

MailOnline

Six-mile exclusion zone placed around crippled nuclear reactor as radiation hits 1,000 times safe level

By [Daily Mail Reporter](#)

Last updated at 12:40 AM on 12th March 2011

- **2,800 residents already evacuated within two-mile radius of the plant**
- **Pressure rises to 2.1 times normal level**
- **Experts warn the situation 'could turn grave'**

Japanese officials warned of two possible radiation leaks today as authorities battled to contain rising pressure at a plant crippled by yesterday massive earthquake.

Thousands of people within a six-mile radius of the Fukushima facility were evacuated as radiation rose to 1,000 times the safe level and pressure grew, fueling fears of an explosion.

With growing tension at the plant 150 miles north of Tokyo, a second state of emergency was declared as pressure rose in two reactors at the facility.

Earlier officials had proposed releasing radioactive vapour into the atmosphere in a bid to prevent an explosion after its cooling system failed.

Scroll down for video



Danger: The Fukushima Daiichi nuclear plant could explode after equipment used to cool down the reactor failed following the Japanese earthquake

The country's nuclear safety agency says pressure inside the reactor had now risen to 2.1 times the level considered normal.

'It's possible that radioactive material in the reactor vessel could leak outside but the amount is expected to be small, and the wind blowing towards the sea will be considered,' Chief Cabinet Secretary Yukio Edano told a news conference.

'Residents are safe after those within a 3km radius were evacuated and those within a 10km radius are staying indoors, so we want people to be calm,' he added.

Previously officials had said there was no leak of deadly radiation from the crippled facility in Onahama city, about 170 miles north-east of Tokyo in the Fukushima prefecture.

But they had already evacuated around 2,800 residents within a two-mile radius of the plant.

Mr Edano said the nuclear power plant developed a mechanical failure in the system which cools the reactor after it was shut down in the earthquake.

He said the measure was a precaution, there was no radiation leak and the facility was not in immediate danger.

Plant workers are now scrambling to restore cooling water supplies, but warned there was no prospect of an immediate success.

It is understood that water levels at the facility have not reached critical levels.

But while workers at the nuclear facility battled to restore normal function, a huge fire engulfed a natural gas facility in Chiba Prefecture near Tokyo.

Flames soared hundreds of feet into the air from the terminal which is based in the sea and felt the full force of the earthquake.

The nuclear plant's owners confirmed that water levels inside the reactors at its Fukushima-Daiichi nuclear plant were falling but it was working to maintain water levels to avert the exposure of nuclear fuel rods.

Tomoko Murakami, leader of the nuclear energy group at Japan's Institute of Energy Economics, said there did not appear to be an imminent danger of a radiation leak.

'Even if fuel rods are exposed, it does not mean they would start melting right away,' she said.

'Even if fuel rods melt and the pressure inside the reactor builds up, radiation would not leak as long as the reactor container functions well.'



Disaster scene: The Fukushima No. 1 power plant run by the Tokyo Electric Power Co. at Okuma in northern Japan, pictured in 2008

But Mark Hibbs, a nuclear expert at the Carnegie Endowment for International Peace, warned that the situation could turn grave.

'This is no laughing matter,' he said, referring to unconfirmed reports that one or more of the emergency diesel generators for the cooling system were not working.

He said there was serious concern in Japan whether the cooling of the core and removal of residual heat could be assured.

'If that does not happen, if heat is not removed, there is a definite danger of a core melt ... fuel will overheat, become damaged and melt down.'

A spokesman for Tokyo Electric Power, which operates the facility, confirmed that water levels inside the reactors were on a falling trend, but added it was working to maintain water levels to avert the exposure of nuclear fuel rods.

The company has been trying to restore power to its emergency power system so that it can add water to the inside of the reactors, the spokesman added.

The Onagawa plant is one of ten nuclear power plants in the Fukushima district.

The quake also started a fire in a turbine building at another nuclear power plant in Onagawa in the neighbouring Miyagi prefecture, but the reactor building was reported to be secure.

Tohoku Electric Power said smoke was observed coming out of the building, which is separate from the reactor, and the cause was under investigation.



Ablaze: An oil refinery is on fire in Chiba city - just one of many fires sparked by the 8.9 magnitude earthquake - the sixth biggest ever recorded

The company also said there have been no reports of radioactive leaks or injuries.

The International Atomic Energy Agency, the world's nuclear watchdog, said today that it was seeking further details about the situation at a Japan's Fukushima Daiichi nuclear power plant.

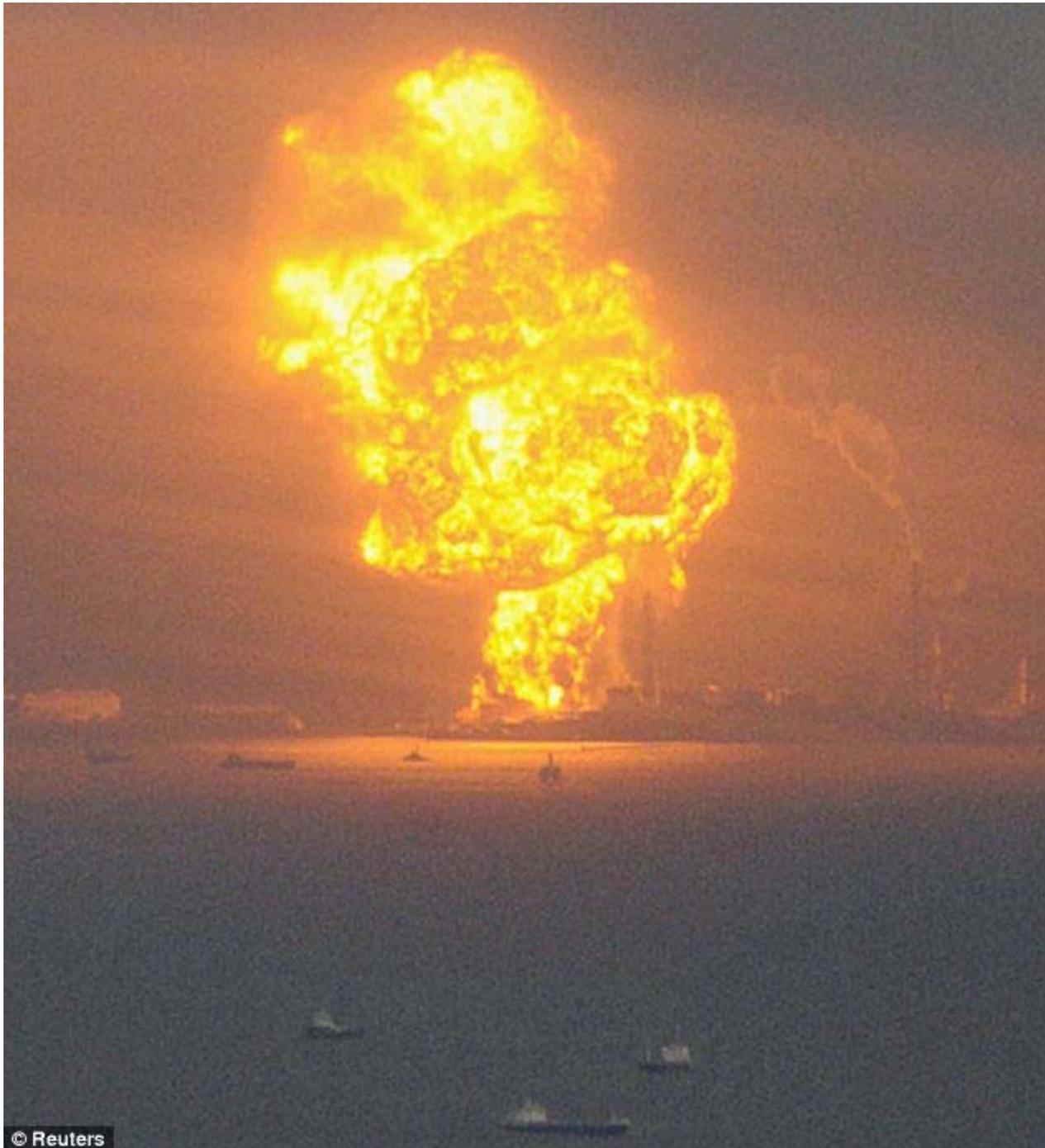
'The IAEA is seeking further details on the situation at Fukushima Daiichi and other nuclear power plants and research reactors, including information on off-site and on-site electrical power supplies, cooling systems and the condition of the reactor buildings,' the IAEA said in a statement.

Professor Tim Abram, a nuclear fuel technology expert at Manchester University, said that as long as a reactor is shut down, it is considered 'benign' until bosses decide it is safe to be turned back on.

He said: 'All nuclear facilities are designed to withstand seismic events.

'The magnitude of the seismic event that they are designed to withstand varies from country to country.

'It's not done on a case of a particular point on the Richter scale, but instead on the basis of probability of earthquakes in particular countries. In somewhere like Japan, the probability will be much, much higher.'



Fire: Flames lick the sky at a natural gas facility in Chiba, near Tokyo, after the structure felt the full force of the quake

The professor said although a failure in the cooling system of a nuclear power plant was 'unexpected', once a reactor is shut down, the heat levels plummet anyway.

He said: 'Reactors shut themselves down automatically when something called "ground acceleration" is registered at a certain point, which is usually quite small. It will instantly drop control rods into the core.'

At that stage, he said, the heat of a nuclear station drops dramatically in a matter of seconds, and within a couple of minutes, it is down to under five per cent of its normal temperature.

He added: 'That's a tiny, tiny percentage of the usual power output of the core.
'You still need to get rid of the decay heat, but the system is very capable of doing that.

'It's a bit like a braking system on a car failing when it is travelling at 3mph, when it is designed to slow it down from 120.'

Many Japanese are sceptical when it comes to assurances that all is well at nuclear plants – the first of which was built in the 1960s by Britain's GEC – following earthquakes.

While the U.S. and the Soviet Union had their own nuclear leak problems with the Three Mile Island accident and the Chernobyl disaster, Japan has suffered several known accidents which have called its safety precautions into question.

In 1981 up to 300 workers were exposed to excessive levels of radiation after a fuel rod rupture at the Tsuruga nuclear plant, while in 1997 there was a reprocessing waste explosion at Tokai.

In August 2004 a steam explosion at the Mihama-3 station killed five workers and an investigation revealed a serious lack of systematic inspection in the country's nuclear plants.

Places:

[Japan](#)

[Today's headlines](#)

[Most Read](#)

- [Over 1,000 feared dead after tsunami sweeps Japan](#)
- [Wiped off the map: How apocalyptic tsunami waves drowned a sleepy coast town](#)
- [Huge whirlpools form off the coast of Japan](#)
- [Police left man floating face down in 2ft boating lake for half-hour over elf 'n safety fears](#)
- [Betrayed by my killer mother: The daughter of child-killer Lianne Smith reveals how she callously ignored years of sex abuse by her TV hypnotist lover](#)
- [Best of British: Tears flow as Ark Royal's last 150 sailors say an emotional farewell](#)
- [Not tonight, dear, I'm feeling too fat: Half of women avoid sex with partners because of their weight](#)
- [Squabbling gay lovers sparked Heathrow terror alert with hoax bomb call](#)
- [Our own EU chief shoots down Cameron's no-fly zone as PM warns Europe 'must do more'](#)
- [The number one excuse: Right to a family life lets foreign convicts stay in UK](#)
- [The Downton Delusion: We love dramas about upstairs, downstairs life, but real Edwardian England saw a pampered few exploiting the poor majority](#)
- [An Innocent mistake: Mother battles drinks giant over the name of her vitamin tablets](#)
- [Raoul Moat's henchmen are convicted of helping him carry out massacre](#)
- [Students down lethal amounts of alcohol in deadly game where aim is to be the first in A&E](#)
- [Nurse fined £75 for putting black bag next to wheelie bin](#)
- [Prince Andrew pulls out of arms sale trip to Saudi Arabia](#)
- [No loyalty! Tesco sells details of your shopping habits for £53m](#)
- [Pictured: The man left floating face down in 2ft-deep boating lake for half an hour by police who feared for their own safety](#)
- [Teenager jumps 220ft off Golden Gate Bridge and LIVES](#)
- [Historians brand voting reform 'threat to democracy'](#)
- [Babies with 3 parents and free of genetic disease could soon be born via IVF technique](#)
- [Ruler of a sick kingdom: Cul-de-sac sex cult leader Colin Batley 'may never be released'](#)

- [TWO of France's most notorious criminals claim they fathered glamorous MEP Rachida Dati's love child... in a prison cell](#)
- [Soldier races to scene of Afghan explosion to find his older brother has been killed in blast](#)
- [Family cry 'cover-up' as murder case collapses on 24th anniversary of death of private detective found with axe in his head](#)
- [MORE HEADLINES](#)

- [Victims of the killer megaquake: Over 1,000 feared dead after tsunami sweeps Japan](#)
- [Cheryl Cole's brother jailed for six years for armed robbery plot](#)
- [Betrayed by my killer mother: The daughter of child-killer Lianne Smith reveals how she callously ignored years of sex abuse by her TV hypnotist lover](#)
- ['Cleo wants to kill me': Graduate star Katharine Ross takes out restraining order after daughter 'stabs her with scissors'](#)
- [Six-mile exclusion zone placed around crippled nuclear reactor as radiation hits 1,000 times safe level](#)
- [Race to hospital: Students down lethal amounts of alcohol in deadly game where aim is to be the first in A&E](#)
- [The big pictures: The moment Japan's cataclysmic tsunami engulfed a nation](#)
- [Pictured: The man left floating face down in 2ft-deep boating lake for half an hour by police who feared for their own safety](#)
- [Wiped off the map: How apocalyptic tsunami waves drowned a sleepy coast town](#)
- [What will Mom say? Bristol Palin's new boyfriend shares his racist, homophobic views on Facebook - and even mocks her mother's reality show](#)
- [Heathrow terror alert was sparked by hoax bomb call after gay lovers' tiff](#)
- [Two legs good, six legs better! Chihuahua triplets adapt to life without front paws](#)
- [More intelligent than Albert Einstein and Stephen Hawking... the schoolgirl, 11, with an IQ of 162](#)
- [I've got it! First man to get an iPad 2 in New York. Then he's off back to France on 8pm flight](#)
- [British woman on teaching trip to Japan missing since huge quake hit town where she was staying](#)
- [TWO of France's most notorious criminals claim they fathered glamorous MEP Rachida Dati's love child... in a prison cell](#)
- [Are we nearly there yet?: Couple travel the world for 11 years having four children along the way...and they're still going](#)
- [Best of British: Tears flow as Ark Royal's last 150 sailors say an emotional farewell](#)
- [Crooked bank cashier tells judge 'You can't send me to prison - it will violate my baby's human rights' \(before she is locked up\)](#)
- [Teenager jumps 220ft off Golden Gate Bridge suicide spot for dare and LIVES](#)
- [Tears of relief as Raoul Moat's henchmen are convicted of helping him carry out massacre](#)
- [An Innocent mistake: Mother battles drinks giant over the name of her vitamin tablets](#)
- [The number one excuse: Right to a family life lets foreign convicts stay in UK](#)
- [Our own EU chief shoots down Cameron's no-fly zone as PM warns Europe 'must do more'](#)
- [Council 'rubbish Gestapo' fine nurse £75 and threaten her with criminal record for putting black bag next to wheelie bin](#)
- [MOST READ IN DETAIL](#)

Ads by Google:

[A Tea Party Manifesto](#) Latest Book from FreedomWorks' Dick Arney and Matt Kibbe. Order Today!

www.FreedomWorks.org/GiveUsLiberty

[Sustainability Degree](#) Master of Science Program (MSc) in Development, Management and Policy www.modul.ac.at/pgm/msc

[GreenTouchscreen](#) Software Leader in Green Bldg EDU Display & Monitor Live Bldg Data www.qualityattributes.com

[Mortgage Rate at 2.90%](#) Get \$200,000 mortgage for \$771/mo. See new payment. No SSN Required. Mortgage.LeadSteps.com

[Coffee Fool is the Fool](#) Grocery co's don't want you to know Buy some beans and find out why! www.CoffeeFool.com

[Sustainability Solutions](#) Sustainability Reports, Development Use our Expert Services! cse-net.org

[30green](#) the environment web magazine www.30green.com

[Humanitarian Consulting](#) Experienced consulting for Humanitarian Organizations www.konterragroup.net

Published by Associated Newspapers Ltd

Part of the Daily Mail, The Mail on Sunday & Metro Media Group

GlamEntertainment

[© Associated Newspapers Ltd](#)

