



ISSUE: HID Lamps Containing Radiation Emitters

Some specific types of high-intensity discharge (HID) lamps used in commercial and industrial applications require the use of very small quantities of materials that emit ionizing radiation. Minimal amounts of these materials are required in order to achieve quick starts and to increase lamp lifetime. The material is sealed inside the lamp and is not accessible under normal conditions of use.

BACKGROUND

Certain metal halide (MH) lamps produced or marketed in the U.S. by members of the NEMA Lamp Section contain tiny amounts of Krypton 85 or Thorium to facilitate a quick start-up and achieve high and reliable performance. These lamps are mainly produced for professional purposes, for example in public lighting, stadiums, airports and other professional applications. These lighting products are safe throughout their life-cycle, from production to recycling. The radiation exposure they cause (less than 0.01 millisievert per year) is far below the amount of natural background radiation experienced in everyday life.¹

Internationally, the International Atomic Energy Agency (IAEA) provides the regulatory framework for the handling and use of all radiation emitting substances. The regulations state that such materials may only be used if the resulting benefit is higher than the possible harm to humans or the environment and if their use is justified. Moreover, the radiation exposure must not exceed a given safety limit.

In the United States, radiation emitters are regulated by the Nuclear Regulatory Commission, which licenses manufacturers and distributors that handle such materials, and the U.S. Department of Transportation, which sets standards for packaging, marking and shipping. NEMA members report that they are in compliance with the applicable U.S. regulations.

Transportation, distribution and use of these types of lamp do not present a potential health hazard. Numerous studies in the European Union and U.S. have shown that these products are not dangerous goods.

POSITION

In coordination with its industry counterpart associations around the world, NEMA supports awareness and harmonization of national regulations that apply to these products, which are eligible for exemption from regulation due to their low risk.

¹ For more information on background radiation in Earth's atmosphere, see <http://www.world-nuclear.org/education/ral.htm>.

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