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INTERVIEW: Former U.S. nuke watchdog chair says regulators must stay independent

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By SHIRO NAMEKATA/ Correspondent

As it is poised to impose strict regulatory measures on the operation of nuclear power plants, the Nuclear Regulation Authority is increasingly met by opposition that it is making the resumption of plants that are currently offline virtually impossible.

In a recent interview with The Asahi Shimbun in Washington, Gregory Jaczko, former chairman of the U.S. Nuclear Regulatory Commission (NRC), said it is crucial for a nuclear watchdog to stay independent from the nuclear industry.

Jaczko, who, unlike his four colleagues, opposed the first new construction and operation of a nuclear plant in the United States since the 1979 Three Mile Island accident, also discussed the future of nuclear energy. Excerpts from the interview follow:

Question: Japan's Nuclear Regulation Authority is an independent watchdog modeled after the U.S. Nuclear Regulatory Commission, but the nuclear industry in Japan has criticized it for being too strict. What do you think?

Jaczko: If the industry is unhappy with the regulatory body, it is probably a good thing. Independence in decision-making, in particular, licensing decisions, is crucial, and I believe that exists in Japan.

The regulators need to have technical expertise, because without technical expertise they rely on others for information and cannot make independent judgments.

They are there to say no, sometimes when the industry does not want them to do so. It is the role of the regulators.

After the Fukushima nuclear accident, everyone turns around and says, "why didn't they make TEPCO analyze the tsunami hazard earlier?"

Had they been doing it earlier, TEPCO probably would have complained, saying it would cost too much money or there was no scientific basis.

But it would have been the right thing, and then the accident never would have happened.

It is always easy to criticize the regulators before you have an accident, and then, if they have not done their jobs, it is easy to criticize them after.

That is the nature of being a regulator.

Q: Last year, when you were chairman, you were the only one to vote against approval of new reactors. Wasn't that unusual?

A: Yes, well, it was very simple. You would not buy a car if somebody was telling you that they were trying to fix the brakes.

You would wait until they had fixed the brakes, and then you would go ahead and buy the car.

Unfortunately, there was tremendous pressure for the Nuclear Regulatory Commission to issue these licenses.

I suggested putting in a requirement or a "condition" in the license, that said that they would not operate the plant until all of the Fukushima changes were implemented.

My colleagues on the commission rejected that proposal. Given that they rejected it, I had no choice but to disapprove issuing the licenses.

Q: The United States has implemented anti-terrorist measures for nuclear power plants after the Sept. 11 attacks. How would that be effective for disasters and other challenges?

A: It does not really matter whether it is terrorist-induced, whether it is earthquake-induced, or some type of other accident.

In many cases, the problems are still the same, which is how do you ensure that the reactor stays cool, that the integrity of the fuel is maintained, so that you can provide adequate cooling.

After the Fukushima accident, many people, including myself, said that the anti-terrorism measures would have prevented the accident. I am not so convinced that is the case today.

When we inspected nuclear plants in the United States after the Fukushima accident, we found many of the anti-terrorism measures had not been implemented appropriately the way they were designed. The plants would not necessarily have survived a tsunami or an earthquake, because the safety measures were designed to be used in the event of a terrorist attack.

If you are worried about the plant being attacked, the kind of backup safety equipment you want to put somewhere far away from the plant. But, the plant would not necessarily be protected from hurricanes and earthquakes.

So, even if that equipment had been at Fukushima No. 1 plant, it probably would have been destroyed along with many of the other equipment that was destroyed. There were some areas there for improvement.

Q: The NRC has implemented its first measurements, so-called "Tier 1 recommendations," following the Fukushima accident. Would you still vote against approval of a new reactor even now?

A: I certainly would, if I were in that position. I would think that the regulatory body would want to make sure that they could not operate, before the Fukushima lessons had been implemented.

I visited Japan after the accident to hear directly from the people who had been impacted. It was important to me to hear what the effects were, how the people were dealing with challenges of being evacuated and how the evacuation was progressing.

It is not acceptable, to the people who had to be evacuated, the people of Namie, the people around that site who had their lives disrupted because of this accident.

There is nothing like being removed from your home. You, your friends and your family are displaced, and you are no longer in the place that you are the most comfortable.

It is something that the industry, the regulators and anyone involved in nuclear power should all agree on that this is simply not acceptable.

We have to rethink this technology in such a way that these kinds of accidents simply cannot happen and that I could, as a regulator or as

anyone else, comfortably say to you: "that accident will never happen."

Q: What was the problem facing the NRC even before you became chairman?

A: The biggest problem with the NRC continues to be the heavy influence that the industry has in selecting the members of the commission. It is a very political process.

There are few commissioners who ever get onto the commission who are not endorsed by the industry, including myself and the current chairman.

There are many good people, who are very technologically sophisticated, but especially in the last few years that I was on the commission, there was very strong influence from the industry on the commission members. You need to have much more diversity in the views of the commissioners.

It would be virtually impossible for someone who is publicly skeptical of nuclear power to ever be confirmed as a commissioner on the NRC. That is fundamentally wrong.

If you look at the state of nuclear power in the United States, it is not very good.

There are very difficult and challenging things, but the culture that exists now is one of not wanting to have the NRC involved, wanting to do more things by the licensees themselves and having less oversight from the NRC.

A lot of what I fought against when I was chairman was to re-instill that culture that our job is to ensure safety and to do what we need to do. And that was met with tremendous opposition from my colleagues on the commission.

Q: Was there pressure from the industry?

A: That pressure is always there. The nuclear industry, very early on, learned that I was not going to respond to a lot of pressure, so they stopped. And, they applied pressure elsewhere.

Q: What was the exact pressure like?

A: It is ultimately meetings with senior executives of the utilities, who demand certain things and ask certain things of the chairman, and expect it to be done.

Then it turns into political pressure from members of Congress, as utilities will work with members of Congress to have them apply pressure.

Most of it is in the form of dialogue, discussion and questions, and that is the type of pressure that is applied. It is very pervasive.

What I saw is that we have very good staff at the agency, and the challenges really come in from the leadership, in the direction that is set by the commission.

That is really where the problems lie. The commissioners come in with strong connections to the industry and are very open with the industry.

It would not be uncommon for a reviewer at the agency to have a challenge with the utility and the utility goes directly to a commissioner and

say, "I am having trouble with this particular review. Can you help move this along?"

Q: You resigned the chairmanship a year before your term expired after your former colleagues made accusations against how you managed the commission. Did the industry play a role behind that?

A: I cannot say for sure what role the industry played, but I have been told that there were some in the industry who wanted me out of my position.

But it was exclusively my decision. It was an opportunity to have a replacement for me who was, I believed to be, reform-minded and safety-focused.

There are very few times in which non-industry people have become chairman of the NRC, and for me to resign early was one way to do that.

Q: How difficult is it for the watchdog to stay independent from industry pressure?

A: if you have the legal and technical independence, it is the leadership that really gives you that true independence in your operation. It is the tone that the leadership sets.

When I look at the NRC, almost all the people were there because they believed in safety. That was what their number one job was. It was what they came to work every day to implement.

A lot of what I spent my time at the NRC was setting a tone that our job as regulators was to put safety first.

There is no one else who has the authority to say no to a utility, other than the regulator. Maybe the bank could in some way, but when it comes to safety, the only people that can say no are the regulator.

Q: In the United States, the development of shale gas is outperforming nuclear power in cost effectiveness. How do you think of the future of nuclear energy?

A: It is hard to say, but I think there are two futures for nuclear power.

One is a future in which the industry continues to kind of degrade, that more plants, as they get older, start to shut down, do not restart. And you have very little interest in people studying nuclear technology, nuclear engineering, nuclear science, and the industry slowly disappears.

It will probably not disappear completely. There will probably always be some nuclear reactors, but there will not be growth.

Here we are, 50 years since the first reactor ideas were born, or the first plants were built, and now we are talking about a significantly new safety feature in the United States.

This is not things that you would expect to be adding now, 50 years after this technology had been developed.

Every time there is something we did not expect, then we add on a new safety system to fix that hole. It is like a dike leaking everywhere.

And, if you look at the projections, right now, for the number of plants that will ultimately be nearing the end of their licenses in the next 20 years or so, you will probably see a reduction in the total number of plants in the United States.

We have four units that are being built right now, but that has not sent a good signal for new construction. It will be difficult for there to be more nuclear plants built, absent specific legislation to address climate change.

But there certainly are attractive features of nuclear power. We need to rethink the current design to have better designs such as small modular reactors.

If we have a reactor that is 100 megawatts, the quantity of material and the energy we have to disperse that material is significantly reduced.

It will not contaminate a 10-kilometer radius area, because it does not have enough material.

Q: How about the problem of nuclear waste?

A: Everybody knows how to solve the problem. It is just finding a place to do it.

Q: In a democracy, it is difficult to find a place to dispose of it with the consent of local residents.

A: I do not think it is impossible. But in the United States, for instance, we have tried to do exactly the opposite.

We try to find a place without getting the consensus of the local populace, and as a result, it has been a disaster--the Yucca Mountain disaster.

Yucca Mountain was not chosen because the people of Nevada held a referendum and said they want this waste dump in Nevada. It was chosen because of a very political process that left Nevada as the only state left after all the other ones were taken off the table, for political reasons.

Done in the right way, you can do it, and then it is a very difficult science to predict.

I always think of it this way: it is not easy to find out where your roof is leaking. Sometimes it takes a lot of trial and error and you still get a leak somewhere, and somebody comes and they fix it.

Well, now imagine trying to do that in a rock for the next 100,000 years. That is what you are trying to do to determine the safety of geological repositories.

It is not easy to do that science, and there may be some people who might say you cannot really do it, because the assumptions you make are so far-fetched and you are over time scales of which you have absolutely no ability to really predict.

There will always be people who will say the analysis is flawed, but if you cannot really do it, then it is hard to say it is going to be safe. You have to just kind of go back to some first principles.

Fundamentally, the way I look at it is that we know how to maintain nuclear fuel in the short term. For the most part, we think it maintains its integrity. It does not need a lot of active systems, and dry casks work very well as far as we know.

The biggest challenges may be in a couple hundred years you may have some degradation in the fuel and it loses its integrity. It changes how you have to keep it and maintain it, but in principle, it should not create a problem.

But at a certain point, if we do not want to deal with the waste, and if nobody wants a repository, you just have to stop generating nuclear power. There is no other answer.

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