



CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS, INC.

RESOLUTION

Relating to: **Control and Disposal of Tritium EXIT Signs**

- WHEREAS:** Tritium (H-3) is a radioactive isotope of hydrogen (H), emits a low energy beta particle, decays with an approximate 12 year half-life, is often used in the gaseous form, but once released to the environment, readily oxidizes to form tritiated water,
- WHEREAS:** The background levels of tritium in the environment from natural atmospheric cosmic ray production, past above-ground nuclear weapons testing, and routine nuclear power plant emissions are approximately 50 to 150 picocuries per liter (pCi/L) in surface waters,
- WHEREAS:** Tritium is not an external hazard, but may cause radiation dose to humans when ingested or absorbed through the skin, and based on the 4 mrem/yr dose limit in 40 CFR 141, the EPA has set a tritium maximum contaminate level (MCL) of 20,000 pCi/L for public drinking water supplies,
- WHEREAS:** Studies of active landfills in various states and countries show leachate with tritium considerably above background, many above the EPA's drinking water MCL of 20,000 pCi/L, and several landfills with tritium concentrations in the 100,000 to 200,000 pCi/L range, which indicates inappropriate disposal of tritium EXIT signs,
- WHEREAS:** States routinely document lost or stolen tritium EXIT signs and report these events to NRC through the NMED reporting system,
- WHEREAS:** A tritium EXIT sign distributed as a generally licensed (GL) device may contain up to 25 curies (or 25,000,000,000,000 pCi) of tritium sealed in small glass tubes, but will have a finite useful life due to decay, that will decrease in luminosity and eventually fail to meet fire safety criteria,
- WHEREAS:** The NRC issued a regulatory information summary in late 2006 (RIS 2006-25) to the distributors and general licensees possessing tritium EXIT signs, to remind the regulated community of their responsibilities for proper control, reporting, transfer and disposal,
- WHEREAS:** An expired tritium EXIT sign has life safety implications in the event of a facility fire or loss of power, and numerous tritium EXIT signs have been found that exceeded their manufacturer-stated expiration date indicating a problem of national scope,
- WHEREAS:** The general licensee who receives a self-luminous tritium EXIT sign must appoint a 'responsible individual' who is knowledgeable with the regulations and requirements for reporting events, transfer and disposal of the device per NRC regulations in 10 CFR 31.5(c)(12) or equivalent Agreement State regulations,

WHEREAS: There are a few million tritium EXIT signs in the United States, many with inadequate regulatory accountability,

WHEREAS: A general licensee who is in possession of a tritium EXIT sign may only legally transfer it back to the manufacturer or an entity for licensed disposal as low-level radioactive waste (LLRW),

WHEREAS: The Pennsylvania Senate Environmental Resources and Energy Committee convened a hearing in June 2006 to review the extent and implications of tritium in landfill leachate, because such concentrations have the potential to contaminate ground water, and to render a downstream drinking water supply vulnerable to tritium,

WHEREAS: The EPA has developed a training CD for the building industry, alerting contractors to search and remove GL devices, such as tritium EXIT signs, prior to building demolition or renovation, and the EPA is developing additional web-based user training information including disposal options,

WHEREAS: By passage of this resolution, the CRCPD membership hereby express their growing concern with the ineffective regulatory control, inadequate labeling and improper disposal of tritium EXIT signs;

NOW, BE IT RESOLVED:

The NRC and states should begin a national effort to actively alert tritium EXIT sign licensees as to their regulatory obligations for control and disposal, and to inventory and check sign expiration dates, and

BE IT FURTHER RESOLVED:

That CRCPD members and NRC should continue to actively alert solid waste facilities, and the fire safety and building construction industries, as to the concerns related to tritium EXIT signs, and

BE IT FURTHER RESOLVED:

That NRC should perform formal evaluations of GL tritium EXIT signs with respect to onsite and offsite tritium exposure scenarios for all possible disposal scenarios in solid waste transfer facilities, landfills, and incinerators, and

BE IT FURTHER RESOLVED:

That CRCPD members strongly recommend NRC evaluate and amend its regulations pertaining to generally licensed tritium EXIT signs, with respect to the size of labels alerting a user to the replacement date and their transfer or disposal obligations, and, evaluate the need for a modified source management system for generally licensed tritium EXIT signs.

Approved by the CRCPD Membership November 14, 2007.



Debbie Gilley
CRCPD Chairperson