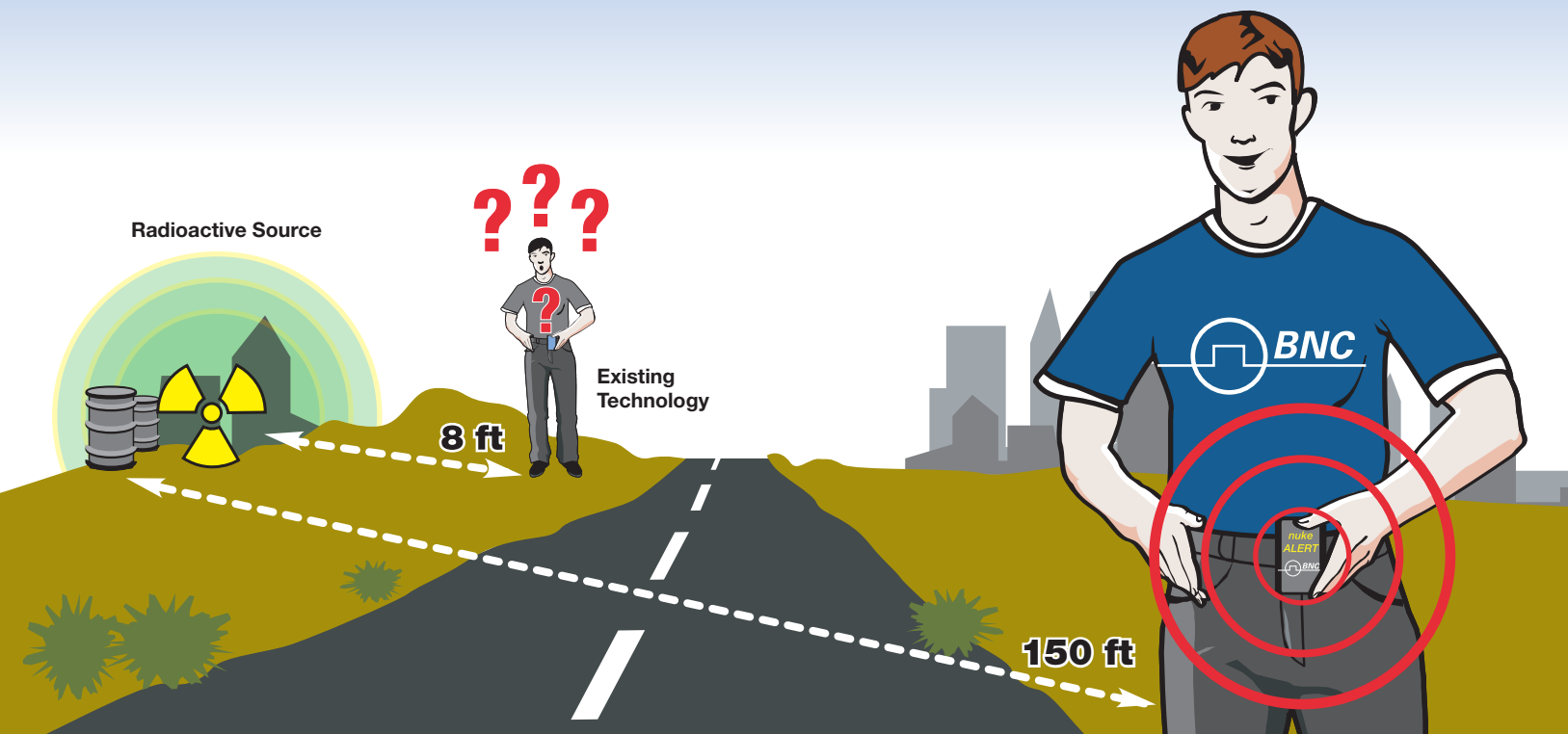


NEW Pager-Sized Radiation Detection Technology Provides Earlier Warning for First Responders



ALL RADIATION DETECTION DEVICES ARE NOT CREATED EQUAL.

Recent technological advancements have improved radiation detection capabilities for emergency preparedness. When responding to a radiological incident, personnel need detection capabilities to provide faster response times at farther distances than what is currently available in the marketplace. The capability to quickly survey an area and detect objects in motion is also essential to manage an emergency incident. Detection response times determine whether you obtain the critical initial alarm or miss the opportunity entirely and derive a false negative reading.

Berkeley Nucleonics Corporation's (BNC) *nukeALERT 951* is a radiological detection pager designed to meet the critical needs of the front line responder. For emergency personnel involved in commercial vehicle inspection, perimeter security or tactical surveillance, the *nukeALERT 951* provides unsurpassed detection capabilities in a micro-sized package. The unit is simple to operate, waterproof, rugged enough to withstand a five-foot drop on concrete, and does not require annual calibration or maintenance.



2005 Model with NEW CsI Technology
Alarms Faster at Greater Distances

WHICH DETECTOR DO YOU WANT ON YOUR BELT?

The information below illustrates the detection and response comparison between a dosimeter using a Geiger-Mueller detector vs. the *nukeALERT 951* with its advanced CsI technology in an emergency situation.

1. What is an RDD?

A radiological dispersion device (RDD) is a bomb that combines conventional explosives, such as dynamite, with radioactive materials in the form of powder or tiny pellets. RDDs can spread radioactive material throughout populated areas contaminating buildings and the local environment while exposing the public to radiation poisoning.

2. What is the primary element in an RDD?

Cesium is a common isotope used for many industrial applications throughout the world, making it a likely element used in an RDD. Small amounts (the size of a marble) are readily available to buy on the open market. Fortunately, in just one second, the *nukeALERT 951* detects and measures these small amounts of cesium at a distance of 25 feet away from the source. For the same amount of cesium, Geiger-Mueller (GM) dosimeters must be within three feet of the source and require almost 30 seconds to provide a full exposure reading. Reliability concerns coupled with a slow response time is justification for end users of GM dosimeter pagers to replace their existing inventory with advanced scintillator technology.

3. Gamma radiation can be shielded

Radioactive gamma rays found in RDDs are similar to x-rays; they are a form of electromagnetic radiation. Gamma rays are the most hazardous type of external radiation since they can travel up to a mile in open air and penetrate many types of materials. Only sufficiently dense shielding and/or distance from gamma ray emitting radioactive material provides adequate personal protection.

Sources of radiological contraband can be intentionally shielded or become shielded by foreign objects. For example, as little as 1 centimeter of lead can shield 5 kilograms of plutonium (size of a baseball). An inspector using a GM dosimeter pager, must be within 16 inches of a shielded isotope source to trigger the alarm, and the final exposure reading will take at least 25 seconds to trigger an alarm. However, using the *nukeALERT 951*, personnel obtain the early alarm notification sooner, within 13 feet of the shielded source. Therefore, walking in proximity to the source triggers the alarm and alerts the end user before health issues may be of concern.

4. Dirty Bomb Response Scenario

Responding to an emergency event without a personal radiation detection device poses a potentially hazardous threat to an emergency response team. Radioactivity is invisible and the first indication of radioactivity should not be the onset of radiation sickness. The early responder needs an effective instrument that triggers an alarm immediately and at the greatest distance possible from the source. The *nukeALERT 951* combines a simple-to-use design philosophy with sophisticated detector electronics to meet the demands of the current world climate. It detects radiation at up to 20 times the distance of typical personal dosimeters and gives instantaneous readings of radiation levels encountered. Traditional dosimeters detect radiation only when the end user is directly upon the source, at the same time wasting critical time integrating data before arriving at the final exposure reading. This slow processing time invariably delays any preventative measures.

Bottom Line

Although the likelihood of a major nuclear incident is low, if an accident occurs, protective actions near the site and monitoring of radiation at greater distances are needed to protect the public. Most recently, the possibility of terrorist attacks using radioactive materials or nuclear weapons poses a threat to the well-being of the public. Therefore, radiation detectors utilized by personnel with the basic understanding of each instruments capabilities can be critical life-saving tools to surviving a nuclear emergency incident.