

Rapporteur remarks

Introduction

- Good afternoon everyone. As you can see, I am not Rob Floyd. My name is Karen Owen-Whitred and I'm the Director of the International Safeguards Division with the Canadian Nuclear Safety Commission.
- I was asked to be rapporteur for the Symposium just over one week ago. I said yes, clearly, based largely on my own lack of understanding of what is expected of a rapporteur.
- What I have to offer you today is therefore reflective of *my* view of a rapporteur's function, which is not to provide a session-by-session summary of the past week *or* attempt to summarize positions that have been presented by various representatives of the Secretariat or Member States or industry or other organizations.
- Instead, I will try to pull together some *highlights* of the Symposium, I will provide *my* thoughts on some of the themes that I saw emerging over the course of the week that can hopefully help provide some context for the individual experiences we all had. Finally, I want to close with some thoughts on "what next" – how can we make use of the connections and relationships – the linkages – we've all made here as we go back to our daily work and as we look ahead to the next Symposium, four years away.
- ***Spoiler Alert: that's the first of many references to "linking" that I will be using throughout my presentation.***

Overview/Highlights

- To begin, I'd like to take a moment to highlight some of the *novel* elements of this Symposium as compared to those that have been held in the past.
- For the first time ever, this Symposium was organized around *five* concurrent sessions, covering over 300 papers and presentations. These sessions were complemented by an active series of exhibits put on by vendors, universities, ESARDA, INMM, and Member State Support Programmes.
- We also had live demonstrations throughout the week on everything from software to destructive analysis to instrumentation, which provided the participants the opportunity to see recent developments that are ready for implementation.
- I'm sure you all had a chance to observe – and, more importantly, interact with – the electronic Poster, or ePoster format used this past week. This technology was used here for the first time ever by the IAEA, and I'm sure was a first for many of us as well. The ePoster format allowed participants to interact with the subject matter, and the subject matter experts, in a dynamic, engaging way. In addition to the *novel technology* used here, I have to say that having the posters strategically *embedded*

in the sessions on the same topic, by having each poster author introduce his or her topic to the assembled group in order to *lure* us to the poster area during the breaks, was also a novel and highly effective technique.

- A final highlight I'd like to touch on in terms of the Symposium organization is the *diversity* of participation.
- This chart show the breakdown by geographical distribution for the Symposium, in terms of participants. There are no labels, so don't try to read any, I simply wanted to demonstrate that we had great representation in terms both the Symposium participants in general and the session chairs more specifically – and on that note, I would just mention here that 59 Member States participated in the Symposium.
- But what I find especially interesting and encouraging is the diversity in terms of representation from the Secretariat, Member States, and operators – and this is something I'm going to come back to later in my remarks.

Linkages

- Next I want to turn to the idea of *linkages*. *And for those of you keeping score, that's reference two.*
- We all know that the three themes or components of the Symposium are *strategy*, *implementation*, and *people*. The DDG touched on these in his opening comments and offered some interesting thoughts on each of the *individual* components and their importance in any organization, but particularly in the world of safeguards.
- What I'd like to do now is focus, not on the components *themselves*, but on the *intersections* among them.
- First let me caveat the following comments by noting that these linkages are simply the mental constructs dreamed up by myself and some very talented people I worked with to help me pull together my thoughts for this presentation. I don't claim that these constructs would hold up as a PhD thesis. But without pushing the metaphor too far, my intent is to use the concept of linkages as a useful *lens* through which to highlight some specific *content* of the Symposium.

Strategy → Implementation

- The first connection I want to talk about is the link between *strategy* and *implementation*, which is what I'm framing as the intersection between *ideas* and *action*, between the *concepts* of safeguards and the "how to".
- Wednesday's session on the Safeguards Implementation Practice Guides, or SIP Guides, fits particularly well within this category.
- For those of you who weren't able to attend this session, the SIP Guides, which are still in draft form but should be published soon, have been developed through collaboration between the IAEA and professionals from several Member States. The guides help States understand the legal text and requirements of safeguards, to help

them move from concepts to good practices, and they include powerful examples to add clarity.

- Three individual guides – covering safeguards infrastructure, verification activities, and the provision of information – were described by different Member States during the session, using examples from their own experiences. This was followed by a panel discussion that touched on the benefits of exchanging information and best practices, and the value of documenting some basic safeguards guidance, whether for emerging State authorities, for new staff, or for operators who may not be familiar with day-to-day safeguards requirements.
- The success of this project demonstrates the natural and *vital* connection between strategy and implementation.

Implementation → People

- Now I'd like to turn to the linkage between *implementation* and *people*. This can be thought of in terms of “on the ground” activities and, in my mind, covers many of the more technical sessions from the past week. It represents the practical, concrete techniques and tools being put in the hands of the people in order to actually do the work.
- There are a large number of sessions that I would group under this category – from communication technology to measurement techniques to analytical methodology. What's interesting about all of these sessions is that they typically stimulated very lively discussions, which speaks to both the knowledge level of the Symposium participants as well as their engagement with “practical safeguards”.
- These sessions also highlighted the collaborative nature of much of the ongoing technical work – I would reference, just to take one example, the poster covering cooperation between the US and the Republic of Korea on experimental assessment to improve partial defect verification of spent fuel assemblies.
- In addition to the more highly technical work, the link between *implementation* and *people* is also about getting safeguards professionals out in the field for *practical* experience – this is another area where collaboration is key, such as that described in a poster from the Czech Republic describing how the support programme from that country consistently offers access to its nuclear power plant for the hands-on training of IAEA safeguards inspectors.
- Finally, and this was specifically explored by some of the ePosters on this topic, it was clear that the advanced technologies that are being developed still often require a skilled human to interpret the data – satellite analysis is a good example of this.
- In other words, no matter how good the *tool*, we still need the right *people* to make use of it.

People → Strategy

- Finally, let me touch on the concept of *people* linked with *strategy*. For me, this link is all about mobilizing people in pursuit of an organization's strategic goals. The sessions on *performance management* and *training* are particularly relevant to this intersection.
- There were three sessions that explored these topics *explicitly*, and a number of others that referred to them indirectly.
- I really enjoyed the ideas and range of perspectives in the Performance Management session (particularly since I was a panellist).
- A key message coming out of that session was the importance of *clearly* and *transparently* reporting on results. There's an obvious link here to the safeguards system and the Safeguards Implementation Report, but this also applies to *all* of us in our respective organizations.
- We need to give our stakeholders the *confidence* that we're fulfilling our goals – whether you're an *operator* focused on ensuring the high quality of material measurements within your facility, a *State regulator* evaluating the performance of your national industry, or the *Agency* drawing conclusions on the implementation of safeguards commitments. We're all striving to do a good job, but we can't forget the importance of *demonstrating* that we're doing a good job.
- In a sense, this is about bringing *strategy* back down to the "*people level*": "*You said you were going to do this, but now show me that you did.*"

Themes

- I've spent some time talking about a few individual sessions; now I'd like to turn to some *overarching* themes that I saw emerge over the past week. Once again, I'm going to preface these remarks by reminding you that these are my *own* thoughts. You may disagree with the topics I identified, or you may have additional ones to add to the list, but these are the themes that spoke to *me*, personally.

"New Blood"

- First off, the acquisition, training, and management of the *next generation* of safeguards experts, is a theme that jumped out at me from the opening plenary and was an undercurrent throughout the week.
- Without giving away my age, I think I'm safe in saying that I'm closer to the beginning of my career than the end, and so this is a topic that is near and dear to my heart.
- I'm not saying anything new when I note that we are, *collectively*, facing the reality of an aging workforce and a corresponding need to introduce "new blood" into the community.
- At the same time, safeguards is a field that requires some unique and specialized expertise: *technical* knowledge, certainly, of fuel cycle activities, of advanced

statistics, of nuclear material accountancy, of measurement techniques, of data analysis. But also the less *tangible* skills of judgement, discretion, mediation, insight, the ability to synthesize large amounts of complex information and arrive at objective conclusions. And, I would add to that, a *passion* for, and dedication to, this important job that we all do. These are not things that can be easily taught through manuals or even classrooms – they require a *commitment* to on-the-job mentoring and the opportunity to gain experience through action.

- These twin realities – a large group of experienced staff nearing retirement on the one hand and the need for highly skilled and motivated newer staff on the other – highlight the importance of knowledge retention, knowledge transfer, and training. The sessions on these specific subjects offered us some good starting points of how to address these issues.
- One main take-away from the Symposium for *me* under this theme is: do not take these next generation experts for granted. *All* of us in our respective organizations need to put in the sincere effort to find them, train them, and strive to *motivate* and *inspire* them so that they will have both the *abilities* and the *desire* to contribute to the field of safeguards.

Innovation

- There's a nice segue from the theme of next generation *staff* to next generation *technology*. On that note, *innovation* is another clear theme that I think we would all agree featured in this Symposium
- There were some fascinating presentations and posters throughout the week touching on some borderline futuristic technology and methodology. Virtual environments for training, cloud computing, "attack trees", video imaging from space...the list goes on!
- There were a few particularly interesting take-aways from all of this, such as the ability to use emerging technologies from a diversity of (non-safeguards) disciplines for safeguards purposes, and especially the value of Member State Support Programmes in advancing safeguards R&D.
- I would also note that there were a number of projects or technologies presented through the week that are still in the very *early*, or even *conceptual* stages, accompanied by acknowledgements that much work remains to be done.
- The session on Spent Fuel Verification, for instance, noted that this issue continues to be a major challenge for the safeguards system and offered an overview of the current status of R&D in this field, particularly noting the need to follow up with ongoing experiments.
- UF6 cylinder tracking, the digitization of site maps and State declarations in general, the growing use of Electronic State Files within the Agency, these are other

examples of interesting and *emerging* projects that were presented here this week and for which we are all, I'm sure, eagerly awaiting updates.

- That means we can all look forward to hearing about progress in these areas in four years at the next Symposium.

Cooperation

- The final overarching theme I want to discuss is one of *cooperation*.
- Not only were there three separate sessions dedicated explicitly to IAEA-State cooperation, but the concepts of partnership, joint endeavours, and collaboration ran through many of the sessions, from the very technical to the more policy-oriented. The importance of close cooperation within the safeguards community was discussed in sessions as diverse as advanced communication technology, instrumentation data analysis, and evolving safeguards implementation.
- This theme goes hand in hand with one of open and clear communication – this links to the importance of clearly defining the roles and responsibilities of all parties involved in implementing safeguards, and the value of proactive communication in managing day-to-day safeguards issues.
- So, as I said, there were three sessions specifically on IAEA-State cooperation – and I would explicitly add Regional Authorities to that list as well – and these were really valuable in providing a diversity of viewpoints on this topic. From the perspective of “newcomer” States, meaning new to safeguards, we saw for example a poster from Nigeria describing how the interaction between the IAEA and the Member State during the surveys and preparation of initial declarations is critical to smooth initiation of safeguards activities in those States.
- There was a really interesting session on Frameworks for Monitoring the Quality of the Operator’s Measurement and Accounting Systems that described the trilateral liaison meetings – involving the State, the operator, and the Agency – that have been held in Japan for over ten years, and how those meetings have contributed significantly to the implementation of safeguards in that country. That same session also touched on the consultative nature of Euratom safeguards throughout the verification cycle. I can say that we have a similar mind-set in Canada and I’m sure there are many other such examples from other Member States around the world.
- I mean, look around you: we’re here, from all over the world, from all different organizations. We may not always *agree*, but we’re *talking*, and that’s important!

What’s Next?

- So that’s what happened this week, as I saw it. But what happens next?
- I alluded at the beginning of my remarks to the importance of all three major stakeholders in our safeguards community: the IAEA, the State or Regional Authorities, and the operators. There seems to be an ever-growing acknowledgement of and

appreciation for the importance of cooperation between the first two on this list: the Agency and the Safeguards Authority. What I've heard from colleagues, and as I've already touched on here, this relationship has been really well represented at this Symposium.

- Where I believe there's opportunity for further discussion is on the role of the third stakeholder on my list: the operator. Over the past week we've had a few presentations from members of industry, and I was fortunate to hear some really valuable interventions from operators in the audience in certain session. I believe it was in the session on Assuring Quality of Safeguards Findings that acknowledged the fact that the quality of the entire system of safeguards data, analysis, and evaluations begins with the facility operator. That one session had presentations from URENCO, the Australian National University, the European Commission, and State regulators from South Africa, Japan, and the United States, which I think shows an amazing diversity of perspectives.
- But there's more that can be done. In the lead up to the next Symposium, I think we should all consider the vital role of the operator in the success of the safeguards system and how we can seek to more meaningfully engage operators in the conversations we have in this forum. I would love to hear from other Member States how they encourage operator involvement, as appropriate, within the safeguards system in their countries, and I would love to hear more directly from operators themselves.
- I'd like to close my remarks with an acknowledgment that, although we're all heading home today or tomorrow, this Symposium is not meant to end here. The links that were made throughout the week – be they relationships between colleagues, or inspiration gained through the intersection of ideas and technology – should be kept alive after we go back to our respective countries and responsibilities.

In conclusion: the world is changing. Therefore safeguards must continue to evolve. We cannot know for certain what challenges the future will bring. What we do know is that we, meaning the full "we", are taking the necessary steps *now* to develop and maintain a dynamic, well-trained workforce, devise robust and forward-looking technology, and foster the open, collaborative, *genuine* relationships that are needed to meet the challenges that come our way. Remember, we are all in this together. We may have different perspectives on certain issues, we may have different ways of doing things, but we're all working towards the common goal of preventing the proliferation of nuclear weapons. And that's a pretty worth-while goal.

Thank you.