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Protecting the Public after a Nuclear Power Plant Radiation Leak

How can you feel safe? How much warning will you have?

The ongoing battle to control the reactors at the Fukushima Nuclear Plant is terrifying to follow, but also leads millions that live near nuclear power plants to look over their shoulder and wonder “what if”? How many of us live within 50 miles of a nuclear power plant? In the U.S. alone, there are 104 nuclear power plants, most with multiple reactors.

When a leak is detected, there are two primary tools to measure the radiation: dosimeters and radiation detectors. Both provide different critical functions.

Dosimeters are the important instruments at the radiation leak. When worn on the body, often clipped to a pocket or belt, they measure how much radiation your body has absorbed. This is critical because the human body can absorb an amazing amount of radiation without damage, but there is a limit. A dosimeter shows when it is time to get away from the radiation before health consequences can occur. Everyone working in an area of high radiation needs to have a dosimeter. Especially the workers trying to stop a radiation leak.

Radiation detectors are faster and more sensitive than dosimeters, react instantly when radiation is detected, and indicate the amount of radiation. If dosimeters are like a doctor looking over your shoulder to continually measure your health, radiation detectors are more like guard dogs. Radiation detectors are used just like guard dogs – they can monitor a perimeter and provide instant warning if that perimeter is violated. They can also be used to inspect people and vehicles for radiation. When people leave a contaminated area they are scanned with radiation detectors to quickly determine who needs to go through decontamination and who can be waved on. Often contamination is in the form of dust present on skin, clothes and shoes. This contamination can be washed off once detected. The people who need radiation detectors are those who establish and guard the perimeter around ground zero, control the road blocks, evacuate the local population, control hospital admittance, and check people and vehicles for contamination as they leave the danger area.

How much warning will you have if a radiation leak occurs at the local nuclear power plant? Radiation detectors inform the authorities that a leak has happened within seconds. Then it’s up to the authorities and the local emergency management team to determine how to respond and what the public needs to know. And if a perimeter needs to be established and an evacuation ordered.

After the leak is stopped, how can you feel safe living next to a Nuclear Plant? How do you know radioactive dust isn’t blowing around during windy days? Those same radiation detectors keep monitoring radiation levels 24/7. They are sensitive enough to detect very small levels of radiation and can be set to alarm at far below hazardous levels. No radiation contamination can move without detection within a network of these devices.

Radiation is invisible to us, but we have the tools to track its every move.

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