

David C. KELLY - "Verification of Compliance with Biological weapons and Control Agreement"

Introduction

What I'd like to do this afternoon is to run through with you a number of the Arms Control Agreements that have been made with respect to biological weapons, drawing on that experience and some of the lessons learnt. And then to consider some aspects of the Biological Weapons Convention and its protocol, and to consider (in some little way) the way forward.

Why are we concerned primarily with biological weapons? Well, the reason is that there are indeed a number of states that are suspected of possessing biological weapons. A count of great authority confirmed that the twelve states that are listed here indeed possess such weapons, but according to the CIA these either possess them or possibly possess them. I can confirm that Iraq certainly possesses them and I deeply suspect that Russia also still retains biological weapons.

There are a number of agreements that have been made with regard to biological weapons and agreements which enable some form of investigation of the possession of weapons and a program behind those.

Of course, the 1975 Biological Weapons Convention is the primary convention, the first global treaty to prohibit a class of weapons. Regrettably some states did not abide by that particular convention. One of those was the Soviet Union. And in 1990 the Soviet Union invited the United Kingdom and the United States of America to visit facilities which were suspected of contributing to that program, and I'll discuss that with you shortly.

In 1991, after the Gulf War and as part of a cease-fire agreement between the United Nations and Iraq, Security Council Resolution 667 was put into place and there was an obligation on Iraq to fully disarm itself and to ensure that its military capability was not regained.

In 1992 there was a formal agreement between the United Kingdom, the United States of America and Russia (who inherited the Soviet Union's biological warfare program) to try to resolve the issues concerned with the illegitimacy of biological activities within Russia. And then in 1999, Security Council Resolution 1284 was put into place to the reinforcement essentially and a renegotiation of Security Council Resolution 687. I shouldn't say renegotiation because it endorsed everything within 687 and then added to it, which again concerned Iraq.

Iraq has never accepted any inspectors after that resolution and so has not cooperated in any way with the United Nations.

The Biological Weapons and Toxins Convention is a convention which was established essentially in 1972. It was signed in London, Moscow and in Washington. The Soviet Union, the United Kingdom and the United States of America were the depository powers for that particular resolution.

It not only prohibits the development, production and stockpiling of these weapons, but it also mandates their destruction. I think that is something that's often forgotten about the Biological Weapons Convention. It entered into force in 1975.

There are, of course, limitations on the Biological Weapons Convention. It is a treaty without any verification provisions whatsoever. Since 1979 it has become obvious that the Soviet Union, Russia and Iraq were non-compliant. And the question is: what other states may be non compliant?

I think it's important to realize that research is not prohibited under the Biological Weapons Convention. Many people who discuss the Biological Weapons Convention bring into that convention offensive and defensive research. There is no way of discriminating between offensive and defensive research because it is intent that is important. It deliberately was not part of that convention and really shouldn't feature in discussion of this particular convention. It is perceived as being politically weak and technically impotent. And the consequence of that, of course, is that during the 1990s there was an attempt to have a verification protocol brought into place and I'll discuss that towards the end of the meeting.

I always have great difficulty in knowing what verification actually is. I always innocently thought it was determining the truth, trying to find out whether a statement made by a country by his obligations under an arms control agreement was indeed a true statement.

The U.N., when it deliberated verification some ten or twelve years ago now, decided that it actually was a process which established whether the States Parties were complying with their obligation. The process includes the collection of information relevant to the obligations undertaken by that treaty, and analysis of that information, and finally a judgement as to whether the specific terms of agreement are being met. When I come on to Resolution 687, you'll find that it is in fact a far more complex process than that.

Monitoring the Soviet (Russian) biological weapons programme

I'll now go on to the experience with the Soviet Union and Russia. The Soviet Union denied that it had a biological weapons program from 1975 to this very day, for that matter, including Russia. In 1989 there was a senior contributor to that program who defected to the United Kingdom, but a consequence of his defection and the release of information and démarches by the United States of America and the United Kingdom, there was an invitation by the Soviet Government to examine facilities associated with that particular individual and the organisation associated with it.

The organisation called Biopreparat, which was an ostensibly a civilian façade for the Soviet military program. Site visits occurred in 1991. They were not particularly satisfactory, although they showed evidence of the Soviet program. In order to formalise the visits that were being undertaken between the United States, the United Kingdom and the Soviet Union, a trilateral agreement came into place in 1992. By then the Soviet Union had collapsed and Russia had inherited the obligations of the Soviet Union and that agreement was put into place.

Russia continued to conceal its program and to deceive the United States and the United Kingdom, and the consequence of that was a technical and political impasse around about 1994. Really the trilateral agreement has not proceeded beyond that of 1994. And there is continued concern about biological warfare activities in Russia.

The experience in Iraq was actually very similar to that in the Soviet Union. Again, Iraq formally denied that it had a program. Iraq had signed the Biological Weapons Convention but had not ratified it. Under those circumstances Iraq really was obliged not to have such a program, but it was not legally obliged.

The consequence of its denial was that the United Nations did not believe it and there was a whole series of investigative inspections. Iraq concealed its program. And it was not, again, until a defector came out of Iraq (in this case Hussein Kamal, Lieutenant General Hussein Kamal, the son-in-law of Saddam Hussein) who revealed that indeed there was a biological weapons program and that resulted in a partial release of information concerning the biological weapons program and indeed the chemical missile nuclear programs as well. After that there came a political impasse. Iraq chose to release information and then essentially stalled. The consequence was that there were military

actions to try to persuade Iraq to fulfil its obligations. They also failed and there is still continued concern about Iraq's biological weapons program.

The Soviet biological warfare program is one of long-standing. It started in 1925 and I just picked through the highlights: it was a large comprehensive program. In 1936 Vozrozhdeniya Island on the Aral Sea was selected as a test site for biological weapons testing. By 1945 plague, anthrax and cholera had been recognised. In 1974 Biopreparat was established as being a commercial façade for its biological weapons program. In 1979 the infamous Sverdlovsk incident occurred where anthrax was released from a biological factory. In 1980 the Soviet Union added a variety of viruses to its program and in 1992 President Yeltsin acknowledged that in fact it had a biological program but only acknowledged research, did not acknowledge weapons.

There were visits to the Soviet Union, all parts of the Soviet All Union Institute of Scientific Research, which were all a component part of Biopreparat. And those facilities were all essentially research facilities and to a certain extent for limited production. Although the concern was for the Soviet Union, part of the diplomacy trying to establish those visits to the Soviet Union meant that they would also visit the United States of America.

They were not reciprocal visits, at least not in the eyes of the United States and the United Kingdom, however in the eyes of the Soviets they were reciprocal. And they went to facilities in the United States of America. Some of those were military facilities: the Vigo Plant, the Dugway Proving Ground, the USAMRID at Fort Detrick, and the Salk Institute at Swiftwater which was a government contractor that provided military BW vaccines.

President Yeltsin admitted on 10 January 1992 that the research undertaken in Russia exceeded defensive requirements. It never elaborated on quite what that meant and subsequent to that, Yeltsin issued a decree which established that work contrary to the Biological Weapons Convention was not allowed. Whether that has been abided by is another matter. And a conventional committee was established to deal not only with biological weapons, but also with chemical weapons. That committee's primary purpose was to propose measures to strengthen openness and international cooperation between Russia and other countries. I don't think it has been entirely successful in that mission.

The trilateral agreement itself acknowledge the 1992 decree. It recognised a number of things (I'm only going to give you the highlights of that). It recognised that the conventional committee established by President Yeltsin was entrusted with the oversight of all the Soviet Union and now Russia's Biological Weapons Convention obligations. It agreed to site visits. It agreed to clarification of format of declaration.

Now the format of declaration was a declaration that, under a variety of confidence building measures established, in the review conferences following the Biological Weapons Convention, offensive programs after 1975 would be acknowledged. The reform F provided by Russia is minimalist and so we have no true understanding of its weapons program from its form F declaration. But the conventional committee had responsibility to clarify that. We also agreed to provide information on the dismantlement of biological weapons facilities, that is unilateral destruction of the facilities by Russia, though not internationally supervised. As a consequence of that, the referral of it to Russia in 1993 and 1994 was essentially concerned with production facilities within the Biopreparat organisation. The Soviet Union certainly had a massive capability for the production of smallpox viruses using eggs.

There were also visits to the United States and to the United Kingdom. The Russians visited Pfizer Pharmaceutical plants in Terre Haute, Indiana, where the U.S. once had its offensive program established in 1946, with the production capability of anthrax and facilities to put anthrax into weapons, now long-since defunct.

They went to Pfizer Pharmaceuticals at Groton, in Connecticut, and also to Plum Island. Those visits had a direct implication on the BWC protocol. Pfizer was appalled by

the conditions under which they were inspected and that led to the U.S. pharmaceutical industry reacting very strongly to any proposals for inspections under BWC.

The U.K. also hosted a visit to Evans Medical in Speke, Lancashire. The reason given by the Russians that in fact it contributed an anthrax vaccine during the Gulf War there for mostly part of a U.K. program. It really packaged vaccines produced by the vaccine facility at CAMR. Fortunately we had done a practice challenge inspection the week before at Evans Medical, so it went perfectly.

The legacy of the trilateral was essentially demonstrated with requirement to strengthen a BWC verification protocol. There was a requirement for some form of international investigation of programs. Both were demonstrated because of the concealment and because of the deception undertaken by the Russians that the Biological Warfare Program had still a place in its defence policy. As I had said earlier, the ghost of the trilateral agreement loomed very much over the BWC ad hoc group which considered the protocol procedures.

What can be said is that cooperation is not achieved in totality with regard to resolution of the biological weapons issue in Russia. But there were achievements, although overall it was a failure. We failed to eliminate biological weapons from Russia, it demonstrated that Russia was not in compliance between 1972 and 1991.

It forced President Yeltsin in to the admission of non-compliance and also forced change of use of some of the Biopreparat facilities. It also forced President Yeltsin to drop reservations on the BW retaliation by the Soviet Union after the 1925 Geneva protocol.

Monitoring the Iraqi biological weapons programme

This was an example of a far deeper, far more intrusive investigation of biological weapons and other weapons of mass destruction activities in a country. Iraq also had a large biological weapons capability.

It started later than the Soviet Union in 1974 by presidential decree. In 1974 it established a research foundation, the Al Hakam Institute devoted not just to research on biological weapons but also on chemical weapons and electronic weapons.

In 1981 Iraq established Al-Muthana, which was the principal chemical weapons facility in Iraq, but it had a secondary mission in 1981 to develop biological weapons. In 1988 and between 1990 and 1991 it had dedicated facility for the production of biological warfare agents and in 1990 there was an enhanced program to further develop its biological weapons program and indeed biological weapons were deployed.

My slide shows a Scud launcher, some of which were in fact armed with biological warheads. The other image at the bottom is of R-400 aerial bombs. These would contain about 100 litres of anthrax, botulinum toxin or aflatoxin. In 1991, at the highest levels, the program was concealed, false statements were made to the United Nations and the status of that program in the year 2002 remains unknown.

Now the UNSCOM verification process was in fact an elaboration of the U.N. concept of verification. It required a formal declaration by Iraq. Iraq initially denied a program completely. The denial of a program and the limited acknowledgement of a program meant that instead of trying to confirm their declarations, they'd have to investigate. And the early inspections between 1991 and 1995 were essentially investigative inspections. Of course what one wanted to do was to confirm that the declarations made by Iraq were correct. In fact, all that we could say was that they were incorrect, a not true account of their activities and so verification is not achieved.

That resulted in a technical report being compiled by the Executive Chairman of UNSCOM, which was presented to the Security Council for political acceptance mostly. It was not accepted by the Security Council and certain aspects of Iraq's program were acknowledged eventually were destroyed by the United Nations.

That should have led to a political conclusion, sanctions being lifted and Iraq back into the international fold. However, that did not happen.

In the biological area, we are still not convinced that we know the totality of Iraq's program and the consequence of that is that there has been much reaction against Iraq, particularly in 1998, that had fought off attempts by the U.S. and the United Kingdom to persuade Iraq to fulfil its obligations.

Disclosure of the BW activities by Iraq was a long and tortuous route. Initially, in 1991, there was a total denial of a biological weapons program and that was made by the Iraqi Foreign Minister, to the U.N. Secretary General at the time, which was Boutros-Gali. In 1991, in the course of the first biological weapons inspection, Iraq acknowledged that it had a military research and development program, but did not choose to divulge whether that was an offensive or defensive program. However there were no features in that research program that were indicative of defensive aspects, like developing vaccines, evaluating protective equipment. All the activities were essentially the activities you'd expect of an offensive program and when that was put to them they did not deny that there were no features of a defensive program there.

In 1995 there was an acknowledgement of industrial production of biological warfare agents and also in 1995 they acknowledged that weapons themselves were manufactured and deployed in 1991. Once that acknowledgement had been made, Iraq then had to submit full, final and complete disclosure. They made five attempts to do that and the fifth most recent one was not accepted by the United Nations and a number of international committees met to consider it. The consensus, in fact the unanimous consensus, was that Iraq had failed to satisfy its obligations to provide a full disclosure.

In 1998 the 24th Biological Weapons Inspection Disarmament was expelled from Iraq. I led that one and came out somewhat unexpectedly. And the consequence of all of that is that in 2002 UNMOVIC, the recently established commission to investigate Iraq's program still has not entered Iraq and still deliberates the unresolved issues concerning Iraq.

In the course of the UNSCOM inspections one has to ask the question: what does one verify? Well, unlike the BWC and the Security Council Resolution 687, there was an obligation to investigate research, all aspects of military research to be undertaken by Iraq was in fact prohibited. Of course the difficulty in looking at research in a country is determining the intent behind it. We also had to verify and investigate the manufacturing processes, particularly the biotech industry, and in Iraq that happens to be the pharmaceutical industries and the agricultural industries.

We also inspected, which is not part of the BWC protocol, aspects of engineering. Heavy engineering, which had a capability to manufacture weapons and equipment for the production of biological warfare agents, light engineering, designed facilities that could make fermenters, spray driers and weapons, and munitions plants that actually manufactured such systems. We also wished to investigate weapons systems. Iraq denied us that opportunity. We also wished to have an understanding of Iraq's military doctrines so we'd have some ideas with scale and the scope of the programs required, Iraq declined to discuss that with us.

On one of the occasions when we got thrown out of Iraq we sat back and actually asked ourselves, "What is verification in the UNSCOM context?" Because, curiously, UNSCOM itself did not sit down and actually ask that question. Steve Black, who is the historian associated with UNSCOM and myself sat down and decided that in fact it was the unambiguous confirmation of the validity and the extent of the disclosures made by Iraq, demonstrating that the disclosure was indeed full and complete. It does not mean that every aspect has to be validated, just that the essential components are confirmed. It does not require proof of admission and an accuracy on the part of UNSCOM to something that Iraq would like us to do. And it is exclusively a technical judgement, and more and more of the judgements made by UNSCOM were politicised by Iraq.

What is the evidence for verification?

Essentially what one would like to have is some form of written confirmation: documents, plans, reports and orders. There's the physical evidence of the weapons themselves, the facilities used to manufacture the agents and the munitions; the agents themselves; medical evidence; records of vaccination; evidence of exposure to agents. We actually didn't chase this very strongly. Iraq denied that it vaccinated any staff associated with the program. Again, we did not come across any evidence of exposure to agents.

The primary route that Iraq chose to make was oral testimony to explanation and us. Testimony and explanation without any form of confirmation, particularly when they're contradictory, presents a real problem. We also had supplier information and information provided by countries and by companies outside Iraq and we could match the acquisition of materials by Iraq with what we found in Iraq.

In addition, inside Iraq we undertook sampling missions, we could look at sampling data and see how the sampling data matched the statements made by Iraq. Probably the most important evidence for Iraq was how the whole chronology as presented by Iraq fitted in with the various activities, as they claimed them to occur day by day. Sometimes when we had to look for documents, we found them in poor condition and trying to sort out information with interpreters was quite a problem.

Inspections.

There were a variety of different types of inspection undertaken by UNSCOM, essentially discovery inspections, which was either interviewing people or going to a site, looking at that site and essentially exploiting the site. By exploitation I mean looking at the site, evaluating the equipment, the layout, the physical resource of that facility and determining a judgement as to what that truly was about. Inspections were concerned in the removal of weapons and facilities from Iraq, destruction of weapons facilities.

To enable compliance monitoring to be undertaken, we undertook baseline inspections from monitoring and auditing of the capable facilities. Other inspections were concerned with past program activities. Some were concerned with document searches and some were concerned with sampling and sensing.

Disarmament was a specialised aspect of the inspection process that required Iraq to make a declaration, but we had to confirm its conditions and establishment to make inventories of those facilities and to take a judgement of what should be destroyed and what Iraq may be allowed to retain.

Then we had to develop an approach which was safe to use both for the inspection teams and for our Iraqi counterparts. We had to go through the dismantlement process and there were rioting and disputes concerned with that. There were consequences of dismantling a program. We could no longer exploit that and Iraq could actually claim that having destroyed the capability that we have destroyed, that we totally eliminated their problem, which, in fact, was not the case.

The slide actually just shows R-400 bombs to be used for test procedures, being broken up and put into a pit.

Compliance monitoring.

As well as disarmament, we had to ensure that Iraq did not gain the capability and we undertook a variety of activities to do that. We had to define the site. We had to catalogue the equipment that was there. The equipment that was deemed capable, was sealed or was tagged so that people knew what the equipment was. Iraq had obligations to provide data on the use of the equipment which could be checked later. We did audits of the activities that were there, and aerial surveillance of the facilities to ensure that no

extra building was going there, no illicit movement of materials in and out, and we installed cameras internally at key points.

The slide shows the Al-Khindi Veterinary Vaccine facility where they produced *Clostridium perfringens*. Three ladies and one guy produced *Clostridium perfringens* in a cottage industry facility. I don't believe it's contributing to a biological weapons program, but it was capable of doing that. What was the outcome of the process? Well the directives of UNSCOM meant that Iraq had to disclose it had a BW program. It established that there was such a program. It was difficult to discern the truth about that program without some form of differentiation. The technical account provided by Iraq lacked technical coherence and that leads us to suspect that they have not revealed all. The scale, the scope and the achievement of that remains to be defined. Iraq has claimed that it totally obliterated the program in 1991, by destroying its weapons and destroying its agent. In fact what it did was conceal this program and preserve it. Full cooperation was not established and as a consequence of that verification official disclosure was not achieved.

One thrust of this talk is to talk about non-cooperation and it required full cooperation to be successful. Although it might seem a little negative, I can demonstrate this best by talking about non-cooperation rather than cooperation.

There was confrontation between Iraq and the United Nations and that is quite well-known. The whole process became highly politicised. There was restriction of access to sites – either it was delayed or it was totally denied. Inspectors were harassed and this slide shows a famous incident.

There is an inspection team in the middle of 1992, outside the Ministry of Agriculture where it was suspected there were a lot of documents concerned with the program and we were denied access for ten days. Essentially inspectors camped outside. Any problem which should have been solved between Chief Inspector and his counterpart was normally escalated up to a higher level, normally to a ministerial level or the Executive Chairman of UNSCOM.

Very rarely were confrontations resolved on the ground between the two participants. Their unfounded accusations made about inspection teams, about individuals and the inspection teams caused a lot of problems.

The humanitarian situation in Iraq left no doubt that it is a very real problem. That was attributed directly to UNSCOM, rather than to the Security Council, and there were attempts to expel UNSCOM, eventually successfully in 1998, IAEA, and also individuals associated with UNSCOM. Often that was associated with nationality, primarily those from the U.S. but also those from the United Kingdom.

Iraq, of course, did not cooperate with a concealment and deception regime in place. The program was secret from its inception in 1972 and up to 1972 and 1991 that was Iraq's choice and I guess any country with an offensive BW program is going to keep it secret. It had at that time a civil façade: presenting itself as being academic (indeed had strong connections with the universities in Iraq), presented itself as being an insecticide program, a vaccine facility or a single cell protein plant. It did that through the acquisition of equipment and presentation to any visitors that happened to go to this facility. After Desert Storm, 1991, it was active Iraqi deception.

Iraq established what it called an operations group, it was to become the National Monitoring Directorate, which was the official Iraqi counterpart to UNSCOM. In addition to facilitating some of the inspections, it also generated the policy of non-cooperation, the production of false statements, fraudulent documents and false explanations and indeed a blatant refusal to discuss many things. With misrepresented facilities, misrepresented weapons and misrepresented materials and individuals, they also undertook unilateral destruction quite illegally of equipment, buildings and of records.

Now, apart from that non-cooperation, there's non-cooperation at a high level with the Security Council. There was tremendous resistance by Iraq at the diplomatic level. Again there were false official statements made by the government of Iraq to the United

Nations. There were unilateral claims of disarmament and once Iraq acknowledged the program it then made the claim that it was totally disarmed. It blamed the United States, the United Kingdom, Israel for many of its problems and its failure to disclose programs and the false accusations by those countries that Iraq still retained the program also created international sympathy for its plight.

Now the images on the right-hand side of this slide are of Ambassador Rolf Ekens and Ambassador Richard Butler, two gentlemen that I admire greatly because much of the burden of UNSCOM demonstrating a technical non-compliance by Iraq fell on the shoulders of these individuals. They were two very lonely men; they had no one to turn to for advice and for help in the presentation. The UN Security Council itself changed its attitude, but its basic approach was to be patient and firm and assertive with Iraq. It provided a whole series of Security Council resolutions demanding that Iraq fulfil its obligations. One occasion involved Secretary-General; famously he went there in 1998 to deal directly with Saddam Hussein. The Security Council also put into place a variety of resolutions, which established humanitarian aid to Iraq.

Co-operation locally in Iraq was also quite difficult. Essentially judgments made by people like myself, involved a Chief Inspector with technical judgments but they often had a political outcome. There was indeed superficial cooperation on hospitality, on operational support and when we got explanations. Iraq knew that you knew the outcome to start off with. If you have that information either from Iraq, from investigation or from an outside source they'd agree to it and accept the statement was correct. If you had no basis for it, they would not accept it. Non-cooperation was to provide limited or no access to the facilities, the documents and personnel. You knew the going was getting tough when you were interacting eyeball-to-eyeball with an Iraqi and the video cameras came out and they were reporting everything you did in that situation.

How do you make judgements about cooperation? If you make a judgement about the Iraqi government's capacity to cooperate, Iraq is a well-structured and well-organised country. It was trained well during the British mandate and actually used many of the British government's procedure. It has documentation; it has good record of activities. You can judge the way that Iraq operated on the ground, the way that the National Monitoring Directorate interacted with you. The judge attributed explanations on unresolved issues. You can also judge its cooperation by the ability of Iraq to produce people who are directly involved in the weapons program and subsequently in the concealment program.

The main indicators of cooperation, I believe, are the government of Iraq's propaganda, a visit to the United Nations, readiness to settle the key disarmament issues (it's already arguing about what those issues are) and its ability to facilitate ongoing monitoring verification. It must provide immediate, unconditional, unrestricted access.

The failure of attempts to provide a verification protocol for the Biological Weapons Convention

So those were the main indicators of cooperation and now I'll have to whiz through the BWC itself. What I'll do is mention that, in fact, the facility itself, the strengthening of the convention occurred throughout the 1990s and regrettably it failed at the third review conference. VEREX was established to look at the technical parameters, which could be used in a verification protocol. A special ad hoc conference in 1994 was concerned with draft verification protocol based upon the parameters defined by VEREX. That continued for some seven years, and earlier last year before the fifth Review Conference in 2001, there was a failure to agreement on the protocol. The protocol itself had a variety of limitations. It was indeed limited to the signatories, and that is not the signatories of the BWC but the signatories of the protocol itself. So there's no guarantee that the protocol would be accepted by all signatories to the BWC. It was essentially very much a

bureaucratic process. It was constrained by commercial confidentiality, that was a major issue in terms of the protocol deliberations and that was primarily because of the experience of the United States of America with the trilateral process and subsequent concerns by U.S. commerce about commercial secrets.

It was also constrained by site definition, and access to sites that had been a real problem in the Soviet Union and in Russia in terms of accessing sites. It focused very much on the academic perception that pharmaceutical plants and illicit research were the main indicators of non-compliance, which is nonsense. The main indicators of non-compliance are weapons in manufacturing plants and weapons test sites, which are not qualified for the protocol at all. And finally, to have confidence that a country has truly eliminated biological weapons program, you have to have a full account of the past program. There were no criteria set down for an account of the past program.

The U.S. rejected the protocol for a whole variety of reasons; I'll just list four. U.S. governments view was that it was incapable of achieving a mandate of the ad hoc group; it did not believe it would improve the U.S.'s capability to verify; they believed it would have very little in terms of deterrence of countries acquiring such programs; and it felt that there was inadequate balance between intrusion and the protection of the U.S.'s interests, particularly with regard to protection of commercial interests and protection of high defence interests. Subsequent to that, the U.S. has proposed a number of issues (I'll just highlight three of them here). There should be field investigations, rather than true challenge inspections. There should be national legislation criminalising biological warfare. There should be national legislation on access to pathogens.

Tomorrow, in the United Kingdom, Foreign Minister Jack Straw will also outline U.K. proposals (there are some nine of those – I will highlight just four of them). They are proposing investigations of non-compliance, alleged use, facilities and disease outbreaks. Facilities are not part of the U.S. proposal. It is also proposing that there should be devised conference building measures, that they should be more robust and that, in fact, countries should be obliged to fulfil the responses to conference building measures. It believes there should be conventions on the physical protection of pathogens and also believes there should be a convention on the criminalisation of chemical and biological warfare.

So what are my main conclusions? I believe that there is a desperate requirement for a BWC verification protocol to be put in place. That will require considerable thought, considerable diplomacy and I don't believe it's going to come in the near future.

And throughout all of this cooperation, both in terms of inspection processes and in terms of development of a protocol, is absolutely essential. And with that I will conclude. I apologise for getting out of sync with my slides.

DISCUSSION

FRANCESCO CALOGERO – Francesco Calogero from Rome. Just your valued judgement, your opinion. You stated that the Soviet Union and then Russia are non-compliant. Do you think that the chief decision-makers in the country were and are aware of that? And in particular Gorbachev, I think I know the answer. Yeltsin after '92 and Putin now, or that somehow they themselves are deceived.

DAVID KELLY – I believe they are fully aware that they have programs. I think the difficulty they have is they're under immense pressure by the Russian Military to retain that capability. They have a real problem in balancing the military authority that still exists in Russia, against their own objectives.

GOETZ NEUENECK – Goetz Neueneck from Hamburg. You started by quoting that several countries possess bio weapons. So what is a bio weapon? I mean, a definition. I can

understand if one says there are states who have bio programs or what else it means. But what is a bio weapon? There is no definition of that. And so long as big countries like Russia and the U.S. have been doing a lot of research, other states can also accuse them of having bio weapons, they do not verify that they have.

KELLY – I agree that there's no definition of a bio weapon.

IAN KENYON – I said there is a perfectly good definition of a biological weapon. A bio weapon is just short for a biological weapon in the BWC, which is very complete because it includes the general-purpose criteria.

KELLY - Thank you, Ian, that's absolutely correct. As I said at the beginning, the research itself is not prohibited under the BWC, and any argument about research really is an impotent argument, because you can argue forever on that particular issue. The important issue is whether that research has taken on the development part to the production of weapons. And presumably, in CIA's view, that has happened. I can't comment. I'm not a U.S. citizen.

JORMA MIETTINEN – Bio weapon is a weaponized biological and dangerous agent.

CATHERINE M. KELLEHER – I may be putting you on the spot, and please duck if you want to. But, as you know, as was said yesterday, the United States or this administration has suspended certain kinds of assistance to Russia on the basis of its non-compliance.

This is despite a history in which, over the last eight years, waivers have been given on statements of intention to come into compliance. If you were in the position to give advice on this issue, how would you advise? Would you say further waivers?

KELLY - I am very concerned about the Russian biological weapons program. So I think any pressure that can be put on Russia to give up that program should be applied. As you know, the U.S. has a variety of investments in converting certain facilities.

Regrettably, they haven't gone the whole hog. They have not required those facilities to make their declarations of their contributions to a past program. The difficulty with that is one really doesn't know what one's paying for under those circumstances. All that one can say is that the scientists without their facilities and their current work is not contributing to a program. He has no knowledge of what happened in the past, he has no idea of what's going to happen to those people when that money is withdrawn. There's a far bigger issue, which is in fact, that Russia should actually make a complete disclosure of its program, and then we can come to an understanding as to what is currently. I don't see that happening for a long time.

BRIAN HEAP – Could we just return to the question of site visits? And the question is the extent to which you feel there is a possibility that if site visits were equally available on both sides, there could be a movement forward. Clearly there's huge opposition on the U.S. and the U.K. side, in terms of the pharmaceutical industries. But supposing that could be influenced in some way, if there was a quid pro quo.

KELLY - I think that would create confidence, and a good step forward. It doesn't create certainty. But when I was talking about sites and site definitions, I was talking about the geographical definitions. One of the problems I think that exists under the CWC and certainly is going to exist on the BWC protocol is that once the site has been defined, then there are problems of accessing building facilities in the adjacent area. It wasn't a problem in Iraq, we could go anywhere and see a building and all sorts of interesting appendages to it.