

Radiation peril in river rising, scientist says

Hanford, state health official contest findings

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Staff writer

A maverick scientist who once sent radioactive jam to Washington's governor says radiation is increasing near salmon beds in the Columbia River.

Norm Buske says he's detected radium-225, a decay product of uranium-233, in the Hanford Reach where 80 percent of the Columbia's fall Chinook salmon spawn.

Scientists from Hanford and the Washington Department of Health are disputing Buske's report, released last week.

In addition, salmon researchers say they've found no proof that radiation is causing mysterious chromosome abnormalities in Hanford Reach salmon.

Buske's sampling methods in his latest study are nonstandard and haven't been peer-reviewed, said Debra McBaugh, a radiation specialist with the Washington Department of Health.

"We've been sampling since the 1960s out there. If uranium (and radium) had been there in large amounts, we would have seen it," she said.

Hanford radiation that's getting to the river is being diluted by the immense flow of the Columbia, and "hasn't been shown to be a public risk," McBaugh said.

A Hanford scientist agreed with McBaugh about Buske's latest study.

"I don't believe it," said Ted Poston, a senior research scientist with Battelle's Pacific Northwest National Laboratory in Richland.

"I like Norm. We need people to question the government. But technically, as a scientist, I can't support his argument," Poston said.

Buske's report was published with a grant from the Government Accountability Project, nuclear critics who defend government whistleblowers.

Since 2001, he's had access to the 586-square-mile Hanford site in an agreement between the Government Accountability Project and the U.S. Department of Energy.

The nuclear gadfly has zeroed in on strontium-90 leaking into the Columbia from springs near Hanford's N and H reactors, other elements in the river, and radiation sucked up from Hanford soils by the roots of tumbleweeds.

"People like Norm, with little budget but lots of guts, tend to find these big problems at Hanford. He's been right more often than wrong," said project spokesman Tom Carpenter.

Buske's latest work concerns a Cold War program that produced uranium-233 for nuclear weapons. It takes 159,000 years for half of its radioactivity to decay away.

Buske says about 22 pounds of the uranium may have been intentionally dumped in the river at old ferry crossings near the defunct D Reactor.

He suspects it was dumped because it contained dangerous fluoride and didn't meet requirements for on-site disposal in tanks or soil.

"There's no proof of that, but radiation patterns in the riverbed suggests it was dumped there," Buske said.

That's highly unlikely because anyone dumping uranium in the river would have exposed themselves to radiation, Poston said.

"The notion that someone could dispose of a fuel rod or element in the river is hard to buy," he said.

Radium, a metallic chemical element associated with uranium, is a risk to salmon because it is absorbed into cells and can damage genes, Buske's report says.

He speculates that the radium might account for recent chromosomal changes in Hanford Reach salmon.

In 2000, researchers from the University of Idaho and Washington State University said female salmon in the Reach had pronounced male sex characteristics.

Four-fifths of the females spawning in the Reach began life as males, the study found.

But Gary Thorgaard, a WSU geneticist and co-author of the salmon study, said there's no evidence of a connection between any radiation and the salmon chromosome changes.

"I'm skeptical that radiation could be causing this problem. But it's still a mystery what's going on," Thorgaard said.

Since the initial study, the same salmon sex changes have been detected in several other places along the Columbia and in the Sacramento River system, Thorgaard said.

For more than a decade, Buske has been studying the Hanford Reach, combining Greenpeace-style publicity stunts with serious laboratory work.

In 1990, he shipped two jars of "hot" mulberry jam affixed with radiation warning labels to Washington Gov. Booth Gardner and U.S. Energy Secretary James Watkins.

The berries came from an area along the river near N Reactor, where radioactive strontium-90 from Hanford ground water is entering the river.

Strontium-90 in sufficient doses can cause cancer.

Buske's jam grabbed national headlines as a symbol of uncontrolled contamination at Hanford, the nation's most-polluted weapons site.

In 1999, he found more strontium-90 in river springs only 100 feet from some of the salmon beds. Hanford scientists said the salmon were safe.

In the early days of the Cold War, Hanford officials said it would take 50 to 180 years for radiation and chemicals from weapons production to reach the river. They were wrong.

The first contaminated ground water beyond Hanford's boundaries was found in January 1956. It took only seven years for radiation in the ground water to reach the river, a 1963 Hanford report said.

Buske is calling for a comprehensive study of radiation in the Hanford Reach.

There's a "great disparity" between the increasing radiation levels he claims and DOE's plans to finish cleanup work along the Columbia by 2012, Buske said.

Poston said Buske has properly focused on strontium-90 in springs near N Reactor, but Battelle research papers already had highlighted the problem.

"It's the highest release point of strontium-90 near the shorelines," he said.

DOE has started a pump-and-treat system to remove the strontium-90 near N Reactor from ground water. "Their target is to have that resolved by 2012," Poston said.

The Hanford shoreline will be carefully examined over the next decade by several state and federal agencies before any land is released for public use, McBaugh said.

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