

Ken Sorenson.

We're going to go ahead and get started with the morning's plenary, the fourth in our series. As with the other ones, we're looking forward to some very good talks with some very distinguished individuals. It is so far a rather small gathering, but it's a hike from the exhibition room back to here. What I've experienced over the last couple of days is as we get started here the room will fill up pretty well. We're looking forward to some really good talks by our distinguished guests.

The moderator for this plenary session is Mr. Steve O'Connor from the Department of Energy. He's from the Office of Packaging And Transportation. He's been in this position since 2008 and manages the implementation of DOE programs and resources to ensure the transportation of DOE materials, particularly radioactive and other hazardous materials to make sure they are shipped in safe, secure and an economical manner.

He also manages the DOE transportation emergency preparedness program to ensure that federal, state travel and local responders have access to the plans, training and technical assistance necessary to safely, efficiently and effectively respond to transportation accidents involving DOE owned radioactive materials.

In addition he is the DOE headquarters certifying official for Type B and fissile packaging approvals. He has over 25 years of experience in the nuclear industry

and about 17 of these years are with the U.S. Nuclear Regulatory Commission. So with that, I'll turn the floor over to Mr. O'Connor.

Steve O'Connor.

Thank you, Ken. I'm glad to be here today. We have two very good speakers that we're looking forward to hear what they have to say. The first of our speakers is Dr. Yoshihiro Nakagome. He is president of the Japan Nuclear Safety Organization and professor emeritus at the Kyoto University. He received his Master's Degree from the graduate school of science, Kyoto University in 1968 and was accepted immediately by the Research Reactor Institute at Kyoto University as a research associate.

He began his career as a research associate and then progressed from associate professor to professor and then deputy director of the institute. His professional research fields were nuclear material management, energy policy and nuclear physics. He retired from Kyoto University in 2007 and now works on many governmental committees as a specialist in nuclear emergency response, safe transport of radioactive material, nuclear disaster management and nuclear nonproliferation issues including nuclear safeguards and nuclear security.

He was awarded a distinguished nuclear material management medal from the Minister of Science and Technology Agency in 2000 and a distinguished nuclear safety service medal from the Minister of Economy, Trade and Industry in 2006. Dr. Nakagome, we are honored to have you as our plenary speaker. Thank you.

Yoshihiro Nakagome.

Thank you Mr. O'Connor, chairman of this plenary session. And good morning ladies and gentlemen. I can find many ladies, so many ladies, thank you very much.

I'm Nakagome, the president of JNES. Today I'd like to explain my presentation entitled New Activity on Transport and Storage of Nuclear Materials in Japan by accident at Fukushima nuclear power station. As you know, two and a half years have passed since the occurrence of the grave damage created by great east Japan earthquake and the resulting tsunami. And the extent of the Fukushima Daiichi nuclear power station of [Tohoku]. The government of Japan continues with reports including contaminants, the contamination toward restoration of the stricken areas.

The Fukushima nuclear power station achieved the cold shutdown and the study taking long term steps toward the decommissioning of its reactors. We

express our gratitude once again for great support and assistance provided from the international community to date.

Use of nuclear energy which is presented by nuclear power generation and radioactive materials including radiation and radiopharmaceuticals has become indispensable for people in many countries in the world to lead healthy and wealthy lives. Transport of radioactive materials play one of the main roles in the use of nuclear energy. Radioactive materials.

The [airport] executive advisors, parties concerned with transport in the world have successfully assured safe transport for more than a half century without causing any major accidents or troubles.

Patram 2013, the 17th International Symposium, attracts many participants from the world. Dating back to the 1992, 20 years ago, the 10th Patram was held at the Yokohama, Japan and with 450 participants from 23 countries. In the past, the last 20 years, Japan has seen the growth of nuclear power generation from 41 commercial reactors with installed generation capacity of 33.239 gigawatt to 45 reactors with 48.47 gigawatt.

The nuclear fuel cycle facilities are uranium in each facility a low level radioactive waste of ... facility and high level radioactive waste storage facility are operating successfully.

Reprocessing facility is now in the negotiating phase. Commencement of operations of our spent fuel intermediate storage facility is scheduled for this autumn. And MOX publication facility is under construction. In accordance with this situation, our transport experience amounted to approximately .25 million drums equivalent for the low level radioactive waste and approximately 1.4 thousand drums equivalent for the high level vitrified waste returned from France and the United Kingdom as of the end of September 2012. The report of the transport of the waste from France was completed in 2006.

The uranium for that transport reached about 1.7 thousand ton and the spent fuel transports attained about 3.4 thousand pounds or 13.7 thousand fuel assemblies. In addition, the medical industry RI, radio isotopes, have been frequently transported. These transports have been carried out without causing major problems or accidents.

This is the Japanese improved transport registration and the complaints with the transport rules by the regulatory agencies, operators and the concerned parties. It is suggested in IAEA transport safety appraisal [TRANSAS] performed in

December 2005. In general conclusion of the report says that the comprehensive legal framework provides a sound basis for the implementation of the transport of radiation in Japan. And generally, the transport regulation implemented in accordance with the IAEA requirements.

To be specific, the appraisal team identified 14 good practices, eight suggestions and two recommendations. Simple comparison showed Japan received favorable appraisal in countries whose TRANSAS reports have been released. However, that due to the great east Japan earthquake on March 11, 2011. One, two, three that were operating at the time of the earthquake at the Fukushima Daiichi nuclear power station failed to cool the core after shutdown resulting in the core damage accident. We say several serious accidents. The reactor facility at the Fukushima Daiichi were designated as a [space wide] nuclear facility in November 2011, last year.

The Nuclear Regulation Authority, NRA, approved the Japanese government provided an ... requiring of action aiming at reducing and optimization of demising the risk of whole facility and metering the onsite and offsite safety including implementing fuel removal as soon as possible to meet Fukushima Daiichi is required to take necessary actions immediately and urgently.

And for units one to four, to ensure the safe decommissioning process and to the decommissioning including the removal and the storage of fuel deliveries only as possible.

We have set up the goals for minimizing the effects of attracting radioactive materials released from the ... nuclear facilities on the fuel site outside environment and for reducing the level to the one before the accident. Many related parties in Japan are working together making the best use of their expertise. We are receiving support from the world to eliminate the hazard of fuel deliveries accumulated in the after core contaminants. Focusing on transport, we are facing the challenges we have never experienced before as follows.

Storage and transport of spent fuel stored in the pool including damaged fuel. This method of secure and confirmed safety of fuel handling. Handling equipment and onsite transport of casks that allow remote operations and the high [dose] environment are preventive actions for disposal and diffusion depending on the extent of the damaged fuel and method of confirmation. Methods to secure the integrity of the spent fuel in storing in the pool. That has been amassing seawater.

Storage and transport of a large amount of fuel deliveries in the core. A multilevel method to secure on the ... and the rational accounting method for fuel deliveries. Methods that will secure and confirm safety of casks containing fuel deliveries. And the transport of waste including the onsite rubble.

Understanding of characteristics of soil waste difficult from those of the conventional waste generated in nuclear power plants because of attached radioactive materials or damaged fuel, and the conclusion of salt and method to nuclearize difficult to measure.

Last is transportation of dismantle waste generated accompanied with decommissioning.

Method of the ensured safety and safety of transport of dismantled waste ... to the final waste form as a way ... remaining event and types and amount of water generated different from the case of a normal decommissioning of a nuclear facility due to the accident.

As I mentioned now, there are many challenges to be tackled with taking into account the environment of Fukushima Daiichi, we determined to promote rational and safe transport with the reflecting overseas experiences, in order to

settle down the issues in a prompt and efficient way within the framework of the safe and reasonable ... in terms of deduction in those workers.

For the situation offsite, some of the massive volume of disaster waste is radioactively contaminated. In addition, the contamination work has generated a large amount of radioactive contaminants. The government related act for a special measure seeking for the environment restoration. At the same time addressing the treatment of the radioactive contaminants.

The government established a policy to store them in several interim storage facilities for 30 years before final disposal. However, the radioactive contaminants, the subject to interim storage are expected to reach 28 million cubic meters. Transport of the contaminants in a safe and prompt way are challenging issues as well. Other challenges with transport include development of transport roles, traffic jams, noise problems and the response to accidents.

The government released the transport guidance to ensure radioactive safety. Efficient implementation of them requires prompt identification of the characteristics of significant amounts of the contaminants. In addition before lifting the restricted areas and allowing the evacuees to return to their homes, collection and storage of the radioactive contaminants in the appropriate

places are necessary in achieving with controlling the secondary exposure to the workers and local residents. The safe and efficient transport is essential.

In the course of medium and long term actions, aiming at prompt settling of the Fukushima Daiichi accident and decommissioning, the challenge in relation to the transport and the storage as I mentioned earlier should be addressed by undertaking necessary research and development and developing the appropriate regulatory systems with the cooperation of concerned industries and research institutes. Moreover, I believe it is our responsibility to systematically arrange the related technological developments in Japan and the methods to secure safety and provide the world with our knowledge and experience.

Thank you for your attention. I hope you can understand, my English is very bad in spite. Not smooth and I hope you can understand what I said. Thank you very much.

Steve O'Connor.

Thank you, Mr. Nakagome. I really appreciate that and I'm sure the audience does also, the overview of the Japanese nuclear power industry including your waste storage. I was amazed to see how long you have been vitrifying and working with AREVA to vitrify waste. And also the overview of Fukushima and

some of the challenges. I really appreciate it. I think I echo the majority of the audience here also that your English is better than our Japanese, hands down.

Any questions?

Question.

[Ken] I have a comment and a question. First of all I'd just like to commend Japan for the way you've really stepped up and addressed this terrible accident in Fukushima. I think it's been very commendable. I think for most of us who have not been there and witnessed it, it's truly hard to understand the scope of the devastation that occurred from that tsunami. And again, I think it's just been commendable with the way Japan has stepped up and dealt with that.

We also appreciate different venues around the world for Japan to come and explain the scope of this accident and the way that you've stepped up to address it. Again, it's been very helpful for us around the world to hear these stories and how you're dealing with it. So thank you for that.

Just a followup question, I wonder if you would comment on the status of potential startups for the existing reactors, if you have any insight into that.

Yoshihiro Nakagome.

No. JNES is not government so I can't answer yes or no. I can't say.

Steve O'Connor.

Any other questions?

Question.

My name is Jean-Luc Lachaume from ASN France and I share with you the fact that English is not my native language too. But my question is about JNES, your organization. Just after the Fukushima accident, [nee za] the previous safety authority has been transformed in NRA, the new regulatory authority and I remember that two years ago the plan was also to merge JNES with NRA and today I see that nothing has changed for JNES. What is the future for your organization? Will it stay like this? Will regulatory activities from JNES join NRA? Or JNES will be merged with NRA?

Yoshihiro Nakagome.

That's a very difficult question. So I'm now discussing about just in general of the NRA. We are now discussing about that program. But I don't know the future.

Sorry.

Steve O'Connor.

Any questions?

Question.

I had one actually. When I saw those volumes of waste, I started wondering.

We're talking about transporting it to somewhere other than onsite. Are there plans to have a burial disposal site, an in ground disposal site to move some of this waste too?

Yoshihiro Nakagome.

I have no idea. Sorry.