

## Energy Matters

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### [Former NRC Chair: Emergency Plans Won't Protect Residents from Radiation, And Indian Point Should Be Closed](#)

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Gregory Jaczko: Shut Indian Point down

**By Roger Witherspoon**

The former head of the Nuclear Regulatory Commission said yesterday that emergency plans for a catastrophic event at the Indian Point nuclear power plant are not designed to ensure that residents will escape unhealthy doses of radiation and it would be best if the plant closes down.

Gregory Jaczko, who led the five-member Commission during the triple meltdown of Japan's Fukushima Daiichi nuclear station and resigned last year after intense clashes with the industry and the other four Commissioners, said in a wide-ranging interview that:

- Emergency plans for Indian Point only teach officials how to make the best decisions in a bad situation and minimize the extent of contamination for those within 10 miles of the Hudson River site. The plans will do nothing to protect the 21 million people living within 50 miles, including New York City, northern New Jersey, eastern Pennsylvania, and western Connecticut.

- With the exception of Allison M. Macfarlane, his replacement as NRC Chair ( <http://bit.ly/YsPqgF> ), the four commissioners “were brought onto the Commission because they were more interested in looking at the impact of regulations on the industry rather than on the possible impact on the safety of the public.”
- The agency’s risk assessment, which undergirds its regulatory structure and determines what practices are safe, is seriously flawed because of a basic assumption that worst case scenarios cannot happen. As a result, there is little thought given to the consequences of accidents – even though it is certain that some will occur.
- Because the consequences of a meltdown at Indian Point are incalculably catastrophic, it would be best if the plant were closed.



#### Indian Point

“I’ve seen a lot of plants over the years battle states,” said Jaczko in his first extended interview since resigning in 2012 ( <http://bit.ly/JO1CXU> ). “Ultimately, time and effort would be better spent working out a way to shut down Indian Point. Clearly there is a potential for severe accidents at the plant.

“Those accidents have the potential to contaminate areas beyond Westchester County. That’s not to say Westchester alone should suffer that kind of consequence. I think the best scenario would be to sit down with the State, with all the stakeholders, and work out a plan to shut it down. They should work out a plan in a coordinated manner to find reasonable alternatives for replacement power; you could successfully transition the workforce into other work and other things.

“The idea of litigating for years and years only creates animosity and creates further antagonism towards the plant and towards the people and undermines confidence in the whole process.”

Jaczko will be in New York City Tuesday and in Boston Wednesday to participate in the third international forum on the lessons learned by the ongoing catastrophe at Fukushima and the implications for local nuclear communities. The forum Tuesday, beginning at 9 AM at the 92<sup>nd</sup> Street Y, will include Naoto Kan, Prime Minister of Japan during the first year of

the ongoing Fukushima disaster; Peter Bradford, an NRC Commissioner during the Three Mile Island partial meltdown and former member of the Public Service Commissions of both New York and Vermont; nuclear engineer Arnie Gundersen; and consumer advocate Ralph Nader. The panel will be moderated by Paul Gallay, head of the environmental group, Riverkeeper, which is challenging the operation of Indian Point in state and federal legal proceedings.



Wednesday's session will be at the Massachusetts State House, sponsored by civic groups and citizens concerned about operations at the Pilgrim nuclear power plant. Jaczko, Kan, Bradford and Gunderson held their first forum, sponsored by Friends of the Earth, last June in San Diego, host community to the San Onofre nuclear power plant ( <http://bit.ly/1gkUEHG> ). It has subsequently shut down.

For Kan, closing reactors is a mission, almost atonement for the calamity caused by the meltdowns at Fukushima. Kan, speaking through an interpreter, said part of what drives him involves the sheer scale of the nuclear disaster to hit his land.

“Fukushima Daiichi has old reactors, just like Indian Point,” said Kan in a late night interview. “And you have an even larger population around Indian Point than we did around Fukushima. I wanted people living in the vicinity of Fukushima to get out of there as quickly as possible. That was my thinking. I ordered an evacuation from five kilometers around the plant, then 10 kilometers, then 20.

“And all the while I thought about how this would affect them. What is going to happen to those people in their future? They are going to lose their homes and lose their jobs and lose their way of life. Everything they depended on will be destroyed. I felt really bad for those people who had to leave everything – who lost everything.

“As head of state, the responsibility of not being able to prevent this from happening was a really great burden.”

The numbers themselves were frightening to him. There was a fear, at one point, that if the spent fuel pool in Fukushima Unit 4 caught fire, or the three remaining Daiichi spent fuel pools, they could have to evacuate 160 to 200 kilometers – a mass movement affecting 40 percent of the nation’s population and a third of the land.

“Japan, as a country, would cease to function. The only way to ensure that this kind of accident doesn’t happen is to not have nuclear power plants.”

But the image of the evacuation which haunts him most involves one collapsed housing complex where survivors were found trapped under the rubble. “There was a rescue mission and there was no power and it got dark,” Kan recalled. “So the rescue team left to regroup and return in the morning.

“And during that night I ordered a wider evacuation, and the lines overlapped – the rescue team couldn’t go back. It was a very small area where the rescue and the evacuation change came together, and initially I didn’t grasp how they overlapped. I didn’t have a clear picture of those two operations.”

The trapped residents waited for help which didn’t return, and died under their homes.

“We ended up leaving people behind in some areas,” said Kan ruefully, “and I feel a grave responsibility for having done that. These were people who could have been rescued had it not been for the reactor accident. It was double pain for me.”

The twin reactors at Indian Point, which generate about 2,100 Megawatts of electricity, have dwindled in significance to the region during the past decade as the free market in electricity and improved transmission networks have provided reliable competition at lower prices. The latest blow to the plants’ bottom line came Sept. 28, when its contract to provide 200 megawatts to the New York Power Authority expired ( <http://bit.ly/ZvIi41> ). NYPA provides the electricity under long term contracts for the municipal buildings, street lights, public housing, airports, and subways and Metro North trains for New York City and neighboring Westchester County. There is now no nuclear generated electricity powering the lights on Broadway’s Great White Way.

According to the New York Independent System Operator, which runs the grid, Indian Point 2 is no longer needed but some 750 Megawatts of electricity will be needed at some point if Indian Point 3 shuts down in 2016. That deficit can be made up through conservation, new transmission, and new power generation. The state Public Service Commission is currently examining alternative power sources for when Indian Point closes ( <http://bit.ly/TyyN4E> ).

Jaczo’s major clashes while leading the NRC dealt with the manner in which the agency

provided oversight to the nation's 104 nuclear reactors and how it assessed safety.

"Everyone knows there is a small but real probability of a severe accident in a nuclear reactor," Jaczko said. "That's never been a question... That's just a fact.

"I think one of the problems with risk assessment has been that it was originally developed by people in the nuclear industry to give an objective assessment of risk," he said. But the more the industry learned about risk, the more concerned they got about the possible public antipathy to having such technology in their midst.

"As there became a real possibility of a catastrophic event," he continued, "people wanted to put some context to that. The context was that there may be these very horrible things that happen, but it's not like it's going to happen every day. It's a very unlikely occurrence, so we need to find a way to think about these things called risk – both the consequences and the probability.

"Over time, what has largely happened is people have dropped the consequence piece in risk assessment and focused more and more on the probability. Things then become issues that are 'not of concern' from a regulatory perspective because the probabilities are low – regardless of what the consequences may be. You hear talk about one in a 10 million probability, and that's longer than the lifetime of earth, so it's not something we should worry about.

"But you need to look at both things. Some things are so catastrophic that even though the chances are low but the consequences are so high that you have to consider them."

But his experience dealing with the Fukushima disaster convinced him that the routine dismissal of problems because of "low probabilities" was wrong. "Some things are so catastrophic," he said, "that even though the chances of occurrence are low, the consequences are so high that you have to consider them.

"And that's the problem. There are two approaches: one, you put your head in the sand and pretend the accidents can never happen, or, two, you acknowledge that they are going to happen and try to do something about them. Unfortunately, there are too few in the industry and certainly I think on the Commission itself who are in that latter camp. And that's a real problem."

Prior to Fukushima, it was an article of faith in the nuclear industry that it was impossible to have multiple meltdowns occurring simultaneously. There were no plans for such an event and no emergency scenarios considering it. Plans at sites with more than one plant, such as Indian Point, always assumed that working systems at one plant could be used to help

stabilize the stricken plant.

At Fukushima in March, 2011, the fuel in three reactors melted down and at least partially escaped the reactor and its containment. The fourth reactor was empty for refueling, and its radioactive core was in the spent fuel pool. The roofs of all four buildings, however, were blown off by exploding hydrogen gas. On talk shows that week, recalled Jaczko, industry analysts predicted the crisis would be over in a few days.

“There is a mindset in the nuclear industry that these things can’t happen,” he said. “Which gets to the issue that the accidents that happen are the ones you haven’t predicted. If you had predicted it, you would know how to make it go away. There was a mindset that this kind of thing doesn’t happen because plants just don’t have severe accidents. That mindset was completely wrong, unfortunately.

“Here in the United States there are so many people associated with this industry who believe these kinds of things will never happen. That is clearly wrong. They will happen. It’s just a question of when and how severe it is going to be.”



Svinicki, Apostolakis, Magwood, and Ostendorff

Jaczko drew criticism from his fellow Commissioners – William Magwood, Kristine Svinicki, George Apostolakis, and William Ostendorff – and the industry when he urged evacuating all Americans living within 50 miles of the stricken Japanese reactors. There were some 70,000 Americans in Japan, primarily military personnel and their families, who were exposed to varying levels of radiation as a result of the catastrophe ( <http://bit.ly/12dzbLe> ). In America, the NRC requires plant operators to develop emergency plans for just the 10 mile radius around each plant. They have to note food and water sources within a 50 mile radius, though they do not have to make any plans involving those who live and work in that region.

The emergency plans for Indian Point were first criticized by James Lee Witt & Associates, who were hired by the State of New York in 2003 to evaluate their effectiveness. Witt, the former director of the Federal Emergency Management Agency, concluded that the plans could not work in such a congested region (<http://bit.ly/gOjdK3> ).

But Jaczko said there is a common misperception about the purpose of the plans: evacuation is not the goal.

“Part of the challenge,” Jaczko explained, “is that there is no standard as to what it means to be effective. The plans are specifically designed to figure out how you make decisions in the event of an incident. The way FEMA and the NRC work, an effective plan holds that if there is a catastrophe on Friday afternoon in rush hour in the middle of a rainstorm that if you put people out in cars to leave the people will probably be stuck for hours and hours and hours.

“An effective plan, then, would be to shelter in place. People think that by effectiveness you will limit the amount of exposure of people to radiation. But that is not really what the standard is. The standard is limited exposure, not no exposure. The plans are tested and give you good information to make the best decisions possible given whatever the conditions are.

“Under some conditions, people may get small amounts of doses of radiation that they wouldn’t get under other conditions. The plans are about how to make the best decisions in whatever scenarios you have. There is no standard or requirement that in the event of an accident you have to have a plan in place that ensures that no member of the public gets a dose greater than 100 millirems, or some designated figure. That is simply not the case.”

And there are no plans to protect anyone past the 10 mile radius around Indian Point. In reality, that would include all of New York City; New Jersey as far south as Newark Airport and west to the Delaware Water Gap; Pennsylvania’s Pocono resort region; and Connecticut from the New York line to Hartford, the capital.

The public, he said, is wrong to think the purpose of emergency plans is to protect residents from harmful radiation. “It is an area of miscommunication with the public,” he said. “But the industry doesn’t want to tackle that issue because then they have to deal with the reality of what the potential exposures are to the public, and they are loathe to deal with that because some people don’t find those discussions acceptable.”

