Japan's nuclear crisis far from over

Peter Symonds 26 April 2011

Last weekend Gosho Hosono, a special adviser to Japanese Prime Minister Naoto Kan, assured the *Wall Street Journal* that the dangers posed by the Fukushima Dai-ichi nuclear plant were receding. "There is no way Tokyo or Kyoto will come into harm's way," he said.

As the prime ministerial adviser responsible for managing the nuclear disaster, Hosono was clearly seeking to play down the scale of the nuclear crisis. While Tokyo and Kyoto, hundreds of kilometres to the south of the plant, might not be in imminent danger, the four damaged reactors at the plant are far from stabilised.

Even the plant's operator, Tokyo Electric Power Company (TEPCO), estimates six to nine months will be required to bring all the reactors to what is known as cold shutdown. The damage to the cores of units 1, 2 and 3 is at this stage unknown; the normal reactor cooling systems are not operating and large amounts of highly radioactive water still have to be removed.

The core of unit 4 had been placed in the reactor's spent fuel pool as part of routine maintenance prior to the March 11 earthquake and tsunami. However, the reactor building and cooling pool were damaged by a hydrogen explosion. The state of the core, which became exposed and heated up, is unclear. Last Friday, TEPCO had to inject 200 tonnes of water in a bid to bring down the temperature of the pool which was nearing boiling point. At the same time, engineers were concerned that the weight of the extra water might further damage the building.

The problems associated with units 1, 2 and 3 are more complex. Last week, robots sent into the reactor buildings recorded radiation levels of up to 57 millisieverts an hour in unit 1 and 49 millisieverts an hour in unit 3. Hidehiko Nishiyama, spokesman for the Nuclear and Industrial Safety Agency (NISA), told the press that these levels were too high to allow workers to enter. Japan has set an annual exposure limit at 250 millisieverts, raised from 100 at the beginning of the crisis.

Attempts by a robot to enter the building of unit 2, where radiations levels are believed to be higher, were hampered by steam which fogged its camera. The steam is being produced by water fed by emergency lines into the reactor's hot core.

Efforts to stabilise the reactors are also being impeded by large amounts of highly radioactive water. TEPCO last week began to pump out about 25,000 tonnes of water from the basement of the turbine building associated with unit 2. The removal of the first 10,000 tonnes to an improvised storage facility will be done slowly, over about three weeks, to minimise the risk of a rupture in the hoses and spillage of the contaminated water.

In all, TEPCO has to remove an estimated 67,500 tonnes of water from the three damaged units. It has to find safe places to store the radioactive water before it is treated by a processing plant being built by the French nuclear corporation Areva. The construction of the Areva unit is likely to take at least two months.

The removal of the contaminated water is a first step to restarting the plant's power supply and cooling systems. According to NISA spokesman Nishiyama, however, TEPCO is also considering a potentially faster alternative to bring down the reactor temperatures—installing an air-cooling system rather than repairing the existing water-cooling system. TEPCO's optimistic estimate of six to nine months to stabilise the reactors is driven as much by political and commercial considerations, as technical ones. The energy giant as well as the nuclear regulator, NISA, and the Kan government all confront suspicion and hostility over their handling of the nuclear crisis. TEPCO is notorious for its long record of neglect and cover-up on safety issues.

At the press conference last week, former Fukushima Governor Eisako Sato, a supporter of nuclear power turned critic, explained that 21 problems at the Fukushima Dai-ichi plant had been reported to his office between 2002 and 2006. The whistleblowers came directly to the Fukushima prefecture rather than to NISA because of the nuclear agency's close relations with TEPCO.

Sato was forced to step down in 2006 over bribery allegations, which he claimed were politically motivated. "Those who say nuclear power is dangerous, like myself, are treated as state enemies," he told Tokyo's Foreign Journalists Club. "This is a truly terrifying logic, is it not? Whoever it may be, be it a Diet member or governor, no one has been able to fight such logic so far."

Despite its poor safety record, the Kan government has left TEPCO in charge of the crisis at the Fukushima plant. Last Friday Japan's powerful Ministry of Economy, Trade and Industry (MITI), which oversees NISA, announced that it would run the main daily media briefing on the state of the Fukushima plant. MITI's decision immediately aroused suspicion. NISA spokesman Nishiyama was forced to declare: "This is not an attempt to collude with each other to prevent uncomfortable information from coming to the surface."

Collusion between NISA and TEPCO, however, is entrenched by the system known in Japan as *amakudari*—literally"descentfromheaven"—orthewelltrodden path of senior bureaucrats retiring early to take up lucrative positions with corporations with which they have dealt previously. A number of MITI officials have taken jobs with TEPCO and other power companies on retirement. Cabinet Secretary Yukio Edano explained last week that the government intended to ask senior MITI officials to refrain—temporarily at least—from taking posts with power companies "in order not to raise public suspicions."

Politically managing the Fukushima disaster is vital to TEPCO's efforts to revive its fortunes. The company's shares have slumped in value by two thirds since the March 11 disaster. Despite promised government financial assistance, TEPCO faces a huge bill for stabilising and eventually decommissioning at least four of the Fukushima Dai-ichi reactors, as well as making up for overall power losses by buying fuel for conventional power stations.

TEPCO and other energy companies are facing resistance to restarting other nuclear power plants that were shut down either as result of the earthquake, or for routine maintenance. Fukushima Governor Yuhei Sato told the media last Friday that TEPCO could not resume nuclear power generation within the prefecture without proper safety guarantees. The company is seeking to restart its Fukushima Dai-ni plant that was shut down after the earthquake and accounts for about 7 percent of TEPCO's total capacity.

As a result, a great deal hinges on giving the appearance at least that operations to stabilise the Fukushima Dai-ichi plant are going smoothly, quickly and according to plan. As in the past, the danger is that the TEPCO will seek expedient shortcuts to surmount serious technical obstacles at the plant and compromise the health and safety of its workers and the wider population.



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