

## Japan braces for potential radiation catastrophe

by Shinichi Saoshiro, Chisa Fujioka via gan - Reuters *Tuesday, Mar 15 2011, 8:50am*

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(Reuters) - Japan faced a potential catastrophe Tuesday after a quake-crippled nuclear power plant exploded and sent low levels of radiation floating toward Tokyo, prompting some people to flee the capital and others to stock up on essential supplies.

The crisis appeared to escalate late in the day when the operators of the facility said that one of two blasts had blown a hole in the building housing a reactor, which meant spent nuclear fuel was exposed to the atmosphere.

Prime Minister Naoto Kan urged people within 30 km (18 miles) of the facility -- a population of 140,000 -- to remain indoors amid the world's most serious nuclear accident since the Chernobyl disaster in Ukraine in 1986.

Officials in Tokyo -- 240 km (150 miles) to the south of the plant -- said radiation in the capital was 10 times normal by evening but there was no threat to human health. Around eight hours after the explosions, the U.N. weather agency said winds were dispersing radioactive material over the Pacific Ocean, away from Japan and other Asian countries.

As concern about the crippling economic impact of the nuclear and earthquake disasters mounted, Japan's Nikkei index fell as much as 14 percent before ending down 10.6 percent, compounding a slide of 6.2 percent the day before. The two-day fall has wiped some \$620 billion off the market.

Authorities have spent days desperately trying to prevent the water which is designed to cool the radioactive cores of the reactors from running dry.

The authorities said they may pour water into the fuel pool of the most critical reactor, No. 4, within two or three days, but did not say why they would have to wait to do this.

"The possibility of further radioactive leakage is heightening," a grim-faced Kan said in an address to the nation earlier in the day.

"We are making every effort to prevent the leak from spreading. I know that people are very worried but I would like to ask you to act calmly."

Levels of 400 millisieverts per hour had been recorded near the No. 4 reactor, the government said. Exposure to over 100 millisieverts a year is a level which can lead to cancer, according to the World Nuclear Association.

The plant operator pulled out 750 workers, leaving just 50, and a 30-km no-fly zone was imposed around the reactors. There have been no detailed updates on what levels the radiation reached inside the exclusion zone where people live.

"Radioactive material will reach Tokyo but it is not harmful to human bodies because it will be dissipated by the time it gets to Tokyo," said Koji Yamazaki, professor at Hokkaido University

graduate school of environmental science. "If the wind gets stronger, it means the material flies faster but it will be even more dispersed in the air."

Despite pleas for calm, residents rushed to shops in Tokyo to stock up on supplies. Don Quixote, a multi-storey, 24-hour general store in Roppongi district, sold out of radios, flashlights, candles and sleeping bags.

In a sign of regional fears about the risk of radiation, China said it would evacuate its citizens from areas worst affected but it had detected no abnormal radiation levels at home. Air China said it had canceled some flights to Tokyo.

Several embassies advised staff and citizens to leave affected areas. Tourists cut short vacations and multinational companies either urged staff to leave or said they were considering plans to move outside Tokyo.

"Everyone is going out of the country today I think," said Gunta Brunner, a 25-year-old creative director from Argentina. "With the radiation, it's like you cannot escape and you can't see it."

"WHAT THE HELL IS GOING ON"

Japanese media have become more critical of Kan's handling of the disaster and criticized the government and nuclear plant operator Tokyo Electric Power Co (TEPCO) for its failure to provide enough information on the incident.

Kan himself lambasted the operator for taking so long to inform his office about one of the blasts, demanding to know "what the hell is going on?," Kyodo reported.

Kyodo said Kan had ordered TEPCO not to pull employees out of the plant.

"The TV reported an explosion. But nothing was said to the premier's office for about an hour," a Kyodo reporter quoted Kan telling power company executives.

Lam Ching-wan, a chemical pathologist at the University of Hong Kong, said the blasts could expose the population to longer-term exposure to radiation, which can raise the risk of thyroid and bone cancers and leukemia. Children and fetuses are especially vulnerable, he said.

"Very acute radiation, like that which happened in Chernobyl and to the Japanese workers at the nuclear power station, is unlikely for the population," he said.

There have been a total of four explosions at the plant since it was damaged in last Friday's massive quake and tsunami. The most recent were blasts at reactors No. 2 and No. 4.

Concerns now center on damage to a part of the No. 4 reactor's core known as the suppression pool, which helps cool and trap the majority of cesium, iodine and strontium in its water.

Authorities had previously been trying to prevent meltdowns in the complex's nuclear reactors by flooding the chambers with sea water to cool them down.

Murray Jennex, a professor at San Diego State University in California, said the crisis in Japan -- the only nation to have suffered a nuclear attack -- was worse than the Three Mile Island disaster of 1979.

"But you're nowhere near a Chernobyl ... Chernobyl there was no impediment to release, it just blew everything out into the atmosphere," he said. "You've still got a big chunk of the containment there holding most of it in."

## VILLAGES AND TOWNS WIPED OFF THE MAP

The full extent of the destruction from last Friday's 9.0-magnitude earthquake and tsunami that followed it was still becoming clear, as rescuers combed through the region north of Tokyo where officials say at least 10,000 people were killed.

Whole villages and towns have been wiped off the map by Friday's wall of water, triggering an international humanitarian effort of epic proportions.

About 850,000 households in the north were still without electricity in near-freezing weather, Tohoku Electric Power Co. said, and the government said at least 1.5 million households lack running water. Tens of thousands of people were missing.

Toshiyuki Suzuki, 61, has a heart pacemaker and takes seven kinds of medicine a day. He lost all of them when the waves swept away his home, along with his father and son.

He cannot go to hospitals because there is no gasoline at local fuel stations. "I am having problems with walking and with my heartbeat. I absolutely need medicine."

Kan has said Japan is facing its worst crisis since World War Two.

Hiromichi Shirakawa, chief economist for Japan at Credit Suisse, said in a note to clients that the economic loss will likely be around 14-15 trillion yen (\$171-183 billion) just to the region hit by the quake and tsunami.

Even that would put it above the commonly accepted cost of the 1995 Kobe quake which killed 6,000 people.

The earthquake has forced many firms to suspend production and global companies -- from semiconductor makers to shipbuilders -- face disruptions to operations after the quake and tsunami destroyed vital infrastructure, damaged ports and knocked out factories.

"The earthquake could have great implications on the global economic front," said Andre Bakhos, director of market analytics at Lec Securities in New York. "If you shut down Japan, there could be a global recession."

(Additional reporting by Nathan Layne, Linda Sieg, Risa Maeda, and Leika Kihara in Tokyo, Chris Meyers and Kim Kyung-hoon in Sendai, Taiga Uranaka and Ki Joon Kwon in Fukushima, Noel Randewich in San Francisco, Tan Ee-lyn in Singapore and Miyoung Kim in Seoul; Writing by Nick Macfie and Jason Szep; Editing by John Chalmers and Dean Yates)

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