



OLR RESEARCH REPORT

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QUESTIONS ON DISASTER PREPAREDNESS AND THE MILLSTONE POWER PLANT

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You asked us to prepare questions on emergency preparedness and the Millstone power plant in light of the nuclear disaster in Japan.

NUCLEAR POWER PLANTS

Japan's continuing struggles to regain control of the Fukushima nuclear power plant damaged by the tsunami that followed a 9.0 magnitude earthquake on March 11 have raised questions about disaster preparedness and the safety of America's nuclear facilities, including the Millstone power plant in Waterford.

The Nuclear Regulatory Commission (NRC) controls the licensing, construction, manufacturing, operation, inspection, and compliance monitoring of nuclear material and facilities (42 USC § 2011 *et seq.*). The U. S. Supreme Court has held that states may not enact laws in any field under NRC regulatory authority, including plant safety (*Pacific Gas & Electric Co. v. State Energy Resources Conservation and Development Comm'n*, 461 U. S. 190 (1983)).

Nuclear power plants must comply with state air and water pollution control laws, and vehicles carrying nuclear material must comply with state traffic laws. Permissible areas of state control also include plant pre-construction issues, such as need for the plant, land use, siting, and zoning; and post-construction issues, such as rate-setting and monitoring certain non-radioactive emissions.

QUESTIONS

Disaster Preparedness

1. What is the current state of disaster preparedness in Connecticut?
2. In what areas is the state most prepared for a catastrophic event and why? In what areas is it least prepared and why?
3. How prepared is the state to deal with two major disasters, such as the earthquake and nuclear crisis in Japan, simultaneously?
4. In what ways, if any, is Connecticut better prepared for a nuclear disaster than Japan was? In what ways is the state less prepared?

Oversight of Nuclear Facilities

1. What major challenges do you believe the NRC faces in ensuring the safety of the country's nuclear facilities?
2. Given NRC's exclusive oversight over nuclear facilities, what role would the state and local entities be required to play in response to an emergency at the Millstone facility? What role would the federal government play?
3. How do the NRC and the Department of Emergency Management and Homeland Security (DEMHS) coordinate their work with each other and with other state and federal public safety agencies?

Plant Safety

1. How safe is the Millstone plant? Is the plant at risk for a catastrophic event such as a hurricane, tornado, or earthquake?
2. What magnitude earthquake was the plant built to withstand? What category hurricane could it withstand?
3. How often does the NRC inspect the plant? When was the last inspection conducted?
4. When was the facility built? What is the impact of age on the plant's safety?

5. How similar is the Millstone plant to the Fukushima plant? How does it differ? Is it likely that what happened at Fukushima could happen at Millstone?
6. Do you believe the crisis at the Fukushima plant warrants any changes in the way the Millstone plant is inspected, monitored, or operated?
7. What steps has the NRC taken to ensure that the problems that have occurred at the Fukushima plant do not occur here?
8. How confident are you that the safety measures the NRC has taken at U.S. nuclear facilities are sufficient to prevent what happened at the Fukushima plant from happening at the Millstone plant?
9. How are safety issues at the plant communicated to the state? How forthcoming has Millstone been in alerting the state or the NRC of possible problems at the plant?
10. What should we learn from the Japanese experience?
11. What other critical questions should we be asking about the Millstone plant in light of Fukushima?

Evacuation Plans

Some nuclear-safety experts have said that evacuation within the 10-mile radius of a nuclear plant required by U.S. safety standards in the event of a nuclear disaster cannot be effectively achieved. The 50-mile evacuation zone being suggested by some experts would be even more challenging.

A nuclear disaster at the Millstone plant could potentially force the evacuation of thousands of residents.

1. How many people live within 10 miles of the plant? How many people live within 50 miles?
2. In the event of a forced evacuation, is the state's infrastructure capable of handling the exodus of vehicles and people?
3. What is the NRC doing to ensure the safety of the Millstone plant and nearby residents in case of a major disaster? Are people who live nearby educated on what to do in an emergency?

4. Are there, or should there be evacuation drills to better prepare for an evacuation? Has the use of social media, such as Facebook or Twitter, been considered to alert residents of emergencies, including evacuations?
5. How often are safety and evacuation plans updated?
6. How would DEMHS communicate with the public in case of an emergency?
7. In case of a Millstone disaster, in how wide a radius around the plant should iodine pills be distributed? When should people be encouraged to use them?

Spent Fuel Storage Pools

The disaster in Japan put the spotlight on how nuclear power plants store waste on site. In Connecticut and elsewhere, depleted—but still lethally radioactive—spent uranium fuel rods are stacked in large pools of water at the plants. In some cases, the spent fuel is placed in dry steel casks in concrete containment structures after its radioactivity level has decreased. The NRC has concluded that the spent fuel pools at units 3 and 4 at the Fukushima plant have low water levels as a result of the earthquake and tsunami. This aspect of the accident has raised concerns about the safety of nuclear fuel storage in the United States.

1. On average, how long does Millstone store its spent fuel in pools?
2. What happens to the fuel rods after they are removed from the pools?
 - Are they placed in concrete containment structures?
 - Are they transported elsewhere?
 - If yes, how are they transported?
 - What precautions are taken when they are being transported?
3. Does the crisis in Japan warrant any changes in the way we store nuclear waste?

VR: ek