Radioactive Lightning Arresters Identification and Safety Precautions

FACT SHEET 26-008-0915

What are radioactive lightning arresters?
Radioactive lightning arresters are ground-mounted, vertical, 17 to 21 meter (57 to 69 foot) high poles, or 6-meter (20-foot) poles mounted vertically on top of buildings that are used to attract lightning strikes using a radioactive source (see Figure 1). The purpose of this factsheet is twofold: (1) to enable readers to identify radioactive lightning arresters, and (2) to educate readers about what to do should they encounter a downed or damaged arrester.

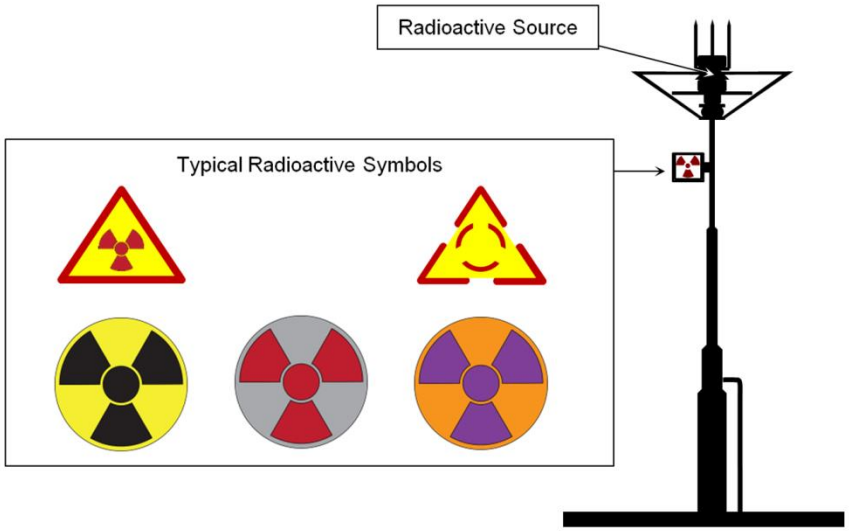

Figure 1. Lightning Arrester Containing Radioactive Material

Where are radioactive lightning arresters located?
Countries where you may be deployed might use lightning arresters that contain radioactive sources. These lightning arresters are typically mounted on the ground or on top of buildings to protect structures from lightning strikes. They are intended to protect structures by guiding the destructive energy from a lightning strike safely into the ground. When properly installed, these arresters pose no risk to personnel.

Can I tell by sight if a lightning arrester contains radioactive material?
Radioactive lightning arrester should be marked with a radiation symbol (Figure 1), regardless of the country in which they are being used. Over the years, however, these markings can become detached or illegible. When no markings are visible, the only means to identify a radioactive source and/or a potential exposure hazard is with appropriate radiation monitors. For example, the AN/VDR-2 and AN/PDR 77 Radiacmeters, if properly used, will alert you of radiation from lightning arresters.

Army Public Health Center (Provisional), Health Physics Program
usarmy.apg.medcom-phc.list.org-ohs-ohs@mail.mil 410-436-8396 or DSN 584-8396
5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5403

Is it safe to be in the vicinity of a lightning arrester?
Yes, if the lightning arrester is properly installed and used in its intended configuration. The potential for exposure to low levels of ionizing radiation does exist near lightning arresters if they have fallen over or have been damaged in any way.

What is the risk to my health if I come across a lightning arrester that is downed or damaged?
Coming across a downed or damaged radioactive lightning arrester, you could potentially be exposed to ionizing radiation, but at levels that would most likely be less than the radiation safety standards for exposures allowed to members of the U.S. general public. (For more information on U.S. radiation exposure standards, refer to the resources provided at the conclusion of this factsheet.)

How do I protect myself from radiation hazards associated with the radioactive sources found on lightning arresters?
Although you would only be potentially exposed to low levels of ionizing radiation, following basic radiation safety best practices can still greatly minimize any potential exposure. (Best radiation safety practices: Limit the amount of time spent near the lightning arrester, maximize your distance from a known or suspected downed or damaged arrester, and practice shielding by attempting to locate yourself where objects will be between you and the arrester. For instance, if you are able to utilize lead or heavy steel containers or both to shield the source, do so.)

What should I do if I find a damaged or fallen lightning arrester?
Do not panic. Do not touch or tamper with the lightning arrester. Move out of the area. Report the incident, including a list of any other personnel potentially exposed, to your chain-of-command or unit CBRN personnel or both. You may wish to note this incident on your Post-Deployment Health Questionnaire that you will fill out upon returning from deployment.

Where can I get more information?

PHC Technical Guide (TG) 244, *The Medical NBC Battlebook.*

PHC TG 236, *Basic Radiological Dose Estimation: A Field Guide.*

Defense Intelligence Agency, Defense Intelligence Report DI-1881-2-01, *Identification of Ionizing Radiation Sources in a Peacetime Environment.*