

The case for nuclear power

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The Fukushima No. 1 nuclear plant disaster has made Japan reconsider the role of nuclear power in its future. But for some reason we hear little about the non-disaster at the nearby Onagawa nuclear plant. What did not happen at Onagawa during the March 11, 2011, earthquake and tsunami events could be much more relevant to Japan's nuclear power future than what happened at Fukushima.

The ocean-facing Onagawa plant was considerably closer to the earthquake epicenter off the Tohoku coast than was the Fukushima plant — 130 km versus 180 km. Earthquake and tsunami destruction in the area was far worse; the nearby town of Onagawa and city of Ishinomaki had over 4,800 people killed or missing. But the plant and its three reactors came through virtually unscathed; it even provided refuge for those fleeing the destruction in surrounding villages.

Onagawa survived thanks to basic commonsense. Its 14.7 meter sea wall was designed to protect it from the worst anticipated tsunami. Its strong foundations allowed it to survive a one-meter earthquake-caused site subsidence; a subsequent IAEA inspection group was amazed at the lack of structural damage. Enough of its various electricity power sources survived to allow it to pump in the water needed to put all its reactors into cold shutdown. Somehow this plant operated by the regional Sendai-based Tohoku Electric company was able to survive better than the Fukushima No. 1 plant run by the elitist Tokyo Electric Power Co.

TEPCO's failings have already been listed in the several reports on the 3/11 disaster, in particular its arbitrary dismissal of a tsunami danger warning made only four years before the event. Some also like to blame earthquake damage. But the Onagawa plant survived the same earthquake. So too did the Fukushima No. 2 plant; Japanese engineers now have the skills to make nuclear plants reasonably earthquake proof.

TEPCO's ability to brush off tsunami warnings has to be blamed on the bureaucratic complacency and amakudari corruption that seems to affect most large business and government organs in Japan, especially when they are based in Tokyo. All of TEPCO's vice presidents and many of its other top people over recent years have been amakudari implants from government ministries, with little knowledge of nuclear power.

Media studies on Onagawa's survival give much of the credit for Onagawa's survival to the late Yanosuke Hirai, a former Tohoku Electric vice president. He had checked past tsunami records and forced through the decision to build the sea wall higher than originally planned. Earlier he had saved a large Niigata thermal plant built on soft ground from destruction in the powerful 1964 earthquake there, by insisting the plant be built on caisson foundations.

Interviews with former subordinates show a man with a strict sense of responsibility who realized that bureaucratic regulations alone would not guarantee safety. He resembled Kotoku Wamura, the former mayor of the small Tohoku fishing port of Fudai, who, remembering the damage from previous tsunami, battled bureaucratic and cost-cutting opposition to build the 15.5 meter seawall and floodgate. Fudai alone was saved from the destruction that wiped out all other fishing ports in the area.

Meanwhile what had been going on at TEPCO? Despite the record of very destructive tsunamis along the Tohoku coast for centuries and even in recent years, the Fukushima No. 1 plant had been placed near sea level, protected only by a 5.7 meter seawall. The engineer involved has revealed that TEPCO had decided it could save construction costs that way.

Hirai pointed out that nuclear plant construction should not be left to the electric companies. Inevitably they would compromise safety by trying to cut costs. Today people call for increased regulation and government control. But that is unlikely to improve things. In Japan's collectivist society it is too easy for the regulators to collude with the people they are supposed to regulate. A tight exclusivist nexus develops and is impervious to criticism. Besides, and as Hirai pointed out,

regulators tend to concentrate on rules rather than contingencies.

If Japan decides to stay with nuclear power — and the arguments in favor are strong — then it should study how France goes about selecting and training the people for its very successful government-controlled Electricite de France nuclear-power subsidiary. True, France has the advantage of a better educated and rounded elite. But the key to EDF's success is its autonomy; its status comes not from its balance sheet or bureaucratic power but from its ability safely to service 75 percent of France's electricity needs. It even manages to service Italy and Germany, which are rejecting nuclear power.

Rejecting nuclear power means Japan will miss some of the technological and safety advances that nuclear power-committed societies like France and China will enjoy. But that is not all. Scientists agree that hydrogen fusion is the safe power source of the future. In the International Thermonuclear Experimental Reactor committee set up to decide location for the first experimental fusion plant Japan has already lost out to France. And now in the wake of the Fukushima disaster a Japanese advisory panel has called on the government to cut funding for the international project altogether. Japan's current nuclear power allergy is understandable. But does it really need to drop out of the race to fusion power?

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