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Fukushima leak is 'much worse than we were led to believe'



By Matt McGrath
Environment correspondent, BBC News



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Rupert Wingfield-Hayes travels to the source of the water being contaminated by Fukushima

A nuclear expert has told the BBC that he believes the current water leaks at Fukushima are much worse than the authorities have stated.

Mycale Schneider is an independent consultant who has previously advised the French and German governments.

He says water is leaking out all over the site and there are no accurate figures for radiation levels.

Meanwhile the chairman of Japan's nuclear authority said that he feared there would be further leaks.

The ongoing problems at the Fukushima plant increased in recent days when the Tokyo Electric Power Company (Tepco) admitted that around 300 tonnes of highly radioactive water had leaked from a storage tank on the site.

Moment of crisis

The Japanese nuclear energy watchdog raised the incident level from one to three on the international scale that measures the severity of atomic accidents.

This was an acknowledgement that the power station was in its greatest crisis since the reactors melted down after the tsunami in 2011.

But some nuclear experts are concerned that the problem is a good deal worse than either Tepco or the Japanese government are willing to admit.

They are worried about the enormous quantities of water, used to cool the reactor cores, which are now being stored on site.

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It is leaking out from the basements, it is leaking out from the cracks all over the place”



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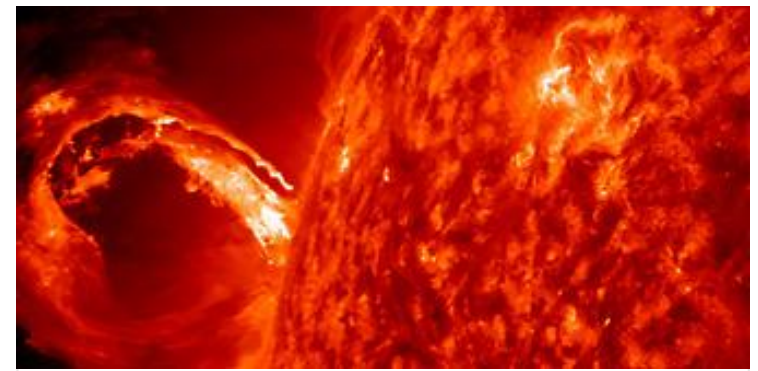
Some 1,000 tanks have been built to hold the water. But these are believed to be at around 85% of their capacity and every day an extra 400 tonnes of water are being added.

Mycle Schneider
Nuclear consultant

"The quantities of water they are dealing with are absolutely gigantic," said Mycle Schneider, who has consulted widely for a variety of organisations and countries on nuclear issues.

"What is the worse is the water leakage everywhere else - not just from the tanks. It is leaking out from the basements, it is leaking out from the cracks all over the place. Nobody can measure that.

Increase in radioactive water stored at Fukushima



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Satellite images show how the number of water storage tanks has increased in the past two years. The tanks store contaminated water that has been used to cool the reactors.

"It is much worse than we have been led to believe, much worse," said Mr Schneider, who is lead author for the World Nuclear Industry status reports.

At news conference, the head of Japan's nuclear regulation authority Shunichi Tanaka appeared to give credence to Mr Schneider's concerns, saying that he feared there would be further leaks.

"We should assume that what has happened once could happen again, and prepare for more. We are in a situation where there is no time to waste," he told reporters.

The lack of clarity about the water situation and the continued attempts by Tepco to deny that water was leaking into the sea has irritated many researchers.

Dr Ken Buesseler is a senior scientist at Woods Hole Oceanographic Institution who has examined the waters around Fukushima.

"It is not over yet by a long shot, Chernobyl was in many ways a one week fire-explosive event, nothing with the potential of this right on the ocean."

"We've been saying since 2011 that the reactor site is still leaking whether that's the buildings and the ground water or these new tank releases. There's no way to really contain all of this radioactive water on site."

"Once it gets into the ground water, like a river flowing to the sea, you can't really stop a ground water flow. You can pump out water, but how many tanks can you keep putting on site?"

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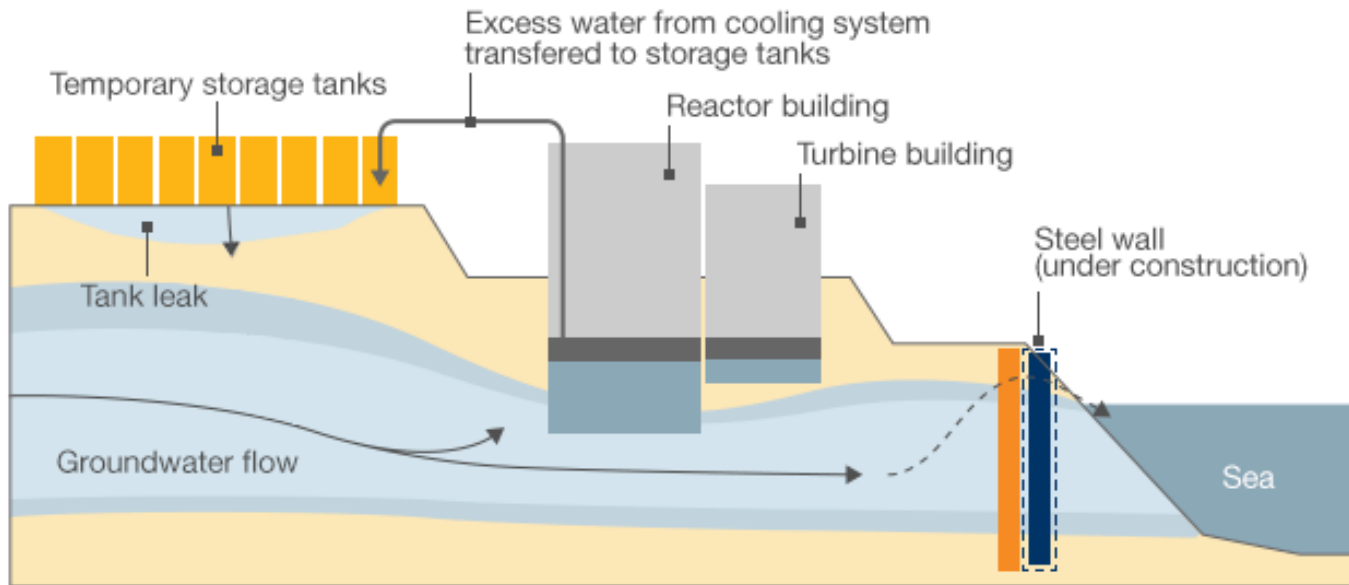
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Several scientists also raised concerns about the vulnerability of the huge amount of stored water on site to another earthquake.

Groundwater contamination at Fukushima



Source: Reuters

Water from the storage tanks has seeped into the groundwater and then into the sea. Efforts to use a chemical barrier to prevent sea contamination have not worked.

New health concerns

The storage problems are compounded by the ingress of ground water, running down from the surrounding hills. It mixes with radioactive water leaking out of the basements of the reactors and then some of it leaches into the sea, despite the best efforts of Tepco to stem the flow.

Some of the radioactive elements like caesium that are contained in the water can be filtered by the earth. Others are managing to get through and this worries watching experts.

"Our biggest concern right now is if some of the other isotopes such as strontium 90 which tend to be more mobile, get through these sediments in the ground water," said Dr Buessler.

"They are entering the oceans at levels that then will accumulate in seafood and will cause new health concerns."

There are also worries about the spent nuclear fuel rods that are being cooled and stored in water pools on site. Mycle Schneider says these contain far more radioactive caesium than was emitted during the explosion at Chernobyl.

"There is absolutely no guarantee that there isn't a crack in the walls of the spent fuel pools. If salt water gets in, the steel bars would be corroded. It would basically explode the walls, and you cannot see that; you can't get close enough to the pools," he said.

The "worsening situation" at Fukushima has prompted a former Japanese ambassador to Switzerland to call for the withdrawal of Tokyo's Olympic bid.

In a letter to the UN secretary general, Mitsuhei Murata says the official radiation figures published by Tepco cannot be trusted. He says he is extremely worried about the lack of a sense of crisis in Japan and abroad.

This view is shared by Mycle Schneider, who is calling for an international taskforce for Fukushima.

"The Japanese have a problem asking for help. It is a big mistake; they badly need it."

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