

Transcript of Interview with Laura Rockwood
June 26, 2006

Segment One - INFCIRC 153

Tom: Welcome, I'm Tom Shea from Pacific Northwest National Laboratory. This document is about the implementation of international safeguards applied by the International Atomic Energy Agency. Our first disc in this series had to do with the creation of the safeguards article in the Treaty on the Nonproliferation of Nuclear Weapons. Today we're joined by Laura Rockwood of the International Atomic Energy Agency Legal staff. Actually, Laura is the author of one of the documents we are discussing today.

The legal foundation for the implementation of safeguards is based upon agreements which are codified in two documents, Information Circulars as they're called, specifically 153 and an extension, 540. Laura I'd like you to introduce yourself and then we'll go on from there.

Laura: My pleasure. Thank you, Tom. I am the Section Head for Safeguards and Nonproliferation in the Office of Legal Affairs in Vienna at our headquarters and I've been working with the Agency for 20, soon to be 21 years, and responsible for the legal aspects of safeguards and nonproliferation in the IAEA.

Tom: I'm joined today by two of my colleagues, Carrie Mathews.

Carrie: I'm Carrie Mathews. I am the international safeguards program manager at Pacific Northwest National Laboratory. I've been working international safeguards for the past 14 years.

Tom: And Danielle Peterson.

Danielle: Thank you, Tom. I also work for Pacific Northwest National Laboratory and am a safeguards and security specialist. Unlike the other people at this table I am just beginning into safeguards. Glad to be here.

Tom: So, to start off today I'd like, if Laura would give us her views on the legal basis for State to enter into agreements with this international organization. How these agreements are created, what the use of the Information Circulars are, in this particular case, and the impression about their authority and how well they actually work in progress.

Laura: The IAEA was the creature of a Statute. It was created by a Statute that was negotiated by a group of States. We are independent from the United Nations but we work in close relation and close contact with the United Nations. In that Statute there is an Article that authorizes the IAEA to establish and administer safeguards in a variety of different circumstances. And one in particular is at the request of States or a group of

States who are party to a particular arrangement. And that brings me to the NPT, the Treaty on the Nonproliferation of Nuclear Weapons. As you've already spoken with George and some of my other former colleagues in one of the other sessions, the NPT requires that States that are defined as Non Nuclear Weapon States conclude with the IAEA a safeguards agreement covering all nuclear material in the State. In the early days this used to be referred to as "full-scope safeguards." We call them "comprehensive safeguards" now. There's no difference between those two names, it's just a more modern name for the same thing. After the NPT was brought into force the IAEA Board of Governors negotiated a document which was a brand new approach to safeguards and it covered all nuclear material in a State. And that document became INFCIRC 153. So when you hear me refer to paragraphs of INFCIRC 153, that's the document to which I am referring. And years later when the Member States asked us to strengthen safeguards, to provide additional tools to help us do our task better, once again the Board of Governors negotiated the text of a document, it's called the Model Additional Protocol, otherwise known as INFCIRC 540, the two blue books that Tom just showed us. And both of these are read together as a single document. Safeguards agreements are international treaties. An international treaty is an agreement, a written agreement, that's entered into by a State or another, by a State or States, or other institutions that have derelict personalities, such as the International Atomic Energy Agency. So when we conclude an agreement, a safeguards agreement, with a State, we're actually concluding a treaty. And these are some of the most formal undertakings and agreements a State can enter into. In fact, under international law a State's treaty takes precedence over its domestic law. A State cannot use its own domestic law to defeat the purposes of a Treaty obligation because it's at a very high level of international law. Both of these texts can be concluded by a State at their request, so for example a State becomes party to the NPT. We will prepare a standardized draft text based on INFCIRC 153 and the model text that is produced in another document, which you may want to show the viewers, which is GOVINP 276, that is actually the model text for comprehensive safeguards agreements. We draft the text, we return it to the State, occasionally we have discussions with the State because particularly if they're new to this they need some understanding as to what are the consequences of this, how do they fulfill their undertakings of the safeguards agreement. Once they're agreed with the text we go back to our Board of Governors, the Board of Governors approves the text and authorizes the Director General to sign and implement the safeguards agreement, or Additional Protocol. The next step is that that IAEA, at the level of the Director General, and the State, or States, sign the safeguards agreement, and this has to be done at the level of head of State, head of government, or foreign minister. If it's not being signed at the level the individual signing it needs to have what they call in international law, "full powers," that are signed by one of those individuals. And frequently that full power is granted to the ambassador in Vienna, the ambassador to the IAEA. Or occasionally foreign minister will sign. Occasionally the head of their nuclear regulatory commission will also be given full powers.

So it's signed. Now the State can decide whether this agreement will enter in to force upon signature, which truly is rare. Most countries require some kind of subsequent ratification and so for those States we have a different mechanism. And what the

agreement will say is that this text will enter into force at such time as the IAEA received notification that the State's requirements, the State's statutory and constitutional requirements, have been fulfilled. So the day we receive that note become the day that most safeguards agreements or Additional Protocols enter into force. And once in force they remain in force. These standardized texts provide that the safeguards agreement and the protocols to them will remain in force until such time as the State ceases to be a Party to the NPT.

Tom: Thank you and one of the things I guess with making agreements with 150 countries or so, most of them I would presume follow model pretty explicitly but there are some departures that maybe you could touch upon how, where those are likely to be found. Nuclear submarines I know is one that some countries give up the right.

Laura: Well in fact we actually have three different kinds of safeguards agreements. We have one kind that was the original safeguards agreement, which was based on an item specific approach to safeguards. This reactor. This material. This fuel fabrication facility. These were safeguards agreements concluded on our early system, INFCIRC 66, revision 2 and the predecessor documents. That's our first type, the item-specific. We then have comprehensive safeguards agreements that are concluded pursuant to the NPT. We also had two other comprehensive safeguards agreements that were concluded, actually three, outside of the NPT, but containing much the same provisions. And then we have a third category, and those are called the voluntary offer agreements. They look remarkably like INFCIRC 153 agreements but they are available to the nuclear weapon states that are party to the NPT. So we have the 66 agreements, the 153 comprehensive safeguards agreements, and the voluntary offer agreements, or VOAs with the nuclear weapon states. Within the category of "CSA" or comprehensive safeguards agreements, they are highly standardized, highly standardized. And in that all of the agreements would contain, all of the later agreements would contain, this provision that would allow a State to remove nuclear material for a submarine, having said that no State has yet exercised that right. Canada came close to it probably about fifteen years ago but decided not to go forward on it. So no state has invoked that provision. But these agreements are very highly standardized. There are variation depending on whether the State is a Member of the Agency or not a Member of the Agency, because if it's a non-Member of the Agency they need to reimburse us for safeguards whereas a Member State pays for safeguards in effect through its membership fees. How it enters into force depends on the State concerned, whether they are party to the IAEA privileges and immunities. The text varies in that regard. But in almost all other respects they are the same.

Now we have two interesting variation on this, three in fact. And they are Japan, the Euratom countries, the European community countries, and Argentina and Brazil. Each one of these agreements contains a special protocol for cooperation. In particular with Euratom, they have their own inspectorate and in the case of Argentina-Brazil, they have their own inspectorate as well, called ABAC. So this protocol describes the relationship between the IAEA safeguards and these regional inspectorates. And we have a similar protocol for Japan and their national inspectorate. But as I said, by and large, highly standardized safeguards agreements.

Tom: So for our watcher it's essential that you read these documents, carefully and perhaps on more than one occasion, to get a sense of what they mean and how they're interpreted. And now we're about to start in to the guts shall we say of INFCIRC 153 and the questions of what they mean. The first basic undertaking is the Article 1, in which a State makes a legally binding commitment to...

Laura: Not to use any nuclear material in any peaceful nuclear activities of the State, no matter where they're carried out, for nuclear weapons or other nuclear explosive devices. There are two aspects of that undertaking that are interesting. You'll notice it doesn't say, it doesn't limit the use of nuclear material to peaceful nuclear activities. It is only precluding explosive nuclear use of nuclear material. And that because when the NPT was negotiated there was a great deal of interest in preserving the right to have nuclear submarine programs, and so it wasn't that all military applications were prohibited, just simply explosive applications. The other aspect of that is what's the difference between nuclear weapons and nuclear explosive devices? Well you are technical people you can answer that question as well as I but the answer is that there is no difference.

Tom: Well there are engineering differences regarding the shelf-life, the deliverability, the miniaturization, but they both explode as a result of fission and perhaps fusion reactions.

Laura: And this distinction was emphasized back in the 70s because at that time there was also a great deal of emphasis on the possible benefits of peaceful nuclear explosions. I understand there was some move in that direction in the early days but really not much after a certain point in time. Because the technology is largely indistinguishable the NPT parties didn't wish to have a State to do an end run around the NPT by simply claiming that the explosion, the explosive device, was for peaceful purposes. Interestingly enough back in 1974 when India exploded its first nuclear device, it did assert that it was for peaceful uses. And it was as a result of that that the Board of Governors decided to change the basic undertaking in our item specific safeguards agreements, to prohibit any explosive use.

Carrie: I was curious, after a State does enter into force its safeguards agreement, how long do they have to come into compliance with its terms?

Laura: There's no requirement in the safeguards agreement itself for entry into force within a particular period of time but the NPT itself does contain a provision and if I recall correctly I think they are required to conclude a comprehensive safeguards agreement with us, which means not just sign but bring it into force, within 180 days if I recall correctly. So we currently around 36 States who have not yet concluded safeguards agreements. The next question, does it matter whether a State has nuclear activities, or not? No. A State party to the NPT that isn't a nuclear weapon state has this obligation to conclude a safeguards agreement with the IAEA.

Tom: So 36 States are still in violation in effect, of this basic requirement of the Treaty.

Laura: Yes.

Carrie: And then once it does enter into force, is there a period of time during which this State can do all of the things that are required before they are found out of compliance with the safeguards agreement, like I think there's some period of time during which they can submit all of the paperwork and everything they need to do.

Laura: Well the first thing a State has to do when its safeguards agreement enters in to force is provide to the Agency a list of all nuclear material in the country. And there are time periods, time deadlines, in the safeguards agreement itself. They are also required to give us a list of all nuclear facilities in the country and to give us information on the design of those nuclear facilities. We frequently refer to that as design information or DI. So an initial list of nuclear material, and an initial list of nuclear facilities. When we get those lists, and yes there are deadlines in the agreement, we start trying to verify not just the correctness of those declarations, but the completeness of those declarations.

Tom: And there are several cases when that has been somewhat problematic. So the first article, or the first paragraph of INFCIRC 153, is the basic obligation in the part of the State to commit. Second one is an obligation on the part of the Agency that it has no latitude, that it must carry out verification activities in relation to the requirements which devolve from the Treaty commitments itself. So, how does that work then?

Laura: Well, that's a particularly interesting provision because in the early days, shortly after we started concluding safeguards agreements in the basis of 153, until approximately 1990-1991, there was a collective sense that the Agency's right and obligation was limited to declared nuclear material. Now in my view, and it was subsequently confirmed by the Board of Governors, it wasn't necessary to adopt a legal interpretation so limited that our activities were limited to declared nuclear materials, but I think it had to do with the fact that in the 70s this was an extraordinarily novel approach to States giving up national sovereignty and they kind of needed to do it in baby steps. But in 1990-1991 with the discovery of Iraq's undeclared nuclear program the Member States decided it was appropriate to take another look at that provision and in fact, without and rewording or modification, if you read paragraph 2 it says not only the right and obligation, but to ensure that all nuclear material in all peaceful nuclear activities in the State, is in fact placed under safeguards. So the Member States confirmed that they wished the Agency not only to verify the correctness. Yes I have a reactor, sure you have one reactor, but do you have another reactor somewhere else. Completeness. And so we have since 1991 really put more effort into what we call "correctness and completeness" verification.

Tom: So one of the next articles addresses cooperation between the Agency and the State. And in effect a country signing up for an agreement is obligating itself to do its best to assure that the Agency is able to carry out its role. And if its not cooperating then that in and of itself is an issue to which is presumably brought before your board of governors.

Laura: We did do that. In the case of DPRK, in the case of North Korea, we identified some anomalies which gave rise to concerns about the completeness of their initial declaration and in the course of our discussions with them to try to clarify these anomalies, we requested certain information and access from them. And in addition to their ultimate refusal to permit us to do a special inspection we also explained to the Board that this was not consistent with their undertaking in paragraph 3 I think it is, of 153, to cooperate with the IAEA. So, yes, that goes hand in hand, it's kind of an umbrella provision. Without the State's cooperation we can have these agreements in force but it really is most effective with the cooperation of the State in which we are applying safeguards.

Tom: Well the job of confirming what someone says is vastly different from finding from first principles what's really going on. And so in the State, now especially, there's a two-level kind of an approach. One is that the State declares its activities in large facilities that inspectors come to visit, and then the question of what else might be going on is part and parcel of the overall safeguards.

Laura: And proving the negative is not easy. You've heard both the previous Director General, Hans Blix, and our current Director General, Mohammed Elbaradei, say there's no such thing as 100 percent assurance, but we can get pretty darn close to that, with the right legal authority, with the Additional Protocol in force, with the cooperation of the State concerned. Our degree of assurance can be quite high.

Tom: And the technical measures that are able to provide, to go beyond hearsay, to substantiate the evidence which allows for conclusions to be based on technical measures rather than on opinion, for example.

Laura: Yes, absolutely.

Carrie: How does the Agency report its findings at the end of its inspection periods? Does it have a report annually for instance?

Laura: Well, we do. We have regular reporting to the States themselves in which we carry out safeguards. There are reports after inspections, and there are annual analyses of the inspection activities. And those are reported to our Board of Governors in a document called the Safeguards Implementation Report, the SIR. And it's gone through as many different iterations as we've published it in years. So every year we try to improve it a little bit more to make it a little bit more readable to our Member States, and we're progressing in the direction of making more and more aspects of it available to the public as well. And what that indicates is what kinds of safeguards agreements we're applying safeguards under, and what kind of assurances we are able to provide under each of those agreements and the extent to which we've been able to do that in individual countries. So this is the document where we as a regular matter give the Board information about the problems we're having with safeguards, generic and specific, and the areas where we're progressing R&D and safeguards technologies, that sort of thing. That's in the annual report. On top of that if we have a situation that warrants it the

Director General will report to the Board of Governors on the implementation of safeguards in individual States. As you know we've done that in the case of Iraq, in the case of North Korea, in the case of Iran, and the case of Libya, South Korea, and Egypt. We've had specific reports to the Board on those countries.

Tom: Paragraph 5 of INFCIRC 153 addresses the issue of confidentiality. And that's a critical issue because you're obviously dealing with sensitive information and activities that the State will often wish to keep protected, not because it's doing something that it shouldn't be doing, but because it needs to protect institutions against, sabotage for example. And so this issue of confidentiality has the two dimensions of how does an international organization carry out sensitive activities with people coming from what is it 139 Member States, on the one hand, and on the other hand, how does it remain sufficiently transparent that the international community is convinced of the credibility of the activities that the Agency carries out.

Laura: Confidentiality is a legitimate concern of our States, of the States in which we do carry out safeguards. There are perfectly reasonable interests that need to be protected and we need to protect the information we acquire through safeguards. We have a very, very stringent confidentiality regime and very limited access to information concerning the implementation of safeguards in individual States. Obviously we ensure that no inspector is inspecting in his or her own country, to avoid a conflict of interest in that regard, and we limit the availability of this information on a need to know basis. Plus it's highly compartmentalized. In extremely sensitive situations there are situations when even I as the lawyer for the department of safeguards don't have access to some of this information except as needed for the implementation of safeguards. So that became a particularly critical issue, and perhaps we'll get into that under the 540, with the Additional Protocol, where we started to go beyond simply regulated activities. And there are clearly commercial interests that need to be protected. (Tom interjects but is muffled). We've had a very good track record in this regard. We've only had one instance where there were concerns raised about specific breaches of the confidentiality by an IAEA inspector. So we make sure there's a limitation on access to information, it's kept sealed, under camera, lock and key, we encrypt communications, we don't publish specific information to the Board of Governors, unless it necessary for the implementation of safeguards. And that's actually contemplated in the safeguards agreement, that's why it's okay for us to go to the Board from time to time in these special cases and give them detailed information about what's going on with safeguards in the State.

Tom: Many governments, some governments, and many NGOs, for example, and university professors, would like to know more about what actually goes on. What's the basis for this and they ask, couldn't the Agency be more transparent in revealing the findings on a State to State basis rather than summarize in ways that are indiscernible.

Laura: Well I think we're moving in the direction of being more transparent. I think by expanding those parts of the SIR that we can make available to the public is one step in that direction, but that's a decision for the Board of Governors to make. And that would be place where the Board Members, if they didn't want to see an expansion in this

transparency, could say, wait a minute, we're getting a little too close to that line beyond which we'd rather not go. I think we're moving in the direction of transparency. There are legitimate concerns that the Members of the public at large have. But it's always a balance. And if we're not able to ensure the integrity of our safeguards and the integrity of the confidentiality regime, you'll find States that simply for that reason will say, I simply can't trust you, I can't possibly give you this information. So it's really a very important balance but where there are problem areas we need to make that known to the Board of Governors and in almost all of those instances the Board has decided to make that information public.

Danielle: Laura, because of the issue of confidentiality, while the Agency is evaluating a State declarations, is there cooperation with the State if there are questions or is it purely undertaken by the Agency itself?

Laura: No, it's really an interactive process with the States. It is very, very rare that we would have a situation that we would prefer not to discuss the matter in advance with the State. If we had some concerns about the fact that if we were to discuss this matter in advance there might be concealment efforts taken. Nowadays there are easier ways of making sure that they don't, or at least you can track them if they are. By and large if we identify a question, an inconsistency, an anomaly, another word we use for those things, the obvious first thing that you do is go back to the State and say, why do you suppose we are finding this. And many times that's resolved. Somebody made a mistake, a benign mistake. They didn't realize that they were supposed to be reporting certain things. There you start getting at the edge of acceptability, but frequently people make mistakes. And if you can resolve those questions, and almost all of them are. Really, a high percentage of questions and inconsistencies –

Tom: Actually I think that every inspection turns up something that's wrong. It may be a number that's transposed, some simple thing, a receipt which isn't part of the collection of records where it should be, somebody has to go searching for it and so on. So they're not mischievous, they're human nature kinds of problems.

Laura: And they're not of nonproliferation concern.

Tom: But the other thing is that this is an international organization that's part of the nonproliferation regime and I can imagine that the last thing that you would want is to come with an ugly surprise to a sovereign State, challenging it in a political body when it hasn't been informed beforehand. I think that would be a difficult situation.

Carrie: We've spoken several times of the Board of Governors and the Secretariat. Would you mind saying a few words about how the Board is comprised, how the States are Members of the Board or not Members of the Board, and what the Secretariat is.

Tom: What's a policy-making organ?

Laura: Well, we have two policy-making organs. We have our General Conference which meets annually in September, usually. In Vienna now. The first one I think was in Rio and there was one in India. But it now meets regularly in Vienna. And we have 139, 140-50 States, I don't remember. But they all meet once a year. And our other policy-making organ is the Board of Governors and they are our Board of Directors. They meet five times a year, generally in February-March, in June, before the General Conference and after the General Conference in September, and then once again in November or December. And, for example, the June Board is traditionally the safeguards Board, the TC Board is traditionally the February-March Board.

Tom: And TC stands for...

Laura: Technical Cooperation, another important department within the IAEA. And the Statute tells the Member States how the Board is to be comprised. Now, it currently comprises 35 Member States, but I guarantee you if you look at the Statute you would have a difficult job trying to figure out how they count these 35 States. But that's what it is currently. There is a proposed amendment to the Statute that would expand the membership on the Board of Governors but that is probably not likely to happen in the near-term. They consist of two categories of States. There are groups of States that are agreed as being the most technologically developed in the area of atomic energy I think is the way the Statute speaks. And they come from different regions. So you get one or two of the most advanced in each of the regions in the world. And then the remaining Board Members are elected at the General Conference. And I think they serve for two year periods on the Board of Governors and they rotate. And they're done by regional groups.

Danielle: And when the Board makes decisions how are those decided? Is it by consensus?

Laura: By and large, yes. As a matter of fact the Agency has historically prided itself on being a technical as opposed to a political organization. And in my 20 years there most of the decisions that I've seen taken have been taken by consensus. But there are situations in which it's clear that a vote needs to be taken or that there are Member States that wish to see a vote taken. And if requested a vote is taken. But as I said, in most cases, they try to do it by consensus. Maybe you have a situation where a person on this side is as equally unhappy as a person on this side, which is probably the perfect consensus situation but it operates quite well, because if you find someone who is obstructionist on a particular issue, they know that if they're doing this simply to be obstructionist they're going to find difficulties in situations where they need help in other contexts. So it works, it works reasonably well.

Tom: Moving through 153, one of the next paragraph addresses the National System for Accounting and Control of nuclear material. And here there are several issues that are interesting, associated with that. One is that the IAEA and its verification activities is expected to verify the findings of this SSAC as it's called. Another is that the IAEA would like SSACs to be professional and proficient and in doing so they can in fact streamline and simplify the activities of the inspectors. On the other hand if there is

something nefarious going on then a well-qualified SSAC would be better at concealing the activities than one that would be less well-suited for that purpose. So perhaps you could talk about SSACs in that regard. SSACs are critical for the implementation of safeguards in a State. An effective SSAC is important, even if you make the argument if you have a really good one they're going to be better at concealing. We simply have to be as good or better than any SSAC. But the better their system runs, the higher degree of confidence we have in the measurements they take. There are always measurement uncertainties, but you have a greater degree of confidence that the "goodness" of the data you are receiving from them. And we actually work very closely with SSACs to help them develop their human resources and their technologies so that they can do these things better. I'm frequently asked to participate in SSAC training courses. We've had them here, we've had them in the Russian Federation (Tom interjects but is muffled). We've had them in Argentina, Brazil, Australia, Korea. We try to hold them with as much breadth and regional depth as we can. Because it's not an easy job and there are many countries whose first priority isn't their SSAC. Particularly countries that have little or no nuclear activities. So these people who are really trying to do the right thing need the help, the resources, from other Member States and from the IAEA.

Tom: Well, there are complementary efforts underway. Particularly WINS, a new organization that is likely to come into existence reasonable shortly that will have to do with best practices and accounting and protection of materials in particular. At any rate, going past that point, one of the next chapters (I'm trying to keep a pace so we get fairly far through this document) – the provision of information to the Agency and this paragraph talks about the obligations on the State to make certain declarations. And again there's always a situation where a State is required to supply sufficient information but has the right to withhold information which it feels is beyond what's necessary for verification. And one of the justifications of the Additional Protocol as I understand it was to address this need, making a conclusion on nonproliferation to go beyond that. So the 153 provision is specific but limited and 540 is more generous. But both of these address information that is reported by the State rather than information that is acquired through other means then.

Laura: That's correct. Actually I wouldn't articulate it the same way that it permits a State to withhold information. What it does is it tells the Secretariat that, regardless of how innovative your lawyers are, there are limitations of what a State under 153 is required to provide. And it was because there were limitations in 153 that we told the Board, if you really want us to do this job effectively, we really need a broader range of information. With any legal system you can always interpret documents more strictly or more liberally. And when we went to the Board of Governors and said we need some additional authority, some of it we can already do by expanding the interpretation of 153, but some of it we simply need new legal authority. And that's how the Additional Protocol came about. Expanding the existing legal authority through interpretation, was the issue of correctness and completeness. Our ability to do environmental sampling, remote monitoring, that comes all from 153. Requiring States to provide information on new nuclear facilities at a much earlier point in time all within the existing legal authority base don new interpretations. But once you get too much further afield we felt it was

wiser to have, to confirm that we have, this additional legal authority. Everything is clear, at least as clear as it can be when you have a legal instrument, and so the States understand what their obligations are and the Agency understands what its obligations are.

Danielle: Another information-based obligation on the part of the State under 153 is record-keeping and I wonder if you could elaborate on the relationship between the SSAC, the State's declaration, and its requirements for record-keeping and how the Agency uses that.

Laura: Sure. Our verification activities are based in large part on the declarations that are made by States. And generally speaking the entity that makes those declarations is the SSAC. It is frequently their equivalent of the [US] Nuclear Regulatory Commission. Sometime it's their foreign ministry. Sometimes it's their ministry of health. But through one entity or another we receive regular declarations. We also receive regular reports on changes in the inventory of nuclear material. We receive information on changes in nuclear facilities or new nuclear facilities. And we take this information and we go back to the State and we do on-site inspections and during these on-site inspections we are able to take this information that we've acquired from the State and from other sources and compare it against the records that the State is required to keep. Now the State itself generally doesn't, it's their operating records that are kept by operator of nuclear facilities, and accountancy records that are generally kept by the operators. Tom you could maybe give us a little bit more information on the details of how that technical aspect works but we take the information that we have and compare it against the records of the operator or the State for consistency, and we also compare the records of the State and the operator for internal consistency, among themselves.

Tom: I think you've covered it. But that in a factory, a reprocessing plant or a fuel fabrication plant, or a reactor, there are logbooks kept. There are instructions to the staff as to what they're expected to accomplish. There are documents that show every movement of material, every processed step that is completed. Those are the operating records basis. Now the accounting goes on top of that. If there's a batch of material, how's the quantity characterized. Samples are taken, weights are made. All of that is part of the accounting records. When a report is filed, and inventory change report, you go back to these various records and those are the basis for the data entries into that formal record. It now comes from the point of a reactor operator, which may be a company, up to a government entity, which now has to put its imprimature on this report, saying that this is an official report of the government now. And so they want to make certain that it's correct also. And then it becomes legally binding as a basis for the State meeting its verification obligations.

Laura: And here's where we get back to Treaty obligations. If the operator isn't providing the correct information and the State is reporting incorrect information it's the State's responsibility. The operator isn't party to this Treaty, it's the State itself. And the State is required to do whatever it needs to do to ensure that any person any derical person, whether it's a person, a private company, whatever, carries out the activities

necessary for the State to comply with its obligations. And that's where national legislation comes in. Because in most countries these treaties are not what they call "self executing." What has to happen is the State has to make it a part of its internal domestic law and also help its people comply with it by giving instruction through the form of legislation, regulations, that type of thing.

Tom: In the United States this comes under the Atomic Energy Act of 1954? Would you guess?

Laura: As amended from time to time.

Tom: This issue has recently come up in the sense of UN Security Council Resolution 1540, in which the Council was concerned about the adequacy of the legislative systems for prevention and accounting and so has in effect issued a mandate for all countries to enact and enforce legislation so it supports this. But it's an evolving situation. Some of the countries have very thorough and proficient systems and others less so. That's always the way of the world.

Laura: It's true and this 1540 is interesting for two, three aspects. First of all, it's geared toward non-state actors, which is a new development in international law. Heretofore it's been the action of the State that you're concerned about – proliferation by a State, of all weapons of mass destruction. But now we're looking at the sub-national level. And that's what 1540 is geared to – missile, biological, chem., and nuclear – building on the existing regimes such as the NPT regime. And the other aspect, another aspect that's important is that the Resolution was adopted under Chapter VII of the UN Charter. And what that means to the lay person is, every Member State of the United Nations is now required to fulfill the request of the Security Council. It was a very interesting approach to mandating national legislation and it speaks about export controls, border controls, accountancy, physical protection. And we've been trying to support our Member States in that regard. We have a legislative assistance program for Member States, and for non-Member States as well, who are trying to develop in the area of nuclear, their nuclear legislation.

Tom: While we're on this subject maybe touch a little bit upon black markets. In this case a country may have activities underway in its institutions or by its citizens that maybe it knows about and looks the other way, maybe it even gives them some support or maybe its completely uninformed as to what's going on. How is the, it's not provision of information but it's largely the system that a State sets up to assure that it has proper control –ties back again to 1540. What's the connection with black markets?

Laura: Well, it's kind of like the weave of a fabric. Safety, security, physical protection. The tighter the weave, the less likely it is that something's going to get through there. The better your nuclear legislation is, the better your export controls, your physical protection controls, the tighter the weave the better the security is that something's not happening in your country that shouldn't be happening. And we try to do this in a holistic way when we help our Member States develop their legislation in this regard.

Carrie: It's equally important I think as having the legislation is enforcing the legislation. Does the IAEA also help Member States with its domestic inspection programs, its oversight programs, to ensure that legislation is actually followed?

Laura: In the case of the nuclear area what we would do is probably invest most, in the safeguards area, in the SSAC. We also have a different area within the Department of Safeguards, that is responsible for nuclear security. And there's quite a bit of overlap because the more you strengthen safeguards the better you increase your security and what we do under the nuclear security program is help States in all aspects of it. Including criminal investigations, including helping them establish border control technologies. So we have a much wider range of support –

Tom: those activities would be carried out at the request of a State, it's not a mandatory program –

Laura: That's correct.

Tom: The Agency doesn't have authority as I understand it that it can say to a country that your programs are deficient or we're planning to send a team of inspectors to examine your legislative process, etc. – it's not something that's done.

Laura: It's not something that's done. We probably have a little bit more leeway to make a move in that direction under the safeguards agreement, but once again what works best is cooperation with the State. They don't want to have a bad system and most of the time they're more than happy to have our help to set it up properly and implement –

Tom: What's the expression, name and shame? They also don't wish to be held up as begin deficient.

Can we move now to inspectors. I think that this is rather a remarkable part of the functioning of this international organization. It always strikes me as somewhat magic that we have this nonproliferation regime and how we got into it and countries have actually signed up to agreements in which they're now held to be accountable for their activities, and on the other hand the inspectors are humans. They have certain rights and privileges, and it is a continuing challenge. Who are they, how do they work, how much authority do they actually have? Why don't we hear of screw-ups and being taken to jail or having press conferences that are outside of the system.

Laura: I have to say when I first came to the Agency and I hear what the inspectors were able to do, my reaction was, we're able to do that? It's really amazing. It's extraordinary. We are able to hire a really, really high level type of employee – people who are interested, people who believe in nonproliferation who want to do the right thing. They believe in the work of the Agency and I think that's a large part of it. We have kind of an in-house ethic that supports good inspections. Mistakes are made but again our system is constructed in such a way that it's difficult for any one individual to make a terminal error in the context of safeguards because we have layers of checks and

balances, we have people checking the reports of inspector and checking the results of the technical so it's a multi-layered system that minimizes the likelihood that there will be errors by our inspector that could go undetected. And we have a strict confidentiality regime, including confidentiality undertakings that are signed by inspectors – all staff members actually – upon hiring and upon leaving the Agency. And given appropriate circumstances we could conceivably go after an inspector after departure from the Agency if the circumstances warranted it.

Tom: We're never going to have enough time to give this subject what it deserves and overall attention but I want to – as we are starting to aim toward closure on our first discussion – I have to mention that INFCIRC 153 is divided into two parts. And the first are these general issues of more the legal underpinnings. The second part has more the technical aspects and we won't get into those issues today. I do want to talk about nonapplicaton of nuclear safeguards to material to be used in non-peaceful activities. The whole business of safeguards is all about use of nuclear materials as reactor fuels, for example, and yet there's a provision in 153 which allows the possibility of a nuclear submarine program, for example, or space applications, depleted uranium being used in armor-piercing projectiles, any nature of things that are not, that don't involve fission or fusion in a nuclear explosive interaction. Can I ask you to address how these thing live in the same house.

Laura: Alright first of all you need to understand the safeguards agreement. The State undertakes not to use nuclear material or to divert it to explosive purposes. So there isn't anything inherently proscribed in a military non-explosive use. But the idea is the material must be declared first and then withdrawn in accordance with the safeguards agreement, for use as depleted uranium in tanks, armor-piercing bullets. There are non-nuclear use provisions for exemption. Where you're talking about a nuclear activity, the submarines, that's Paragraph 14, and as I said that's never been invoked. Were it to be we would be able in the terms of paragraph 14 to get as close as possible to the actual reactor fuel and the State would have to commit itself to returning that reactor fuel, to safeguards, when they finished. Now it could be a lifetime, I'm not that familiar with submarine, but they can last for a very long time. But the safety valve on this is that any arrangement we enter into with a State to remove that material under Paragraph 14, would have to be approved by the Board of Governors, in my view.

Tom: There are many thorny issues that one could imagine but so far the situation has been controlled by virtue of the fact that countries haven't established nuclear submarine programs as non-nuclear weapon state and thus far there has been no exports of nuclear submarines from weapons states to non nuclear weapons states so those things are perhaps concerns for the future but not for the present.

Finance. How does Agency safeguards get paid for. I know there are two ways and perhaps you can comment on that.

Laura: There are two ways. The Statute speaks to the funding of the IAEA in general and has a specific provision on the financing of safeguards and there are specific

mechanisms, calculations, how you figure out what each State owes, what share of the safeguards budget. And up until very recently States with very small economies, very small States, were somehow shielded from paying into the safeguards part of the budget. That is changing as finances have become tighter. So Member State contributions. But we do not only apply safeguards in Member States. We are also permitted to apply them in non-Member States. And in those cases the State, or for example Taiwan, China, which isn't a State, and certainly not a Member of the Agency since they're not a State, they reimburse us for the costs incurred by us for carrying out safeguards. So largely through regular budget, some through reimbursement of expense, a tremendous amount through extra-budgetary contributions. Many of our Member States provide personnel, in kind contributions, money, that's considered extra-budgetary. And for better or worse, we've become quite reliant on extra-budgetary contributions, which is good an generous but it makes a little less secure the financing of some aspects of safeguards.

Tom: There's a political skewing that takes place also when those contributing the money also expect that they have some control over what it's spent for. It would be surprising if it isn't the case. As we aim toward our final considerations of INFCIRC 153 maybe you could talk a little bit about the objective of safeguards from the standpoint of it's initial interpretation - and this is Paragraph 28 for our watchers - but its gone beyond that now as we see the concerns of what constitutes a significant quantity. It used to be interpreted in terms of the amount of material necessary to make a nuclear explosive. Now it has to do with any misuse is significant and even minute quantities of material as found in some cases where it's not supposed to be is already a significant finding.

Laura: There are two aspects of this question of the objective. One is the objective itself and the other is this issue of quantities. You'll notice under Paragraph 1 of 153 the State undertakes not to divert nuclear material to nuclear weapons or nuclear explosive device. What paragraph 28 says is the provision of this part, the second part, of the safeguards agreement -

Tom: The technical part -

Laura: - the technical part of the safeguards agreement - shall be implemented in such a way that it is capable of detecting diversions of significant quantities of nuclear material for nuclear weapons, nuclear explosive devices, or for purposes unknown. So there's the issue of what constitutes diversion, and to our mind it is diversion to nuclear weapons or nuclear explosive devices. But you have situations where States may not declare it and you don't know what the purposes are. In those instances, in our view, it creates a rebuttal presumption but a presumption nonetheless that it was for proscribed purposes. And that's why we are so adamant about following up on undeclared nuclear material. It may go missing altogether or you may have it eventually brought back into safeguards but the question is what were they doing with it when they weren't declaring it. The second aspect of this is the issue of significant quantities. And while we need to be able to detect the diversion of significant quantities we have become aware especially in recent years that a great deal can be done with very small quantities of nuclear material. So we're trying to tighten up from the bottom as well as from the top. But in terms of

routine inspection currently we've concluded that it hasn't made a great deal of sense to change the quantities that are attributed to significant quantities. You're not going to get a greater value by working at the issue from that point of view but rather trying to close some of the loopholes where it's possible to misuse smaller quantities of nuclear material. And in that respect, I know we don't have time for it, but you might take a look at what we've been doing with the Small Quantities Protocol in States we've been doing heretofore little or no verification whatsoever. The Board recently approved changes to this standard protocol, which is in GIVINF/276/AnnexB, if you want to take a look at that later. It says that in a State that has less than certain quantities of nuclear material – and it used to be no nuclear material in a facility – we did no safeguards. No initial report, no verification, do they really satisfy those criteria. Now, with the new SQPs it requires a State to satisfy the condition of less than those quantities of nuclear material and no nuclear facility and no planned nuclear facility, whether it has nuclear material there. If it doesn't satisfy that criteria they can't have an SQP. And if they do, even if they do qualify, they are now required to submit an initial report – as we talked about in the beginning- much the way any other country is and that we are able to verify that before or while that SQP is in force.

Tom: So we've had a very limited discussion about the principal parts of the general aspects of INFCIRC 153. And this provides us now with a segway into INFCIRC 540, in effect that the technical measures to the extent that they were applied that they were not able to confirm that undeclared activities were not taking place and so a whole new additional legal instrument was necessary to secure those particular right. And those are the subject of our continuation when we resume our discussions.