

# Fukushima Update Autumn 2014

It has been 3 1/2 years since the triple meltdown in Fukushima, Japan, and the situation over there is steadily sliding further out of control. The three melted-down reactors are all leaking out into the environment, and efforts to deal with this constant leakage are not getting anywhere. The mountains to the west funnel rain and ground water through the site, and 400 tons of this water a day are estimated to enter the reactor buildings, mix with the reactor fuel, then head out into the Pacific Ocean – every single day since the meltdown. Efforts to slow down this continual flow of water are not working, as they are being done on the cheap, by a company that the government already owns - through bailouts - but keeps in place as a handy scapegoat, while forcing it to further cut corners 'to return to profitability'.

Two basic plans were drawn up to deal with the water problem. The first was to pump up the groundwater before it reaches the poisoned water in the reactor basements. We and others advised them to pump it a few miles upstream, above the waste water tanks. But Tepco would rather save money, so went for the low cost option of pumping it up fairly near to the reactors, but down stream of the waste water tanks. These tanks have been leaking, on and off, for the last two years, so any water pumped up from there is already poisoned.

The second plan was to build a 1.5km long subterranean wall of frozen ground around the 4 reactors. This has never been done before on this scale or for this length of time. First they had to freeze the poisoned water in two trenches near the reactors, putting pipes carrying coolant into the trenches. They gave up on this plan in mid-August, as the water wouldn't freeze, even after throwing 15 tons of ice and dry ice each day into the trenches for a month. This means they can't start yet on

the 1.5km frozen wall, so they've held a couple of press conferences saying 'sorry' while the 400 tons a day of highly radioactive water continue to pour into the Pacific Ocean. The root of these problems is that, after 3 1/2 years, they still don't know where the reactor fuel has got to. They admitted last month that reactor 3 had a complete melt-through, ie. 100% of the reactor fuel had slumped down and out of the RPV, the reactor pressure vessel, whereas up till now they claimed only 60% had escaped.

It was also finally admitted last month that reactor fuel dust had spread all over Japan in the first days after the accident. A radiation monitoring station only 15 miles from Tokyo had trapped numerous micro particles of reactor fuel in an air filter, and analysis of these particles showed them to contain reactor fuel (uranium, plutonium, caesium etc.), fuel rod casing material (zirconium) and reactor vessel material (iron, cobalt). These 'hot' particles or 'fuel fleas' have an astronomically high radioactivity of 200 trillion Becquerels/kg (Bqs/kg). They are small enough to inhale and then they remain trapped in the lungs where they bombard the surrounding cells with radiation, repeatedly, causing permanent genetic damage and cancer.

These 'fuel fleas' had formed when the reactor melted down, producing temperatures of 5000 degrees Centigrade, vaporising these metals, which formed tiny, glassy, insoluble particles when they cooled, and travelled on the wind, coming down as the 'black dust' found all over Japan. And sweeping around the rest of the world as well. Fairewinds calculated that everyone in Portland, Oregon was breathing in ten hot particles a day during March 2011. As the cancers take 10 or 20 years to develop they can't be linked directly to Fukushima, so nuclear advocates will argue they are from other causes. This time-delay in the

appearance of cancer is how this deadly industry has got off the hook for the last 60 years.

Doctor Shigeru Mita of Tokyo closed his practice and left the city in March saying 'Tokyo should no longer be inhabited'. This was after finding many of his child patients there had significantly lowered white blood cell counts and all his patients had a host of symptoms indicating weakened immune systems. Dr Mita said this was due to 'long-term low-level internal irradiation' from inhaled or ingested radioactive particles which are concentrating and increasing in the urban area, mainly via the sewerage system and the transport and incineration of garbage.

Evacuees, including families with young children, are being urged to move back to areas which are impossible to decontaminate; food which sucks up contamination from the soil in which its grown is being sold at home and abroad; nearby beaches are opening to the public without testing the sand.

In a study which came out in July, Macaque monkeys living 70km from Fukushima were compared with others living 400km away. The monkeys unlucky enough to be living near Fukushima were found to have significantly lowered white and red blood cell counts, meaning weakened immune systems. A biologist at the University of Southern Carolina, Dr Timothy Mousseau, said this was similar to what his group found in studies of the children living around Chernobyl, Ukraine, which had its meltdown in 1986.

Other studies have also found significant abnormalities and mutations in butterflies fed leaves from Fukushima, and decreases in Fukushima bird populations. The trouble with the genetic damage that causes these mutations is that they are passed on to all future generations. They don't self repair.

Fukushima is still emitting ten million Becquerels (Bqs) of radioactive pollution to the

air each hour. Last month it was found it had released 1.1 trillion bqs as dust in a four hour period during clean-up work. This release was not detected by the plant itself, but from detectors on a council building 25km away. Why didn't the plant pick it up? Or did they, but not tell anyone? Local farmers asked Tepco to replace the protective covers over the reactors, but they refused as this would slow down the decontamination efforts.

In the first months after the accident the French nuclear company, AREVA, supplied a water-cleaning system to filter the water which had been used to cool the reactors. This has now been abandoned, after three years of trying to get it to work. So the proud French boast of having nuclear technology well under control, and its claim to be able to deal with any incident, is exposed as false. Maybe they should reconsider the 58 nuclear power stations they have in France. If one has a bad day, it'll destroy a third of your country, permanently, and no clean up is possible.

Meanwhile, herring, cod, halibut, salmon and pollack catches are dropping off a cliff in Alaska, 80% of the sea-stars have died on the US/Canadian west coast, seawater from there is reported to contain 'far less plankton than normal', record breaking numbers of sick young seals are clogging the sea mammal sanctuaries in California, and sea lions have vanished from the Russian east coast. Scientists say they don't know why, but they know its not from Fukushima. If they don't know what it is, how are they so sure that it is not related to Fukushima?

The best defence against all this is to inform yourselves. We recommend [enenews.com](http://enenews.com), [fukushima-diary.com](http://fukushima-diary.com), [fairewinds.org](http://fairewinds.org), or [fukuleaks.org/web](http://fukuleaks.org/web) for daily updates on this unfolding permanent global headache.

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