



## 1. POLICY: A nuclear shock felt around the world could resonate for years *(ClimateWire, 03/17/2011)*

**John J. Fialka, E&E reporter**

The ongoing nuclear power disaster in Japan could slow or stop nuclear development in several countries, set back Europe's plans to cut climate-related emissions by 2050, drive up the cost of electricity and fossil fuels and, ironically, delay ongoing plans for a generation of safer nuclear reactors, according to industry analysts.

"This will be a difficult decision for Japan," explained Akira Tokuhiko, a professor of nuclear engineering at the University of Idaho, who noted that about 50 percent of the nation's electricity comes from nuclear power. Public reaction to the current danger and concerns about vulnerability to earthquakes and unreliable backup power could cause Japanese authorities to shut down older nuclear plants while they reassess the nation's energy future, he added.



A team of 33 engineers, scientists and technicians from U.S. nuclear labs boarded an Air Force C-17 in Las Vegas on Monday to fly to Japan, where they will help Japanese experts monitor the radiation and other aspects of the Fukushima accident. Photo courtesy of [Flickr](#).

Because the nation's commitment to nuclear power is so great, any decision to shift away from nuclear power could have a major impact on Japan's economy and on leading research there into two generations of more foolproof reactors, which are designed to cool down safely and automatically in the event of a nuclear accident, Tokuhiko explained.

Japan is among the world leaders in the design and manufacture of so-called "Generation 3" reactors, which are intended to survive human errors and power failures by relying more on gravity and natural heat transfer systems that can cool the reactor without power or human intervention. A still safer family of reactors called "Generation 4" is now on the drawing boards, scheduled to be ready sometime around 2030.

"I suppose in light of circumstances this past week," Tokuhiko said, "that may be set further

back."

While Japan may face the toughest economic and public acceptance problems, the United States may have to make some tough decisions, as well, he noted. It has the world's largest fleet of older reactors, many of the same 30-plus-years-old vintage as the four damaged reactors in Fukushima. Twenty percent of U.S. electricity comes from nuclear power.

### Questions about older U.S. plants

"This accident raises questions about some of the plants we have right now. We should look at them," asserted Victor Gilinsky, a physicist and former member of the Nuclear Regulatory Commission that handled the Three Mile Island partial nuclear meltdown in March 1979. "At TMI, in just two hours, 50 percent of the fuel melted. We didn't learn about that until five years later."

"They [the Japanese] don't know what's happening in those [reactor] vessels and won't know for years until it's safe to open them up," said Gilinsky. He said he favors moving ahead to safer reactors. "I don't like these designs that require a lot of things to work together." Lately, however, he noted, the United States has been extending the lives of older reactors, pushed by utilities that favor them for economic reasons.

Reactor regulations and performance levels differ from country to country. Currently, U.S. reactors lead the world in operating efficiency, being available more than 90 percent of the time. During the great Northeast blackout of 2003, Gilinsky noted, as many as nine nuclear plants were kept cool by backup diesel power generators without mishap.

At a Senate hearing yesterday, Sen. Barbara Boxer, (D-Calif.) pressed Nuclear Regulatory Commission Chairman Greg Jaczko to order two aging nuclear plants on California coast offline for inspection, along with other older U.S. reactors.

Boxer cited a 2008 California Energy Commission report that she said warned the San Onofre plant at San Clemente could experience larger earthquakes than the 7.0 magnitude quake predicted when it was designed. The Diablo Canyon plant near San Luis Obispo is confronted by an additional, offshore fault that should be taken into account before the plant is relicensed, she said.

"Given the disaster in Japan, what are our options to provide these plants with a greater margin for safety?" she and Sen. Dianne Feinstein (D-Calif.) asked Jaczko in a letter released yesterday.

"Let's take another look at these plants," she said of the U.S. reactors build before 1980. "Is that too much to ask? Just look at the plants that are on earthquake [faults] ... and the ones that old. Just take another look and put some teeth behind it; put a timetable behind it."

"Right now, you are doing nothing new. Not one thing," Boxer said. "I'm looking to you for more leadership from you than I've gotten."

"We are going to look," Jaczko replied. He tried to list steps the NRC has taken, including measures after the Sept. 11, 2001, attack to strengthen nuclear plants' ability to weather severe crises. Each U.S. plant is designed to withstand the greatest predicted earthquake in its area with a wide safety margin, he said.

Once the Japanese crisis is over and information is available about what happened inside the reactor buildings there, the NRC will see if there are measures that should be taken with U.S. reactors, he said. "We are not doing nothing."

Both Gilinsky and Tokuhiro noted that the record earthquake and tsunami that triggered the Fukushima disaster were more powerful than the design basis, or the risk assumptions the engineers used to build the reactors. "The probabilities of some of these things happening may have been one in a million," Tokuhiro noted, a risk so low that it might have been easy for economists and utilities to dismiss.

"The problem with using these probabilities is that when some of these things happen, the answer is always one," he added.

"Maybe everything is going great with these [older U.S. nuclear plants], but I'd say that's a situation where we ought to take a look," said Gilinsky.

## **Germany calls for a nuclear shutdown**

On Tuesday, Germany decided to have such a look, shutting down eight of its older nuclear power reactors for three months until they are checked and the nation's nuclear energy policy is reconsidered. Norbert Röttgen, the nation's environment minister, called it a "period of reflection and action."

Markets reacted immediately, with electricity futures prices shooting up in Europe along with coal and natural gas prices. Because nuclear power is the biggest and most dependable source of carbon-free energy, some analysts said that the European Commission's "road map" to cut greenhouse gas emissions by 80 percent by 2050 may already be outdated.

In the United States, the Obama administration and both Democrats and Republicans on Capitol Hill had a more subdued reaction, clinging to the hope that U.S. nuclear power could remain a mainstay of a clean-technology energy future.

In China, Xie Zhenhua, vice chairman of the National Development and Reform Commission (NDRC), its top economic planning agency, told *China Daily* earlier this week, "We will draw lessons from Japan's nuclear accident, taking into account the threat that earthquakes pose." He added, however, that China's planned reliance on nuclear power will rise from 7 percent to 11.4 percent by 2015.

After that, China's five-year plan calls for a "fast-developing" phase of modern nuclear plants, Sun Quin, president of CNNC, China's largest nuclear power producer, told the newspaper. He explained that, given the limitations surrounding hydroelectric dams, wind and solar energy, nuclear power remains China's most promising energy source. Currently, China has 13 operating reactors, as opposed to 104 in the United States. Another 28 reactors are under construction in China.

---

Advertisement

# ENVIRONMENT & ENERGY DAILY

The Best Way To Track Congress  
START A TRIAL NOW



*Premier Information Source for Professionals Who Track Environmental and Energy Policy.*

96-2011 E&E Publishing, LLC [Privacy Policy](#) [Site Map](#)

---