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How India Will Respond to Japan's Nuclear Crisis
By Gaurav Kampani
March 21, 2011

The official Indian reaction to the Fukushima disaster has been politically astute but technically nonchalant. India's political leadership has acknowledged the enormity of the disaster facing Japan, and the prime minister ordered the Department of Atomic Energy (DAE) and the Nuclear Power Corporation of India to review all the safety systems in India's nuclear power plants to ensure they could withstand the impact of large natural disasters.

The Indian nuclear bureaucracy, however, has tried to downplay the disaster unfolding at Fukushima. On March 15, the chairman of the Atomic Energy Commission, Srikumar Banerjee, said the disaster had nothing to do with reactor safety. He said the reactors had a safe shutdown but things went wrong with the cooling system when the tsunami struck. Also, he said, a chemical and not nuclear explosion caused the disaster at Fukushima. That day, he even disputed reports that there was high radiation around the Fukushima plant, declaring that radiation levels were normal. [1]

At the same time, the DAE has been quick to emphasize that Indian reactors are not located in seismically active zones, and that reactors located on the east coast, which is vulnerable to tsunamis, have been built well above the level that might be threatened by flooding. They noted that Indian reactors include passive safety features, which means there is little danger to these reactors from the loss of electrical power, which was the primary trigger of the Fukushima disaster. [2]

Indeed, the message from India's nuclear bureaucracy is clear: despite the disaster, India's nuclear power projects will proceed unimpeded. Yes, India will take stock of the disaster and review its implications for reactor safety. Data from Japan will be used to check for potential safety and design lapses in Indian reactors and power plants. But left unsaid in the discussion of India's nuclear future is the nation's history of plant-related accidents and incidents concerning the exposure of workers to radiation beyond recommended limits.

The DAE's Atomic Energy Regulatory Board (AERB) has documented hundreds of such technical lapses and incidents. Most prominent among them was the May 1994 collapse of the 130-ton concrete containment dome at the Kaiga nuclear power reactor during construction. According to one analyst, had the dome collapsed when the reactor was operational, it would have damaged the automatic control rods as well as the coolant pipes and pumps. That could have led to a reactor meltdown. [3]

In another major disaster, in 1993, a fire at the Narora nuclear power plant started in the turbine section and destroyed the power supply cables to the rector's secondary coolant system. The AERB

later attributed this problem to poor design and faulty cabling. 4 In other instances, sensors have failed, or the absence of sensors in critical areas has caused accidents.

The DAE's safety record also suffers as a result of its history of contentious relations with plant workers. In the 1970s and 80s, there are documented cases of the DAE using temporary contract labor to clean up spills and perform other repair tasks in zones of relatively high radiation exposure.

Some evidence suggests that the DAE adopted a very cavalier approach to workers safety in several cases. There are documented cases of radiation exposure accidents involving unionized workers. What's more, workers have protested and threatened strikes, leading to a contentious culture in which the DAE and its sister agencies are not transparent with information, and workers are afraid to speak their minds or point out safety and design lapses due to the implicit threat of retaliation. [5]

There are also organizational concerns about the regulation of India's nuclear plants. The AERB is not entirely independent; it falls under the administrative control of the DAE and the NPCL, the very organizations it is tasked to monitor and regulate. Further, according to former AERB head Dr. A. Gopalakrishnan, 95 percent of AERB's engineers and scientists are on DAE's payroll. This institutional feature is an impediment to a truly independent regulatory mechanism to monitor the DAE and its sister agencies. Equally significant, starting in 2000, all facilities related to the nuclear weapons project were removed from AERB's regulatory oversight.

Despite these concerns, India has turned to nuclear power generation as the panacea for its shortages in power generation. India now has 20 nuclear reactors and five nuclear power generation plants, producing 5,000MWe or three percent of its electricity. There are now nine additional reactors under construction, 15 additional reactors up for definite approval, and an additional seven units under consideration. Projected estimates suggest that by 2020, nuclear power will generate 20,000MWe, and 63,000MWe of power by 2032. By 2050, the DAE hopes that nuclear power will generate 50 percent of India's power.

As a matter of policy, the Indian government's underlying assumptions are that hydrocarbon sources are limited and finite, that it would like to reduce its dependence on energy imports, and that nuclear power is the sole means of generating enough power to sustain the country's high economic growth rate while reducing its carbon footprint. Thus, at the governmental level at least, the disaster at the Fukushima Daiichi power plant appears to have had little impact on the perceived promise of nuclear power.

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1 "Indian nuclear plants are safe: scientists," Hindu, March 15, 2011, http://www.thehindu.com/todays-paper/tp-national/article1538642.ece, <March 19, 2011).
2 P. Sudhakar, "Koodankulam reactors quite safe," Hindu, March 16, 2011, http://www.thehindu.com/todays-paper/tp-national/article1541798.ece, <March 19, 2011).
3 Buddhi Kota Subbarao, "India's Nuclear Prowess: False Claims and Tragic Truths," Manushi 109, 1998, p. 26.
4 Subbarao, "India's Nuclear Prowess," pp. 24-25.
5 MV Ramana & Ashwin Kumar, Safety First? Kaiga and Other Nuclear Stories," Economic & Political Weekly, February 13, 2010, pp. 47-50.