Transcript of Interview with Laura Rockwood
June 26, 2006

Segment Two - INFCIRC 540

Tom: We talked earlier of INFCIRC 153, which is created by a special committee of the Board of Governors. Committee number 22. That was in 1970. In 1995 I believe the Committee began its negotiation under Committee 24 – there was one mysterious committee in between – to draft the Model Additional Protocol.

Carrie: We have with us today the primary author of this document. So we're going to talk a little about the objective, how this relates to 153, and perhaps we can start with some of your comments about the document and how it came to be and what it's purpose is.

Laura: Certainly. In the days of 93+2, Program 93+2 – and you met the mastermind of Program 93+2, Rich Hooper, in one of your other talks. He came up with an approach to strengthening safeguards - which are referred to in our earlier section - which was to identify measures we could already do with existing legal authority and those which we believed would – that state would believe – required additional legal authority. And in 1995, before the NPT Review Conference we were able to go to the Board with that set of measures, divided into Part 1 and Part 2 measures.

The Part 1 measures the Director General informed the Board that we would commence to implement them, which the Board approved of. And that same year the General Conference requested States to implement those Part 1 measures, as being within existing legal authority. In that same year, in 1995, the Board said alright, we like the idea of additional legal authority, come up with a draft instrument. So, we, over the period May 1995 to May 1996, we produced several iterations of a draft document. What went into this consideration? Well, should we modify 153. Should we do a brand new agreement? Or should we make it a protocol to existing agreements? Well you know what we ultimately decided to do, but the reason we decided not to modify 153 is it meant reopening 153 and there was a risk that we might end up back-sliding. So what we wanted to do was add onto it. But not a separate independent agreement because then you'd have to build 153 into 540 as well. So what we decided was to go with a protocol additional to safeguards agreements. It was drafted as a protocol additional to comprehensive safeguards agreements. That is, you see in the forward the Board ultimately encouraged the Secretariat to conclude Additional Protocols with the nuclear weapons states and the other states that did not have comprehensive safeguards agreements - India, Israel and Pakistan if you wish to name them - to conclude Additional Protocols with those countries, based on measures that they were prepared to accept. But for the CSA states it was an all or nothing approach – this is the standard text for the Model Additional Protocol. So we came up with this draft Protocol and after several iterations - informal consultations – we were able to produce a draft for the Committee, which met for the first time in May of 1996. And extraordinarily enough a year later we had a document that looked remarkably like the document Rich and I first formulated.

The brains behind Program 93+2 I have to give to Rich. And what I did is I took those ideas and translated them into a draft text, that was negotiated by the Member States of the IAEA, not all of whom by the way would ultimately conclude an additional protocol. Much the way as 153 was negotiated by States that weren't even Party to the NPT.

So, what did we do this for? We knew the correctness and completeness came from the existing safeguards agreements, from 153 Paragraphs 1 and 2 as we talked about earlier. But it was clear there limitations to our authority to do what states expected of us. And it was clear as of Iraq they wanted to know why we weren't providing completeness assurances. And we said, we can do it within limitations. But in order to do it effectively and efficiently we need new tools. And what were those new tools?

First of all much broader information on nuclear fuel cycle related activities, including R&D –

Tom: Declared by the States.

Laura: That's correct. The idea was that you would have declarations by the States against which we would judge what they had and didn't have. They would be required to tell us more about their nuclear fuel cycle activities, that don't involve nuclear material. They would have to tell us more about what was going on, on the sites of nuclear facilities. And if you ever wonder why just think about Tuwaitha in the case of Iraq. On the site where we were going to inspect, a couple of reactors and I think a fuel fabrication laboratory, they carried out an amazing number of activities that could have support their nuclear weapons program, that we never knew about. Because we didn't have information that would lead us to those locations and we didn't have broad routine access to the site. So we needed broader information about the activities they're conducing, broader information about what happens to nuclear material that's not required to be declared under 153. Exempted material, terminated material, material like yellow cake which isn't suitable for fuel fabrication isotopic enrichment. So what we did is we took a look at the nuclear fuel cycle, what we got under 153, and where we needed to fill the gaps, from an information point of view, but also from an access point of view. And we came up with this animal called complementary access. We intentionally did not use the word inspection because INFCIRC 153 takes care of ad hoc, routine, and special inspections. We wanted to create a new type of access which could allow us at a much lower, at a technical level as opposed to a political level, to resolve questions or inconsistencies that required more information than 153 gave us. So we came up with this new concept, complementary access. It was complementary to inspections and design verification information under 153. And it has its own provisions, it has its own notice provisions, they are not unannounced inspections. They provide for short notice – 2 hour or 24 hour notice – depending on the circumstances and there is one possibility of seeking access before we consult with a State on a question or an inconsistency but that was perceived to be really, really, a highly unusual situation where we would be concern that if we told the State about the question or inconsistency their ability to conceal the activity or cover up whatever the inconsistency was before we could access it would be problematic. But now days with the technical tools we have –environmental sampling

and remote monitoring, those kinds of things – it was thought to be very unlikely. We can do unannounced inspections under the safeguards agreement but there is a mistake that we do unannounced inspections under the Additional Protocol, that's not the case.

So, we have broader information, broader access, but also we needed some tools to make safeguards more efficient. We needed better, simplified designation procedures. In the past we'd go to the Board with new inspectors, get the Board to approve them for designation, DG would write a letter to a State put several names on the letter, and ask the State to approve them –

Tom: It would take a year before an inspector would make his first inspection. Frequently longer.

Laura: Yes. Frequently years. So we decided to introduce a simplified designation procedure. We go to the Board with a list of new inspectors. We get the Board to approve them. We send letters to all States that have the Additional Protocol, and say, if you don't get back to us within a certain period of time, we will consider them designated to your country. Now you as a country can always reject a designation, you can withdraw a designation for a given inspector. But rest assured if you as a State try to reject all of those inspectors we would certainly raise the issue with the Board of Governors – by the way that's never happened. I mean we have been kicked out of North Korea and so in that case they're not only don't accept designated inspectors they don't accept the implementation of safeguards in that context. But we've never had a situation where a State has rejected all of our inspectors. Usually on an individual basis, it has to do with language. It used to have to do with membership of that inspector's coutry to the NPT. Those kinds of things.

The other tool we wanted was simplified visa procedures. Now, we can do unannounced inspections in 153 but I'd like to know how we're supposed to do that if we have to send our inspectors to the Embassy and say, excuse me don't tell anybody but we need a visa to your country – I mean just in case. So we introduced this idea of visa-free travel. Our inspectors travel on the United Nations laissez-passe and what we ask States to do in the Additional Protocol is if they are not in a position to waive visas entirely - and some States do – we ask them to grant our inspectors multiple-entry visas of a minimum of one year. Some States are already doing that voluntarily outside of the Additional Protocol so we decided to make it one of the tools we could use under the Additional Protocol.

So, access, more access, more information, simplified designation procedures, and visa, simplified visa mechanisms. But you'll notice in the Additional Protocol there's an extraordinary paragraph on confidentiality. During the negotiation of the Additional Protocol there was an extraordinary emphasis placed on the importance of confidentiality. I can guarantee you that if we hadn't done something about confidentiality we wouldn't have an Additional Protocol today. So parallel with the negotiation of the Additional Protocol we prepared any number of reports for the Board of Governors on the IAEA's confidentiality regime, as a result of which we introduced this concept of confidentiality undertakings, training in confidentiality. We revised the Agency's confidentiality regime

Agency-wide, not just with safeguards confidential information. And we were able to do that to the satisfaction of the Board and the provision in the Additional Protocol that relates to confidentiality reflects the extreme concern on the part of Member States of the importance to them of the confidentiality of the information they were providing us.

Danielle: I would say not only that but it testifies to the fact that the Additional Protocol is allowing the Agency access to so much more information.

Tom: There are two issues that maybe touch upon this. One of which is the sources of information become much broader than inspectors going to facilities and bringing back inspection results. Open source information reviews whereby the internet is being mined on a daily basis for information which remarkable in how much is there to be found. And third party information which is a euphemistic way to say that information which may result in intelligence activities that a State may wish to share – I suppose there are also things like the opposition groups in some countries which may draw attention to what their own government is doing. So that is part of the fabric of 540, which brings a remarkably richer dimension to this type of activity.

Laura: Absolutely. We have information access from 153, the information and access from 540, and then we have open sources-

Tom: Satellite imagery –

Laura: Satellite imagery. Intelligence information. And its all fed into this State Evaluation process that I think Jill Cooley described in your other session. And again I use the word holistic. We're looking at the State in a holistic fashion. The State as a whole. Does all of this information fit. Is there any blip on the screen that doesn't seem to be consistent with what the State has told us they're going to do in their nuclear activities. Does this not look right. Why? Because what we wanted to do was to detect these kinds of anomalies at an earlier stage so that we could either a) resolve them or, b) raise the alarm at a much earlier stage in our inspection and verification process.

Carrie: You spoke of the Model Additional Protocol earlier. We asked this question about 153 and I think for the sake of completeness let's talk about the extent to which the existing Protocols that have been signed, differ from the Model. Are there cases when it's significantly different?

Laura: The cases that differ from the Model are the five nuclear weapon State Additional Protocols. They are quite different. The CSA Additional Protocols among themselves are highly standardized. Again you have a slight variation on that from a procedural point of view with the Euratom countries. Some of the information will now be coming directly from the States and some of it will be funneled through Euratom. We are negotiating similar kinds of provisions with respect to Argentina-Brazil because they have ABAC but that has not yet gone to the Board. We're still in the negotiation process.

But with respect to the nuclear weapon states it was another issue that came up in the course of the negotiation of the Additional Protocol and at the last session where the Committee approved the Model, it was made clear that there would be no approval by the non-nuclear weapon states if the nuclear weapon states didn't make declarations of their willingness to conclude Additional Protocols. They did in fact do that, the Model Additional Protocol was approved and report out of Committee 24 and the Board of Governors in a special session – I think it was the 27 of May in 1997. Subsequently each one of the nuclear weapon states came to us and said, alright, what's the purpose of the Additional Protocol. In our view it's really to help the Agency improve its safeguards in non nuclear weapon states. And each one of these States described how they thought they could best help. And they range from the U.S. Additional Protocol, which has basically the same language as the Model, but excludes matters of national security, so slightly different language, but excludes those facilities or materials that have national security implications. In the case of the 2 nuclear weapon states that are members of the European community, the UK and France, their agreements look slightly different. They are articulated in the context of, in order to help you with safeguards in non nuclear weapons states we will share with you information very much the same kinds of information as the Additional Protocol that has some nexus to the non nuclear weapon states. And in the case of Russia and China, their agreements – and both of these provide for access – the Russia and the Chinese Additional Protocols don't provide for access, but they do provide for those States giving us information on activities that again have a nexus with the non nuclear weapon states. It runs all across the range but one of the most important aspects is information on exports to non nuclear weapon states. That is really a key factor of the nuclear weapon states Additional Protocols and will be we believe extremely helpful. Because these are highly developed countries, they have –I hate to use the expression but – booming businesses in nuclear trade, perfectly legal nuclear trade.

Tom: What about what are referred to as dual use items. Materials or equipment that might serve a proliferation purpose. How does 540 address that in the sense of the export controls for example, or even in the sense of complementary access.

Laura: Well, as we've discussed, the Additional Protocol requires a State to report exports of items that are listed in Annex 2 of the Additional Protocol. And if we come back to them with information, requires them to confirm imports. It's just that most States don't have licensing mechanisms for following imports. But they have agreed to help us confirm that they've received items. So the big issue is exports. We aren't an export control organization. This is simply to permit us to acquire information about what States are acquiring. We have no right to deny exports. We don't get engaged in export control. Now, when we were drafting the Additional Protocol, Rich Hooper and I talked about this at length and consulted with Member States and the bottom line was it didn't make sense to go out and make up a whole new list. You have the Zangger list which was prepared by the parties of the NPT, of the EDP items, items "especially designed or prepared for the processing or use of nuclear material, otherwise known as single-use items. You also have the Nuclear Suppliers guidelines that up until 1992 consisted of single-use items and in 1992 they created a list of dual-use items. When we turned to the Additional Protocol and said to ourselves, what do we want to know about? Well we

would have loved to have included all of the items on Parts 1 & 2 of the NSG list. But it became clear from our consultations that the Member States weren't ready to go that far. So what we did was we took the list that was at that time extant for the NSG Part 1, single-use items. And that's what you have in Annex 2. There is another common misperception that it has dual-use items in it. It does not. It's not precluded – we specifically used a title for Annex 2 that didn't say single-use or dual-use. It just said list of items. And right now in Committee 25, this new committee that's looking into strengthening safeguards measures, one of the recommendations that's being considered is, should the Board look again at Annex 2 with a view to amending it. And we have a simplified mechanism for amending these Annexes that requires the setting up of a committee – yet another – working group of the Board of Governors that would look at these, make a recommendation to the Board, and if the Board the addition of other items to that Annex, then within a fixed period of time that becomes automatic for any State that has an Additional Protocol. It sounds a little draconian but the truth is can you imagine implementing a hundred and fifty different annexes – it's just not practical. And the Member States agreed and that's why they agreed to the simplified amendment mechanism for the annexes.

Carrie: Is it strictly an addition of items to the annex or is it a change to the annex.

Laura: You could have any modification to the annex, you could have any amendment.

Carrie: (muffled) So you could remove –

Laura: I'm sure you could if you felt that was appropriate.

Tom: I think the chemical weapons convention has an annex which list precursors to chemical weapons and there are over 100,000 that are identified. If you start from a system in which you're trying to provide coverage for such a vast number there really is a question of whether you're able to achieve very much in the end. So having the list somewhere – if you find something or there is some information exposed about some activity – then you have a basis for action and so that's the important legal finding.

Laura: There are a number of items that are neither, if you will, single-use of dual-use in the way we use them in the nuclear field. That is, those that are strictly designed for nuclear fuel cycle, or those that are nuclear fuel cycle useable and also used in non nuclear capacity. You have items that are strictly weaponization items. And what do you with those? There's a lot of discussion about one or two of those things in the Committee 24. Bit was decided that for the time being it was best to go with the existing NSG list. We have a mechanism in the guidelines that we've prepared to help States prepare these declarations in which we've encouraged States who wish to do so to provide any information – for example, certain types of berillium, tritium – to voluntarily report exports of those kinds of materials as well.

Danielle: So you would say there's informal work between the Agency and States to actually, informally expand Annex 2 in some way?

Laura: What we've encouraged States in this forum to report voluntarily certain things. And we have a new unit in the Department of Safeguards that was designed to receive particularly information concerning nuclear trade. For example, denials of licenses. If a country that's a member of the NSG decides they're not going – someone comes to them and says, I want to buy an enrichment facility – and they say no you can't buy it here – it would be very interesting for the IAEA to know that country X is shopping – that somebody's in the business and somebody's shopping.

Danielle: Does the IAEA currently accept or receive that sort of information regularly about denials?

Laura: No. We don't. We're trying to encourage the suppliers to develop voluntary relationships with us, whereby they can provide us with such information as denials. Or to help us speak to companies that are in the nuclear business. If you want to buy something in the nuclear business you're going to go to a supplier – you're going to go to a good one – not because you hope they're going to circumvent their laws but because they're the people who are supplying it. And most of these companies are extremely conscientious and they look at inquiries and say, you know, this is just not on, there are things that are sketchy about these inquiries –

Tom: some employees of companies have gone to prison, particularly in some of the European countries, for exporting controlled items to Iraq, for example.

Laura: Exactly. So we're trying to engage States and the nuclear suppliers themselves but we don't approach companies independently we go through the Member State and say we'd really like to develop a rapport or contact with these countries and we think that the information we have gives you another level of assurance. We would like to think of this information as one way. We're not in the business of trading information.

Carrie: We spoke also of entry into force or options of entry into force of 153. On the Additional Protocol I've heard the term used "provisional" implementation of the Additional Protocol and in fact do I understand correctly that Iran he provisionally implemented its Additional Protocol or not and what does that mean?

Laura: When we were drafting the Additional Protocol we incorporated the standard provision for entry into force on signature or upon receipt of the Agency of written notification that the State has satisfied its requirements for entry into force. We also decided to formalize something that in international law is possible anyway, even if we hadn't included a provision like that, and anecdotally so since we had recently been working on an agreement with India which they had wished to conclude a safeguards agreement but realized it would take a while for ratification. And they informed us, in accordance with international law, that they would like to implement the safeguards agreement provisionally. And so we decided this might be a good idea to emphasize to Member States that you can go ahead and implement this even before it enters into force. It's a voluntary thing, And in fact, yes, we have a couple of States that have agreed to do

that. Ghana did before it entered into force. Libya is implementing its safeguards agreement "provisionally" because it will take them a while to get it approved. And indeed Iran agreed when it signed the Additional Protocol to continue implementing as if it were in force. And that was the case until January of this year when it decided to cease its implementation of the Additional Protocol pending its entry into force. We certainly are hoping that they will reconsider that particularly as it may take them a while to have that instrument properly ratified by their government. But it's a mechanism that's available to a State under an international treaty in any event but we simply wanted to make it more visible and more attractive if you will to States because the important thing is that we get the information and we get the access.

Carrie: So once a State does enter into force officially there is no mechanism for, such as Iran did, withdrawing its provisional implementation, you can't withdraw after entry into force.

Laura: No. It becomes a binding international undertaking and because the Additional Protocol is read together with the safeguards agreement the duration clause and the termination clause for the treaty is the one that's contained in the safeguards agreement. And as we discussed earlier in most of these agreements it says this safeguards agreement shall remain in force so long as the State is party to the NPT.

Carrie: Article 2 is the article that talks a lot about the information that needs to be provided by State in what's called an expanded declaration. I was curious, it seems like that is going to put a tremendous burden on an SSAC that may not have done a lot in terms of safeguards in the past because they have a very small nuclear program. But perhaps in preparing their expanded declaration, that maybe a burden that they weren't prepared for. Can you talk a little bit about how difficult it has been for SSACs to submit the expanded declarations and what the Agency is doing to help them?

Laura: It can be difficult and it's difficult for different reasons depending on the nature of your nuclear fuel cycle. Japan has a very extensive nuclear fuel cycle and they had – what did we discuss, Tom – six thousand pages of submission for their Additional Protocol, and extraordinary effort went into that. On the other hand you have small countries that don't have a nuclear program but have a safeguards agreement and have wanted to demonstrate transparency by concluding an Additional Protocol. And so they come to us and say, now what do we do. We have training courses, the Board has encouraged us to go out to these countries and help them set up their SSACs. We paid for fellows to come to the IAEA and spend some time with the IAEA to learn about how it operates. We are acutely aware that the more we are able to help them the better ob they are able to do. So we are working on that.

Tom: (muffled)

Carrie: The other side of that coin obviously is the Agency has to review 6000 pages of information. How has the Agency dealt with such a huge increase in the scope of activities?

Laura: It's a process that produces kind of an initial hump. And once that's over then that's an extraordinary wealth of information. But even when we were developing 93+2 we were assessing costs and effort we said, you have to be honest with yourselves, this is going to be a huge effort in the beginning. For the State, for the Agency, for everybody. But the payback is very high.

Carrie: Can you speak for a moment about what it means when you – we haven't really talked about integrated safeguards yet – once the Agency does get all of this information its objective is to provide assurance of the absence of undeclared activities. What does that result in, in practical terms?

Laura: What happens is, if, with the combination of the safeguards agreement and the Additional Protocol, we are able to assure ourselves that there are no undeclared nuclear materials and facilities in that State, We are able to focus our safeguards on the more sensitive parts of the nuclear fuel cycle. And so what we do is we might reduce our inspection effort on a conversion facility or reduce our inspection effort with respect to a reactor and focus on other activities further up stream in the nuclear fuel cycle and that what's we call "integrated safeguards." If we have a 153 agreement in place, and Additional Protocol in place, we've reached the conclusion that the declarations are correct and complete, and we have no outstanding anomalies, we feel confident enough to be able to move forward with integrated safeguards. And Jill Cooley is in charge of integrated safeguards and I understand she spoke with you in your previous rountable.

Tom: That's in the next disc to follow this particular segment on the retrospective. She and I were moderators of a retrospective involving Myron Kratzer who was very much involved in the creation of 153, Rich Hooper whom you've mentioned as a co-architect in 540, and Ambassador Norm Wulf who was the American delegation head duringt he time of the 540.

Carrie: There's a clause in Article 2 to allow for voluntary reporting of information. I was curious when you were authoring this, what did you and Rich foresee as some kinds of information that might be report under that.

Laura: It's funny that it's in there at all. Back when we were developing this there was some sense that we could do more near real-term verification and the idea was – that's the one provision in 2a that isn't mandatory. What it basically says is if the agency and the State and get together and find a way to make safeguards much more efficient and effective they can go ahead and agree on it and do it. Now the truth is we didn't really need a 2a2 in order to so that but it seemed like a good idea at the time to confirm – or some States preferred to have something they could point to and say we have legal authority to do this under the AP. Basically this had to do with – Tom do you remember this near real-term reporting we were talking about where the States would have some mechanism for reporting on a daily basis what was going on, or tracking –

Tom: So there are different mechanisms. In facilities that process materials that are directly useable in nuclear weapons there's often a requirement for a real-time material accounting system and in cases of reprocessing plant maybe continuous inspector presence 24 hours a day at a facility. And so the information is always up to date and available to the inspector. There's another technique used that's sometimes called a mailbox in which the plant periodically put a record into a sealed box that they can no longer withdraw that information. And that information is then used to compare with monitoring systems or surveillance cameras. After the fact.

Laura: That was it, the mailbox systems. So was that to provide a mechanisms by which the State needed a provision under the Additional Protocol, they could.

Carrie: Has it been used to date?

Laura: I'm not aware of it. It may have been used but probably not frequently.

Tom: Now moving along with this. And I'm wondering that with (rough). A lot of the issue with the AP have to do with this additional access that you described. And if I may ask a question on complementary access then as to how the term came about, how complementary access differs from a special inspection, and what are the practical considerations regarding how far can you actually go in this area. Specifically, into a military facility.

Laura: Well, to answer your first question, it's fairly plebian. I think we just made up the name because we decided it was just going to be complementary to the access we had in the safeguards agreement. And we wanted a self contained mechanism for achieving access. You asked me –

Tom: The difference between complementary access and special inspections and I'd be interested if you also know how many complementary access activities are carried out in year now, for example.

Laura: I will touch on the CA-Special Inspection issue. We do complementary access frequently. Much of our complementary access is not associated with a question or an inconsistency.

Tom: A hundred or more times a year?

Laura: Could be. To be honest I don't know the numbers but regularly. And in most instances it is a situation where we want to see somewhere else that's on the site of a nuclear facility and we do it as a regular matter. Not in any systematic or mechanistic way but in a way that we feel confident to be able to conclude there are no undeclared nuclear materials or activities there.

The relationship between CA, complementary access, and special inspections. Under 153 there are three type of inspections. Ad hoc inspections, to do before subsidiary

arrangements enter into force, routine inspections, once subsidiary arrangements/facility attachments are in force, and special inspections. Historically we have invoked those very, very rarely. And prior to the situation in North Korea in 1993 we had never sought access under a special inspection, to an undeclared location. We had carried out – Tom maybe you remember – 2 or 3 special inspections but to declared locations because we needed to resolve a problem. But in 1993 when we uncovered this anomaly in North Korea, by taking a swipe sample from their hot cell complex, it became clear that there was likely undeclared nuclear material somewhere in the State. We didn't know if it was a lot or a little. And the only mechanism – well, initially they offered us anytime and anyplace access. They withdrew that offer and the only other mechanism we had was special inspections. So in fact we sought access to these two sites, which we believed were waste sites, for special inspection. They declined to give us access and so we went to the Board of Governors – there's a mechanism under the 153 agreements that permits the Board to make a decision that an action is essential and urgent. The Board having done so, the State is then obliged to take that action. The Board decided that the DPRK should grant us access to the waste sites. We went back to North Korea and they denied access. At that point they became noncompliant with their safeguards agreement. But what we do in a situation where this conflict of special inspection unfortunately has taken on such political overtones because we really haven't used it that much over the years. So now when we invoke it everybody is on alert. And there may be many situations where you could resolve a situation without having to ratchet up the alarm level, So the idea was to get a mechanism, complementary access, that would fill that gap between ad hoc, routine, and special inspections. You don't have to go through ad hoc, routine, complementary access to a special inspection but it gave us another tool to be able get more information, to get more access, without having to go to the next step. Now, the Board of Governors I think it was back in 1992 – I think it was actually before the DPRK situation arose, we might have had a different story afterwards – we went to the Board of Governors to look for confirmation that we could get access under special inspection, to an undeclared location. For a variety of reasons the Board was unable to agree on language that actually said that. It uses something euphemistic like, the Agency should implement all of its rights and obligations under safeguards agreements. The Board anticipates that special inspections should be used only rarely or infrequently. Kind of like a bizarre negotiated formulation. What it doesn't say is they must only be used infrequently. It reflects their expectation that they would be. But we are trying to revisit that, because it is clear that we do have access to undeclared location under special inspection, as confirmed by the Board itself. So maybe at some point we'll get the Board to take another look at that conclusion.

Tom: Complementary access to highly sensitive facilities, military bases for example.

Laura: There's no exclusion for access to military facilities under the safeguards agreement or the AP, simply because its military doesn't form the basis for a justification for denying us access. Now I'm not addressing the paragraph 14 submarine issues – that's a very special arrangement. Simply because its military is a basis for denial of access.

Tom: So this is going on now. Some of these –

Laura: Some of these. We also can carry out complementary access on a managed access basis. There are legitimate concerns that warrant protection by the State. We don't want them releasing proliferation sensitive information. For example, we're doing a complementary access in a nuclear weapon state. We don't want to interfere with physical protection measures, security measures. But if we have a question, managed access does not serve as a basis for denial of access. It's just what it says, managed access.

Carrie: Is managed access also used in facilities that contain more sensitive processes, such as enrichment and refining?

Laura: Well those are nuclear facilities and we have fairly defined ways of safeguarding nuclear facilities. So some of that involves managed access. If you recall in the case of enrichment facilities, there's some sensitivity to how the cascades are connected. We find ways to manage the access. We can do it under 153, it's just not called managed access. But in terms of complementary access you'd be more likely to use that in a location that was not a nuclear facility. But on the site of a nuclear facility for example, yes.

Danielle: Would that be the sort of safeguards implementation that would be covered under subsidiary agreements?

Laura: We have what we call subsidiary arrangements. Under the safeguards agreement they are mandatory so we have very standardized subsidiary arrangements that consist of a general part and then attachments for individual facilities. When we drafted the AP we were of the view that because we weren't going to be doing complementary access in a systematic or mechanistic way, we didn't really see a value in subsidiary arrangements, so we proposed that it be discretionary. Come to find out – and we have now standardized AP subsidiary arrangements, they're codes 1-10 for the safeguards agreement and then I think it's 11-20 for the AP, kind of mirror images. And we have found that it is useful because some of the States have different communication routes. There are some things that it's helpful for them to tell us before we start doing complementary access. So the subsidiary arrangements under the AP, while they have some value, they're not as important in my view as the facility attachments are in the safeguards agreement. But they do allow us to talk in advance about how is this going to work and you'd be amazed at how much more open state are once they really understand how it actually works. And it's not as frightening as it's sometimes sold to be. For better or worse.

Carrie: Does the Agency have to provide some justification to request a complementary access, for instance to clarify information in the declaration, or can it simply request it.

Laura: It depends on where we want access. If we want access on the site of a nuclear facility or a location outside a facility where nuclear material is customarily used, or we

want access to other places where the State declares nuclear material is located, under the AP. With respect to those locations, we need no justification, no question, no answer. In fact the justification is to provide assurances of the absence of undeclared nuclear material. We don't have to have a suspicion, there's nothing iffy about it, and we don't have to explain it. We just say we need access. Now, if we want to go anywhere else or if the reason we want to go is to resolve a question or inconsistency then the first step is we need to consult with the State. And to find out if there's a way to resolve that question or inconsistency. Maybe without complementary access. But we have had situations where the question or inconsistency has actually required us to seek complementary access. We sit with the State, we talk about it, they explain why it is. And we say, that sounds good but it would probably be a good idea if we take a look at the place as well. And we can go there. We can take environmental samples, which is an extraordinary tool that can detect, not everything but nuclear material quite effectively. Certain kinds of nuclear material quite effectively.

Tom: In implementing 153 this agreement on maximum routine inspection effort – MRIE – at a facility, which depends upon the type of facility and how much material is present and the like. When you have complementary access does that become subject to any limitations on how often that activities can be carried out or duration of a complementary access?

Laura: No.

Tom: That could go on indefinitely without limit as long as resources are available. Presumably a state would complain because it was being singled out if it hounded shall we say by the perpetual presence of inspectors.

Laura: There's a limitation of reasonableness on all of our activities. There is no systematic or mechanistic limitation to complementary access except that they're normally supposed to be carried out during regular working hours of the State or the facility in question.

Danielle: Tom you mentioned resources and I wonder does the AP require for the Agency to increase the number of inspectors?

Laura: In the last few years we've gone to Member States and really pressed them for an increase in our regular budget. We've had demands on our resources that exceed the availability of them under regular budget. And the States eventually agreed to give us a small increase. Because for quite some time we were under a zero real growth restriction. That is to say, we might be able to get a little bit for inflation but no real growth. So now we have additional resources to hire new inspectors and to expand our capabilities in other areas. So, yes, it has required additional resources. But, as we said before, the payback, the cost-benefit analysis, is pretty compelling in this case.

Tom: The Agency has you mentioned environmental samples which was one of the principle mechanisms employed both in Iraq and in DPRK and in Iran also some in

Libya. So this is a remarkable capability when it's applied at a nuclear location, at a facility or a location other than a facility where nuclear material are customarily used. When it's used outside of that there's questions of complementary access and this is a routine activity now and it's just wonderful that it, the evolution of the technical measures has assimilated that and has, continues to expand from that base. There also was a provision of 540, Article 9, on wide area environmental monitoring and in this case the technical basis hasn't yet been demonstrated, at least to the satisfaction of the Board, and so that is still awaiting. But the mechanism is there. The door exist and the corridor, it's just a question when is the key going to be made for that. Do you have any thoughts on that?

Laura: No insider information on that. We're certainly, we've been engaged in some field trials. If I recall correctly I think the Swedish government has been helping us with this. The problem is it's a very cost-intensive mechanism, approach. And at least up until now the Secretariat, let alone the Board, is still trying to assess whether it's really a cost-effective tool given some of the other technical tools we have for achieving those same ends. Wide-area environmental monitoring allows you to sample air throughout the State or rivers or water sources. But as I understand it it's labor and finance, financially intensive. And the payback from it is not as great as we'd like it to be, yet. And so we wanted to make sure, we wanted to put a placeholder in the AP because we weren't prepared to give up on it, and haven't yet. So we're working on the field trial to see if we can develop the technique any further, to make a little more effective. Refined.

Carrie: And you actually do have the rights under the AP to conduct those kinds of environmental sampling at locations closer to facilities where a lot of information can be gathered. Even water, air, or other kinds of –

Laura: We can do location-specific environmental sampling anywhere in the State.

Danielle: Could you do environmental sampling in a neighboring State but for information that would apply to a different State?

Laura: If the neighboring State had an AP and was prepared to allow us to do that, yes. Could we insist on right of access, that'd be a tough one, that'd be a tough one. But I suspect that the downwind State might have two interests. One they might be concerned that we find something there and we might blame it on them. On the other hand they would probably rather have them take some environmental samples if there's some suspicion that their neighbor might be carrying out activities. So it could work either way.

Danielle: (muffled)

Carrie: Article 10 requires the Agency to tell the State what it's done under the AP. Can you talk a little bit about how that information is conveyed and at what frequency for instance.

Laura: Right. These provisions in there. If you look at paragraphs 90 a and b of 153, are intended to mirror those pretty much. And so we do them following complementary access. Now, I am not aware of whether we do those, whether we summarize a set of complementary access or whether we provide a 10b statement after every individual complementary access. I suppose that is probably tailored to the State concerned. But then in principle at the end of the year we would provide them with a summary of the results of the complementary access.

Tom: As we are aiming toward the end of our interview I'd be interesting to hear from you regarding the success and adoption of 540 as a universal instrument. Whether you see this becoming something – obviously some countries are more interested to acquire, innocent countries are more interested to sign on to a 540 than countries that may not be so innocent. Whether or not this becomes legally part of the NPT. Whether it becomes part of a separate instrument, a fissile material cutoff treaty, whether or not it is perceived as some way connected to this UNSCR 1540. I guess we're leading to some speculation on what's the future of all this, Laura.

Carrie: Or as a condition of supply is also being considered.

Laura: I think the NSG is considering that. I don't know at what level. I don't think there's agreement on it yet but they are discussing it. In terms of 540, the AP, becoming obligatory, there's a real debate going on. First off if you decided today that it was an obligation under the NPT to have an AP, you'd have a heck of a lot of countries that would be in noncompliance with the NPT. So I suspect it's going to again, excuse me for the metaphor, it's going to take a critical mass of countries having an AP in force before the States Parties will say, look, now it has to be part of our norm. Much the same way as the NSG developed comprehensive safeguards agreements as being a condition of supply. The big debate going on is who has the authority to make that decision. We've always operated on the assumption that it's the NPT parties who decide what's required under the NPT. But there's a serious formulation in Article3(1). Which is, the State agrees to accept safeguards in accordance with the Agency's safeguards system. Who gets to decide what the Agency safeguards system –

Tom: And the system that was in force at the time the Treaty was written was INFCIRC 66. And so the whole situation has changed radically since that time.

Laura: I think we're moving in the direction eventually of this becoming a standard norm in safeguards implementation. I think it will take a while because there are factors that are affecting a State's willingness to conclude an AP that really have nothing to do with our verification capabilities. The Middle East is sensitive area where there are political considerations. There are other areas of the world. There are concerns that, if I may be frank, there are concerns by some of the non nuclear weapon states that they're the ones that are bearing the burden. Where are the nuclear weapon states in terms of disarmament?

Tom: Or even the AP. The United States, how do we say this, has signed and has received advice and consent from the Senate but has not yet taken the steps for entry into force of the AP for the United States. And even as a weapons state for the United States it has decided to open up a lot of its territory as though it were a non weapon state. So there's some greater sharing. This doesn't exist as I understand it in other weapon state. And so the activities, it will be to my mind perhaps important for the American AP to enter into force as providing some impetus for other States that are still sitting on the fence.

Laura: Very much so. I couldn't agree with you more.

Tom: I think as we're wrapping up now I'd like to ask Carrie first and then Danielle as to whether you have any final questions or observations you'd like to offer.

Carrie: Simply that 540 has done a tremendous job of strengthening the ability of the Agency to do its mission and I applaud you and Rich for your hard work establishing it. I think it's remarkable how quickly it was agreed to and I'm pleased with the efforts of States to sign and enter it into force. I'm hopeful that other continue to do so in the future.

Danielle: Building on Carrie's question, I wonder, if we look at the progression, evolutionary, of the IAEA. There was 153, and then came 540 quite a bit later and now you have the Committee on Safeguards Verification, Committee 25. Where in your opinion is the IAEA going as far as its legal authority.

Laura: I kind of see safeguards, the way it's developed over the years as a pebble in the pond. Initially when we dropped that pebble we were trying to solve a particular problem about transferred nuclear items. Then we decided that maybe the problem was we needed to get a handle on all nuclear material. Well then we decided as the ripple went out further is what we needed to get a handle on was undeclared nuclear material. Well, to my mind the next logical step is weaponization. To what extent so we have the right and the authority to investigate aspects related to weaponization activities and that depends very much on the basic premise of safeguards which has until now been focused on nuclear material. Without nuclear material you can't have a nuclear weapon. So I think that's the next logical ripple in the pond of nonproliferation and verification. And I know it's a very difficult step. I mean States have legitimate national security concerns and even the country with the best of intentions would want to make sure that that step be taken carefully. That and the issue of black market, which we've already taken some steps on a voluntary basis to get States to cooperate with us to fulfill, to complete the knowledge that we have. So maybe that's the interim between the undeclared nuclear material and the rest of the nuclear fuel cycle. And weaponization would be this idea of the nuclear black market.

Tom: Do you have a final remark that you'd like to offer?

Laura: No, just to tell you that I'm really proud to be associated with the IAEA and proud of our organization that we're able to do the kinds of things with the degree of professionalism we're able to and we simply could not do that without our staff of inspectors, and without our Member State support. So thank you and thank you allowing me to participate in this.