



FRONT PAGE | CITY | SPORTS | BUSINESS | NATIONAL | WORLD | DIALOGUE
ENTERTAINMENT | YOUR MONEY | INTERNET | COLUMNISTS | CLASSIFIED

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Chalk River's dirty secret

Nuclear plant's neighbours angry after leak hushed up for almost 20 years

Tom Spears
The Ottawa Citizen

For nearly 20 years, the nuclear complex at Chalk River leaked more than 4,000 litres of radioactive water each and every day through the soil to the Ottawa River.

And the complex's bosses didn't tell their neighbours.

Even though Atomic Energy of Canada Ltd. finally removed the source of its leak in 1995, water laced with radioactive tritium and strontium is still percolating through the soil today to the river a few hundred metres away.

Most of the radioactivity enters the river inside the water molecules themselves, not in a separate substance that can be filtered out or purified.

The Atomic Energy Control Board, which regulates nuclear safety in Canada, acknowledged last December that Chalk River's NRX reactor had experienced a "mild" leak. It called the leak "seepage." The board said then, and still says, that the Ottawa River dilutes the pollution, and there is no danger to people who drink the water.

But an access to information request filed by a Pembroke woman shows the leak carried large amounts of radioactive water into the river, which supplies drinking water for many communities downstream, for nearly 20 years.

Now some residents and political leaders in the region are asking why neither Atomic Energy of Canada Ltd., which owns the plant, nor the Atomic Energy Control Board ever told them about the leak.

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They say leaks like this may be why fish downstream from Chalk River are up to twice as radioactive as fish upstream.

They're also wondering why it took until 1995 to remove the source of a leak that started in the 1970s.

"We're appalled that they would keep this secret for so many years," said Lynn Jones of Pembroke, who filed the access to information request that uncovered the size of the leak. "This has made people start asking questions."

Studies by AECL, obtained through the access request, show:

- In 1994, an average of 4,300 litres of contaminated water escaped daily through a leak in the "bay" where used uranium fuel is stored.

A bay is like a high, narrow swimming pool sunk in the ground. Used fuel is highly radioactive, and is kept underwater to cool it and prevent radiation from getting into the air.

The leak happened when an extension to the original fuel bay was built 20 years ago. The join between the old and new sections wasn't completely sealed, and radioactive water ran through the gap.

NRX is now closed, and the used fuel has been removed.

- In 1983, AECL estimated the leakage rate was even higher -- about 6,000 litres a day.

- More than 18 billion becquerels of radioactivity were leaking every day in 1994. A becquerel (Bq) is a small unit of measurement showing radioactivity. Natural water has fewer than 10 Bq per litre, but the AECL leak had an estimated four million Bq per litre.

- On one day in 1994, 28,800 litres of radioactive water overflowed from the fuel bay because of a mechanical glitch. A failsafe device kept pumping more water when none was needed.

As well, AECL actually made it easier for the contamination to reach the river by draining a large part of it through a storm sewer. The drain was built as part of a new building foundation, and when connected to a storm sewer it also carried the radioactive groundwater to the river with no delay.

If the company had let the water move slowly through the soil,

some of the tritium would have broken down along the way.

AECL says there's no danger. Even with all the years of leakage, says spokesperson Donna Roach, the river water has less than one per cent of the radioactivity level permitted in drinking water quality standards.

"That seems fairly minuscule to me," she said. "What is going out there is slightly radioactive water."

And she said local municipal councils have often been offered the chance to tour AECL and see the plant, but usually haven't shown much interest.

Dave Stewart, warden of Renfrew County, said his council was never told of the long-term leak, but should have been. Mr. Stewart isn't impressed with the statement that the Ottawa River can dilute the radioactivity safely.

"I don't buy that," he said.

"It's eventually going to catch up with you. You know what's happened with mercury pollution -- every place you go now there are signs on the waterfront saying 'Don't eat the fish more than once a week'."

The secrecy surrounding the leak will make local people less willing to accept a new dump for low-level radioactive waste, he said.

Natural Resources Canada wants to bury low-level waste from other parts of the country, mostly tainted soil, at Chalk River.

"It questions their credibility when they tell us not to worry about the low-level waste because everything will be all right," Mr. Stewart said.

"How can we believe that when this thing (the leak) is happening and they didn't tell us about it?"

"That's terrible," said Denzil Spence, reeve of the township of Allumette Island, just on the Quebec side of the border, downstream from the leaky reactor.

The Ottawa River runs down both sides of his township, and provides drinking water.

He's upset that neither AECL nor the regulators in Ottawa have ever told his township about the leak.

"They keep everything under the table," he said.

"However, the public are starting to demand answers."

In an exchange of letters with nuclear authorities in Ottawa, AECL argued there was no secrecy.

The company said it filed annual reports on the leak to the Atomic Energy Control Board, and anyone who wanted it could have looked it up.

But Ms. Jones and Mr. Stewart said it never occurred to them to look up information on a leak that was not announced in the first place.

The cracked fuel bay isn't the plant's only source of leaks to the river. Buried radioactive waste on the property has also entered the groundwater

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