

PARK LIGHTS MAY BE HAZARDOUS

On August 9, 1993, the Ottawa-Carleton Health Department was informed about several cases of keratitis seen at a local emergency department. The patients had all attended night baseball games at a local outdoor park and suffered severely painful eyes a few hours after leaving the game. Keratitis is an inflammation of the cornea of the eye, characterized by symptoms of redness, inflammation, itchiness and light sensitivity that lasts for a few days. It can occur for a variety of reasons, a common one being exposure to ultraviolet light sources such as the light from a welding arc. The Health Department began its investigation of the event by informing the municipal works department that owned the park of the reports and inquiring into possible causes of the eye complaints. A variety of possible causes were explored before it was determined that a malfunctioning metal-halide lamp used to illuminate night ball games was the cause of the problem.

Background

There are two types of metal halide lamps commercially available: those that self-extinguish when their protective glass cover is damaged and those that do not. In the early 1980's Health and Welfare Can-

ada recognized a problem with some types of mercury vapour and metal halide lamps used in sporting facilities (eg. arenas and gymnasiums). Over a period of two years, they received reports of eye and skin injuries to over 200 people exposed to these lights. The nature of the activities in recreational facilities make the lights particularly vulnerable to breakage. When the outer protective glass that shield the UV rays from affecting us is broken, burns to the skin and eye may result. Permanent eye damage may result in particularly serious cases.

In response to this health hazard, Health and Welfare Canada produced regulation governing the use and operation of these lights. The regulations are targeted at manufacturers, requiring them to indicate the type of bulb by marking the self-extinguishing kind with the letter 'T' and the non-self extinguishing kind with the letter 'R'. Lights marked with an 'R' should be used only in areas where people will not be exposed if the outer bulb is broken. Examples are street lights and parking areas where people do not remain for any length of time. Only bulbs marked with a "T", designed to extinguish automatically within 15 minutes when the outer glass envelope is broken, should be used in areas where fans and players are likely to be exposed.

Results

The light at the ball diamond was examined by municipal staff on the day the reports were received by the Health Department and the light removed for further examination. The bulb was not the self-extinguishing type. No further incidents of keratitis resulted after the offending bulb was removed. In total, twelve cases were reported to the Health Department, all women who had been watching night ball

games on four different evenings and were seated on the observation bleachers behind the first base line. None of the people affected wore glasses to the game. At least one spectator sitting in the same area wearing glasses was not affected by the light. Children in the stands and the ball players on the field were not affected, likely due to the fact they were in continuous motion, and did not remain stationary in front of the broken lamp. Eye problems cleared up within a week in most cases.

In order to prevent a reoccurrence of such an event in the area, the Health Department has written to local municipalities informing them of the incident and the regulations governing the use of the two types of metal halide bulbs.

RECOMMENDATIONS

Managers of recreation facilities should be aware of the potential health hazard of metal halide lamps in their facilities. The warning requirement that follows is required by law to be included on the packaging of the non-extinguishing type bulbs. This caution should be reviewed and a decision made as to whether the shielding over lamps is adequate to permit the use of these bulbs or if a better shielding or self-extinguishing bulbs should be alternatively used in all areas where metal halide bulbs are used.

WARNING

"This lamp can cause serious skin burn and eye inflammation from short wave ultraviolet radiation if the 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. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available".



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