Fukushima Dai-ichi #2 Reactor Explodes releasing radioactive material

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> *Dai-ichi nuclear reactor #2 has exploded today at the Fukushima power plant followed by the largest release of radioactive material into the environment to date. Engineers believe the core has been exposed and a partial meltdown has occurred but they say containment vessels seem to be intact.*

The death toll -- now estimated to exceed 10,000 souls -- from the mega quake and tsunami, which devastated Japan, has revealed weaknesses in nuclear reactor designs. Our sympathies go out to the Japanese people BUT our RAGE is directed at Corporatists and Transnationals that traditionally avoid excess costs in areas of safety and environmental impact. Perhaps the WORLD and the PEOPLE may NOW decide to rein in these irresponsible and delinquent criminal forces once and for all.

Clearly, after NUMEROUS oil spills culminating in the catastrophe in the Gulf of Mexico and the current nuclear disasters, the situation is made plain; Corporatists and Transnationals MUST be HEAVILY REGULATED by governments that REFLECT the WILL of the people rather than puppet governments bought and corrupted by criminal Corporatists. We also continue to note that not ONE Wall St rogue has yet to be jailed for consciously participating in the criminal enterprises which plunged the global economy into recession. A situation that DEMANDS to be addressed by the citizenry of the WORLD.

Report from NDTV follows:

> **Tokyo:** An explosion early on Tuesday morning damaged the No. 2 reactor at Japan's Fukushima Daiichi Nuclear Power Station, the third in a series of blasts that have now hit each of the three crippled reactors at the plant, plant officials said.
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> It was not immediately clear if the blast was caused by the buildup of hydrogen, as occurred at the two other reactors at Daiichi - one on Saturday and the most recent one on Monday, when there was also a large explosion at the No. 3 reactor. Some early reports in the Japanese press suggested the latest explosion amounted to a different and more critical problem than the previous two.
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> This explosion, reported to have occurred at 6:14 am, happened in the "pressure suppression room" in the cooling area of the reactor and inflicted some degree of damage on the pool of water used to cool the reactor, officials of Tokyo Electric Power said. But they did not say whether or not the incident had impacted the integrity of the steel containment structure that shields the nuclear fuel.
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> Radiation levels around plant spiked after the explosion to 8,217 microsieverts an hour from 1,941 about 40 minutes earlier, the company said. Some emergency workers there were evacuated, though the levels would have to rise far higher to pose an immediate threat to health, officials said.

Any damage to the steel containment vessel of a nuclear reactor is considered critical because it raises the prospect of an uncontrolled release of radioactive material and full meltdown of the nuclear fuel inside. To date, even during the four-day crisis in Japan that amounts to the worst nuclear accident since Chernobyl, workers had managed to avoid a breach of a containment vessel and had limited releases of radioactive steam to relatively low levels.

Details of what happened remain unclear, with executives of Tokyo Electric Power, the plant's operator, giving only preliminary reports and declining to answer questions from reporters pressing for more information, while repeatedly apologizing "for causing concern and inconvenience."

The new blast came after emergency operations to pump seawater into the same reactor temporarily failed, leaving the nuclear fuel in that reactor dangerously exposed late Monday into early Tuesday morning.

Tokyo Electric Power said late Monday that a malfunctioning valve made it impossible to release pressure in the reactor, which in turn thwarted efforts to inject seawater into it to cool the fuel. The water levels inside the reactor's containment vessel fell and left its fuel rods exposed -- perhaps completely exposed -- for some hours.

Workers had been having difficulty injecting seawater into the reactor because its vents -- necessary to release pressure in the containment vessel by allowing radioactive steam to escape -- had stopped working properly, they said.

In the predawn hours of Tuesday Tokyo Electric announced that workers had finally succeeded in opening a malfunctioning valve controlling the vents, reducing pressure in the container vessel. It then resumed flooding the reactor with water.

But the company said water levels were not immediately rising to the desired level, possibly because of a leak in the containment vessel.

A Tokyo Electric official had earlier described the situation as improving. "We do not feel that a critical event is imminent," he told a press conference.

But the explosion appeared to suggest that the efforts to contain the problem at that reactor had failed.

In reactor No. 2, which is now the most damaged of the three at the Daiichi plant, at least parts of the fuel rods have been exposed for several hours, which also suggests that some of the fuel has begun to melt. Government and company officials said fuel melting has almost certainly occurred in that reactor, which can increase releases of radioactive material through the water and steam that escapes from the container vessel.

In a worst case, the fuel pellets could also burn through the bottom of the containment vessel and radioactive material could pour out that way -- often referred to as a full meltdown.

"There is a possibility that the fuel rods are heating up and starting to melt," said a Tokyo Electric spokesman told a late-night conference on Monday, televised on public broadcaster NHK. "It is our understanding that we have possible damage to the fuel

rods," he said.

By Monday night, officials said that radiation readings around the plant reached 3,130 micro Sievert, the highest yet detected at the Daiichi facility since the quake and six times the legal limit. Radiation levels of that magnitude are considered elevated, but they are much lower than would be the case if one of the container vessels had been compromised.

Industry executives in touch with their counterparts in Japan Monday night grew increasingly alarmed about the risks posed by the No. 2 reactor.

"They're basically in a full-scale panic" among Japanese power industry managers, said a senior nuclear industry executive. The executive is not involved in managing the response to the reactors' difficulties but has many contacts in Japan. "They're in total disarray, they don't know what to do."

The venting problems made it impossible for a time to administer the emergency remedy the plant operator had been using to control heat at the three crippled Daiichi reactors, all of which experienced failures in their electronic cooling systems. That remedy involves pumping in seawater to cool the fuel rods, then opening vents to release the resulting steam pressure that builds in the container vessel. When the vessel is depressurized, workers can inject more seawater, a process known as "feed and bleed."

The extreme challenge of managing reactor No. 2 came as officials were still struggling to keep the cores of two other reactors, No. 1 and No. 3, covered with seawater. There was no immediate indication that either of those two reactors had experienced a crisis as serious as that at No. 2.

The United States Nuclear Regulatory Commission said Monday that the Japanese government had formally asked for assistance as it responds to the crisis in Fukushima. As part of a wider response, the United States has already dispatched two experts in boiling-water reactors, the type used at Daiichi. They are in Tokyo offering technical assistance to the Japanese, the commission said in a statement. The commission is considering further assistance, including providing technical advice, it said.

The situation at Daiichi was also complicated on Monday by another problem when the outer structure housing reactor No. 3 exploded earlier on Monday. A similar explosion destroyed the structure surrounding reactor No. 1 on Saturday. Live footage on public broadcaster NHK showed the skeletal remains of the reactor building and thick smoke rising from the building. Eleven people had been injured in the blast, one seriously, officials said.

Chief Cabinet Secretary Yukio Edano said earlier Monday evening that the release of large amounts of radiation as a result of the explosion at No. 3 was unlikely because the blast did not compromise the steel containment vessel inside the No. 3 reactor. But traces of radiation could be released into the atmosphere, and about 500 people who remained within a 12-mile radius were ordered temporarily to take cover indoors, he said.

"I have received reports that the containment vessel is sound," Mr. Edano said. "I understand that there is little possibility that radioactive materials are being released in

large amounts."

Mr. Edano and other senior officials did not address the escalating crisis at reactor No. 2 later Monday or early Tuesday.

But the situation a reactor No. 3 was being closely watched for another reason. That reactor uses a special mix of nuclear fuel known as MOX fuel. MOX is considered contentious because it is made with reprocessed plutonium and uranium oxides. Any radioactive plume from that fuel would be more dangerous than ordinary nuclear fuel, experts say, because inhaling plutonium even in very small quantities is considered lethal.

In screenings, higher-than-normal levels of radiation have been detected from at least 22 people evacuated from near the plant, the nuclear safety watchdog said, but it is not clear if the doses they received were dangerous.

Technicians had been scrambling most of Sunday to fix a mechanical failure that left the reactor far more vulnerable to explosions.

The two reactors where the explosions occurred are both presumed to have already suffered partial meltdowns -- a dangerous situation that, if unchecked, could lead to a full meltdown.

(Report by Hiroko Tabuchi, Keith Bradsher and Matthew L Wald)

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