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Reflections from Fukushima

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Confronting the risks and rewards of the world's largest low-carbon energy source.

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By [Rachel Pritzker & Roland Pritzker](#) Nov. 25, 2015

With President Obama's recent decision about the Keystone XL pipeline and preparations for this month's international climate summit grabbing headlines, an important development for the climate has gone nearly unnoticed: Japan is reviving its nuclear energy program.

The shutdown of Japan's nuclear reactors in the wake of [the 2011 meltdown](#) at the Fukushima Daiichi Nuclear Power Plant has had serious consequences for the country and the planet. Without nuclear energy, Japan has become more reliant on [importing](#) and [burning](#) fossil fuels at significant cost. By bringing back nuclear power, Japan will be able to slowly start replacing its dirty fossil energy with this clean, cheap power source—a transition that will have tremendous benefits for its economy, the health of its population, and the global effort to curb climate change.

For the past two years, we have been [advocating](#) for greater worldwide use of nuclear power to address climate change and accelerate human development. But like every energy source, nuclear clearly has its drawbacks—chief among them, the risk of meltdown. So to better understand what happens when things go wrong at a nuclear power plant, we visited Fukushima this spring to see it for ourselves.

We were fortunate to travel alongside a group of experts, including [Tom Wigley](#), one of the world's foremost climate scientists, and [Gerry Thomas](#), an authority on the long-term health effects of radiation. Our visit began at the southern end of the still mostly unpopulated 20-kilometer exclusion zone around the Fukushima Daiichi plant, where we met with officials from Naraha town. There, we heard first-hand stories about the devastating earthquake and tsunami on March 11,

2011, and the nuclear accident that followed. We learned about the difficult decision to evacuate local residents and the more recent challenges of trying to repopulate an abandoned town.

But we also discovered that local agricultural products and fish in the region have [tested safe](#), with negligible radiation levels, for the past few years. Heading north toward the plant, we were surprised to find a verdant landscape with lush, overgrown grasses and trees. This was no post-apocalyptic industrial wasteland. We did, of course, see plenty of evidence of the evacuation: houses overrun by nature, an abandoned convenience store, a car dealership with automobiles in the parking lot still waiting to be sold. We saw a massive radiation clean-up effort underway, including thousands of black plastic bags containing soil removed from the land. And we even spotted remaining damage from the tsunami, such as a downed electric pole and battered water tanks at the power plant.

We did not get to some of the areas in the exclusion zone that had the highest contamination levels after the accident, but in the parts we visited, the radiation levels were lower than we had anticipated. According to our dosimeters, provided by the independent nonprofit [Safecast](#), until we got within about 2.5 miles (4 kilometers) of the power plant, the radiation levels were no higher than the [normal, natural background radiation levels](#) in many parts of the world where people safely live. And even then, it was only in the power plant itself, when we were within sight of the reactors, that we recorded dangerous levels. In fact, we got significantly more radiation on our [flight](#) from San Francisco to Tokyo than we did at Fukushima.

In a 2013 letter to the Japanese public, Thomas [warned](#), "It is ... important to understand that the risk to health from radiation from Fukushima is negligible, and that undue concern over any possible health effects could be much worse than the radiation itself." Sadly, this seems to be the case: While about 1,600 people—mostly elderly—have died from the stress and trauma of relocation, not a single individual has died from radiation associated with the nuclear meltdown. [Experts predict](#) that few, if any, such future deaths will occur—despite the heartbreaking news that a Fukushima worker, recently awarded a workers' compensation claim by the Japanese government, has leukemia.

In the aftermath of the Fukushima meltdown and the global response to it, the public is quite understandably nervous about radiation. And yet, after visiting Fukushima ourselves, we can't help but wonder if that anxiety is misplaced. After all, in contrast to the nuclear accident, the tsunami and earthquake killed nearly [16,000](#) people. And globally, more than 19,000 people die each and every day from [air pollution](#), much of it from burning fossil fuels and wood for energy.

It is time to look at Fukushima—and nuclear power—with fresh eyes. Many advocates have used Fukushima as an excuse to write off nuclear power and to convince the public that it is too dangerous: Germany is [mothballing its entire nuclear fleet](#)—a reaction equivalent to shutting down the aviation industry because of one plane crash—making it much harder for the country to meet its emissions targets or to keep its energy prices low. Nuclear energy has also been marginalized at the Paris climate summit.

So it is significant that Japan is restarting its nuclear program, and how it does so will have huge implications for the global community's response to climate change.

As with any technology, we must continue to improve nuclear power, to make it even safer and cheaper. Nearly [50 groups in the United States alone](#) are currently developing promising new reactor designs, many of which can consume existing nuclear waste for fuel, have physical properties that would prevent the possibility of a meltdown, and offer the promise of dramatic cost reductions. Through our foundation, the [Pritzker Innovation Fund](#), we are working to ensure that these technologies have a pathway to commercialization so that they can begin producing clean, cheap, and safe energy as quickly as possible.

Former NASA chief climate scientist James Hansen estimates that by replacing fossil fuels, [nuclear power has saved 1.8 million lives](#), with the potential to save millions more. And a [growing number](#) of experts [argue](#) that the benefits of nuclear power are worth the associated risks. Can the public overcome its fears about nuclear power? Can we recognize the risks involved in continuing to burn fossil fuels? Or the risks in expecting that a small set of intermittent energy technologies can do the entire job of global decarbonization on their own?

Let's hope so. The future of our planet depends on it.

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