



Dangerous breach suspected at Japan nuke site

Two workers at stricken reactor suffer burns after wading into water 10,000 times more radioactive than normal, officials say



AP

Workers from the Fukushima Dai-ichi nuclear complex are shielded with tarps before receiving decontamination treatment at a hospital on Friday.

msnbc.com news services

TOKYO— A suspected breach in the reactor core at one unit of a stricken Fukushima nuclear plant could mean more serious radioactive contamination, Japanese officials said Friday, revealing what may prove a major setback in the mission to bring the leaking plant under control.

The uncertain situation halted work at the complex, where dozens had been working feverishly to stop the overheated plant from leaking dangerous radiation, officials said.

The plant has leaked some low levels of radiation, but a breach could mean a much larger release of contaminants.

Suspicions of a possible breach were raised when two workers waded into water 10,000 times more radioactive than normal and

suffered skin burns, the Nuclear and Industry Safety Agency said.

However, though damage cannot be ruled out, the cause remained unclear, spokesman Hidehiko Nishiyama told reporters.

"It is possible there may be damage somewhere in the reactor," he said, adding later that there was no data suggesting there were any cracks and that a leak in the plumbing or the vents could be to blame.

Officials have previously said that small explosions at the reactor could have damaged it, but the high seepage of radiation could imply worse damage than previously believed.

A rupture in a reactor would mean a serious reversal following days of slow progress in containing radiation leaks.

Video: U.S. sees progress in Japan relief operation (on this page)

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More than 700 engineers have been working in shifts around the clock to stabilize the six-reactor complex.

The confusion was yet another setback to the urgent task of gaining control of the plant 140 miles northeast of Tokyo two weeks after a magnitude-9 quake triggered a tsunami that engulfed the facility and knocked out its crucial cooling system.

The plant has been releasing radiation, with elevated levels turning up in raw milk, seawater and 11 kinds of vegetables, including broccoli, cauliflower and turnips.

Tap water in several areas of Japan — including Tokyo — also tested with radiation levels considered unsafe for infants, who are particularly vulnerable to cancer-causing radioactive iodine, officials said.

The scare caused a run on bottled water in the capital, and prompted city officials to distribute bottled water to families with babies.

In the latest contamination finds, Kyodo reported that radioactive cesium 1.8 times higher than the standard level was found in a leafy vegetable grown at a Tokyo research facility.

Experts say radiation leaking from the plant is still mainly below levels of exposure from flights or dental and medical X-rays.

Meantime, officials are also grappling with a humanitarian crisis in the northeast, where hundreds of thousands of survivors remain camped out in schools and civic buildings two weeks after the tsunami swallowed up swaths of the coast.

Some 660,000 households do not have water and more than 209,000 do not have electricity.

The estimated \$300 billion damage from the quake and tsunami makes this the world's costliest natural disaster, dwarfing Japan's 1995 Kobe quake and Hurricane Katrina in New Orleans in 2005.

Interactive: Japan before and after the disaster (on this page)

In other developments Friday:

- Japan's chief cabinet secretary said 120,000 people living near Fukushima should consider leaving, although he insisted it was because getting supplies to the region was difficult and maintained it was not an evacuation order.
- China said two Japanese travelers arriving in the country were found to have exceedingly high radiation levels. The travelers, who arrived in the eastern

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city of Wuxi from Tokyo, were given medical treatment and presented no

radiation risk to others.

- Police said the official death toll jumped past the 10,000 mark Friday. With the cleanup and recovery operation continuing and more than 17,400 listed as missing, the final number of dead was expected to surpass 18,000, taking into account overlapping figures. Authorities are burying unidentified bodies in mass graves, despite Japan's usual Buddhist practice of cremation.
- Nissan Motor Co. said it may move part of its engine production line to the United States because of damage to a

northeast of the epicenter, with reports as far as Liuyang in Hunan, more than 500 miles away. Geological effects reported with this earthquake included ground fissures, uplift, subsidence, liquefaction and landslides. Most towns in the damage area reported city walls collapsed, most to all houses collapsed and many of the towns reported ground fissures with water gushing out.

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2: Tangshan, China, July 27, 1976



Keystone / Getty Images
1976: Workers start rebuilding work following earthquake damage in the Chinese city of Tangshan, 100 miles east of Peking, with a wrecked train carriage behind them. (Photo by Keystone/Getty Images)

plant. *The Associated Press and Reuters contributed to this report.*

A look at the worst earthquakes in recorded history, in loss of human life. (These figures do not include the March 11, 2011, temblor off eastern Japan, the death toll of which is still not known.) Sources: United States Geological Survey, Encyclopedia Britannica

1: Shensi, China, Jan. 23, 1556

Magnitude about 8, about 830,000 deaths.

This earthquake occurred in the Shaanxi province (formerly Shensi), China, about 50 miles east-northeast of Xi'an, the capital of Shaanxi. More than 830,000 people are estimated to have been killed. Damage extended as far away as about 270 miles

Magnitude 7.5. Official casualty figure is 255,000 deaths. Estimated death toll as high as 655,000.

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Damage extended as far as Beijing. This is probably the greatest death toll from an earthquake in the last four centuries, and the second greatest in recorded history.

3: Aleppo, Syria, Aug. 9, 1138

Magnitude not known, about 230,000 deaths.

Contemporary accounts said the walls of Syria's second-largest city crumbled and rocks cascaded into the streets. Aleppo's citadel collapsed, killing hundreds of residents. Although Aleppo was the largest community affected by the earthquake, it likely did not suffer the worst of the damage. European Crusaders had constructed a citadel at nearby Harim, which was leveled by the quake. A Muslim fort at Al-Atarib was destroyed as well, and several smaller towns and manned forts were reduced to rubble. The quake was said to have been felt as far away as Damascus, about 220 miles to the south. The Aleppo earthquake was the first of several occurring between 1138 and 1139 that devastated areas in northern Syria and western Turkey.

4: Sumatra, Indonesia, Dec. 26, 2004



Getty Images / Getty Images
MEULABOH, INDONESIA - DECEMBER 29: In this handout photo taken from a print via the Indonesian Air Force, the scene of devastation in Meulaboh, the town closest to the Sunday's earthquake epicentre, is pictured from the air on December 29, 2004. Meulaboh, Aceh Province, Sumatra, Indonesia. The western coastal town in Aceh Province, only 60 kilometres north-east of the epicentre, has been the hardest hit by Sunday's underwater earthquake in the Indian Ocean. Officials expected to find at least 10,000 killed which would amount to a quarter of Meulaboh's population. Three-quarters of Sumatra's western coast was destroyed and some towns were totally wiped out after the tsunamis that followed the earthquake. (Photo by Indonesian Air Force via Getty Images)

Magnitude 9.1, 227,898 deaths.

This was the third largest earthquake in the world since 1900 and the largest since the 1964 Prince William Sound, Alaska temblor. In total, 227,898 people were killed or were missing and presumed dead and about 1.7 million people were displaced by the earthquake and subsequent tsunami in 14 countries in South Asia and East Africa. (In January 2005, the death toll was 286,000. In

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April 2005, Indonesia reduced its estimate for the number missing by over 50,000.)

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5: Haiti, Jan 12, 2010

According to official estimates, 300,000 were also injured, 1.3 million displaced, 97,294 houses destroyed and 188,383 damaged in the Port-au-Prince area and in much of southern Haiti. This includes at least 4 people killed by a local tsunami in the Petit Paradis area near Leogane. Tsunami waves were also reported at Jacmel, Les Cayes, Petit Goave, Leogane, Luly and Anse a Galets.

6: Damghan, Iran, Dec. 22, 856

Magnitude not known, about 200,000 deaths.

This earthquake struck a 200-mile stretch of northeast Iran, with the epicenter directly below the city of Demghan, which was at that point the capital city. Most of the city was destroyed as well as the neighboring areas. Approximately 200,000 people were killed.

7: Haiyuan, Ningxia , China, Dec. 16, 1920

7.8 magnitude, about 200,000 deaths.

This earthquake brought total destruction to the Lijunbu-Haiyuan-Ganyanchi area. Over 73,000 people were killed in Haiyuan County. A landslide buried the village of Sujiahe in Xiji County. More than 30,000 people were killed in Guyuan County. Nearly all the houses collapsed in the cities of Longde and Huining. About 125 miles of surface faulting was seen from Lijunbu through Ganyanchi to Jingtai. There were large numbers of landslides and ground cracks throughout the epicentral area. Some rivers were dammed, others changed course.

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8: Ardabil, Iran, March. 23, 893

Magnitude not known, about 150,000 deaths

The memories of the massive Damghan earthquake (see above) had barely faded when only 37 years later, Iran was again hit by a huge earthquake. This time it cost 150,000 lives and destroyed the largest city in the northwestern section of the country. The area was again hit by a fatal earthquake in 1997.

9: Kanto, Japan, Sept. 1, 1923

7.9 magnitude, 142,800 deaths.

This earthquake brought extreme destruction in the Tokyo-Yokohama area, both from the temblor and subsequent firestorms, which burned about 381,000 of the more than 694,000 houses that were partially or completely destroyed. Although often known as the Great Tokyo Earthquake (or the Great Tokyo Fire), the damage was most severe in Yokohama. Nearly 6 feet of permanent uplift was observed on the north shore of Sagami Bay and horizontal displacements of as much as 15 feet were measured on the Boso

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10: Ashgabat, Turkmenistan, Oct. 5, 1948

7.3 magnitude, 110,000 deaths.

This quake brought extreme damage in Ashgabat (Ashkhabad) and nearby villages, where almost all the brick buildings collapsed, concrete structures were heavily damaged and freight trains were derailed. Damage and casualties also occurred in the Darreh Gaz area in neighboring Iran. Surface rupture was observed both northwest and southeast of Ashgabat. Many sources list the casualty total at 10,000, but a news release from the newly independent government on Dec. 9, 1988, advised that the correct death toll was 110,000. (Turkmenistan had been part of the Soviet Union, which tended to downplay the death tolls from man-made and natural disasters.)

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