

## EPA's radiation detection system not 100 percent

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By Joseph Neese - [email](#)

WASHINGTON (RNN) - As reports continue to surface that radiation from Japan's failed nuclear reactors is reaching the U.S., the integrity of the system used by the federal government to monitor risks has been called into question.

"The monitoring system isn't functioning fully," said Daniel Hirsch, a lecturer on nuclear policy at the University of California Santa Cruz.

The monitoring system, known as RadNet, is the nation's comprehensive network for monitoring radioactivity and ionizing radiation, according to the [U.S. Environmental Protection Agency](#) (EPA).

The EPA has acknowledged that its network isn't fully operational. And according to media reports referenced by Hirsch, some of RadNet's monitoring systems have gone months without receiving necessary repairs.

### Radiation levels in the U.S. monitored by volunteers?

The nation's comprehensive network for monitoring radiation is called RadNet by its overseer, the U.S. Environmental Protection Agency (EPA).

A network of individuals work with the EPA under voluntary agreement as RadNet-trained monitor operators, a move that helps the federal agency save money.

According to an EPA spokeswoman, these individuals are "typically" local or state

Both statements raise caution bells, as the EPA said Monday it had "identified trace amounts of radioactive isotopes consistent with the Japanese nuclear incident" in 12 of its RadNet air monitor systems.

Some of those filter results show levels higher than those found by EPA monitors a week ago. The uncertainty has left a nation previously assured that no harmful radiation would reach the U.S. questioning if reality may be worse than it seems.

### Radiation discovered in rain water

According to the [EPA results](#), samples showing elevated radiation levels were found in Alaska, Alabama, California, Guam, Hawaii, Idaho, Nevada, Saipan, Northern Mariana Islands and Washington, according to a press release issued by the agency Monday.



Radiation has been found in U.S. rain water (Source: CNN)



An aerial shot of Japan's damaged Fukushima nuclear reactor. (Source: CNN)



A side view of Japan's damaged Fukushima nuclear reactor. (Source: CNN)



Some workers at the Fukushima plant have treated in the hospital. (Source: CNN)

public health officials or university professors.

"The operators go through a training course on operation of the monitors and diagnosis of problems," the official said.

Each operator keeps in regular contact with the EPA's Office of Radiation and Indoor Air's National Air and Radiation Environmental Laboratory, which is located on Maxwell Air Force Base's Gunter annex in Montgomery, AL.

"In addition, the EPA analysts know how to recognize errors and anomalies in the monitor's datastream," the official said.

The system, which was birthed in 1973, "has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents and to document the status and trends of environmental radioactivity," according to the EPA's website.

RadNet tracks radiation through samples of air, rain, drinking water and milk.

In 2006, EPA began to replace its monitors with advanced technology that can transmit data in real time, according to its website.

Wednesday - a slight improvement over Monday's 40 percent figure.

Traces of radiation also were found as far east as Pennsylvania and Massachusetts.

"Elevated levels of radioactive material in rainwater have been expected as a result of the nuclear incident after the events in Japan since radiation is known to travel in the atmosphere," said the EPA in a statement published Sunday on its website. "There have been reports received that the states of Pennsylvania and Massachusetts have seen elevated levels of radiation in recent precipitation events."

While drinking water remains unaffected, the levels of nuclear iodides in the rain water exceeds the limits set forth in the EPA's Safe Drinking Water Act, Hirsch said. The EPA, however, has continued to ensure that there is no risk to U.S. citizens.

"It's troubling that the rain is unsafe to drink," Hirsch said.

Hirsch is president of the Committee to Bridge the Gap, a non-profit nuclear energy organization founded in 1970, which focuses on nuclear safety. He says the elevated levels of radiation in rainwater are a red flag.

It remains unknown how the rain will affect water systems at large.

### **Are the government's reports accurate?**

According to Hirsch, the radiation levels currently presented to the American public are out of date almost as soon as they are made public. This is because there are delays in getting the official results published.

Air samples, for example, are captured by machines and pumped through air filters, a process that takes three or four days, he said. The samples are then sent to a lab in Montgomery, AL, where they are analyzed. Final results from the lab are issued in "one to several days."

Moreover, radiation from the accident, which occurred more than two weeks ago, takes quite a while to reach the U.S., Hirsch said. This is a problematic situation, he says, because even if we take protective action now, it may be too late if toxic levels are making their way to the U.S.

### **The radiation monitors: Are they operational?**

The Associated Press (AP) reported Saturday that of the 124 fixed monitors used by the EPA, "about 20" were out of service last week. On Monday, that number dropped to 10, according to the EPA's website. By Wednesday, eight were off line.

However, according to the EPA's website, of those 124 monitors, 38 percent were listed as "under review"

A spokeswoman with the EPA said monitors are placed under review any time a monitor detects readings "outside typical background fluctuations." The EPA reviews the incoming data to ensure its accuracy before it makes the data available to the public online.

"It is part of the normal process," said the spokeswoman, who did not want her name used. The EPA pointed out that the monitors continue to function while the data is under review.

A review of an EPA map available on its website shows which detectors are transmitting data, which are under review and which are malfunctioning. While some of the detectors - such as one in Hawaii, where the first effects of radiation on the U.S. would be expected to be seen - are marked as functional, all data may not be available to the public.

On Tuesday, Hawaii's [radiation readings page](#) said, "Gross beta counts are temporarily unavailable due to mechanical issues." On Wednesday, the page was functional again.

Whatever the case, the EPA is beginning to take a deeper look at its monitoring system.

"We are considering follow-up work on previous assignments related to EPA's emergency response activities and RadNet may be a part of it," said EPA Inspector General Arthur Elkins Jr. "We have no firm plans developed at this time."

That may be an appropriate step, Hirsch says, about a system that first came on line in 1973. However, he didn't express much confidence in the system as a whole.

"Even the parts that are working can't see the parts of radioactive iodide that are concerned," he said.

### **Why it's not unusual for the monitors to experience problems**

Brendan Gilfillan, press secretary for the EPA, said it is not unusual for the devices to require service because of the advanced technology they use.

"EPA's RadNet monitors are highly sophisticated technical devices which occasionally require maintenance and repair," he said in an email interview.

Gilfillan, however, assured that the down monitors would not affect the integrity of the system as a whole.

"If a monitor in one area is being repaired, EPA's network will still be able to detect any fluctuation in background levels," he said.

Gilfillan said that's one reason there are more than 100 monitors across the country - so that an abundance of devices can provide overlapping coverage.

Hirsch doesn't buy that argument.

"What's the purpose of having a network if half of it isn't working?" he asked, mentioning an AP reports that some monitors have not worked for months.

The AP has reported that a RadNet monitor in Fontana, CA, has not transmitted data since November and was only repaired after the nuclear meltdown in Japan.

When questioned about this particular monitor, an EPA spokeswoman emphasized only that RadNet has been in place for more than 20 years.

"If EPA fails to receive a datastream from a monitor, we call the appropriate operator to check on it," the individual said.

Hirsch took his argument a step further.

"The reality is that there are large holes in their blanks," he said.

Hirsch noted that there is no monitor located between Los Angeles and San Francisco, a gap of about 350 miles.

The EPA, however, feels that its network is sufficient.

"The monitor - and the network as a whole - continues to detect even the slightest traces of radiation in the air," said the EPA spokeswoman. "To suggest otherwise is both inaccurate and irresponsible."

Gilfillan compared the current RadNet monitoring system to the system in place during the Chernobyl Nuclear Power Plant disaster in 1986, which is regarded as the worst nuclear disaster in history.

"By way of comparison, we were able to detect minuscule traces of radiation from the Chernobyl incident with only 50 monitors in the network," he said.

### **Further concerns: Bland assertions and political ramifications**

Also of concern to Hirsch is the fact that the [Nuclear Regulatory Commission](#) (NRC) has superseded the EPA in the post-Japan response. He said that official guidance documents for radiation release place the EPA in charge. This is alarming, as the NRC has weaker standards than the EPA, he said.

When questioned directly about these statements, the EPA referred Raycom News Network back to a statement that appears on its website:

"As the Nuclear Regulatory Commission has said, we do not expect to see radiation at harmful levels reaching the U.S. from the Japanese nuclear incident," Gilfillan said.

Gilfillan re-emphasized that currently there is no domestic emergency response in effect because the U.S. is not expected to see harmful levels of radiation. Still, he said, "The federal government is monitoring the situation."

Hirsch said the "bland assertions that no harmful radiation could reach the U.S." are "idiotic," as no radiation is safe, according to the EPA itself.

"In setting limits, EPA makes the conservative (cautious) assumption that any increase in radiation exposure is accompanied by an increased risk of stochastic effects," the organization writes on its website.

Hirsch was also concerned about President Barack Obama's immediate commitment to the nuclear industry.

"Here at home, nuclear power is also an important part of our own energy future," Obama said in a speech on March 17, less than a week after the tsunami's waves struck Japan.

Hirsch said he worries that a conflict of interest could exist that prevents the administration from being more candid with the public.

"Politics and health should not be intermixed," he said.

## Looking at the levels: Are we safe?

Gilfillan emphasized that current background radiation levels in the U.S. are "typical."

"EPA's RadNet radiation air monitors across the U.S. show typical fluctuations in background radiation levels," he said. "The levels detected are far below levels of concern."

While "minuscule" amounts of radioactive material linked to the Japanese nuclear plants were found in more detailed filter analysis, Gilfillan said the amounts were also far below levels of concern.

However, Hirsch feels the benchmarks the EPA is using to gauge whether radiation levels are safe are not acceptable.

He said the public has been told that the radiation levels detected in the U.S. are a small fraction of "permissible" levels. But those levels are judged against emergency levels assigned to areas in close proximity to nuclear power plants, not to areas with no known risk to radiation, he says.

According to the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, a level of 1 rem is typically responded to with evacuations. The [EPA's website](#) says 5 rems can result in changes to blood chemistry.

[\[Click here to view the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents\]](#)

The EPA says physicians recommend that humans be exposed to no more than 100 mrem "per year, from all sources." An mrem is a millirem, or 1/1000 of a rem. One dental x-ray is about 40 mrem.

The EPA tracks radiation in counts per minute, with 1,000 counts per minute equaling 1 mrem. In other words, it would require 1 million counts per minute to equal the level (1 rem) recommended for evacuation.

According to Hirsch, when faced with 1 rem of exposure, 1 in 1,000 people will develop cancer.

The states currently showing trace amounts of radiation have readings that typically fall between 20 and a high of more than 850 counts per minute in [Fresno, CA](#).

Fifty counts per minute is considered typical background radiation.

"Please note that there has not been a need to implement public precautions," Gilfillan said. "Radiation levels have been far below levels of concern."

## Congressional intervention?

Hirsch compares the current radiation scare to last year's BP oil spill. At first, the public was told that there was not much leakage from the rig, when in reality, millions of gallons were pouring into the Gulf of Mexico.

Hirsch said the radiation is "more harmful" to human beings, and called the crisis "nuclear BP cubed."

He supports legal action in order to address what he says are problems with the EPA's radiation monitoring system.

"I think there needs to be a Congressional investigation of the failure of the EPA monitoring system," he said.

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