

The Path towards Strengthened Safeguards: Experiences in Iraq, South Africa, and North Korea

This video series is a collection of dialogues centered on the immense role played by the IAEA, and in particular how the Agency supports nuclear nonproliferation through the practice of safeguards. This current update is a chronicle of events during the 1990s, Iraq, South Africa, and North Korea, that led to the development of the Additional Protocol.

7.26 Implementing Programme 93+2

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Rich: As these various experiences came together, they also came together with SAGSI¹'s recommendations. SAGSI's recommendations were, as SAGSI is wont to do, very general. For example, States should be more transparent. What information would you need from States to bring about that condition of greater transparency? And it was during defining those specifics that these experiences in Iraq and South Africa became so important. The work of 93+2 got underway seriously in the first of 1994, that work was carried out that year, it was comprised of seven tasks; two of those involved extensive field trials. We needed, 12-13 member states, supported the Agency's effort. We needed to collect ES's² around a variety of kinds of nuclear plants, in and around, that would provide the basis for us to argue to the Board that ES was a new safeguards measure that was objective and technically feasible. And that was Task 3 of 93+2, and in my mind, probably the most important. I think it was the single most important technical measure ever introduced into safeguards.

Carrie: So its success in Iraq wasn't sufficient to convince the Board to adopt it as a routine safeguards measure?

Rich: No. The importance of it in Iraq was, to say it wasn't important is incorrect, but it was limited in a way. It was through ES that the Secretariat, the Action Team, was able to say to the Iraqi that these were some locations where the Iraqi said, nothing nuclear had gone on here, but there was evidence of nuclear material. But, when the Iraqi side took the decision to try to hide this program away, in the summer of 91, it was even before that summer, that the Iraqi army went around to all these nuclear sites and removed all the equipment. So any of the tell-tale equipment had been hauled out to the desert, they dug big holes and dumped them in and blew them up in these big holes. It was through ES once all this became known and this equipment was dug up and samples were taken, that the equipment was tied back to the locations in the nuclear weapons program. But you have to remember that at that point in time, the UNSC 687 in Iraq was not safeguards. And the Board went out of their way to say this is not safeguards. This is a UNSC resolution mandated disarmament mission, and the fact that you have this technical measure that's found to be useful in this disarmament exercise – that's something different.

Now, when the DPRK brought into force their comprehensive safeguards agreement, this action (and concluded the ratification of the NPT), in the aftermath of that, Blix³ visited DPRK. And DPRK made very broad statements to him about access anyplace, anywhere, and so on. Agency inspectors showed up

¹ Standing Advisory Group on Safeguard Implementation

² ES – Environmental Samples

³ Hans Blix – Head of IAEA from 1981 – 2007, Lead UN Monitoring, Verification and Inspection Commission in Iraq.

there, it was the ad hoc inspections to look at their initial report, and it was at this point in time when the Board has taken no action with respect to environmental sampling, the inspectors asked permission to take samples, and the DPRK gave it. To their sorrow as it turns out. So during the early ad hoc inspections, at least the first several, they collected a variety of environmental samples, and the analysis of those samples turned out to be pretty damning. In the plutonium finishing area, it showed a species of Pu of isotopic composition, for which there was no Pu declared like it, so that suggested the presence of additional Pu somewhere. Secondly, while they had declared the small amount of plutonium they had was the result of one hot reprocessing campaign, the Pu particles that were found in the finishing area looked like separations took place three different times.

Jill: Rich, let me ask a little bit more about the ES. The sampling done in Iraq and DPRK - was it focused on just swipe sampling, or was it a broader range, and then how did you go forward with the field trials, I think ES was one of the major field trials that was done.

Rich: The samples collected in DPRK were all swipe samples. There were a variety of ES media used in Iraq. There was a very large campaign - Iraq has a very peculiar hydrology. The whole country is drained by the Euphrates-Tigris river system, it was a very clever water sampling scheme that was set up where a baseline set of water samples, these were both high volume and grab samples, were collected at points in the Tigris and Euphrates river drainage, and after that then, as time went by, they were periodically revisited. There was vegetation samples, and swipes. But swipes were the predominant type. And as time went along, it became clear that swipe samples were by far the preferred medium. Part of the reason is the difficulties in the number of labs that are involved. And you have a consistent media with swipe samples, where vegetation, soil and other types of things create problems.

Jill: During the field trials, they tried a variety of media. That's when the Agency with member states was trying to understand the best way to handle things.

Rich: As a result from the field trials became available they were very carefully documented, and shown to the state where the samples were collected, and then there was a summary that was constructed that went to the Board. The summary was contained in a very large technical annex to the final report of Programme 93+2. The Board had the best chance to learn about that in a briefing prior to that Board meeting. Any member that chose to, however, could come to my office and read the full results of the field trials. And then they could sit and look at the full details. And two did. Wanna know the two? The Iranian and the Israeli. And that was early 1995. Interesting.

So when the Secretariat went forward to the Board with the report for 93+2, it made no proposals, it simply laid out the measures that constituted Programme 93+2, and provided an assessment of the financial and legal implications.

So when the Chairman's summary was done for Gov 2784,⁴ he simply made mention of the fact that the Board's taking note of the report did not mean that they were approving any of the measures. They invited the Secretariat to submit a proposal in June. So that's what they did. The program was divided

⁴ Report to the March 1995 Board of Governors titled, "Strengthening the effectiveness and improving the efficiency of the safeguards system: Programme 93 + 2 - A report by the Director General"

into two parts. The first part could be done under existing authority, and the other was the measures where the Secretariat thought additional legal authority was needed.

Blix chose to simply inform the Board of his intention to proceed with the Part 1 measures immediately, in implementation. The Board took note of that, in effect approving it. And the collection of ES; everywhere the Agency inspectors had access, it was a part 1 measure. And it was argued that, as being under existing legal authority as both a surveillance measure (para 74d) and also as a new technical measure that's shown to be objective and feasible (para 74e).

Carrie: Do you know if Dr. Blix struggled with the decision about how to convey the message to the Board, whether he should notify them, or ask for approval?

Rich: He really struggled. The reason is that he was under so much pressure from some States that you already have the authority you need. All you really have to do is make use of special inspections. The trouble with that is, from a legal authority standpoint, the issue is never physical access, the issue is always information. There just simply was no way at all that anybody could dream up to incorporate all these transparency measures into the existing legal authority. Another dimension was – the conventional wisdom in this house, forever, but certainly through the Blix years, is that you avoided at all costs, being reprimanded by the Board for overreaching. And secondly, that you never accept the renegotiation of an already accepted measure. And so a number of the early proposals in 93+2 involved correcting some bad practices, mistakes that had been made in the past, and some of those were incorporated in the legal framework, in subsidiary arrangements. So in some of these proposals, Blix took the decision that if any of these proposals amend or in any way could result in 153 negotiation or having to go back individually to state by state, and could threaten other things that were proposed, they just all went away. Turns out that some of the proposals that he had pushed over the years of administrative nature, issuance of multi-entry visa, and inspector designations, both of which were measures in 153, they remained. And Committee 24 didn't have any trouble with those, but still it's gone now. So in the Board in June of 1995, they simply took note of the DG's decision to proceed with the part 1 measures, and at that point, the Secretariat embarked on a year-long informal negotiation involving these measures that needed additional authority.

This involved unending meetings, individual states, groups of states, the Board was involved all along, through what were called "discussion drafts", there were two of these very thick drafts that went to the Board, very heavily discussed. At the end of the year, Blix decided that this informal process had taken things as far as it can, and it's time for the Board, then a Committee of the Board, to invite States to negotiate a new legal instrument. The Board agreed, and so they immediately and urgently formed an open ended Committee of the Board, the 24th such Committee in the Board's history, and it began its work 3 weeks later.

Jill: This was in the summer of 1996?

Rich: Yes.

Carrie: And how was participation on this Committee determined?

Rich: There are two ways. If you are Member State of the agency, or if you have a Safeguards Agreement.

And there was a substantial participation – 75 or something, States chose to participate.

The first negotiating session scheduled for 2 weeks in the early part of July in 1996 fell apart. And the reason is because States didn't take into account that there had been this one year preparation, essentially, and so they came to Vienna expecting the first week to be agreeing on procedures, and the technical people would only need to come the 2nd week when the Secretariat would read through the proposal they had prepared. When they were ready to begin reading on the 2nd day, their people weren't. So it ended with States being invited to provide the Secretariat with comments. Many did. And then the real negotiating began in October. There was a 2 week session in October of 1996. From the Secretariat's standpoint it was disastrous. It was at that point that it really looked like there wouldn't be an agreement. It also was a time when Blix had announced he would not seek another term. There was a lot of bad feelings within the house regarding his successor - whether or not his successor was negotiating away the legacy by giving away too much on the AP.

Unbeknownst to us, however, the U.S. intervened. President Clinton called Chancellor Cole and together they decided they wanted an agreement. So the head of the German delegation, Reinhardt Loche, and the head of the U.S. delegation, Norm Wulf – again the Secretariat knew nothing of this - did their own shuttle diplomacy. The January negotiating session got underway. It was like a miracle. These guys were in lockstep. One guy would have a problem, the other would propose language for a solution. The Secretariat sat there with their mouth open. So at the end of January, there was essentially consensus language. Delegations needed to return to Capitals to get approvals. There was a very brief 3-4 day meeting in April, when they reported back, and the language went to the Board the 15th of May 1997. And the Board approved the Additional Protocol.

Jill: I know you were clearly involved in the front lines, and the back lines, of the negotiations. I know there were a lot of compromises that were made in what was included, and not included in the Additional Protocol. Can you say a few words about what didn't make it in, but were discussed clearly and were something that was felt to be considered.

Carrie: If you could, divide it into two areas – what hit the cutting room floor before Committee 24, and what was discussed and removed within Committee 24?

Rich: I can. We pretty much knew what would go and what wouldn't before Committee 24; If we knew things weren't going to fly we removed them from the protocol ourselves. As I mentioned a few minutes ago, the kinds of things we would've liked to see addressed with respect to 153-based kinds of implementation, the decision not to do that was taken by the Secretariat very early on. The decision not to address the timing of Inventory Change Reports (ICRs)⁵, not to address the Small Quantities Protocol (SQP), not to address the basic undertaking in 153 that says "All nuclear material," – All means All. When the Secretariat constructed the language for subsidiary arrangements, they limited the contents of the initial report to paragraph 34c material – meaning not ALL, but only that material according to the Secretariat or the State's view, that was subject to the detailed material accountancy procedures specified in the agreement. So you asked what hit the cutting room floor? Those bounced early on. The original

⁵ A report that describes changes in inventory of [nuclear material](#) in a [material balance area](#). ICRs are usually provided on a monthly basis.

proposals included reporting on a selected but still extensive list of dual-use items. Through discussions it became clear that that simply was not sellable. The primary opposition came from the western Europeans actually, and the reason was that legislation within the EU guaranteed free movement of goods and services between states. And they saw that requirement, since safeguards is implemented state by state, and not in blocks of states, so they saw the requirement as impacting already agreed legislation within the community. And they even went further- they saw it as Pandora's box of ever increasing reporting requirements that they simply didn't want to sign up to.

So the reporting of dual use equipment and non-nuclear materials disappeared as a proposal – it was still discussed through the year following the discussion draft year, but it was never formally placed in a Board document or put forward. We also had a great deal of discussion dealing with access to individuals. Again, there seemed to be no way to construct such a measure without running into State by State constitutional barriers regarding unlawful search and seizure. And then we had the sort of conflicting experiences of Iraq and South Africa where it became clear that if a State was being cooperative, they produced the people, and if they weren't, they wouldn't. And it simply came down to cooperation irregardless of the legal obligation, because Iraq certainly had the legal obligation to do so, and eventually they did, but only in a slow and painful way.

Jill: Back to the things that weren't included in the Additional Protocol – was there anything in Annex 1 with regard to manufacturing activities that wasn't included?

Rich: Yeah, I forgot that. We decided late to take what we thought was a modest run at including some dual-use materials on the Annex 1 manufacturing list. And we thought they were sufficiently single-use that there wouldn't be too much objection. Let's see if I can remember what they were – tritium was one, metallic beryllium, enriched lithium, and boron 10. And we got an incredibly strong negative reaction – they didn't threaten to throw us out of the room, but it was a very surprising negative reaction. The western Europeans were negative, as before, and particularly the Belgians saw it as a Pandora's box, that they were going to have reporting requirements and conditions upon which they had no say. But for me, the surprising resistance, and it was specific to tritium, came from the Canadians. It was the only time in Committee 24, they really came to an impasse, the Chairman set up a side group - go away and set up a compromise - and the compromise really was not much – the proposals themselves disappeared. But the Canadians did agree to leave heavy water if nuclear grade graphite was included.

Carrie: Program 93+2 was also responsible for addressing the financial implications of the AP, can you say a few words about that?

Rich: Well, the final report, measure by measure, contained a statement about the financial implications. And in some of them I think they were probably realistic – costs would increase, information evaluation would increase, - they were reasonable. The overall cost of the program, however, was advertised to the Board and member states as being cost neutral. And that was a political decision, that was not a decision that could be very well defended. The increased cost in the early days of implementing strengthened safeguards was going to be offset by trade offs - by reducing conventional nuclear material accountancy kind of safeguards, with the idea that over a period of time it would become cost neutral. I don't know that anybody ever believed that, but there certainly were Governors that would say, "I don't believe you."

But Blix maintained that position during his tenure, and it was repeated by Mohammad.⁶ It was a couple years after that, it became recognized that it wasn't sustainable.

Jill: I think there are still people who remember that position. It was advertised as cost neutral for the Secretariat. This is something that has come up that states say it was supposed to be cost neutral for them as well.

Rich: Yes. We made very clear that we did not believe that it would be cost neutral for states. And we believed that some operators would win, and others would lose. I believe we were quite honest on that front. We certainly never advertised to states that implementation of strengthened safeguards wasn't going to cost them something.

Carrie: If there's anything that you would do differently in hindsight, can you say what it would be?

Rich: If I could do it again, and had the authority, I would have included all of those various sort of gaps that developed between intent and practice over the years, in the implementation of material accountancy safeguards – I would have addressed those explicitly – whether it was the SQP, or the contents of initial reports, the timing of ICRs, there are others – I would have addressed those explicitly. As time has shown, it would've been the right thing to do. The SQP problem has been addressed by itself, as a stand alone kind of thing, where it could've been addressed as a larger set of values. And the contents of initial reports is getting addressed a little bit for those states that are needing to submit initial reports- states with modified SQPs for example. No one has suggested going back to states that have been under safeguards for 40 years and asking them to submit new initial reports. And the inclusion of dual use remains a big hole. Right now if you said, today, what is the most important thing that could augment the Agency's safeguards, that would be it.

Carrie: Jill – do you have any closing remarks?

Jill: Rich, this has been extremely interesting, especially trying to implement some of these, and hearing how they came about and how they were negotiated, and I think from the contributions you've made to the department in the years since you've left, in terms of consulting and teaching, you've certainly given that sense to the staff of the Department which has been fantastic. But also have recognized some of the difficulties in implementing some of the concepts which we continue to struggle with and hope for your continued support and advice as we go forward.

Carrie: I would also like to thank you very much for your continued devotion to sharing your knowledge with the next generation of safeguards experts, through teaching courses, participating in intern lectures, and just staying involved with the community. Thank you, it's extremely valuable and we appreciate it.

⁶ Mohammad El Baradei – Former Director General of IAEA