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Good morning, ladies and gentlemen. We will begin the morning plenary session. We have two individuals to provide an international perspective in this area. Mr. Jean-Luc Lachaume and Toshiari Saegusa. We look forward to that.

First, Scott Moore from the U.S. Nuclear Regulatory Commission will be our moderator for this session. Scott is the Deputy Director for the Office of Nuclear Materials, Safety and Safeguards of the NRC and with that I will turn the floor over to Scott. Thank you.

Scott Moore.

Thanks. Good morning and welcome to Wednesday's plenary session. I hope everyone had a chance to see the poster sessions this morning. There were some great presentations there on topics that were thought-provoking and graphics were really good. Congratulations to the poster presenters. If you haven't had a chance to go by yet, please check it out later today. Let's give a big hand to all of the poster presenters.

Speaking of outstanding presenters, our plenary speakers today have each come a long way to join us at Patram. Like so many of you, we're privileged to hear this morning from Jean-Luc Lachaume of the French Nuclear Safety

Authority or ASN. And Toshiari Saegusa from Japan's Central Research Institute of Electric Power Industry or CRIEPI.

Before I began in the part of NRC that regulates the safety of casks, safety and transportation and fuel facilities, I served in NRC's office of international programs and there I saw firsthand how nuclear safety and security were being addressed around the world. As you look around the room today and as you see the roster of more than 800 attendees for Patram, it becomes clear that we all operate in a global environment, whether you're from industry, government, academia or some other sector we have seen that what happens overseas impacts us here in the U.S. and vice versa. Just as important we can all learn from each other by sharing information and that's what we're doing here at Patram. So to help us learn today about issues in their countries, we're joined by these two distinguished speakers. Mr. Lachaume will speak first.

Jean-Luc Lachaume was appointed Deputy Director General of the Nuclear Safety Authority, ASN, in France in 2004. He is in charge of the regulation and control of fuel cycle facilities, research reactors, radioactive sources, radioactive waste and the transportation of radioactive materials. Lachaume is highly involved in international matters related to IAEA activities and ASN bilateral relations. He began his career in 1980 with the French Navy and spent a few years on military ships and submarines. In 1998 he joined the French regulatory

body as head of department in charge of emergency preparedness, training, environmental protection and organization of inspections. Lachaume graduated from the Naval Academy in 1983 and from the French Nuclear Military Application School in 1992. Please join me in welcoming Jean-Luc Lachaume.

Jean-Luc Lachaume.

Thank you for the kind introduction. Good morning ladies and gentlemen. It is a pleasure and an honor for me to be here with you this morning. First of all I want to thank the Patram organizers who have allowed me to present to you this morning the point of view from an overseas regulator. ASN I represent here is in charge of regulation and control, emergency preparedness and information of the public for all civilian nuclear activities in France. And all of these nuclear activities' common point is they all need transportation and safe transportation.

I would like today to share the perspective of the competent authority ASN, on the current state of transport safety. A very important and obvious feature of the transport safety is the weight of the international consult safety regulation, is very important. I think that these regulations at our ... in several respects, in particular when you compare them to other safety standards.

As mentioned early in this conference, the first edition of these standards date back from 1961 and have been continuously developed and have posted them, the core concept remains the same. For example, the emphasis placed on the ... and efficacy as a graded approach and so on.

The scope is very wide as a result caused a conflict ... and cross water nature of nuclear material transport. There are ways all activities are for the active material ranging from very low activity, including such material as mine post and concentrics of those to very high activity such as spent fuel and high level waste transport. They provide a set of requirements that traverse all aspects of safe transport including the actions required by the consignor, the carrier and approvals required to be issued by competent authority.

The transport safety regulations cover also almost all of transport and they form the direct basis for nuclear ... regulation in many states through direct regulation or model regulations.

Transport has an important role in our societies now. In fact the regulation is old, there have been significant evolutions of the landscape during these last 50 years. The quantity and the diversity of transport has widely expanded with the increasing role of nuclear activities in our society. I would take the example of France with this map of France on this slide. And for example, in France there

are 670,000 transports each year and we make about 2000 transports of radioactive material every day. It's very, very significant. It's significant but it's only a few percentage of all the dangerous goods that are transported in France and I think it's only six percent of all dangerous goods.

These transports are related to fuel cycle 15%, medical application 18%, and other applications. The map you see on the screen shows how the transports flows with the nuclear fuel cycle. A similar map for the supply of radioactive ... products would be of course very different and short and even more complicated web of connection between production site and hospitals. And this is only to illustrate how the transport of radioactive material has taken an important role in our society. And this to an extent larger certainly than most cities that are aware of. I'll come back on this point.

My next point is about the incidents. My slide is about incidents. Given the very significant number of packages transported, the number and the gravity of safety even appear limiting. I would take this example of France, in fact there have been several significant events. For example in my mind I remember the accident of ... cargo who sunk in 1983 with a U.S. ... And that is a maritime accident was with the sunk of color in 1997 with ...

We have also examples of accidents with trucks or vans. In 1999 a truck containing ... two for one smoke detectors burned during an accident. And also another event in my mind is a packaging error that led to the exposure of two ... workers in 2001. Some of these events have had a significant ... and human consequences. Unfortunately some people died during this accident, but there are no major consequences in terms of nuclear safety or radiation protection.

In fact and it has been said here in this room I think on Monday, never during an accident never people died from harmful effects of radioactivity. But to be more specific on the incidents that occurred in France, you can see on this chart the events that are notified to ASN since 2000. And mostly they have been deviations rated at level zero on INES scale. I hope you know what INES scale is, it's a communication scale with eight levels from zero deviation to seven, it's a major accident like a Genaville or a Fukushima.

And we are also ... at a level one on the INES scale and sometimes level two. A level two incident last year, we had an incident at level two on the INES scale. It was during a transport of fleuron 18. In fact the transporter lost a package during the transportation. If it could be a ..., a transporter for nuclear material.

We also had a serious incident, I mentioned earlier, level three in 2002 with the irradiation of two workers at Charles de Gaulle Airport. During the air transport of

iridium 192 package from Sweden to ... . But given the very high number of packages transported and the absence of major accidents, the transport of radioactive material has an outstanding safety record.

But having said this, does it mean that we can't or that we shouldn't impose safety anymore? I don't think so. I think that there are still possibilities to explore and I propose now to elaborate some of them. And for the possibility of improvement in the field of transport coming from the view of the regulator I think for the ...

The first is about experience, feedback and the fact of capitalizing on history. As opposed to the early days of the implementation of our transport safety regulations in the sixties, we have now much more experience. And we should take advantage of this experience to adapt the regulations and our practices.

In fact through their inspections, the incident reports, the competent authorities gather a lot of data. But collecting this data isn't sufficient. And the competent possibility should also thoroughly analyze them to identify and address breakout difficulties and relevant trends. ASN used to perform such analyses on an annual basis, but we also did it recently on a five year period. It was in 2012 and it was a very useful exercise. The conclusion of this work was presented to our national

transport safety expert group and also to the ASN Board of Commissioners. And after this we have an action plan coming from it.

And if you are interested in this, this work will be presented during Session J tomorrow afternoon and it's an opportunity to learn more about it.

But we are also listening to learn and to take the feedback and one is the Fukushima accident and for this topic I have to say that I'm really eager to hear the presentation of the next speaker, Dr. Saegusa, who will give us an update from the Fukushima accident and about the consequences of the accident on some of the transport packages.

Lessons coming from the accident should be taken into account. In several countries this work is being done mostly for nuclear power plants. I think there was a so-called stress test in Europe. Safety margin and ruggedness of nuclear insulation have been reassessed in a targeted way with the focus on natural result, plus safety system and severe accident management. Of course, the specific details of the Fukushima accident can't be directly transposed to transport, however, for transport as for nuclear installation, it is equally important to understand to which extent packages can resist aggressions more intense or different than expected. And to figure out whether a severe accident would be properly managed.

The Japanese competent authority took the initiative to identify ways to draw lessons from the Fukushima accident in the field of transport safety and submitted recently these elements to the IAEA TRANSCC committee. And it was integrated in the scope of the technical meeting launched last month on the transport environment. And I look forward to see for us in this important area. These technical meetings cover also other areas such as the evolution on transport condition due to the impact of climate change and these issues are also of great interest.

But beyond capitalizing on experience, we should also anticipate foreseeable trends such as the increasing volume of radioactive materials to be transported in the future because of the decommissioning of nuclear power plants.

My second point is about an inconsistency between safety and security. This point also has been emphasized during this conference. In fact, different [principles] have been used for regulation of the safety of transport, TSA-1, for the regulation of the security transport, IAEA nuclear security, series number 9. For the regulation of the safety of sources, basic safety standard, and for the regulation of the security of sources, could have conduct cause a safety and security of sources. And IAEA should systematically review their requirements during transport and use radioactive senses to avoid difficulties at the user level.

Rigorous process has been established in the framework of IAEA in the area of safety, delivering a top down structure from the ... through requirements to guide it. The system at the same time is managed by the commission of the safety standards at IAEA ensuring the suitable flexibility is retained.

Security documentation in IAEA is not as long established. The transport safety requirements have more than five major revisions while the security equivalent has not yet been revised. And such a conference as processed has not been implemented now for security. However, things are changing and moves to bring the transport process into closer alignment ... through the commission of safety standards are the first step to ensure consistency between safety and security requirements. And moving forward in which extent the ... process to IAEA safety requirements could be extended to security requirements. I think it is an important issue.

And finally, there are certainly opportunities to better align security and safety requirements so that they can reinforce each other. I am really convinced of this.

My first point is about reinforcing exchanges between competent authorities. Sharing the transport safety regulations as the same basis for national regulation

is necessary, but it's not sufficient at all to ensure harmonization. It has been said here during this conference that even regulation is the same practically everywhere. The implementation of the regulation is quite different among countries. The safety transport regulation are complex and very comprehensive and for this reason safety control practices often defer from one country to another. This may result in ... to ... transport flows. This may also result in an ... level of safety on the same national territory because competent authority relies on each other for certain tasks.

So competent authority should then endeavor to enhance convergence by sharing and adopting the best practices. There are certainly several ways to quickly improve this convergence but I'll give you a few examples.

We should try to harmonize guidance provided to package designers to help them prepare the package design safety reports. In that regard I'm happy to see that a working group in the framework of TRANSSC is actively preparing a draft international applicant guide with the objective to present this complete draft I think at TRANSSC 29 in November 2014.

But beyond providing equivalent guidance, competent authority should also cooperate when assessing the package design safety report or inspecting them in the case of package design not approved by competent authority. This can

go from exchanging with other competent authorities on the assessment of the safety report to agreeing on mutual recognition of certificate requiring a ... provision and in fact I have a good example. It's the case with the agreement between the French and British authorities which had such agreements in 2006.

We should also learn from each other when it comes to inspection. This can be done by exchanging inspection guides or drafting common inspection guides. An example of this is the preparation of a technical guide by the European association of competent authorities and compliant inspection. And this document will be presented tomorrow during Session J if you are interested.

Competent authorities can also organize joint inspection or inspection with observers from other competent authorities. And just on this slide you can see the picture of an inspection where ... were invited to participate to an inspection. And over the last few years we have organized or participated in such inspections in Switzerland, Belgium, Germany and Italy. And clearly it's very helpful to question and address our own practices.

Crisis management exercises are also interesting to involve several competent authorities. And it's helpful because transport accidents can have cross-border consequences. And in such case, close cooperation between competent

authorities would be required and we are certainly not prepared enough to such situations.

It can also be another opportunity to observe and inspire ourselves with each other's practices.

Another way to collaborate and to learn from the other experiences are the peer reviews. Peer reviews to all the regulators are also a very valuable tool for continuous improvement. At ASN we took benefit of a TRANSSC mission in 2004 and TRANSSC product mission in 2006. And we looked for what: for full scope IRS mission review in 2014 and with full scope review within transport. IRS services are referred by IAEA. They are peer review of regulators and the idea is that during two weeks a team of foreign regulators come in a country and check the performance of a regulator. And we will see such a mission in 2014.

More generally, competent authority should take the habit to share information and work as a network. [Peer reviewed by external agencies] or regional association of competent authorities are a great starting point to quickly improve harmonization.

Now my fourth and last point is about the necessity to increase transparency.

One more time, this has been emphasized during this conference as a necessity

to have a better information and education of the public. In fact, citizens and more certainly specific stakeholders are increasingly requesting information on the transport of radioactive material. Some high profile transport for example cross border spent fuel transport attract much attention and specifically in France and in our neighboring countries and specifically it is Germany. This is challenging for several reasons.

First, the member of public of various interests and various levels of understanding as regards the transport of radioactive material. Moreover, with field covert activities of very different significance in terms of nuclear safety, and it's difficult to convey this difference.

Finally, there are valid reasons to restrict transparency in certain cases. For example, if it's needed to preserve security, public order, or industry ... . And in that matter, many questions we requested the French public authority which is in charge of freedom to help us and to give its opinion on this matter. And they decided that specific information on transports like dates and trajectory shouldn't be fully disclosed to the public. However, these challenges can be addressed by publishing a variety of information ranking from high level assessments of transport safety or detailing inspection report of package design assessment and which is reasonably easy to understand.

I think that in France the public reacts positively to such proactive initiatives. And we can also capitalize on the very good safety record over the last decade and the level of maturity of the transport safety regulations.

And on with the slide, you can see an example of our policy of transparency specifically regarding the transport of radioactive material. Here is the example of preparation of a shipment of high level vitrified waste from France, from La [aga] to Germany. We had the specific and proactive communication on this transport by inviting journalists and NGOs to the preparation of the transport. I think that we had good feedback from the journalists and also from the public. In fact, it's very interesting in case of controversies in that field. And also informing the public can be an area of cooperation between competent authorities in the case of cross border transports.

And now I come to the end of my presentation. And to summarize my points, I see the safety record of the transport of radioactive material as definitely positive. The development of the transport safety regulation is a remarkable example of international cooperation. These regulations are based on sound principles and efficiencies. But it doesn't mean that they shouldn't evolve. Some improvement of these regulations are still needed to improve their comprehensiveness, adequacy, user-friendliness, internal consistency and consistency with other regulations. That's why I have shown to you for example

and for domains that I think are interesting for improvement. I remind you first taking into account feedback ... . Second, enhanced consistency between safety and security. Third, ...force exchanges between competent authorities and for increased transparency. Also true for all actives not only for the competent authorities.

But before closing this presentation, I want to reassure those who have to implement the regulation, my idea and the ASN idea is not at all to create a new burden for licensees and transporters. However, the most significant margin for progress probably resides in better harmonizing implementation among the various countries. This remains a true challenge and requires strong efforts from competent authorities and stakeholders. But I feel that many current initiatives go in the right direction and I'm really optimistic about our current progress.

And I have to say that the most part of what I have said this morning, you can find it in a magazine that was in your bag you picked up at the Ballroom A when you arrived at this meeting. And this magazine is specifically about transport and fortunately is available in English and it's also possible to download it on our ASN website. And on the ASN website you also can find more information, some in English, about our policy for the control of transport of radioactive material. And this is the end of my presentation. Thank you for your attention.

Scott Moore.

Thank you, Mr. Lachaume. Any questions from the audience? I have a question. Your fourth bullet talked about transparency. Could you expand on that and do you have any personal experiences that you've addressed with transparency at ASN?

Jean-Luc Lachaume.

I think that transparency is a very important matter and at ASN we dedicate a lot of our time to transparency and to action of communication or more education of public and stakeholders. One example of this activity of transparency is at ASN we perform each year about 2000 inspections. It covers all of our field of competence and control. And all these letters are followup letters after the inspection. They are the letters we sent directly to the licensees. And these letters are available to the public on our website.

I see that sometimes some people read these letters because sometimes in NGO is a publication, the generally antinuclear association. I see that some part of our letters are picked up. It's a sign that someone reads our letters.

And specifically in the field of transportation and it was a picture of one of my slides, it was an example of proactive communication activity we had in 2007 because at this time there was a controversy on the transport of vitrified waste

between France to Germany. You know that some spent fuel coming from many countries is reprocessed in our facility in [Laug]. They come in [Laug] but after they have to return in the owner countries. They return in packages of vitrified waste. And there are many strong opponents to these transports in France and also in Germany. And we decided to have for a specific transport a proactive communication. As we perform before the transport the inspection of the transport to check the conformity of these transport, to check that there is no problem of radiation prediction, we decided for this transport to invite journalists and also NGOs to attend our inspection.

We invited journalists. We explained to them what is our business, how the transports are controlled in France. We explained it also to some NGOs and the members of the NGOs are representative of antinuclear organizations, so it's very important but decided to participate. I think they were quite satisfied. And we also invite NGO labor especially in measurement in the environment to measure the transport packages. They are checked the radioactivity. They find on the practicality the same results than the official measurements made by IRSN. So I think it was a really fine experience.

And after that the specific day of the transportation I said that we don't say to the media the exact day of the transportation of course for security reasons. But obviously when a transport starts from somewhere everyone, specifically the

stakeholders are very interested and know the departure of the transport and on the specific day we posted on our website a notice of information specifically prepared for the public to explain to them what is at stake and what obvious transport and how they are controlled.

After that I think we have a very good feedback from it and if you look at our magazine, I make some advertising but it's free for the public. And we had last year a specific publication, in fact at ASN we published each four times a year this publication. Its name is Control. And in this publication we had a thematic review of one topic. And this publication was specifically dedicated to the safety of transport of radioactive materials. And in this publication if you don't have it with you, you can download it on our website in English.

And specifically for the matter of the inspection for the transport of vitrified waste, you can find here some articles and interesting articles coming from an official organization. And specifically you can find here the feedback from the NGO who participated to our inspection and also the feedback from the NGO lab who makes the measurements from the environment. I think it was very useful. It's very important for us and now for every transport because of transportation of such kind of material.

Of the day of departure of transport we post on our website public notification and so far the feedback is very good for us. And I think that is very important for us, for the competent authority but also for all the actives of transport to be able to clearly explain to the public what we are doing and what we are at stake and it can be a first step to avoid sometimes some controversy.

Scott Moore.

I've actually searched your website for those inspection reports, but I'm sure it would have helped had I spoken French at the time.

Jean-Luc Lachaume.

Unfortunately the letters are coming after our inspections are only in French. I'm really sorry about that.

Scott Moore.

No reason to apologize, I think it's expected they would be in French. Thank you very much. Are there any final questions for Deputy Director Lachaume? Thank you very much.