But a four-hour teacher training session in the gym in November left many teachers with symptoms ranging from sensitive skin to burned corneas and temporary blindness.

Teachers union president Kathy Lundeen said although doctors told teachers their symptoms

should soon subside, "more than a handful" of teachers are still suffering dry eyes and sensitivity to light more than two months after the incident.

"I don't think anyone should have to go through what the employees have gone through here," Lundeen said.

The day after a February 2000 basketball game at Sutherlin Middle School, school officials received calls from half a dozen people who had attended the game and suffered from burned skin and sore eyes. They later determined that all of those affected had sat in a center court section of the gym, directly below a light that had been struck by a ball.

The light still functioned, but a diffuser that spreads out the light had cracked. As a result, concentrated ultraviolet rays shot downward. The school later replaced the bulbs to ensure that individual lights would go out if their diffusers were damaged.

Dave Bussen, director of environmental health for the Douglas County Health Department, investigated that incident. At the time, he had never seen such a situation.

On Wednesday, Bussen said he would review findings from OSHA and ensure that all Douglas County schools are aware of the potential danger.

"We're concerned to hear that this happened again," he said.

<http://www.newsreview.info/article/20050130/NEWS/101310015/0/FRONTPAGE>

Standard Warnings, Cautions and Operating Instructions for all HID lamps

"WARNING: These lamps can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used."

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb may cause glass to fly if the envelope is struck.

WARNING: The arc-tube of a metal halide lamp is designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.

The following operating instructions are recommended to minimize these occurrences.
RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.

Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC-TUBE RUPTURE THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

Lamp Operating Instructions:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only auxiliary equipment meeting ANSI standards. Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
4. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
5. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
6. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require around 100 hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary slightly between individual lamps.
7. Lamps may require 10 to 20 minutes to re-light if there is a power interruption. DO NOT immediately re-fire a hot bulb.
8. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.

Mike Holt's Comment: The following requirement was added to the 2005 NEC, luminaires subject to physical damage, using a mercury vapor or metal-halide lamp, installed in playing and spectator seating areas of indoor sports, mixed-use, or all-purpose facilities must be of the type that has a glass or plastic lamp shield. Such luminaires are permitted to have an additional guard [410.4(E)].

Source: [mikeholt.com](http://www.mikeholt.com)

<http://www.mikeholt.com/mojonewsarchive/Safety-HTML/HTML/State-to-Warn-About-Halide-Light-Dangers~20050314.php>