Japanese soldiers collect contaminated leaves in Fukushima Prefecture. AFP/Getty Images

Fukushima: Six Years On

Continued from Cover

a result of this meltdown... The second report received from Japan proves that the incidence of thyroid cancer is approximately 230 times higher than normal in Fukushima Prefecture... So what's the bottom line? The cancers already occurring in Japan are just the tip of the iceberg. I'm sorry to say that the worst is yet to come."

Japanese authorities now overseeing Fukushima's disaster response are pressuring citizens to live in or return to areas that are contaminated with up to four times the annual radiation exposure allowed in similarly contaminated areas around Chernobyl. Thousands of Japanese incinerators are burning thousands of tons of contaminated debris collected in clean-up efforts—spreading radiation to the winds; and millions of tons of related debris will reportedly be used in road construction throughout Japan, exposing highway workers and nearby residents to long-term radiation risks.

On this somber anniversary, we remember the 19,000 people killed by the tsunami, the 160,000 evacuees who fled radiation zones contaminated by wreckage, and the infants, children and parents who endlessly endure examinations and treatments for thyroid problems stemming from the disaster.

The total cost of decommissioning the destroyed reactor complex and providing compensation to victims has repeatedly doubled. A December 2016 estimate puts the cost at $250 billion.

The *Japan Times* reported this February that "Scientists still don't have all the information they need for a cleanup that the government estimates will take four decades….. It is not yet known if the fuel melted into or through the containment vessel's concrete floor, and determining the fuel's radioactivity and location is crucial to inventing the technology to remove the melted fuel."

According to Dr. Shuzo Takemoto, a professor of Geophysics at Kyoto University, "The problem of Unit 2… If it should encounter a big earth tremor, it will be destroyed and scatter the remaining nuclear fuel and its debris, making the Tokyo metropolitan area uninhabitable. The Tokyo Olympics in 2020 will then be utterly out of the question."

Dr. Caldicott wrote this February, "should there be an earthquake greater than 7 on the Richter scale, it is very possible that ... structures could collapse, leading to a massive release of radiation as the building falls on the molten core[s] beneath."

"Voluntary" evacuees to lose housing support

Some 27,000 so-called "voluntary evacuees"—people who fled their homes in areas beyond mandatory evacuation zones after the disaster began—were to lose their six-year-old housing subsidies at the end of March, 2017.

Thousands of Japanese, wary of government assurances that radiation was limited to official exclusion zones, chose to leave their homes. Many families reported suffering health problems beyond the officially contaminated area, including nose bleeds and nausea.

A local Fukushima Prefecture government spokesman told the news agency AFP that areas not covered by the original evacuation orders have been deemed safe, so housing subsidies were no longer necessary. "The environment is safe for leading a normal life and that means we are no longer in a position to provide temporary housing," he told AFP.

Greenpeace has said "This amounts to economic coercion of those individuals and families that are victims of a nuclear disaster they had no part in creating. The group called on the Japanese government to cease its return policy, provide full financial support to evacuees, and "allow citizens to decide whether to return or relocate free from duress."

Groundwater from the mountains behind Fukushima gushes into the quake-smashed reactor foundations, pours over the melted fuel and becomes highly contaminated. This water then runs to the Pacific Ocean which is undergoing the largest radiation dump in recorded history.

A deeply trenched underground wall of ice that was supposed to divert ground water away from the reactors has failed. Nuclear Engineering International reported last August 23 that according to experts, "little or no success was recorded in the wall's ability to block the groundwater and the amount reaching the buildings has not changed after the wall was built."

The Pacific covers more than 30 percent of the Earth's surface, and with a surface area of more 62 million square miles, its basin is larger than the landmass of all the continents combined.

Part of the reason that whole-sea contamination can result from Fukushima was revealed last February when radiation gauges for the first time got near the melted fuel.

What the Tepco called "astounding" and "unimaginable" levels of radiation were recorded in January and February inside reactor 1. The radiation reading 530 sieverts per hour in January and 650 sieverts/hr on Feb. 9, Tepco said.

News accounts first called this a "spike" in radiation levels, since the highest reading recorded during the disaster's first days was 73 sieverts/hr.

The *Washington Post* reported that Azby Brown of the citizen science group Safecast, said "It doesn't necessarily signify any alarming change in radiation levels at Fukushima. It's simply the first time they've been measured that far inside the reactor."

On Safecast's website, Brown wrote: "While 530 sieverts/hr is the highest measured so far at Fukushima Daiichi, it does not mean that levels there are rising." Kevin Kamps of Beyond Nuclear said on Tom Hartman, "The 530 sieverts or 53,000 rems per hour has probably been there the whole while since March 2011."

Further, the 530 sievert reading was taken some distance from the melted fuel, so the actual hazard could be 10 times higher, according to Hideyuki Ban, of Japan's Citizens' Nuclear Information Center, who spoke to the *Washington Post*.

Dr. Caldicott writes that, "These facts illustrate why it will be almost impossible to 'decommission' units 1, 2 and 3, as no one could ever be exposed to such extreme radiation."

Exposure to just one sievert is enough to result in infertility, hair loss and cataracts. According to the National Institute of Radiological Sciences, a mere four sieverts can kill a person.

Disappeared on the Border

Continued from Back Cover

Since 1999, the Pima County Medical Examiner's Office has handled more than 2,800 human remains, those who died attempting to migrate through the southern Arizona deserts. Border Patrol reports 6,029 human remains recovered in the same region since the 1990s. Fifty-one bodies have been recorded already this year, with deaths trending between 100 and 250 annually over 10 years. Skeletal remains like those Joel and I encountered are not counted; nor are the deaths of migrants in Border Patrol custody. Estimates of the total number of migrant fatalities vary between three and 10-times the official number of bodies recovered.

This is a dark untold chapter behind this staggering body count, the story of the dead never recovered, the disappeared.

"I'm looking for a disappeared person" was the gist of over 800 phone calls to the Missing Migrant Crisis Line in 2015 alone. A family member is desperately seeking information on the whereabouts of a loved one who has come north from Mexico or Central America—and has not turned up.

The term "disappeared" has generally been associated with people kidnapped by authoritarian regimes and killed without explanation. The United Nation's definition of "enforced disappearance" now includes state policies which result in persons being disappeared. People don't just vanish into thin air in the Sonoran Desert. A sophisticated technological network which includes surveillance towers, drones, ground sensors, and cameras work together with an ever-increasing number of Border Patrol agents to create a vast zone of enforcement which pushes people further into formidable, lethal terrain. In effect, the desert becomes a weapon. People do not just disappear. They are disappeared. Their numbers are unknowable, uncountable, and reprehensible—at least in the view of civil society. Even one lost is one too many, let alone thousands. The 1999 "Prevention Through Deterrence" enforcement directive which fueled this catastrophe is not only fatally flawed, it is criminal.

Members of La Coalitión De Derechos Humanos and No More Deaths held a press conference near the border fence in Nogales, Arizona last December to announce the publication of their latest abuse report: "Deadly Apprehension Methods, The Consequences of Chase and Scatter in the Wilderness." The study spotlights one of the US Border Patrol's more egregious tactics, "Chase and Scatter."

"Chase" is defined as "the active period of pursuit of border crossers by US Border Patrol agents during an attempted apprehension." Four-wheelers, horses, and low-flying helicopters—euphemistically called "dusting"—are used to pursue people. The copter hovers directly over people creating a maelstrom of rocks, branches and dust, which scatters people in the chaos. Then the chase ensues.

In 42 percent of the over 500 interviews conducted by La Coalitión de Derechos Humans, people reported members of their group lost to the wilderness by this tactic; 41 percent reported injuries including broken limbs and lacerations. A few individuals are usually apprehended. The rest are scattered, often unable to regroup, fleeing alone into the wilderness. This tactic has contributed to untold numbers of the disappeared. The policy's title is "Prevention Through deterrence." Human remains are what deterrence looks like.

As I'm writing Feb. 14, I've been told that four more sets of human remains were recovered in the Growler Valley last week. There is no end in sight.

—John Heid lives and works with the Mariposa Community in Tucson.

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