

**THE TRILATERAL COMMISSION PLENARY MEETING  
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**SESSION TWO: JAPAN: COPING WITH CRISIS**

**Panel**

**Yotaro Kobayashi, Minoru Makihara, and Taizo Yakushiji**

CHAIR YOTARO KOBAYASHI: This team of three is going to report on what's going on in Japan after the earthquake and the tsunami.

I will start by covering the situation in very general fashion, Makihara will tell you what he thinks has to be done or is being done at this particular moment, and Yakushiji will concentrate on the Fukushima Power Plant situation. That certainly is a major concern, as you know, not only to the Japanese, but to the people around the world.

I think you have all the materials. "Disaster in Japan: The Great East Japan Earthquake and Tsunami" was prepared by the Japan Center for International Exchange and covers the situation quite well. You also have Yakushiji's paper, "Fukushima Daiichi Nuclear Power Plant Accident," and the report prepared by Tokyo Electric Power Company, "The 2011 Tohoku Pacific Earthquake and Current Status of Nuclear Power Stations." I would encourage you to go over these which will certainly give you a pretty complete picture as of today.

When an earthquake hit the northern part of Japan, I was in the Okura Hotel in the Orchid Dining Room preparing for the meeting I was going to chair starting at 3:30 in the afternoon. The earthquake came at 2:46. I had never experienced anything like that, even in Tokyo. The hotel seemed almost to be collapsing. It didn't collapse, but the magnitude that hit that part was magnitude 9, I think the biggest earthquake that has ever hit Japan.

But, of course, the damage from the earthquake was nothing compared to the damage done by the tsunami, the big tsunami. As you all know, that area has a history of having suffered from tsunamis. At one time some years back, they even suffered a tsunami coming from a big earthquake in Chile.

They felt they were pretty well prepared. At least, they felt they built the fence 12 to 13 meters high. They felt that was enough to protect those areas from tsunamis, but again this tsunami was as high or as big as 15 to 20 meters. That's was just four minutes away. You've seen the television reports, and we've seen only the television reports. The aftermath, is just out of this world.

Now, it's been almost a month, and we are, I repeat, thankful for the words of sympathy and encouragement both physical and also in terms of spirits. I don't really know how much encouragement the people in the north received. We share your praise for their calmness, civil attitude, and courage, and we are amazed by how courageously those people are behaving even today. It hurts when you see children smiling, the children going through the graduation ceremony with only half a class, but they're all human beings and their spirit will not last very long. This is when action, very united action between the public and the government and the private sectors, is very badly needed.

The plant situation which Yakushiji will describe, of course, is a major concern. This is when, of course, the government is having a lot of meetings. The electric power company is also having a lot of meetings, and I'm sure the government and TEPCO probably deserve much of their criticisms.

But, at the same time, I was born in 1933. I did not know about the big earthquake in '23, and

really nobody in Japan had experience with dealing with such a disaster like this, even the government and some of the very senior leaders in the business community. There's no question that this is not the time to critique or criticize, but I think this is a time for us to put our forces together to come out with a very strong leadership. I personally feel that although there's damage that will take a long time to be mended, we will have no choice but to go on.

In the future we certainly will have a major problem of dealing with the power situation long term. Are we going to stay with the atomic power? Right now, it's affecting all the world, but in the end it will be our decision. These are things that we'll be struggling with in the coming months, in the coming years.

I will ask Makiyama to continue, and then we'll go on to Yakushiji on the situation.

MINORU MAKIHARA: Thank you very much. I would first of all like to repeat what Kobayashi just mentioned, our gratitude towards aid from abroad. I left Tokyo two days ago, and at that time I was told that 133 countries and 39 international organizations had offered aid to Japan.

Since time is limited, I will just briefly run through what happened. As Kobayashi mentioned, the magnitude of 9.0, I gather, is a world record magnitude—it stands third. But the most dramatic thing which I heard was that, as a result of this earthquake, Japan has shifted eight feet eastward, which means we are getting closer to the United States.

As far as our death toll is concerned, it most likely will be 30,000 plus. Our damages are estimated now to be about 25 trillion yen or about 5 percent of our GDP. Our GNP before the earthquake was estimated to be 3 percent, but now, for next year, it is expected to be down to 0.3. Some optimists say 1.9, but anyway between those figures.

Unemployment, which used to be 4.6, which is still high for Japan, as a result of this earthquake will increase slightly from 4.5 to 5.5, but, of course, a lot of this employment offered will be in terms of moving debris and this and that.

The Bank of Japan diffusion index since the earthquake has declined from plus three to minus three, and, in addition to that, there have been collateral damages, electricity supplies, supply chains being destroyed, cost escalation, and overseas this has also affected supplies or shortage of supplies, particularly in automobiles.

The Japan market is going to shrink. For example, I was told that 17 percent of Callaway Golf Clubs are normally sold in Japan, but I'm sure this is going to decline. Apart from Clubs, however, we have to bolster effective demand to overcome deflation.

Also, there's exaggerated concern about contamination due to this nuclear debacle, and I fear that these over-exaggerated concerns could result in protectionism, which I hope can be avoided.

Now, we have come through this period of difficulty supported by what is called the patience or the stoicism of the Japanese populace, but again, this cannot be expected to continue.

And to overcome our difficulties, there has to be first of all a reconstruction effort hopefully to bring Japan to a new stage of competitiveness from what until recently was a rather stagnant type of economy. The idea would be to build, I think, cities in Northeastern Japan, modern cities environmentally oriented, hospitals, education, and so forth which would be leading in the area.

But to do this, the populace or the people of Japan need to be shown and need to be able to share a vision of what the future of Japan is going to be. For the reconstruction itself, my personal view is that the private sector is quite capable of handling of this. We have leaders in the financial field, leaders in the construction field, all who are willing to work and all who I expect to do a superb job.

But, to let them function, the political system has to support this, and this is where there might be some difficulties. Mr. Kan is doing his best, but he has set up six or seven separate committees, all of which

he's heading, and, as a result, decision making is getting very unclear and this has to be settled.

The bureaucracy, which recently has been rather demoralized, has to be energized again. I think through them they have to continue to push through efforts of deregulation. For example, Trans-Pacific Partnership, which has been spoken of, has to be revived, but all this must be based on a vision to be expressed by leaders of Japan who have to be identified.

I think once the vision is set, Japan will be able to recover, particularly because we are blessed with a diligent populace and also because we are situated in Eastern Asia which is a vibrant area in the world.

Looking further into the future, and this may be covered by the following speaker, my concern is that because of this event there will be a review of nuclear plants. Safety standards must be strengthened, but, nevertheless, I do believe if the Kyoto Protocol is going to stay, nuclear energy has to be utilized, and for this I believe that issues, for example, like what to do with the waste material, have to be addressed, probably on a global scale. With that, I'd like to pass on to the expert in the field.

TAIZO YAKUSHIJI: Thank you very much.

What I'm going to do is to give you a basic idea of how the Fukushima Daiichi Nuclear Power Plant is going to be re-stabilized. I know you have been watching the media reports, including CNN, that Fukushima Daiichi is getting more serious. My handouts show a basic picture, not the details, of the situation. Because of time constraints, I'm going to give some basic ideas, and if you have a question, we're going to talk at the State Department reception if you like.

The first page of my presentation paper is about the difference between the accidents of Three Mile Island (TMI) and of Chernobyl and of our Fukushima Daiichi. TMI and Chernobyl happened because the nuclear power system malfunctioned because of the mismanagement of the cooling system. The TMI nuclear fuel meltdown in '79 and the Chernobyl blowup in '86 happened because of the accidental shutdown of the cooling system.

A nuclear plant needs cooling systems by water and also highly pressurized, high-temperature water evaporation that would generate electricity. A hot one and a cool one, both. It's a very contrasting and somehow contradictory system. That's the very simplified structure of the boiling-water reactor (BWR) system.

In the Fukushima case, there was no mismanagement like that at TMI and Chernobyl. The tsunami hit the whole electrical system of Fukushima Daiichi. Fukushima Daiichi was probably shut down automatically when the earthquake occurred. That is, all reactors were shut down, so there would be no problem if electricity was there. But at Fukushima Daiichi, the whole electrical system was gone and its operating system was malfunctioning, so the motor-pumping system and thus the water-cooling system were damaged. That's the difference between Fukushima Daiichi's accident and previous nuclear accidents.

As shown on the second page, the Fukushima Daiichi type is a GE-made boiling-water reactor. There are two types of nuclear power plants—boiling-water reactor and pressurized-water reactor. The boiling one is simpler, but it's very difficult to handle that kind of system.

I'll show you the system with the TEPCO hand-out, pages 1, 2, and 3. Look at page 2. This map shows where Fukushima Daiichi (no.1) and Daini (no. 2) plants are located. They're very close. Fukushima Daini was already shut down for inspection and has no problems even after being hit by the earthquake.

The second page of the handout shows the basic structure of the boiling-water system. There are two small tanks on both sides—actually tanks are around the primary vessel. On the right-hand side is the hot one, and on the left-hand side is the cool one. You can see the cross mark. That's where all the damage is. The electricity was dead, and also this cooling system, the pump system, was dead, and the whole system, ventilation, the left-hand side and the hot one on the right-hand side, they're all dead and damaged. How

could you handle all this without help? That is a serious problem.

When the accident happened, all the operating units were shut down. Shutting down means inserting the control rods to absorb the neutrons. The neutrons make the whole nuclear chain reaction, that's simple nuclear physics. As I said before, when the earthquake hit, automatically all Fukushima Daiichi's active reactors inserted control rods to absorb neutrons. They shut down the nuclear furnaces.

Look at page 3. We have three units—unit 1, unit 2, unit 3, they were operating normally. They automatically shut down, and the fourth one was already shut down, and the fifth and sixth were just inspecting the whole system. The problem is for units 1, 2, and 3. You can see the whole table, so look at the situation right there.

Then, the last problem is how to contain nuclear materials. The problem is a ventilation leak that will create highly radioactive water. The problem lies not in the whole nuclear core system, but just in the big primary vessel. You can see on the previous page that the serious problem is the highly radioactive water drain.

How can we deal with and solve this kind of problem? Normally, we have a filter to deactivate radioactive materials. We got the water out, but it didn't work. That's why we put in the ventilation nozzle to get the highly radioactive water out. That's a very controversial treatment. Then there is highly radioactive contained water around the furnaces. So, how can we deal with it?

The first solution is to drain radioactive water into the ocean. That created an international problem. Korea got angry, and other countries were also angry, because they claimed this is the international ocean. Then the solution is to put same radioactive water into a container.

That's the basic system TEPCO is now working on. Look at page 14. This is where we are having a problem. This is normally water you filter—filtering of radioactive material to emit into the air, but we put in ventilation to reduce the pressure within the primary vessel. That's why we have to do ventilation to open up the nozzle, and then the problem is highly radioactive material got out through this pipe. That is another serious problem.

Please look at my own handout. Immediately after we had the Fukushima nuclear accident, Americans and other foreigners left Japan, including the diplomatic corps. We understand that, because you experienced Chernobyl and TMI you have a memory or nightmare that Fukushima would be the same as Chernobyl and TMI, a blast of the nuclear furnace or a meltdown of the fuel rods.

But we are working on maintaining Fukushima Daiichi to achieve stability. We are facing how we can deal with that radioactive water. The depressurizing primary containment vessels are successful so far, so there has been no blast like that at Chernobyl and no meltdown like that at TMI. (Author's note: Later we found that fuel meltdown had also occurred at Fukushima Daiichi reactors.)

As my handout shows, we have a social program for handling the Fukushima Nuclear Power Plant situation. As you can see, we have not four, but six competing parties separately reporting on the current situation of Fukushima Daiichi. TEPCO and METI's nuclear safety officers have their own announcements of the situation, and a cabinet office's Nuclear Safety Commission has its own announcement. The government's Nuclear Commission also has its own announcement and a status report. The chief cabinet secretary is also reporting the situation. There's so much information that the general public has some mistrust of the truth of the current situation of Fukushima Daiichi.

I'm going to finish by saying Japan has only 20% energy sufficiency. Out of 20%, nuclear power accounts for 90% or 80%. The general public is rather against nuclear power plants today, but we have to have a public debate on whether or not we will maintain or discard nuclear power plants. What kind of energy are we going to have? Are we going to replace nuclear plants with windmill, solar panel, or what kind

of new energy? We really need a public debate, but the general public is now concerned with the danger of nuclear plants.

IAEA expert Amano came to Japan with his technical officers, and Anne Lauvergeon of AREVA came to Tokyo, because AREVA gives us MOX fuels and spent-fuel reprocessing. Also, of course, GE Chairman Jeff Immelt came with a technical staffs because GE built the Fukushima Nuclear Power Plant.

Thank you very much.

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