

From Fukushima To the World: How to Learn from the Experience in Japan  
Dinner Speech at 2011 Advanced Summer School of Nuclear Engineering and  
Management with Social-Scientific Literacy

August 4, 2011

Tatsujiro Suzuki

Vice Chairman, Japan Atomic Energy Commission (JAEC)

[tatsujiro.suzuki@cao.go.jp](mailto:tatsujiro.suzuki@cao.go.jp)

Thank you very much for your kind introduction. It is my great honor to speak as dinner speaker at the 2011 Advanced Summer School of Nuclear Engineering and Management with Social-Scientific Literacy. The given title of my speech is; "From Fukushima to the World: How to learn from the experiences from Japan." This is a great title and I would love to make my personal remark tonight and please note that this is not necessarily representing the views of JAEC or the government of Japan. Before I start my speech, I would like to make a few remarks on my personal feelings on this issue.

First is "sympathy." I would like to express my deepest sympathy and condolences for victims of the Earthquake and Tsunami, and their families. In particular, personal sympathy goes to people who have been forced to evacuate from their own home and land. And even after several months they are not sure when they will be able to come back to their own homes and some fear that they may not be able to come back forever. It is heartbreaking to watch the site and hear people's anger, frustration and anxiety over the accident and their future.

Second is "regret." As a researcher who has been working on nuclear energy policy for over thirty years and as a government official, I am truly regrettable for what happened at Fukushima. How could this happen? Why could not we prevent the accident? How can we prevent such nuclear disaster in the future? These are the questions that I am asking myself every day since March 11. I believe this is our responsibility to answer to those questions with complete transparency and sincerity. This is the only way, I believe, to restore the trust lost by this accident.

Third is "thank you." I would like to express my sincere thanks for all assistance and heartwarming supports given to us by the US and many other countries after the Earthquake and the accident. I also thank you for this great opportunity to give a talk in front of distinguished experts and excellent students who are wondering about future of nuclear energy. To be honest, I do not have any good answer regarding the future of nuclear power. I am sure that not only experts but general citizens are also wondering

the future of nuclear power. In this context, I am convinced that it is my (and Japan's) responsibility to share the information and experiences of the accident as much as possible so that you can make better decisions. That is why I am accepting as many invitations as possible to speak on Fukushima since May, 2011.

Today, though, it may take too much time to give you my speech (package I prepared for other international conference) with more than 60 page slides. Instead, I will summarize four major points which are; seriousness of the accident, securing safety of the public and environment, energy and nuclear energy policy, and implications for international society.

First, how serious is this accident? It is clear to everybody that the Fukushima Dai-ichi accident is one of the worst in global nuclear history. It is unique in a sense that it was triggered by massive earthquake and tsunami, resulted in three core-meltdowns and four explosions at one site. Large amount of radioactive release occurred which forced more than 80,000 people to evacuate, and it is not completely under control yet, after more than four months of the accident. In terms of quantitative impact of the accident, the INES scale is now rated as Level 7, but I believe the social consequences of this accident cannot be expressed by this simple number of Level 7. The most serious social consequence of this accident is; *“loss of public trust in Japan’s governance over nuclear safety.”* JAEC issued a statement on this point as follows;

*“We are gravely concerned about this accident which can fundamentally undermine public trust in safety measures, not only in Japan but also in other countries.” (April, 5, 2011)<sup>1</sup>*

*“[t]he people’s confidence in the adequacy of the risk management activities has been lost due to the occurrence of this accident.” (May 10, 2011)<sup>2</sup>*

While it is technically possible to take measures to enhance nuclear safety responding to this accident, it would be extremely difficult to restore public trust in a short period. This is a biggest challenge, I believe, for Japan’s nuclear energy policy.

Second, securing public safety and restoring the environment. This is the top priority of the government, but so far the results of the efforts are not completely satisfactory. There are many challenges that we have to face; managing large amount of highly contaminated water is one big challenge on site. Continuous monitoring and drawing more detailed “contamination map” is another, and it may require huge efforts in decontaminating the land/water and make sure that people can come back without fear

---

<sup>1</sup> [http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110405\\_e.pdf](http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110405_e.pdf)

<sup>2</sup> [http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110510\\_e.pdf](http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110510_e.pdf)

of radiation. And it will probably take decades to remove spent fuel from the reactors and will completely decommission all four reactors. *This is a huge, very expensive, very complex, and unprecedented challenge which we have never faced before.* We may need new technologies to cope with the difficult tasks. I believe we need a systematic, strategic and well-planned approach to complete this process. We probably need a new institutional scheme as we have to deal with technological, economical, legal and social issues. International cooperation on this matter is essential. JAEC also issued a statement on this issue;

*“The government should develop an organizational framework to promptly and effectively carry out such emergency measures, ...and if necessary, it should develop the legal framework required for each measure, and immediately start on such steps as implementing demonstration tests on effective technology.”* (May 10, 2011)<sup>3</sup>

Third, overall energy and nuclear energy policy. The top priority on this issue is how to secure the safety of existing nuclear power plants with public trust. This is a short-term energy policy issue, but critically important for long term energy future, too. Unless we regain public trust in safety of existing nuclear power plants, it is not possible to discuss positive future of nuclear power in Japan. Unfortunately, public trust in nuclear safety regulation is now completely lost. The government will plan to separate Nuclear and Industry Safety Agency (NISA) from its parent body, Ministry of Economy, Trade and Industry (METI) and Nuclear Safety Commission (NSC) will probably be incorporated into a new safety regulatory agency. Restructuring nuclear regulatory agency alone may not be enough to regain public trust.

In this context, the Government’s report to the IAEA issued on June says that *“it is necessary for Japan to conduct national discussions on the proper course for nuclear power generation while disclosing the actual costs of nuclear power generation, including the costs involved in ensuring safety.”*<sup>4</sup> I agree. We probably need an innovative policy making process, stimulating public debate and incorporating public inputs and still based on scientific evidence. Do we have such a forum? One possible social function that we need is an institution dedicated to Technology Assessment (TA) which can provide objective (unbiased) assessment of societal implications of science and technology. Information disclosure with proper assessment is critically important for informed public debate.

For a longer term energy policy, a newly created “Ministerial Council on Energy and

---

<sup>3</sup> [http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110510\\_e.pdf](http://www.aec.go.jp/jicst/NC/about/kettei/seimei/110510_e.pdf)

<sup>4</sup> [http://www.kantei.go.jp/foreign/kan/topics/201106/iaea\\_houkokusho\\_e.html](http://www.kantei.go.jp/foreign/kan/topics/201106/iaea_houkokusho_e.html)

Environment” released its interim report on July 29, 2011, outlining basic new energy policy. There are three basic philosophies; (1) Three principles toward new best energy mix (reducing dependency on nuclear power, strategic approach for energy security, complete reevaluation of nuclear energy policy) (2) Three principles toward new energy system (realization of distributed energy system, international contribution, multi-eyed approach) (3) Three principles toward national consensus (national debate in order to overcome “pro-“ “anti-“ conflict, strategy based on objective data, dialogue with various sectors of the public). The Council also suggests that they will re-evaluate costs of nuclear power considering the impact of the accident. Given public opinion polls (more than 60% of the public is now in favor of “phasing out” nuclear power), “reducing dependency on nuclear power” is probably the likely outcome of the new energy policy. But it is not yet certain how soon, how much and what other energy sources will fill the gap.

Fourth, implications for international society. This accident is not just a Japanese accident, and has already had significant impacts on global nuclear energy pictures. There are more than 400 nuclear power plants worldwide and it is critically important to assure the safety of those plants. In this context, it is Japan’s responsibility to share the information and experiences as much as possible. One concern is that the world is now clearly divided into two groups, “pro nuclear” and “anti-(phasing out) nuclear”. This trend, which did exist before but was much more subtle, is now clearly changing the global politics of nuclear power. It is getting more difficult to reach consensus on nuclear energy policy, although there is a growing consensus on enhancing nuclear safety in general.

At the recent UN Conference on Nuclear Disarmament held in Matsumoto City, Japan, July 27-29, 2011, there was an interesting discussion on civilian nuclear power. Under the Non-proliferation Treaty (NPT) Article IV guarantees the “inalienable right” of peaceful use of nuclear power by member countries. But Ms. Yoriko Kawaguchi, former co-chairperson of International Commission on Nuclear Non-proliferation and Disarmament (ICNND), suggested that there should be a “responsibility” of using nuclear power. However, there was a strong statement by Dr. Yukiya Amano, Director General of International Atomic Energy Agency (IAEA), saying “global use of nuclear power will continue to grow in the coming decades and it will remain an important option for many countries.” Still, there was another important issue emerging from the Fukushima accident. That is the common characteristic of “nuclear safety” and “nuclear security,” especially the safety and security issue associated with spent fuel storage has become a major policy issue for international community.

I would like to conclude my talks with the following remarks.

First, we should be able to overcome this tragic accident with our wisdom. Never give up. Yes this is an unprecedented crisis, but crisis can be an opportunity. We will draw lessons and come up with innovative ideas to improve safety of nuclear power plants and to clean up the site. If we cannot control nuclear energy, how can we control nuclear weapons? We should overcome this man-made disaster with humble attitude towards nature and science/technologies. I truly appreciate in this context that international community can work together with Japan to overcome this crisis.

Second, let's make Fukushima as a symbol of "recovery". Hiroshima and Nagasaki were the victims of nuclear destruction, but became symbols of "peace." Fukushima is now victim of one of the most serious nuclear accidents in human history. But, I sincerely believe Fukushima can become a symbol of "recovery." And this should be the goal of Japanese government and I personally do my best to achieve this goal as a government official and as an individual.

Finally, in order to achieve the above two goals, I believe that the role of scientists, like yourself, can be extremely important. One of the important lessons we learned from the Fukushima accident is that closer collaboration between nuclear engineers/scientists and other fields of scientists, especially, social scientists is definitely needed more to improve "safety culture" of nuclear community. I believe this summer school has already played very important roles in achieving this important goal. I appreciate and congratulate all of your efforts you have done and I hope my talk today has contributed to better understanding of the implications of Fukushima nuclear accident.

Thank you very much for your attention.