

Tritium Exit Sign Owner Responsibilities

The Department of Environmental Protection's (DEP) Bureau of Radiation Protection (BRP) has prepared this fact sheet to inform the owners of tritium exit signs of the proper disposal methods and the hazards associated with these devices.

What is tritium?

Tritium is a radioactive isotope of the element hydrogen.

What are tritium exit signs and how are they identified?

Tritium exit signs are signs that display the word "exit" to identify the designated exit route from a building or enclosed space. They are typically used in buildings to illuminate egress routes in areas where access to electrical service is unreliable, unavailable, or costly. Tritium exit signs are self-luminous and require no electrical power.



This type of exit sign can be distinguished from others by observation. The signs illuminate with a greenish glow emanating from several sealed glass tubes arranged into the word "exit." Another indication that the sign may contain tritium is the lack of evidence of an electrical power supply. The sign may also be identified by the required labeling, similar to that shown below, which includes the three bladed radiation symbol and the words, "Caution – Radioactive Material," as well as other information about the quantity of radioactive tritium and the manufacturer.

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|  | CAUTION – RADIOACTIVE MATERIAL CONTAINS CURIES OF TRITIUM |  |
| <small>THE RECEIPT, POSSESSION, USE, AND TRANSFER OF THIS DEVICE ARE SUBJECT TO A GENERAL LICENSE OR THE EQUIVALENT AND THE REGULATIONS OF THE US NUCLEAR REGULATORY COMMISSION OR A STATE WITH WHICH THE NRC HAS ENTERED INTO AN AGREEMENT FOR THE EXERCISE OF REGULATORY AUTHORITY</small> | | |
| <small>DO NOT DISMANTLE OR OPEN THIS DEVICE UNLESS SPECIFICALLY LICENSED BY NRC OR AN AGREEMENT STATE</small> | | |
| <small>DO NOT SELL, TRANSFER, ABANDON, OR DISPOSE OF THIS DEVICE EXCEPT BY TRANSFER TO PERSONS SPECIFICALLY LICENSED BY NRC OR AN AGREEMENT STATE</small> | | |
| <small>USE OF THIS DEVICE IS PROHIBITED IF THERE IS ANY INDICATION OF FAILURE OF OR DAMAGE TO CONTAINMENT OF RADIOACTIVE MATERIAL</small> | | |
| <small>LOSS, THEFT, OR TRANSFER OF THIS DEVICE TO ANOTHER LICENSEE AND FAILURE OR DAMAGE TO SHEILDING OR SOURCE CONTAMINATES MUST BE REPORTED TO NRC OR AGREEMENT STATE</small> | | |
| SERIAL NO. | MODEL NO. | DATE |
| REMOVAL OF THIS LABEL IS PROHIBITED | | |

Who Regulates Tritium Exit Signs?

Tritium exit signs are regulated by Pennsylvania as a Nuclear Regulatory Commission (NRC) agreement state under federal regulations (10 CFR 32.51 and 31.5a). Under these regulations, certain people (general public excluded) have a general license to acquire and use these devices. There are more than 60,000 tritium exit signs in use in Pennsylvania, according to estimates derived from the NRC.

What is the concern?

Recent testing performed by DEP has identified tritium contamination in many of the landfills throughout the state. DEP believes that illegal disposal of tritium signs has caused this problem. Often, building maintenance personnel or construction/demolition workers may be unaware that the devices contain radioactive material. As a result, these devices may end up in landfills, incinerators, and at scrap metal recycling facilities.

What can be done?

As an owner of these devices, it is important to know that tritium exit signs must be disposed of or recycled properly. The following management practices are recommended:

- Ensure that building maintenance staff and employees are aware of the need to use caution when working on or removing tritium signs.
- Ensure that all staff are aware that a broken tritium exit sign has the potential to result in contamination and a potential radiation dose to people, property, and the environment.
- Ensure that all staff are aware of the special handling and disposal requirements for these devices.
- Ensure that employees are aware that tritium signs are not to be disposed of in the ordinary trash.
- Ensure that when tritium signs are removed or replaced, they are returned to the manufacturer or a low-level radioactive waste site for disposal.
- Maintain an inventory of tritium exit signs including each sign's expiration date, location, and condition. Check this inventory at least annually.
- Report the transfer of tritium exit signs to: PA DEP BRP, Attn: GLTS, P.O. Box 8469, Harrisburg, PA 17105-8469.

How should the signs be disposed?

Contact the sign manufacturer for instructions and return cost information. If the manufacturer is unable to accept return of the device, other manufacturers of similar devices, provided they are licensed to accept tritium, may accept the signs. Alternatively, consider using a radioactive waste broker or processor to perform packaging, transport, and disposal of unwanted tritium signs.

Where is additional information?

For a list of radioactive waste brokers and processors, contact DEP's BRP at 717-787-2480.

For more information regarding the responsibilities concerning these or other radioactive materials, contact the regional BRP office or visit www.crcpd.org or www.dep.pa.gov.

Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222
412-442-4000

Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110
717-705-4700

Southeast Regional Office
2 East Main Street
Norristown, PA 19401
484-250-5950