

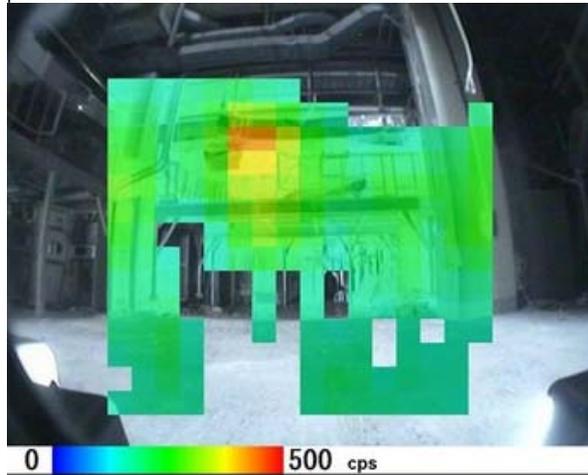
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NEWS

TEPCO reports limited damage at unit 2&3; majority of fuel damaged, but still in core

26 May 2011

TEPCO has concluded that the damaged Fukushima Daiichi unit 2 and unit 3 reactors are being cooled in a stable way, based on temperature readings from the units' reactor pressure vessels.



Workers will use data from the gamma camera for shielding and isolation of sources.

After it found that the unit 1 fuel melted down relatively quickly after the tsunami hit using a computer simulation from the US-based Electric Power Research Institute's MAAP code, it has also analysed unit 2 and 3.

The analysis produces different results depending on whether one believes that the water level sensors reflected the actual water level. If they did, (case 1), then fuel in both unit 2 and 3 melted down, but remained within the reactor, without significant damage to the RPV. If they did not, and the level remained below the active fuel rods despite water injection, then the fuel melted down and penetrated the reactor pressure vessel.

Even in that worst-case scenario, however, it says that temperature readings from many sensors (in both unit 2 and unit 3) suggest that damage is limited, and that the majority of the fuel remains in the core. In particular, measured temperatures tend to fluctuate with the change in the amount of water injection; it drops with increased water injection, and increases when water injection reduces. (In particular, a spike in unit 3 temperature recorded in early May might be caused by a change in water injection methods, in which the injection line was changed to the feedwater injection line to improve reliability.)

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Yellow indicates abnormal/unstable; red means damaged/nonfunctional

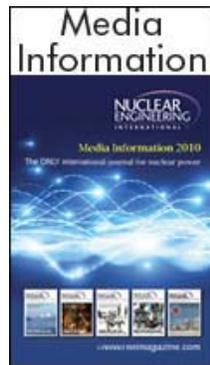
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In addition, dust sampling in the air above the unit 1 and unit 4 reactor building on 22 May has found radioactivity levels only about 10% of regulatory limits.

TEPCO has issued a report to the Japanese government about the causes of damage to Fukushima Daiichi electrical and power line infrastructure. Although a full report in English was not available, it did list a few conclusions. Internal power systems, including diesel generators, were estimated to mainly have been caused by the tsunami. However, damage to line breakers were mainly caused by earthquakes. A power line tower collapsed under the force of a mudslide.

In other news, the 10,000 ton-capacity barge, formerly a sport-fishing park, has reached Fukushima Daiichi station. TEPCO said that it will be used once agreement is received from the Japanese regulator.



Sea contamination

TEPCO has also issued a report about the three releases of radioactive water into the sea at Fukushima Daiichi. The first, 1-6 April, was a leak from the unit 2 turbine building. The 500 m3 of leaked water contained a total of 4.7×10^{15} Bq of I-131, Cs-134 and Cs-137. Based on recently-measured radioactivity concentrations, 99.9% of this leak discharged out of the port by 9 May.

The second was an intentional discharge of 10,393 m3 of low-level radiation water from the central radioactive waste disposal facility, 4-10 April, to make way for more highly-contaminated water. Total radioactivity was 1.5×10^{11} Bq of I-131, Cs-134 and Cs-137. That water was also judged to have left the port.

As a result of these leaks, a peak was noticeable at measuring points even 30km (18.6 miles) offshore during April (maximum: 186 Bq/L Cs-137), although most readings fell below measureable limits (10 Bq/L) in early May. Diffusion simulations suggest that the discharged water is likely to diffuse along the coast in a southerly direction, and then turn to the east from the Black Stream current.

The third leak was 250 m3 of highly contaminated water from the unit 3 turbine building 10-11 May. The total amount of radiation of I-131, Cs-134 and Cs-137 was estimated to be 2×10^{15} Bq. Silt fences and other countermeasures have kept this water in the port area.

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