

# Fukushima: Lethal levels of radioactivity in building

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## **Lethal four-sievert reading taken by robot: Radiation in No. 1 reactor building at highest level yet**

Tokyo Electric Power Co. said Saturday it has detected radiation of up to 4,000 millisieverts per hour in the building housing the No. 1 reactor at the Fukushima No. 1 nuclear plant.

The radiation reading, which was taken when Tepco sent a robot into the No. 1 reactor building on Friday, is believed to be the highest detected in the air at the plant so far.

On Friday, Tepco found steam spewing from the basement into the building's first floor. Nationally televised news Saturday showed blurry video of a steady stream of smoky gas curling up from an opening where a pipe rises through the floor.

The radiation is so high now that any worker exposed to it would absorb the maximum permissible dose of 250 millisieverts in only about four minutes. Tepco said there is no plan to place workers in that area of the plant and said it will carefully monitor any developments.

The utility said it took the reading near the floor at the southeast corner of the building. The steam appears to be entering from a leaking rubber gasket that is supposed to seal the area where the pipe comes up through the first floor. No damage to the pipe was found, Tepco said.

The reactor's suppression chamber is under the building, and highly radioactive water generated from cooling the reactor is believed to have accumulated there, Tepco said, adding that the steam is probably coming from there.

Meanwhile, tanks for storing radioactive water were on their way Saturday to the plant.

Tepco has said radioactive water could start overflowing from temporary storage areas on June 20, or possibly sooner if there is heavy rainfall.

Two of the 370 tanks were due to arrive Saturday from a manufacturer in nearby Tochigi Prefecture, Tepco said. Two hundred of them can store 100 tons, and 170 can store 120 tons.

The tanks will continue arriving through August and will store a total of 40,000 tons of radioactive

water, according to Tepco.

Workers have been fighting to get the plant under control since the March 11 tsunami knocked out power, destroyed backup generators and halted the crucial cooling systems for the reactors, causing the world's worst nuclear disaster since Chernobyl in 1986. Several explosions have scattered radioactive debris around the plant, and reactors are spewing radiation into the air and leaking it into the sea.

On Friday, nine workers who entered the building to attach a pressure gauge to the pressure vessel of reactor No. 1 were exposed to around 4 millisieverts of radiation, according to Tepco.

The fuel rods are believed to have melted almost completely and sunk to the bottom of the containment vessels of reactors 1, 2 and 3.

A complete meltdown would have seen the fuel melt entirely through the containment vessels and into the reactor floor.

**Kyodo, AP**, June 5, 2011

<http://search.japantimes.co.jp/cgi-bin/nn20110605a3.html>

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## **Fukushima's No. 1 reactor building radiation up to 4,000 millisieverts**

TOKYO (Kyodo) — The operator of the Fukushima Daiichi nuclear power plant said Saturday it has detected radiation of up to 4,000 millisieverts per hour at the building housing the troubled No. 1 reactor.

The radiation reading, taken as Tokyo Electric Power Co. sent a robot into the No. 1 reactor building on Friday, is believed to be the largest detected in the air at the plant.

TEPCO said it took the reading near the floor at the southeast corner of the building. A pipe runs under the floor, but TEPCO said it found no damage to the pipe.

The pressure suppression containment vessel is located under the building and highly radioactive contaminated water generated by the reactor is believed to be accumulated there, TEPCO said, adding, the steam is probably coming from the water.

TEPCO said its workers have no plan to work around the area but it will carefully watch developments in the area.

On Friday, nine workers entered the building to attach a pressure indicator to the pressure vessel, with the workers exposed to up to about 4 millisieverts of radiation, according to TEPCO.

The Fukushima Daiichi plant was crippled by the massive March 11 earthquake and tsunami.

**Kyodo**, June 4, 2011

<http://mdn.mainichi.jp/mdnnews/news/20110604p2g00m0dm040000c.html>

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## **2 TEPCO employees exposed to radiation likely to get regular cancer tests**

Two Tokyo Electric Power Co. (TEPCO) employees exposed to high radiation levels will probably not need treatment but will likely receive regular tests for cancer, a research institute has announced.

Officials from the National Institute of Radiological Sciences (NIRS) said that the two employees — who were involved with repair work at the stricken Fukushima No. 1 Nuclear Power Plant — do not show signs of health damage and should be able to continue living their lives as normal. The pair's risk for cancer had been raised by at most around 3 percent, the officials said.

TEPCO said the minimum amount of radiation the two workers were exposed to stood between 284 and 289 millisieverts, while the maximum they could have been exposed to ranged between 654 and 659 millisieverts — far more than the yearly limit of 250 millisieverts for workers handling the disaster.

According to NIRS, if the workers had been exposed to 570 to 580 millisieverts of radiation internally, their thyroid glands' cumulative radiation exposure would have been around 10 sieverts.

"Symptoms begin to appear in the thyroid gland from around 20 sieverts of exposure. Treatment is not necessary, but I think they will be receiving regular tests for cancer," said Makoto Akashi, executive director of NIRS.

However, he also criticized TEPCO's onsite safety supervision, saying, "If the workers had been wearing their masks correctly and the onsite radiation monitoring had been properly carried out, they should have had almost no internal radiation exposure."

Yasuhito Sasaki of the Japan Radioisotope Association said, "As long as (internal radiation exposure) does not exceed 1,000 millisieverts, no major health effects appear, but the risk for cancer in the future is raised. Workers' radiation exposure levels need to be estimated in advance and radiation measurements must be properly taken after employees finish their work. Every effort is needed to keep workers' radiation exposures below the yearly limit."

**Mainichi Shimbun**, June 4, 2011

<http://mdn.mainichi.jp/mdnnews/news/20110604p2a00m0na004000c.html>

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## **Japan Nuclear Agency Fails to Disclose Some Radiation Data**

Tokyo, June 3 (Jiji Press)—The government's Nuclear and Industrial Safety Agency said Friday that it has failed to disclose some radiation data collected in emergency monitoring conducted soon after the ongoing crisis started at the Fukushima No. 1 nuclear power plant in March.

The undisclosed data include those on the amounts of radioactive substances in the air and weed

measured between March 12 and 15 at locations near the Tokyo Electric Power Co. <9501> plant in Fukushima Prefecture, northeastern Japan.

The crisis began after the plant was severely damaged by the 9.0-magnitude earthquake and subsequent tsunami that hit the Tohoku region on March 11.

According to the newly released data, 1.8 to 90 becquerels per cubic meter of radioactive iodine and cesium were found in air samples collected in the town of Namie in Fukushima between 8:39 a.m. and 8:49 a.m. on March 12, or shortly before work to vent steam at the plant was carried out and a hydrogen explosion occurred at its No. 1 reactor.

The site where the air samples were collected is some 7 kilometers from the nuclear power plant.

**Jiji Press**, June 3, 2011

<http://jen.jiji.com/jc/eng?g=eco&k=2011060400019>

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