

# Fukushima nuclear crisis timeline

February 2012

## March 2011

**11 March** a magnitude 9.0 earthquake strikes off the east coast of Japan. A large tsunami follows. External power is lost at the Fukushima Daiichi nuclear power plant; back-up generators also go down. Without power, cooling systems fail. Within days, three of the plant's reactors experience meltdown, and hydrogen explosions destroy the reactor buildings.

**12 March** Japan declares a 20km evacuation zone around the Fukushima Daiichi plant, displacing tens of thousands of residents. The government later expands the zone to other highly contaminated areas, leading to the eventual evacuation of 150,000 people.

**23 March** new analysis prepared for Greenpeace by a nuclear safety expert shows that enough radioactivity was released into the atmosphere to rank at Level 7 on the International Nuclear Event Scale (INES). This is the scale's highest level, and equal to the 1986 Chernobyl nuclear disaster. Despite clear facts and INES criteria, TEPCO – the operator of the Fukushima nuclear plant – only upgrades its ranking at this time from Level 4 to Level 5 scale of accident.

**26 March** Greenpeace specialists begin independent measurements of radiation in the contaminated region and immediately find radiation levels high enough to require evacuation in several locations to the northwest of the crisis-stricken Fukushima Daiichi nuclear plant, including Iitate village, 40km from the plant and 20km beyond the official evacuation zone. Although the Japanese government rejects these findings, experts of IAEA confirm the need for evacuation two days later.

## April 2011

TEPCO admits that radioactive water from Fukushima reactor #2 is leaking into the ocean from a crack in the maintenance pit near the reactor. In addition, TEPCO intentionally dumps 11,500 tonnes of radioactive water into the sea, ignoring protests from other nations and its own fisheries industry. Measurements show levels of radioactive iodine-131 in seawater at 7.5 million times the legal limit.

**4 April** Greenpeace expands its radiation team operating in Fukushima prefecture. Based on more detailed findings, Greenpeace calls for an expanded evacuation zone, and urges the evacuation of pregnant women and children from high-risk areas.

**6 April** Greenpeace radiation experts begin food testing and find radiation levels above official limits in vegetables collected from gardens near Fukushima City, Koriyama and Minamisoma, and from a supermarket in Fukushima City. In the meantime, Japan announces it will raise the allowable radiation levels for children to 20 times higher than the internationally recognised and legal limit of 1 millisievert a year.

**12 April** Japan finally and officially rates the disaster at Level 7 on the INES scale, a decision Greenpeace calls 'woefully late'.

**22 April** the government finally concedes that radiation levels remain too high in Iitate and other contaminated areas, and urges residents to evacuate – one month after Greenpeace's demand to widen the evacuation zone.

## May 2011

TEPCO finally admits that the meltdown began in reactor #1 within five hours after loss of power, and also occurred in reactors #2 and #3.

Greenpeace's flagship *Rainbow Warrior* arrives in Japan. Greenpeace urges the Japanese authorities to undertake comprehensive radiation testing of seaweed along the Fukushima coast, after it carries out the first marine radiation monitoring. Initial tests by Greenpeace register significantly high levels of radioactive contamination, far beyond allowable limits for food consumption.

## June 2011

NISA, Japan's nuclear regulator, announces that radiation releases of radioactive isotopes of iodine and caesium from the accident are more than double what they originally stated: 770,000 terabecquerels, up from 370,000 terabecquerels if iodine-131 equivalent.

Greenpeace radiation experts find very high levels of contamination in the backyards of Fukushima City schools and kindergartens, as well as on access roads that children use. Radiation levels at a public playground actively used by families and kids reach 9.5 microsieverts an hour, and a hotspot next to a public school reads 45 microsieverts an hour, even after decontamination efforts.

Greenpeace again calls the government to secure better monitoring, to provide better information and protection of people, and to give support to highly vulnerable members of the community – such as children and pregnant women – to allow them to voluntarily evacuate from highly contaminated places.

## July 2011

Over the course of this month, numerous scandals reveal which power companies tried to directly influence the outcome of town hall meetings designed to determine public support for nuclear power. Later, revelations show that local and national government figures were involved in the scandals.

Prime Minister Kan calls for a nuclear-free Japan. Under pressure, he later says this is his personal view and not government policy. Kan is eventually pushed out and replaced by Yoshihiko Noda, who is considerably more pro-nuclear.

Reports surface that the Nuclear Safety Commission noted the possibility of a power loss to nuclear plants, including Fukushima Daiichi, as far back as the 1990s, but downplayed the risk.

Japan bans cattle shipments from Fukushima after cows eat contaminated straw. Over the next month, this affects thousands of cattle from prefectures around the nation. The beef industry is decimated, affecting farmers nationwide.

Nuclear Minister Goshi Hosono says that the government will move to lift some of the evacuation zones. Greenpeace responds, arguing that the situation at the Fukushima nuclear plant is not under control and supplies of uncontaminated food remain in jeopardy.

## August 2011

Japan's Foreign Minister announces that, as a result of the beef crisis, Japan can no longer vouch for the safety of the food it exports. In a related discovery, radioactive rice – a staple of the Japanese diet – is found.

The outgoing NISA chief says that nuclear regulation in Japan is inadequate and admits that he knew that a meltdown was possible on 11 March.

Greenpeace calls on the Prime Minister to delay the opening of schools in Fukushima City after finding radiation dose rates again exceeding international safety standards at several schools and many public areas in the city.

The findings, released shortly before schools were to restart, indicate that schools should not re-open until properly decontaminated.

## September 2011

Scientists at the Japan Atomic Energy Agency (JAEA) report that the disaster may have released more than three times as much radiation into nearby ocean waters as initially reported by TEPCO: up to 15,000 terabecquerels of iodine-131 and cesium-137. TEPCO only reported 4,720 terabecquerels.

Hydrogen is discovered in pipes at reactor #1, but TEPCO insists that there is no risk of explosion 'in the immediate future.'

## October 2011

The Japan Nuclear Energy Safety Organisation (JNES) reveals that NISA officials secretly acknowledged the possibility of full nuclear meltdown on 25 March – at the same time that both NISA and TEPCO were only saying that the reactors were 'slightly damaged'.

For the first time, Japan admits that decommissioning the Fukushima reactors will take more than 30 years, a figure later amended to 40 years. In May, TEPCO said the plant would only be shut down for six to nine months.

TEPCO announces the discovery of xenon-133 and -135 in reactor #2, a sign that criticality and possible nuclear fission are occurring. The utility later retracts its statement and blames the discovery on spontaneous fission. The incident highlights the instability of the reactors, as well as TEPCO's lack of information about their current state.

## November 2011

Japan's largest retailer, AEON, announces that it is moving to zero radiation contamination of its food products after Greenpeace's campaign focusing, in particular, on seafood.

## December 2011

TEPCO releases an interim report, saying that its employees made no errors in the handling of the nuclear disaster. Meanwhile, a government panel publishes a highly critical report, charging that both TEPCO and NISA directly contributed to the nuclear crisis.

Prime Minister Noda announces that 'cold shutdown' of the Fukushima reactors has been achieved. The milestone is symbolic and political, designed to adhere to a schedule announced in September by Nuclear Crisis Minister Goshi Hosono and to allay public fears. Members of Noda's own party call the declaration 'a fiction'.

Nine months after the triple meltdown at the Fukushima Daiichi nuclear plant, Greenpeace finds radioactive hotspots and signs that the official decontamination programme is both uncoordinated and thoroughly inadequate.

## January 2012

Japan announces it is considering nationalising TEPCO.

In spite of the increased risk of earthquakes, Japan's nuclear industry continues to push nuclear power. Meanwhile, scientists from the University of Tokyo report that there is a 70% chance that a magnitude 7.0 earthquake will hit the Tokyo region, home to 12.9 million people, in the next four years. The chance of a similar quake hitting the same area within the next 30 years is 98%.

Over 90% of Japan's reactors are offline. Only three of 54 reactors are operating and no significant problems with the electricity supply are evident.

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