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MINUTES OF EVIDENCE

TAKEN BEFORE

DEFENCE COMMITTEE

THE FUTURE OF THE UK'S STRATEGIC NUCLEAR DETERRENT:

THE STRATEGIC CONTEXT

Tuesday 14 March 2006

MR MICHAEL CODNER, DR KATE HUDSON, DR REBECCA JOHNSON, MR DAN  
PLESCH, SIR MICHAEL QUINLAN and DR LEE WILLETT

Evidence heard in Public Questions 1 - 67

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Oral Evidence

Taken before the Defence Committee

on Tuesday 14 March 2006

Members present

Mr James Arbuthnot, in the Chair

Mr David S Borrow

Mr David Crausby

Mr Mike Hancock

Mr Dai Havard

Linda Gilroy

Mr Adam Holloway

Mr Brian Jenkins

Mr Kevan Jones

Robert Key

John Smith

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**Memoranda submitted by RUSI, CND, The Foreign Policy Centre,  
and Acronym Institute for Disarmament Diplomacy**

**Examination of Witnesses**

Witnesses: **Mr Michael Codner**, Director of Military Sciences, Royal United Services Institute, **Dr Kate Hudson**, Chair, Campaign for Nuclear Disarmament, UK, **Dr Rebecca Johnson**, Executive Director, Acronym Institute for Disarmament Diplomacy, **Mr Dan Plesch**, Senior Associate, The Foreign Policy Centre, **Sir Michael Quinlan**, Consulting Senior Fellow, International Institute of Strategic Studies, and **Dr Lee Willett**, Head of Military Capabilities Programme, Military Sciences Department, Royal United Services Institute, gave evidence.

**Q1 Chairman:** I would like to begin by welcoming everyone to this first evidence-taking session on the Strategic Nuclear Deterrent. I would like to set the context in which we are doing this. There will be a series of inquiries that this Committee will be doing over the lifetime of this Parliament into the Strategic Nuclear Deterrent. This is not intended to be an exhaustive coverage of everything. There will be further inquiries in due course. The first one is intended to cover the strategic context within which decisions on the future of

the nuclear deterrent will be made. It is not going to be easy this morning. We have an unusually large panel, amongst which, as amongst the Committee, there will be disagreement, so I will need the assistance of both the Committee and of the panel to keep moving things on, please. We have two hours to get through a lot of very difficult and very deep questions. I am grateful to many of the witnesses and those outside the Committee for providing most helpful memoranda in advance, but I should be particularly grateful if members of the Committee and members of the panel could be as short as possible. Please do not feel that it is necessary to answer each question. Certainly do not feel it is necessary to answer simply in order to agree with something that has been said before. If you feel a gloss needs to be added, I will try to get you in but we need to move on very rapidly through a lot of difficult questions. I would like to begin, if I may, by welcoming the witnesses very much to the evidence session. I am most grateful to you for coming. I wonder whether I could begin by going into the factual background in relation to the purpose of the deterrent, how the Ministry of Defence might explain it, and some of the technical details of it. I would like, Sir Michael, to begin with you. Could you possibly explain to us what the purpose of the UK's existing nuclear strategic deterrent is, what is the rationale behind it and how would the Ministry of Defence explain its purpose?

Sir Michael Quinlan: I should stress, of course, that I retired from the Ministry of Defence 14 years ago. I do not now speak for them in any way. The broad rationale was that the strategic nuclear capability was part of the total capability which we possessed primarily for the prevention of war, and it was designed to convey to any potential adversary that attack on us, especially if it were persisted beyond the levels with which our conventional forces could cope, might in the extreme bring down upon them nuclear action. That is the essence of what we were trying to convey by the possession of these things. The context originally, at the time when the present force was ordered, was that of the Cold War. It has now of course changed. The essential concept is as I describe, I believe, still.

**Q2 Chairman:** Was it aimed at particular players or was it a general deterrent?

Sir Michael Quinlan: At that time, it was clearly directed to a Soviet Union whose power was very large, which was forward-deployed in Europe, and whose ideology and attitudes were such that we thought we could not entirely trust them not to have disagreeable designs to our detriment. That is no longer the

case. It seems to me that, to the extent that there is a case now, it is a case, like that for most of our armed forces, simply addressed "to whom it may concern".

Chairman: I will move on to the status of the Trident programme.

**Q3 Mr Crausby:** Could I begin by asking you to summarise the technical capabilities of Trident and set out for us, and indeed for the record, how the system operates.

Dr Willett: As is stated in the public record, what we have is four Vanguard-class Trident submarines. They have the potential to carry 16 Trident D5 ballistic missiles per boat, although, as the MoD have stated in the Defence Review papers, it is not necessarily the case that all boats go to sea with their maximum outload of missiles all the time, and each missile has a set number of warheads, UK-designed and built warheads. The point about the warheads, of course, is that the numbers are classified, both in terms of the numbers in the inventory and the numbers that are allocated per missile, but the UK MoD has stated on some occasions in the past that some boats go to sea with some missiles that have single warheads, others that have more, but no precise details of the numbers. Of course, there is some public debate about what the yield of the warheads is as well, and the warheads are regarded as having a variable yield, but the precise nature, once again, according to my records, is classified.

**Q4 Mr Crausby:** The 1998 Strategic Defence Review described Trident as a "credible minimum deterrent." Is that accurate? Is it a credible minimum deterrent?

Dr Willett: The key point about this debate we are having today, and I think you have started it in the right way, is to start by asking the question why we need it. That is the point: is it credible? Why do we need it? What are the threats? Is it credible in deterring those threats? The issue about deterrence is that, obviously, you need to understand who your adversaries are and what you need to hold at risk with those potential adversaries to deter them. There are those who argue that, in the current climate, there are no obvious threats, but the point is, we have to look at what the next 50 years will hold, and in terms of credibility, it is more an issue really of we just do not know what the future will hold. This system is there as a deterrent to high-end threats to the survivability of the nation. You make the point about the force levels and the minimum deterrent. One might argue that, with the world changing as it is, perhaps in the

debate about replacing Trident, we could at least consider the possibility that the UK might wish to reduce what it has deployed in its inventory, whether that be numbers of warheads or numbers of missiles, while still retaining what is a credible and flexible capability.

Chairman: Dr Willett, you have said that this is the right way to begin the debate, and I want to pick up that point. This Committee will not, of course, be making any decisions about the strategic nuclear deterrent. What we will be doing is informing the debate. We will not be coming to any conclusions as to whether we should or should not replace the strategic nuclear deterrent. We consider that we are the right people to inform and begin and help with that debate, so I am most grateful to you for bringing that point out.

**Q5 John Smith:** I have a supplementary on the technical status of Trident. Are we right to believe that, in the absence of an obvious threat, the Trident system is currently one, de-targeted, and two, its standard of readiness has been greatly reduced?

Dr Willett: That is correct. That is stated in the Strategic Defence Review and subsequent government documentation, that the missiles are de-targeted and that the readiness of the boats has been reduced to a matter of days rather than the hours that it was previously.

**Q6 John Smith:** What are the implications of that, if any?

Dr Willett: The point, I think, is that we stepped away from the targeting of what was then the obvious threat, the Soviet Union, and what we have now is the boats at sea, in the continuous-at-sea deterrent cycle, still ready to be able to do what they have to do if needed, but we still have boats at a certain notice to fire, and the ability to work up that capability in the light of the likely lead times we may have on any perceptions of potential threats. So the flexibility to be able to react is still there.

Sir Michael Quinlan: They were held during the Cold War at 15 minutes' readiness to fire, because they were our last resort insurance against the hypothesis, remote though it might seem, of a bolt from the blue by an immensely powerful superpower. That hypothesis no longer has to be seriously entertained, and therefore they are held in a much more relaxed condition, which, of course, if we got into a serious crisis, could be raised again.

Dr Johnson: I just want to make a clarification that both the de-targeting and the reduced notice to fire are operational. In terms of the mechanics of the Trident fleet, when the submarine goes out, it would in fact mechanically be able to be fired at any time. So we are not talking about de-alerting. The warheads are on the missiles and the decision both to re-target and to greatly shorten the notice to fire could be made simply by both political decision and computer operation, and the estimates are that that could be made in 10-15 minutes.

**Q7 Mr Hancock:** Can I ask a question about the change over the last ten years of the missile's capability and its ability to be re-directed from a blanket target like the Soviet Union to a more specific target, and the reduction in the actual capability of individual warheads being reduced to an extent that they become a useful tool if they were deployed in being more of a specifically targeted weapon. Is there any evidence to support the view that Trident has aged well, in the sense that it is a vehicle that can be changed to suit the change in the world's situation, or is it still the same weapon it was 15 years ago?

Mr Plesch: From its own perspective, the Government has made various changes - successive governments - in terms of developing what they call a sub-strategic weapon with a smaller warhead, and both in the SDR and in the New Chapter there are discussions for the use of the weapon in circumstances other than retaliation if this country were destroyed, which I think is the public understanding and rationale for the weapon. If I might make one other point concerning the future of the credibility, I think the public understanding is that we have this if ever again we faced 1940. There is, I think, a strong sense in this country, going back almost to Trafalgar and the Armada, in our culture that we have to have something for that contingency. My real concern is that people do not understand that if we were in a situation - albeit this is highly unlikely and highly undesirable - as in 1940, where the United States was neutral, or in 1956, when the United States had a very contrary position, then the United States would have every ability, in the short and particularly in the longer term, to prevent the system from being used because of our relationship.

**Q8 Chairman:** That is your 1940 test in your memorandum.

Mr Plesch: Yes, and I think that is a very severe problem when we look at the 50-year rationale, because if the basic rationale is if something nasty turns up, we need it, the nastiest thing that can turn up for this country is to fall

out with the United States in some unforeseen manner.

**Q9 Mr Jones:** Can I now turn to the threat? Sir Michael made it quite clear what the **Trident** was procured for in terms of Cold War threat, and clearly that threat is not there now. Can I ask you to comment in terms of what you perceive as the actual threat that **Trident** deters now?

Mr Codner: I think that is a very difficult question. Clearly, there is the potential for emergent nuclear powers which may be hostile to the United Kingdom to develop the capability. At present, there is no very obvious target for our deterrent. However, if we are looking at replacing the system, we have to look into the longer term and to a very cloudy future, and one in which things could change very substantially. There are some specific issues of deterrence against some of the most immediate threats, like the terrorist threat, *et cetera*, where it is very unclear how a nuclear deterrent could be effective even against a terrorist threat with nuclear capability, the suitcase scenario. However, one could create arguments to say that the deterrent was relevant against nations which may be supporting that sort of activity. My own view is that when we are coming to judge what the deterrent is for as far as the United Kingdom is concerned, obviously, these issues are relevant but they are probably not the central issue.

Dr Willett: May I just add a bit of gloss to that? As you say, the whole point about **Trident** is that it has never been designed to deal with all the range of threats. It was always designed to deter threats to the high-end survivability of the nation. Deterrence as an issue for the UK is about a broad package of options, political, conventional military, strategic nuclear, so the **Trident** system that currently supports the strategic nuclear deterrent was only ever about deterring a certain kind of threat. While that threat may not include 7-7 tube bombers, as Michael pointed out, the key point in this is that we are talking about the 2020-2050 time frame, and it is the "just in case" against what we just do not know.

Dr Johnson: I would like to comment on that, because I agree with Dr Willett that **Trident** was not intended for a broad range of security threats and yet, if we actually project forward for the next 20-25 years, we see a very broad range of security threats, including things like environmental degradation and climate change and depletion of resources, which are both threats to our security and will generate more traditional views of security threats in terms of mass population movement. I list a whole range of them, of which

the only conceivable deterrent role possibly played by nuclear weapons at all, whether Trident, which is an extremely clumsy instrument in these days, or any other, would be war between stable, rationally governed nation states. We have to look at the broader elements of deterrence, which do not necessarily require a nuclear element at all. Other countries have deterrents that are well in place, that are this panoply of other measures, and the problem with constantly calling nuclear weapons a nuclear deterrent is that you end up with a tautology: our deterrence deters. That, I think, is lazy thinking because it prevents people thinking through what actually is the role that nuclear weapons play in that range of deterrence tools and in what ways maintaining nuclear weapons would actually diminish the usefulness and roles of some of those other tools.

**Q10 Mr Jones:** Can I throw in from Mr Codner's memorandum to us a point I actually agree with: the proposal that retention of a deterrent seems to support is that UK has an influence, indirect or on its wider security environment, because it retains a nuclear deterrent. Is that what you are saying? Would you agree that actually having nuclear weapons not only gives you a seat at the table but also paints a broader security picture that somehow you are a senior power which you could not do if you just had conventional weapons?

**Dr Johnson:** I think that was largely true in the Cold War. It was certainly perceived to be the truth in the Cold War. I think it is less and less true now. There is a diminishing status value as more and more states seek to acquire nuclear weapons and there is actually a diminishing security value.

**Q11 Chairman:** We will come on to that issue later on. I want to bring in Mr Plesch and Dr Willett briefly on these questions.

**Mr Plesch:** I think one of the problems we face because of our relationship with the United States is that while a great many countries around the world see multilateral arms control as something which was important to move much faster on with the Soviet Union out of the way, we are now in a position where, really for the first time, we are pursuing a policy which is nuclear weapons without arms control. That is a key issue, and indeed, frankly, without disarmament, and if one addresses the question of status, a great many countries around the world that we rarely listen to, South Africa for example, are adamant that the connection between possession of nuclear weapons by the big countries and the desire for nuclear weapons by those we are concerned about proliferating, is in



fact critical. The powers with weapons undoubtedly deny that, but the rest of the world argues it.

**Q12 Chairman:** Yes, that is a proliferation issue rather than a deterrence issue.

**Mr Plesch:** It is a question of whether you can have your cake and eat it.

**Dr Willett:** I wanted to follow up on a couple of Dan's points and Dr Johnson's as well. With the panoply of other issues that there are facing the world, again, deterrence is very specific in what it is trying to do, and its particular role in certain threats that threaten the UK and global security as a whole. The point is that the proliferation of nuclear weapons, nuclear materials, nuclear technologies is only going in one direction and that is up - proliferation can only go one way, I apologise, but the way that we are moving is only in the way of proliferating. There are those that argue that as many as 35 nations now have the know-how to do this. There are those that are declared, those that are suspected and those that may well have this capability in a very short space of time. So the number is growing, and we do not know what the future will hold. While others have nuclear weapons, the only thing, in my humble opinion, that can deter a nuclear weapon is a nuclear weapon. Dan made a very good point about arms control too. I think it is very valid. What the UK should pursue is a dual-track approach. We need to look at the arms control issue again at a multilateral level. The NPT faltered but the nuclear powers and others of this world should be getting round the table to talk about these things. Perhaps, as I said previously, the UK could look at options for reducing its own stockpiles if it decides to extend and replace the current system. So there are options indeed, yes, for moving the disarmament debate forward, but it needs to happen at a multilateral level, and that is not happening at the moment. We cannot risk living in a Utopian world where we hope these things might happen. We should try to make them happen but, at the same time, we need the deterrent there as an insurance policy just in case.

**Q13 Chairman:** Sir Michael, you indicated a little earlier that you would like to say something.

**Sir Michael Quinlan:** Could I make three very quick points. Firstly, deterrence is an extremely broad concept. It refers to a whole range of instruments, some of which may not even be military. We may be trying to discourage Iran by economic or political pressure, for example. That is deterrence. I never

liked the phrase "the deterrent", as though it meant just this. This is one of many instruments. Secondly, reference has been made to the seat at the table argument. I personally do not think there is value in that. I do not like that argument. I think one needs much more solid reasons than prestige and status. Thirdly, could I just lodge the fact that Mr Plesch and I will be found to have different views on independence. No doubt you will be exploring that a little later.

Chairman: We will, and no doubt we will discover exactly that.

**Q14 Mr Jenkins:** I want to just ask you a few simple questions from a simple back-bencher here. When we look at the technical capabilities of Trident, I understand that in the Cold War we could have launched massive retaliation, but we are not in that scenario now. What would happen if one of our naval patrols suddenly got a message that we need to take out one particular location; we cannot get a conventional bomber there to take it out; we do not have the bombs and we need to take that one out? When you fire a missile with multiple warheads, can you activate one warhead, so that, say, if you have ten in the missile, would the one warhead go off and the other nine fall to the ground? When I wanted to activate the missile, how would I? If I am sailing round the Indian Ocean and it is decided there is a target over there, how would I know how to aim the missile at that target? Would I rely upon satellite technology? Would I rely upon the American satellite technology? Would the new Galileo European satellite technology give us a back-up in that respect? Or does the missile itself have its own device; you can send it off and it knows exactly where it is going?

Mr Plesch: The fire control targeting system computer software and satellites are all American-derived. The Government has stated formally and informally, I think, that some of the missiles have just one warhead on, and there has been some discussion that these could be as small as only 300 tonnes of TNT, 0.3 of a kilotonne, and the system is designed to have an accuracy within a few metres - not, I think, as good as GPS, which the Americans now have, but it was originally designed to be able to attack Soviet missile silos, so it was always designed to be highly accurate, and of course, it is very fast: less than half an hour from launch to target.

**Q15 Mr Jenkins:** So the missile itself, when it is fired, relies upon nothing else outside itself? There is no satellite indicator to where it is going, *et cetera*? It relies upon nothing apart from what is in the head of the missile?

Dr Willett: My understanding is that the missile is a totally self-contained package that has an inertial guidance system that takes it to a point in space, and the ballistic trajectory then takes it to the latitudinal and longitudinal point on the target. It does not, in my understanding, rely on external guidance systems such as American satellites that have been mentioned.

**Q16 Chairman:** Sir Michael, I noticed you reacting a bit about the American software. We will come on to the independence issue in a few minutes. Did you want to add something, Dr Johnson?

Dr Johnson: Mr Plesch said that it is American guidance system, but my understanding is in fact that as part of that guidance system there is a requirement for checking with the GPS system. I think there is a dependence in relation to GPS, and I do not think it would be adaptable to Galileo, even if Galileo was fully working. The US was very unhappy about the Galileo system precisely because it offered an alternative potentially in future to GPS. But these systems are dependent on the GPS.

**Q17 Chairman:** We have been told that Galileo does not have a military application.

Dr Johnson: We have been told.

**Q18 John Smith:** I just want to explore the exact nature of the current military threats that this country faces in your expert opinion. The threat scenario is usually identified as a combination of capability that exists and intent. What, in your view, Dr Willett, are the current military threats to this country?

Dr Willett: That is obviously a very open-ended question. I do not want to belittle it by coming back with the point that we just do not know, but it is worth looking back at recent history to show that it is littered with strategic shocks, things that we had not expected: the Falkland Islands, the first Gulf War, 9-11, 7-7. All of them were things that we had not predicted, so to try and make a point about what are the military threats, one could argue that it is as long as a piece of string; it depends on the person's own view. The point is that this particular debate is not talking about the current military threat; it is talking about threats in the 2020-2050 time frame. We cannot begin to try and predict what will be round the corner in that time frame. It is the argument about the insurance policy, as always. It is there as

a hedge, just-in-case, capability, should threats that require such a response come to pass.

Mr Codner: As far as the United Kingdom is concerned, geographically, clearly, where it is in the Atlantic in the current environment, it is in a pretty safe place. The biggest threat directly to the United Kingdom is probably asymmetric response to activities elsewhere, if you call them responses to those activities, terrorist attack, *et cetera*, to the United Kingdom itself. There is one scenario where you could say the British Government has an obligation as opposed to a choice to engage overseas, and that would be the rescue of non-combatant British personnel and perhaps Europeans in some situation where there was a revolution or whatever. Supporting what Dr Willett said, we are looking into the longer term and there is a presumption, I think, in many places that we are not going to face inter-state war in the old-fashioned sense any more. Sir Rupert Smith's book makes this point, but there are other books by equally distinguished people in different areas, such as Colin Gray, who make the point that we cannot dismiss this sort of scenario in the longer term.

**Q19 Chairman:** When you said that the greatest threat that we faced was a terrorist incident, would you say that the coming together of a terrorist incident and weapons of mass destruction was the greatest threat that this country is likely to face at the moment?

Mr Codner: It is certainly not the most probable threat. The most immediate threat, you could argue, is terrorist attack. The most probable threat is not a nuclear-armed terrorist. There is that possibility, and it would be pretty horrific.

Dr Johnson: I would like to comment that we should not forget that military threats are security challenges that were ignored or were not adequately dealt with at a much earlier stage, so when we think about the future, we must not assume that the choice that we make now does not have a range of other kinds of consequences in terms of opportunity costs for taking steps that would reduce what we see as the foreseeable security challenges and military threats in the future.

Mr Plesch: I broadly agree with my fellow panellists but I think there is one critical point about capability and not intention that we are in grave danger of overlooking, and that is that neither the Russians nor the Americans have taken their strategic nuclear forces off a high alert status, able to fire thousands of weapons still in under an hour. There has been considerable political and NGO discussion in the United

States and in Russia on this point, but it has largely been overlooked. The point about de-targeting, which was issued after the Cold War, has been found to be largely rhetorical or entirely rhetorical and there is a very strong technical argument to support that, and grave concern among many experts that the hair trigger which people were so concerned about has not actually been removed.

**Q20 John Smith:** A little bit more crystal ball-gazing: what about emerging nuclear threats? Speculation: what sorts of scenarios could you envisage in terms of future threats to this country within the time frame of this decision?

**Mr Plesch:** Clearly, there is the concern, as Dr Willett said, that a lot of countries who have a latent capability may, as proliferation increases, turn their latent capability into real weapons: Japan, Germany, South Korea, Egypt, to name but four. Lee Willett mentioned the word "Utopia". My perspective, and that of many people, is that what is truly Utopian is to think that we can have a world with multiple nuclear powers in the 21st century and not have a nuclear war. That, to my mind, is the real Utopian view.

**Dr Willett:** I totally agree with Dan, because these nations have their own reasons for having that capability. Perhaps one of the serious risks is us getting dragged into somebody else's conflict rather than necessarily a direct threat to us. The obvious melting pot there is the Middle East and the numbers of countries that are looking to get a nuclear capability there. As Dan rightly mentioned, that number of potential nuclear powers does leave you with the scenario, particularly when you look at those powers' reasons for having that capability, where nuclear war may be more likely, and while you need to have a mature approach to arms control, that in itself is a reason for retaining deterrence in whatever form it be: conventional, political or strategic nuclear.

**Ms Hudson:** The country which the United States appears to have identified as a potential nuclear superpower rival is of course China. This was gone into in some detail recently in February's quadrennial defence review from the US Defense Department. In terms of the 15-20 year time frame which Dr Reid referred to in September, obviously, there is cause for concern around that because of the very rapid economic development that China is currently undergoing. It is precisely to try and avoid the onset of a nuclear arms race with a nation like China that we believe that it is more appropriate to begin to engage in the kind of multilateral disarmament negotiations foreseen in the Nuclear Non-

Proliferation Treaty as long as 30 years ago. We need to be aware of that but we need to know the current situation of China, which is, of course, that they have round about 400 nuclear weapons, whereas the United States, for example, has over 10,000. So to start now to begin the process of preventing a nuclear arms race taking place would be more appropriate than to start now to prepare for a nuclear arms race with a nation such as China. Really, that needs to be considered too.

**Q21 Robert Key:** Should we be paying more attention to the emergence of new threats arising from climate change, such as water shortages, energy crises, pollution crises, shortage of rare minerals and so on?

Dr Johnson: Yes, I clearly think that we have to have a much more diversified concept of both security and the challenges to our security here in the 21st century. We really cannot keep thinking about it purely in military terms. Those are 19th century. The nuclear weapon is a 20th century instrument. Actually, we need to be prepared to put the nuclear weapon into history and start working in a much more co-operative collective security approach to deal with these real security threats, which include trans-boundary threats such as pandemics, either naturally caused like Avian Flu or indeed bio-weapon caused. Nuclear weapons are not only not going to help us on that, but actually hinder us, and that is, I think, a crucial problem that we have to get to grips with.

Dr Willett: Just a small pointer to follow up on the nuclear weapons aspect of the last question. The key point is that no-one else, in my understanding, appears to be having this debate about reducing or getting rid of the capability. The Americans may be reducing the size of their inventory because of affordability issues over certain legs of the triad but nobody else of established nuclear powers is looking to reduce their capability, looking to get out of the game, and of course, there are all those that are looking to get in. There may be the likes of Libya and South Africa that have backed away from it but the key point is that no-one else is getting out of the game, and we are having this debate about getting out, and my humble view would be that the other nuclear powers, if we did make the decision to abolish, would pat us on the head and say, "Well done, boys. Good on you for taking the lead," but then turn their attention back to the real world of politics.

**Q22 Chairman:** We are still dealing with the threats that are going to face us in the next decades.

Mr Plesch: We come back to the point about whether a threat comes from individual countries or also comes from a situation of a proliferated world. It is always very easy to think that this proliferation is inevitable. Take the case of China. CND just said 400 warheads. If you look at the evidence of the Defence Intelligence Agency Director to the Senate last month, they put the Chinese number at "more than 100", that is, half of the UK number. It is very easy to get carried away thinking that there are these build-ups going on. We know the number of countries which have not taken a political decision to go nuclear which could. We know the South Africans did not and we know that a great many countries do, in a sense, adhere to Einstein's precept, which is that nuclear weapons have changed everything except the way we think, and that we hold our security in common, first of all, on the nuclear issue and now, increasingly, on these other issues, and that the critical task for us is to work out how we hold our security in common.

Sir Michael Quinlan: In response to the question that was asked a moment ago, could I say that there are many threats to us in the world and I certainly would not put those with which nuclear weapons might help us at the top. That is not to say that there are no threats with which nuclear weapons might help us. Second point: the mid-point in the life of any likely Trident successor would be, I suppose, 2035-2040. It seems to me simply impossible to say what might be the problems then. We would not have done very well in 1970 in describing the situation today, and therefore I think the search for some specific scenario is almost certainly misleading. Third point, of a quite different kind: there have been a number of figures mentioned by my colleagues here as though they were fact, which are speculation, in one or two cases bad speculation. I do not want to take up the Committee's time by traversing them but I hope that not all the figures which have been produced are taken as gospel.

Mr Codner: In response to Robert Key's question, and just expanding on what others have said, yes, of course, these are all very serious issues for now and for the longer term,, and the United Kingdom needs to take part in addressing them. The question, taking the military example - and I separate military example from the deterrent for many of the reasons that people have given - is to what extent will there still be a requirement to have military capability and for the United Kingdom to have that? That is one question, and the second one is, to what extent should Britain's contribution to security in any context, whether it is within the context of Europe or globally or whatever, perhaps lean on defence, which is

something that we are held to be rather good at? If you take that same argument and look at the nuclear deterrent, you could say that where there are threats for which the nuclear deterrent would be relevant, to what extent should the United Kingdom, which has this capability, be the nation or one of the nations contributing that? In that case, I am looking very much at the European context.

**Q23 Linda Gilroy:** I am interested in hearing a little bit more about the relationship between climate change, whatever the outcome of our own energy review is, and the industrial development in other parts of the world will mean countries turning in increasing numbers to nuclear energy to fuel their own development. What are the relationships - I think Dr Willett touched on it - between those countries that have nuclear energy capability, what are the security impacts which arise from that type of proliferation, and attached to that, are there any lessons to learn from the sort of security framework which the United States Security Council has operated for the past 50 years or so, because it has been a great deal more successful, I think, than people probably expected it to be when it came in in terms of keeping the lid on proliferation of nuclear weapons.

Dr Johnson: There is a real problem with nuclear energy, which is that it gives you the technologies and the capabilities that can fairly easily then be transposed into nuclear weapons, and that is a contradiction at the heart of the nuclear non-proliferation treaty and indeed at the heart of the mission of the International Atomic Energy Agency. There is no getting away from that. I actually think that Jonathan Porritt's study, which showed the alternatives as being a much more useful and effective way forward for Britain to meet its energy needs, could be multiplied by ten for many of the other countries. Where countries already have a nuclear energy dependence, unless they have a political debate, the likelihood is that they will reinforce that. I am thinking about countries like Japan and France. But in fact, nuclear energy is not an easy technology for developing countries to get into in such a way as to make it cost-effective at all. It is highly expensive and the returns are rather low.

Chairman: Dr Johnson, can I stop you there, because I want to come on to nuclear energy right at the end of the session. We will come back to that.

**Q24 Linda Gilroy:** It was really the relationship with the threat and containing the threat, because I think you mentioned 35 or 36 countries, Dr Willett, and I take it those



are nuclear-energy capable countries that you are talking about. What are the risks that are already attached to them, not the ones that might emerge, and how do we create a security framework which answers that particular challenge?

Dr Willett: All I would say to clarify my point was that my understanding is that it is 35 nations which have the knowledge to create nuclear weapons, and the obvious example at the moment, if you are talking about not guessing, for an interesting look at the relationship between nuclear energy programmes and potential nuclear weapons programmes is Iran, and asking yourself really, despite all the rhetoric, what is Iran's real intent? Is it an energy programme or is it something more than that? That is a question that needs to be discussed in public, in my view, because there is too much acceptance that it is just an energy programme.

Chairman: It would help us if you could provide us with a memorandum of which those 35 countries were. I should be grateful for that.

Mr Hancock: I happen to agree with Sir Michael that it is impossible to predict 30 years on what the threats are, but our inquiry is headed "Inquiry into the future of the UK's strategic nuclear deterrent." I would be interested in a one-line answer from all of you. Is there a future for the UK's strategic nuclear deterrent? If you cannot predict the threat we are hoping to deal with, is it effective to have a deterrent when you do not know if you have a threat to deter it with?

Chairman: That is a rather large question for a one-line answer.

Mr Hancock: It is the question that leads out of what we have just heard from everyone who has contributed so far, and I think it is the fundamental question for the debate to start off with.

**Q25 Chairman:** It may be a fundamental question for the debate to end up with. Let us try.

Mr Plesch: As you know, my view is that the historical record and documentary evidence shows that for some considerable time this country has effectively not had an independent strategic nuclear deterrent. We are getting on to this later but that is my one-sentence answer to your question.

Dr Willett: My one-sentence answer would be: can we with 100

per cent certainty say that in the next 50 years one nation with one missile with one warhead will not try to threaten us with it?

Mr Codner: My view is that it relates very much to this business of independence and dependence. It is very much a matter of where the nation thinks it is going to be going in the longer term and its own perception of itself, but at the end of the day, if a more independent deterrent is not affordable, then I wonder why we want to go down that route.

Sir Michael Quinlan: Life does not come with 100 per cent certainties in either direction, but insurance policies are related to things that may or may not happen. The hard question is: how much is it worth? I am not an absolutist on this question at all. I would want to know how much it is going to cost.

Ms Hudson: The current threats that we face cannot be deterred by nuclear weapons, as we tragically saw last summer and as, of course, the United States experienced on 9-11. Future threats or potential future threats I believe could be averted by pursuing a different policy, which would be to de-escalate the current nuclear tensions.

Dr Johnson: I think deterrence is actually a bit like voodoo medicine. If you believe in it, it gives you a bit of reassurance, until it is tested and it fails, at which point it is far too late to discover that it was not actually helping you at all.

**Q26 Chairman:** You suggest in your memorandum that voodoo medicine can be fatal.

Dr Johnson: It can, because it can distract you from addressing the real illness you have and taking the correct kind of medicine that might help you. I went off on the energy track, but there is a key question on the security framework to respond to your question about Iran and other countries with nuclear energy that I think we do have to address here, and that is that the IAEA, Dr ElBaradei, has determined that plutonium and highly enriched uranium are not necessary in the nuclear energy economy at all, and yet British policies, partly because of our dependence on Sellafield, yet again are actually impeding our ability to get an international consensus on at least taking those bomb materials, the essential materials to make nuclear bombs out of the nuclear energy circle.

**Q27 Mr Holloway:** I have a lot of sympathy with what Dr Johnson says about military threats being problems that were not dealt with earlier, but given that we cannot know where we are going to be in 30 or 40 years' time, can I just ask the two former vice chairmen of CND, Mr Plesch and Dr Johnson, can they see any circumstances where Britain could require its own independent nuclear weapon over the next 30 or 40 years?

Dr Johnson: No. Let me explain. In a worst case scenario that the Government identifies, a terrorist with a weapon of mass destruction, imagine even a nuclear weapon use in that appalling scenario. Having nuclear weapons even Prime Minister Tony Blair says does not deter terrorists, so you are reduced to retaliation. Question mark: against whom? This is where we are crucially different from the Cold War scenario...

**Q28 Chairman:** I think the answer is "no", is it?

Dr Johnson: ...where a nuclear exchange would have resulted in all-out nuclear war. We cannot guarantee - I agree with the panellists - that at some time in the future somebody might not seek to use a nuclear weapon. However, what we can do is create the conditions under which that would not and could not escalate into a nuclear exchange or nuclear war.

**Q29 Mr Holloway:** Is that a "no" in terms of Britain having its own missile?

Dr Johnson: It is no in terms of Britain having in the future a deterrent effect.

**Q30 Chairman:** Dr Johnson, I think the answer is no.

Mr Plesch: We do not have it, and if we had it, the answer would be no.

**Q31 Mr Jenkins:** We have all been dancing round in a circle here very nicely. The one thing that did not come out was with regard to Russia and the state of Russia. My difficulty, although I wish it well and I would not wish a democratic state to take a step backwards, is that now they are coming under increasing pressure domestically, so what happens if we have a nuclear state which suddenly reverts to being a non-democratic state? It has the power, it has the authority, and it is not out of the woods yet, I do not believe. What we need to know is, if it was good enough then, are we saying it is not good enough now?

Mr Plesch: I have already said to the Committee that the

greatest physical capability threat is the retention on high alert of American and Russian strategic nuclear forces, and I think in the event that you describe, we would rue the last 15 years of arms control and disarmament and the decision really in America to halt the disarmament process with START II and not to pursue it as fast and as vigorously as we could have done. I think it really points to the squandering of the opportunity to control and eliminate nuclear weapons and weapons of mass destruction that we had at the end of the Cold War, that we still have now, and we sit around saying, "How much longer is this opportunity going to last before we get into a disaster?" not saying, "How do we use this opportunity to build on the tremendous achievements of Ronald Reagan and Mikhail Gorbachev, and the treaties that we had then to really control these weapons?"

Chairman: We have been going for nearly an hour and we have covered some very valuable topics to a depth that I was not expecting to be possible given the size of the panel and the Committee, but in case we might fall behind, I would ask the Committee and the panel to try to stick quite tightly to the subject matters in hand. First, can we go into terrorism and the nuclear deterrent and the consequences of those.

**Q32 Mr Hancock:** I will shorten my questions because I think some of it has already been touched on. To what extent, if it is possible, is the nuclear deterrent any form of combat to a terrorist threat? Do any of you see that as a realistic situation? Obviously Dr Willet does because he is shaking his head in agreement.

Mr Codner: I mentioned this before. As far as deterring a state from sponsoring terrorists who are using not just nuclear weapons but other forms of weapons of mass destruction possibly, there is clearly an option there for nuclear deterrence against a state which is clearly giving support.

Ms Hudson: Yes, I think that is a correct point. We have heard on a number of occasions in US policy documents where there is reference to the potential use of nuclear weapons with regard to countries that may be deemed to have supported or backed a terrorist atrocity. I think the problem with that really is obviously that it increases and escalates tensions globally, but of course, it brings nearer the question of nuclear use, so the whole notion of nuclear weapons as a deterrent actually really seems to be now completely out of the window. That is what has been missing perhaps in the public debate so far, where our nuclear weapons are still referred to in this kind of deterrent framework, when actually we know that that has

very much changed, not only in terms of referring to their use in defence of our vital interests but also the abandonment of negative security assurances and so on, so I think really the context has very much changed away from the deterrent notion.

Mr Plesch: The new chapter to the SDR after 9-11 makes clear reference - I do not have the exact quote - in the paragraph on nuclear weapons to the fact that terrorists would have to be aware of the full range of UK capability, and that rather throw-away line, perfunctory remark, is I think something that should be explored in some detail, particularly because on the other side of the Atlantic in the mid 1990s under President Clinton the official Pentagon published policy was to include non-state actors among the potential targets for nuclear weapons. My own view is that this is entirely unrealistic and the tragedy is that we are tying ourselves to these very unrealistic policies at the price of sacrificing the proven achievements of arms control.

Dr Willett: One would argue that it would be very hard for a non-state actor to develop its own nuclear weapons capability. It would have to get it from somewhere, and that somewhere would at this stage be a state. Just a comment, if I may, with regard to the question that you asked, and without meaning to do down the question, the issue of terrorism and nuclear weapons. I wonder if that somewhat clouds this particular discussion.

**Q33 Mr Hancock:** The question was not about a terrorist using a nuclear weapon. It was about whether the UK nuclear deterrent is a deterrent to a group of terrorists who would engage in actions against the UK.

Dr Willett: Yes. As per my original point, where they got that capability from does leave the providers of that capability vulnerable to deterrence if the UK could identify them and hold at risk something that that sponsor may hold dear, but again, the question of the terrorism threat is very much focused on today. It is today's issue and just to clarify, of course, while terrorism may still be a threat in 20 years' time or 50 years' time, I just wonder if the focus on the terrorist issue is somewhat clouding the debate on what deterrence will be all about in 20-50 years' time.

**Q34 Chairman:** That happens to be the subject we are dealing with at the moment.

Sir Michael Quinlan: I do not myself believe that the terrorist case plays any large part in whatever case there is

for staying in this business. Might I also say, Chairman, that a number of statements are being made about what the US, for whom I hold no brief at all and I think they get a lot of things wrong, have said, which I think at the very least are in need of the provision of chapter and verse, because they are certainly outwith my own recollection.

**Q35 Mr Hancock:** If I may go on to something else that has already been mentioned, you, Sir Michael, suggested that you were open-minded on this and you would want to see whether there was a cost-effective alternative.

Sir Michael Quinlan: No, not quite.

**Q36 Mr Hancock:** I will not misquote you then. I will leave the record to say what you said, but given the financial burdens that we all know of of the current combating of terrorism, not only to us but to other states, to what extent should the development of a successor to Trident be measured against that cost? There is no cost offset, is there, because the war against terrorism will have to go on being financed. In my opinion, it is ludicrous to suggest that Trident's successor is actually going to lessen the cost that we are already embarked upon in fighting terrorists.

Sir Michael Quinlan: The fact that we have to spend money on one thing does not mean that we can afford not to spend it on others. My point about cost is that when we are dealing with something which is an insurance against a very unspecific, very distant set of possible circumstances, given that we cannot afford to cover every eventuality with utter certainty, one has to look at how much one is prepared to pay for that insurance. In other words, how much risk is one prepared to accept? My own view is that there would be some costs that would be simply too much to pay for the insurance of staying in this business. We have not yet got from Her Majesty's Government anything like official information on what the figures are.

**Q37 John Smith:** Last month President Chirac announced that French nuclear forces had been reconfigured to target power centres of rogue states that may sponsor terrorists, so clearly the French see nuclear weapons as a deterrent against terrorism. Do you think they are wrong?

Mr Codner: That sort of statement from a head of state or head of government is part of the process of executing deterrence. No doubt what he is saying is what they are actually doing but it might not be, and it does not mean that they actually hold

any great confidence that this will be effective but it is worth giving it a go.

Chairman: We are falling behind. I want to move on to prospects for arms control now, which is a very important issue that has come up already.

**Q38 Mr Borrow:** A number of the panel have already touched on this issue. What developments do you expect in arms control over the next decade or two? Secondly, and this is pertinent to the discussion generally, what effect do you think Britain's decision one way or the other on the replacement of our nuclear deterrent would have on the overall arms control situation?

Dr Johnson: Very interesting questions. In a sense, "What developments?" is a bit like saying "What threats?" A lot of it is up to us. If we take the steps now that would increase the salience and the credibility of the non-proliferation regime, which frankly is under enormous pressure and is eroding, then I think we could see some considerable progress being made. On the other hand, if we sit back and we do not challenge the United States sufficiently over its attitude towards verification, for example, which we are very supportive of, or the Comprehensive Test Ban Treaty, we will see a progressive erosion. If we do not deal with issues like North Korea and Iran we will see a progressive erosion. To move from that briefly to what effect, I do not think that if we just announce we are not going to have nuclear weapons and then sit back that that will have a direct connection with the policy decisions of other countries, particularly proliferation aspirants, for whom it is regional power projection and other elements. However, if we put as much into a strategy of making ourselves more safe and secure in deciding to renounce nuclear weapons and therefore worked step by step to reinforce the regime to take plutonium and highly enriched uranium, for example, out of circulation altogether, to work with other NATO states - and I have had some very interesting discussions with a number of our European allies on how they see this as being that Britain could actually take a leadership role in reinvigorating the view that nuclear weapons essentially have no role in defence and no role in status, and in a sense to devalue nuclear weapons. That is a hard job. There is a challenge there. It is not status quo or not status quo. Whichever we choose, we are going to have to make a case and we are going to have to deal with the consequences, but in my view - and, as you saw, I laid out a scenario of 2025 in a much more proliferated scenario, such as the cascade of proliferation that the Secretary General warned

about, and I put a scenario that looks at a world that maybe does not have zero nuclear weapons but where nuclear weapons are considerably devalued, are marginal in the security and military policies. I have discussed in that context how we get there. There is no time to go into that kind of detail.

Ms Hudson: I think the prospects for advance on arms control are currently poor if the nuclear weapons states continue to pursue the type of approach that they are following at the moment. Last year at the NPT review conference, there was some indication that nuclear weapons states seemed to want to redefine the NPT in some way as removing the process of disarmament from it, the requirement for disarmament, and seeing themselves as somehow entitled to maintain their nuclear weapons, and of course, we heard Mr Straw saying that yesterday, that Britain was authorised to have nuclear weapons and so on. There has to be an understanding by the nuclear weapons states that, until they begin the process as required in Article VI of the NPT to pursue negotiations in good faith towards disarmament, we are not going to have any headway and there is going to be a continued tendency towards proliferation from other countries who are going to arrive at the conclusion they have a deterrent need for nuclear weapons. The onus is on the nuclear weapons states to start making some progress.

Sir Michael Quinlan: The nuclear arms control agenda has languished over recent years, largely because the present US administration does not believe in any of it. That, I think, is to be deplored but it is a fact. I think the era has passed of bean counting numbers bargains in arms control anyway. I think there are possibilities but they are not of that kind. I do not believe the UK could put itself in any useful arms control bargains since our numbers are not a function of how many anybody else in particular has. I do not believe that our decisions are at all likely to make a material difference other than in speech making to what other people actually decide to do. That said, I do believe that we ought to look very hard, as we move into another generation, if we do, at what we could do to reduce the scale of what we have. I think I can without impropriety tell the Committee now that I recommended when I was still Permanent Secretary, over 15 years ago, that we could do with three submarines. That idea was not accepted, but that sort of thinking we could well look to and I think that would be marginally helpful to the general trend of affairs in the nuclear world.

**Q39 Chairman:** Sir Michael, I think both Dr Johnson and Ms Hudson have said in their memoranda to us that the decision to



upgrade in 1980 was a material breach of the non-proliferation treaty. Do you consider that to be true?

Sir Michael Quinlan: No, wholly untrue.

Dr Johnson: My brief quoted Professor Chinkin and Rabinder Singh QC in saying that now to replace Trident would be a material breach, and it is an important element of the argument because of the way in which the states party to the NPT strengthened elements, including the disarmament element, in both 1995 and 2000 by consensus and that legally this now becomes part of the meaning of Article VI.

Chairman: I should not have paraphrased your memorandum and I apologise for that. I put to you a wholly false question. I want to move on to the nuclear deterrent and the UK's international influence.

**Q40 Robert Key:** Chairman, I am sure everyone will have their own view on this. Could I start with Sir Michael Quinlan. It is often said that the possession of nuclear weapons by the United Kingdom gives us a seat at the top table. If we did not have nuclear weapons, would we still be at the top table or would it matter if we were not?

Sir Michael Quinlan: As I have said, I do not myself find the top table argument very persuasive or attractive. I think it is rather a pity that we have the confluence between permanent membership of the Security Council and nuclear weapons status, because that does not seem to me logical, necessary or indeed politically desirable. What I think is more relevant is that our possession of nuclear weapons in a very general way gives us slightly greater confidence in the way we act around the world, and since we are still among the countries which have both the capability and the will to take on difficult missions around the world, as we are seeing in one or two uncomfortable places now, nuclear weapons have a certain relevance to that, but the status/top of the table argument I do not myself believe to be a great weight-bearing one.

Mr Plesch: I think all too often we think that moral authority is not something that cuts any ice in the really world, and I think we forget the history of the Second World War, which while it was fought to the Nth degree in terms of hard fighting, also the moral authority of the Allies against the Axis was critical in providing the motivation of that generation to fight that war, and I think that we lose sight of the power of new ideas to save our world at our peril. I think this country would be looked on much more favourably if

it did not have nuclear weapons. It would be regarded as being much more modern. If I can just take a moment on the previous question, we I think forget, again, at our peril, the enormous achievements in arms control and disarmament made, really, one might say, in the forgotten decade of 1987-1996. There is a list of critical treaties all of which had done thing in common: everyone thought they were impossible before they were signed. Everyone thought it was impossible to achieve them, yet we have them, and what we have not done is to build upon them for the future and see how they can help secure our future.

Dr Willett: I think the issue is of status rather than a seat at any particular table, status in the world as a whole and also in particular in Europe. What we have with our capability is a political balance in Europe. There is not much discussion of the French reducing their capability or giving up nuclear weapons and one would have to ask what would be the implications for Europe of us stepping away from this kind of capability. Are we a balance against another state, for example, Germany, looking to establish a capability, which maybe they might be inclined to do if the UK were not there to offset the French capability, as one example? It is a balance against global instability as a whole and, as Sir Michael said, the ability to have greater confidence.

Mr Codner: I would reinforce the point about Europe and France. This is a consideration as to whether Europe should, in whatever form it takes in the future, have merely one nuclear power. Sir Michael Quinlan in a paper a couple of years ago made reference to Edward Heath's remarks about nuclear weapons being held in trust for Europe, and I think that this is certainly a consideration.

Ms Hudson: I think we should remember that there is an overwhelming demand from the vast majority of countries in the world for the nuclear weapons states to pursue their disarmament obligations, and the status and prestige which would associate with taking a step in that direction would be quite extraordinarily large. I think that one has to ask really whether one wants to be at a top table which is pursuing policies which lead to proliferation and war.

**Q41 Chairman:** Why do so many countries want it?

Dr Hudson: Looking back to the late 1960s when the nuclear non-proliferation treaty was being drawn up, it was primarily drawn up on the initiative of countries from the developing world who wanted to see an agreement which would prevent

proliferation but which would also bring about disarmament, and that was the basis of the nuclear non-proliferation treaty - a kind of balance primarily between disarmament and non-proliferation, and the non nuclear weapon states agreed not to proliferate and get nuclear weapons in return for the nuclear weapon beginning the process of disarmament, and that strong desire is still very much there and is very strongly manifested at NPT preparatory committees and review conferences, for example, and that demand is still very wrong in the world because many countries do not want to see us sliding to nuclear use, nuclear war and so on.

Chairman: There will be a lot of answers to this but I wonder if we could move into the independence issues which we said we would get into, the independence of the nuclear deterrent.

**Q42 Mr Hancock:** I just have one aside, if I may, because I think the last comments that were made about Europe and the French in particular lead me to the question would it ever be politically acceptable for any government in this country of any political persuasion to abandon the nuclear deterrent all the time the French maintained one? That is just a one-answer question along the panel.

Mr Plesch: Can I link into that to the question the Chairman asked? The French view of 40 years has been that we do not have it and that our dependence upon the Americans makes us a vassal state, so for many continentals they would not see the question that way at all. That is a choice we made many years ago.

**Q43 Mr Hancock:** But the British people would see the exact opposite, would they not?

Dr Willett: It is more a question of the balance in Europe as a whole rather than a particular issue with the French. It is the implications of --

**Q44 Mr Hancock:** No. My question is would it be possible for any British government of any political persuasion to be able to sell the idea of the abandonment of the nuclear deterrent all the time the French maintain one? That is a straight yes or no answer. That is not looking for the balance in Europe: that is about the political question in the United Kingdom.

Sir Michael Quinlan: It would be very difficult.

Dr Hudson: I do not think it is of particular interest to the majority of the British people. They see nuclear threats in

terms of the either the great super powers or rogue states or something like that, but I think we should be aware of the opinion poll which was conducted in the autumn by Greenpeace and MORI which indicated that when those polled knew that the Trident replacement could be extremely expensive 54 per cent of them said we should not have it, and they were not given any subtext about France or anything like that so I do not think it is at the top of people's agenda.

**Q45 Chairman:** Sir Michael, you said it would be very difficult. Wherein precisely would lie the difficulty?

Sir Michael Quinlan: I have to say I think it is just national gut feeling. To leave the French as the only people with this I think would twitch an awful lot of very fundamental historical nerves. I am not arguing about the logic of it; I just think it would be that gut feeling that we cannot.

**Q46 Chairman:** But are you not there putting exactly the status argument that you said did not apply?

Sir Michael Quinlan: I am not commenting on the merit of the argument; I was asked what I thought was the probability of it.

Dr Johnson: I completely accept and I hear this argument a lot in the corridors of the FCO in particular but what I find bizarre about it is this: imagine if you were to say to the British public, "We need to spend upwards of £25 billion for a nuclear weapon because the French have one". I think you would be laughed out of court. That is realism --

**Q47 Mr Hancock:** With the greatest respect, I do not think the British government would pose the question just in that way!

Dr Johnson: Of course they would not but what that underpins is this is not about military; this is not about defence. Indeed, it is a political instrument --

**Q48 Mr Hancock:** That is what I am trying to get at.

Dr Johnson: This is a political instrument, and make that decision openly if that is the decision you make.

Mr Codner: I wanted to make the distinction that has come out of the discussion with Sir Michael Quinlan between strong arguments over status and actually what the British self-perception is, which I think is very important to this for the reasons you have given, what the British electorate would vote

for if asked. I think we do not have as good an understanding, perhaps you do but I do not as an analyst, of this business of the electorate self-perception. I think the whole nuclear issue is very important in that respect bearing in mind the outcomes of a couple of previous general elections where the issue has been of relevance, and I am not sure that has gone away.

Chairman: Can we now get back to the independence question?

**Q49 Mr Hancock:** Absolutely, and this leads very conveniently on to the idea of how the British people's view is of the independent nuclear deterrent. Several of you have spoken that you do not believe there is such a thing for the United Kingdom; I would be grateful now if you could expand on the idea of the British public believing we have a strategic independent nuclear deterrent.

Sir Michael Quinlan: I have, in fact, sent your clerk a note, rather belatedly so it may not have got round to the Committee, about the matter of independence, but I think discussion on this is befogged by failing to distinguish between two different kinds of independence which are different levels of insurance policy with different costs. One is independence of procurement, which the French for the most part have gone for at high cost; the other is independence of operation. We have gone for the latter which costs a great deal less. It means in the last resort, when the chips are down and we are scared, worried to the extreme, we can press the button and launch the missiles whether the Americans say so or not. We have not got independence for procurement and the result of that is that if, over a very long period, we became deeply estranged from the Americans and they decided to rat on their agreements, we would be in schtuk, great difficulty, and I think one needs to distinguish between those two different sorts of independence.

Mr Codner: I would like to follow, agreeing very much with what Sir Michael Quinlan said. Independence of operation means that in the context of a one-off, which if it ever was used it would be likely to be, we would not have the problem then of replenishment where we are, once again, independent. The issue to my mind over independence is more to what extent can we in the longer term guarantee not only the continuity of an operating system but also of the procurement process over the next twenty years, and whether it is actually in the United States' interest for us to have an operationally independent system.

Dr Willett: A key aspect of the independence argument obviously is the system we have and people looking at the fact we have a Trident system and therefore arguing we are tied in with the Americans. If we start at the front end the question is why do you need this, first, and what do you need, and when we got down to the question of what was the US option, in partnership with the United Kingdom, it was the option that presented the right requirement at the best cost. We did not have an indigenous programme, and other options, for example doing something with the French, would be in this current debate politically difficult and potentially more costly, so it needs to be stated that, of course, one of the key elements in this is that the American option offered the best value for money option.

Mr Plesch: If I might, I think Sir Michael makes a very useful distinction between procurement and operation. Procurement though, as some documents one can find from US presidential archives on the web show, does extend to parts for nuclear weapons which, generally speaking, has been not a view expressed by the Government and not the public understanding of the British people, that we actually procure parts for the weapons, but the question is how long before we are in schtuk. Suez was a crisis that dragged out for some considerable period of time; 1940 was a crisis that built over years, and in both one could not rely upon the United States. If we look at the provision of updated software for weather information, the condition of the targeting, these sorts of things, the time lag is quite short. Former naval officers have said to me that even in the 1980s the time lag was between a year or two. That is not a very considerable period of time in politics, I think. I have explored this in some detail in my memorandum and, of course, we do have rather tighter controls over information than the Americans, but if you look at what has come out from memoirs and letters, at the time when these arrangements were made Macmillan's Permanent Secretary minuted that this would put us in America's pocket for a decade and before Nassau the head of Bomber Command said in a note to a colleague that Macmillan was going to Nassau to defend what was already a myth of independence. Similarly the then defence secretary and his officials in 1962 said that the United Kingdom forces at the time of the V Bomber Force did not operate independently and, of course, the normal understanding from the American side and the documents that Presidents sign is that they are assigned to NATO which is, of course, an integrated command with the Americans.

Linda Gilroy: Sir Michael, you referred to the difference between independence of operation and independence of

procurement and I am not sure if it was you or Mr Codner who referred to the deterrent as an insurance policy. The proportion of total managed expenditure represented by the defence budget is 5.4 per cent of what the Government spends on everything. What proportion of that budget can anybody say is represented by the operation of the Trident programme?

Chairman: I am sorry, Linda, but that is a question I would like to come on to immediately after we clear up the independence issues, because it is slightly different, I think.

**Q50 Linda Gilroy:** The question was in the context of recognising that there is a difference between operating a system which is independently procured and independently operated. We have an independently operated system, some would argue with that, but what is the cost of that?

Sir Michael Quinlan: Could I explain the point about insurance? What I said in the note which I made available to your clerk is that the Americans have got tons and tons of nuclear weapons. If the Americans are solidly with us, nobody else needs anything; the size of their armoury is ample for any conceivable use. For anybody else who is more or less on the American side, as it were, to have them depends on a hypothesis that either they are not available on the day because the Americans do not agree with you about this particular crisis or they are scared, and that points to having operational independence, the ability to fire the weapon whether the Americans like it or not on the day. The other hypothesis against which one might want to insure is the possibility that we become deeply estranged with the Americans, they have gone isolationist over a long period of time, they ratted on their agreements with us, if that is what you are insuring against then you need what the French have which is independence of procurement, and that costs you about three or four times as much. Within the defence budget, and you would need to check this with the MoD currently, my impression is that not more than three per cent goes on our nuclear capability. The French have been in the 15, 20 per cent and even more territory.

Chairman: You are quite right; it was relevant to the question of independence.

Linda Gilroy: And it is three per cent of five per cent which is nought point something per cent of what we spend for that deterrent.

**Q51 Mr Hancock:** So moving on to the next generation, is it possible for the United Kingdom, if we were to go down the line of procuring another version, an updated version, of Trident and a submarine to launch it from, to maintain an independence of operation? Do you think that is a capability that we could have? What does it do for us politically in the world, us being locked so closely to the Americans over and on this issue, not just now but in the foreseeable future?

**Mr Plesch:** With respect to the independence of operation I think we lose sight of the role of American corporations in managing the operations of Aldermaston, of AWE, and of the submarine refit facility as well. My point is that if you look at any one point of the relationship you can argue about how much operational independence there might be, but in my memorandum I have endeavoured to provide the spectrum which covers operational questions as well as procurement questions. One has to say if we really want this then we should be prepared to pay for it. I do not think when it comes to insurance policy that people want something, or that your voters should believe they are buying something, where when you get to the small print it says: "Well, in this sort of situation we can use it, you can cash in your insurance policy, but in these other situations, 1940, 1956, then your insurance policy is valueless". That I think is a fraud on the voters, and it is a fraud that has been perpetrated.

**Sir Michael Quinlan:** 1940 and 1945 are not parallels.

**Dr Johnson:** For my sins I spend quite a lot of my time among diplomats in New York and Geneva, and I think your question raises a third level of independence and that is independence of policy. I have to say that during the run-up to the Iraq war there was really a lot of consternation among diplomats about why Britain was so close to the Bush policy on going to war in Iraq and why it was clearly flying in the face of evidence, and a lot of those diplomats were making quite sarcastic remarks about the fact that the Bush administration would tug the nuclear lead and that Britain is dependent on the US for its nuclear weapons. Now I am not necessarily saying that is a correct depiction of the facts: I am saying that it is a correct depiction of perceptions in quite a number of countries, including our allies, that we do not have independence of policy as long as we are so dependent on the US for procurement. The final point on that is that I was in Washington in November and January talking to people from the Department of Energy and the Pentagon and, indeed, up in Congress and I asked them was there any guarantee that the US would continue to supply either Trident D5 missiles, if our



option were to be a like-for-like replacement, or cruise missiles - either of those delivery systems would be dependent on US missiles - and while I was told that the expectation is that the United States will continue to produce Trident D5 missiles to about the year 2042, there was no guarantee. Policy could change: there was no guarantee. Also let me remind you that on at least three occasions in the past, Blue Streak, the upgrading of the C4 to the D5 Trident missile and, indeed, the nuclear testing moratorium when Britain had a device down the shaft at the Nevada test site when the US signed the modern moratorium, and I was very pleased they did that, the truth of the matter is they left United Kingdom planning policy high and dry with no consultation.

Dr Willett: We have to go back to the point about the independence of use and the one vote. The United Kingdom has a fleet of four submarines to put one on station all the time. We are not talking about having four submarines at sea to fire all their missiles. The United Kingdom requirement is one boat that has on board up to 16 missiles with a set number of warheads that is regarded as sufficient to do the deterrent job. The point here is the independence of use that we have talked about previously in that it is a British boat and a self-contained missile, a self-contained guidance package, that does not rely on the US for permission and cannot be stopped by the US if that boat is there with sufficient capability on its own to do what is regarded by the United Kingdom government as being sufficient to deter that particular threat. As Michael Codner mentioned previously, the independence issue then comes in the re-supply, but the United Kingdom requirement for strategic deterrence is contained in that one boat and that one boat at sea, and therefore the issue of re-supply and the reliance is somewhat academic because, arguably, we would have done the job. On the issue of reliance on America companies - well, you have to buy it from somewhere, so we can either build our own, which will cost more money than buying it from the Americans; we can either go with the French, which we believe will cost more money than buying it from the Americans; or we can build our own, and what we have is the best system that fits within our budget.

**Q52 Mr Holloway:** Sir Michael, you state that the circumstances in which the United Kingdom would use one of its missiles would be when American missiles were unavailable or when we were in disagreement with them. Mr Plesch's paper makes the point about manufacture and maintenance being very much tied in with the Americans. Logically it would seem extraordinary to me, whilst you assert that the United Kingdom deterrent is independent, that the Americans would not have some means in

the internal structure of the missiles or the delivery system or, indeed, an external means of preventing a successful detonation of one of our bombs. What is the situation?

Sir Michael Quinlan: We believe there is no such thing. Of course, you cannot prove that there is no such thing in the sense that the whole world is a genuine conspiracy, and the only reason you cannot find the evidence is just how clever they are! And the fact you are posing the question is of that order.

Dr Hudson: Obviously CND would take the position that whether it was independent or not we obviously do not want it, but just thinking about the 1958 mutual defence agreement between the US and the United Kingdom which gives us, I think, what is probably the most extensive nuclear sharing agreement in the world, and of course there are countries that have raised its legality under Articles 1 and 2 of the MDC, but in that context would we be able or allowed to use our nuclear weapons without US approval and if, indeed, Parliament did decide over the next couple of years that it did not want to replace the Trident system, would we be allowed not to?

Chairman: I am now going to move on to the timetable for decision-making.

Mr Havard: I would like to talk about the decision-making process and the timetable for doing so. We have already had announcements made about the AWE and money being spent in order to provide current safety and current capability so investment decisions have been made about that and have been declared. What I really want to get to is what decisions have to be made when, and what options are there within that decision-making process that actually die away? When do they die away? So what is the timeline for making decisions about a replacement of a capability?

**Q53 Chairman:** Mr Codner, in your memorandum you gave us some helpful stuff about this. Would you like to begin?

Mr Codner: I have to say that it is all speculation based on when the last possible date that the last submarine has to cease operating for safety reasons, and working back looking at other modules of long procurements and, indeed, Trident and Polaris before that, so the dates that I use are very much speculation in that sense. But if one looks at the last possible date of replacement of the last boat with an extension of life for that boat then we are talking about 2024, by which time another boat must be in service and

operating, and if one imposes on that these timelines, as I said, that implies to me, using the language of smart acquisition which some of us are familiar with, that there would need to be an initial gate decision at the very latest in 2010. Many have said it has to be a longer period than that which means that the first amount of investment to reduce the options from a particular range of courses to a particular option would need to be made on that particular date with a view to a main gate decision in about 2014, and the main gate decision for development and manufacture would be the bulk of the expenditure. We are talking about 28 billion altogether, then a good 17, the final commitment, would be then. This leads to the question: What is the decision to be made now? Looking at the smart acquisition model we are talking here about the concept phase, so that is reducing the numbers of options - quite apart from the overall decision whether to go ahead which I will come back to - from land base, air launch, continuing the submarines, whether there is an upgrade of Trident, whether there is an extension of the life of the hulls - all of these decision are the ones that need to be made in this Parliament, and this is the most optimistic in delaying model I can give. All I would say is that because of the nature of those decisions they are in themselves very diffuse and could all be made, as it were, separately so the decisions to be made in this Parliament do not necessarily have to be a "We will go ahead". What they do involve is a certain amount of investment in studies, etc, the Aldermaston upgrade, and possibly the work Dan has referred to in the development of particular elements in this Parliament. When one looks further ahead, of course, one could say that if the Government does not want to undermine its deterrent strategy at the moment one way ahead would be to make the "Yes" decision now over these parts of the investment and, indeed, make a "Yes" decision at initial gate committing, say, another 3 billion, but the final decision would then not need to be made until 2014 when you make the big investment, so what you are doing is making a considerable but partial investment in sustaining our deterrent capability at the moment with a view to making the big decision in someone else's Parliament.

Dr Willett: And Michael made the point that the 2024 date was based on the assumption that the life of the current hulls would be extended. That decision has not been taken yet obviously, so the clock currently stops in around 2019/2020 when HMS VICTORIOUS comes out of service, HMS VICTORIOUS being the second boat of the class, and the reason why HMS VICTORIOUS is significant rather than HMS VANGUARD is that if the second boat comes out of service the United Kingdom will no longer have the minimum three boats it needs to do the

continuous at-sea deterrent. So it is very important to make the point that the clock still stops at 2019 at the moment and, as Mike pointed out, one of the key situations for this Parliament is whether to extend the life of the hulls. Now, they can be extended for up to five years but beyond that there are United Kingdom safety regulations about the reactor and the submarine; there are questions as to whether or not it becomes cost effective to continue to run them any further, and even in that five-year period the actual cost effectiveness of maintaining the submarines will reduce, as will their availability. One of the key points in this whole timeline debate is the issue of the submarine. The submarine is the big platform, the big question, in the replacement debate. The missile is under development already in the US, the warhead is the same warhead - it is the platform that is the big question, and there is the issue of maintaining the skillset at Barrow, assuming it is a British-made submarine, and just ensuring that you have the options open at all times until you make that final decision.

Mr Plesch: My understanding from colleagues in Washington is that the American successor SSBN is currently a classified programme. I agree with the view taken by the parliamentary research department that it is likely that the United Kingdom will go with the American successor. That also, I think, is the historical precedent and if one looks at the way in which the discussion went on Polaris that was, first of all, to be their Polaris missiles in new boats, then it was an adaptation of the Polaris missile which turned out to be a dramatically new capability missile, then it was Trident C4 and then Trident C5 - ultimately the fourth iteration of what was discussed, all driven by what was going on in the US. Secondly, very briefly, I think it all depends on what you mean by "decided" because in many respects, particularly with respect to warhead design, if not actual development, decisions are very well advanced. Finally, I think a good deal more attention needs to be put on the tactical warhead that was developed and notified to Parliament under the last Conservative government. In a sense why do we want yet another new nuclear warhead if our last three nuclear tests were apparently for a new tactical warhead, and in the 1993 defence estimates the Government said this was going along very well and then it was cancelled? Whatever happened to that?

Dr Johnson: I would like to address this timing question from a different angle. We face a very tough choice - no question. We can either sleepwalk into a much more proliferated world by the 2020s or, if we want to maximise our ability to strengthen the non-proliferation regime and influence other states, then

the earlier the announcement of a decision not to procure a replacement nuclear weapon system for Trident the better. The more leverage we have the better we can manage the transition towards a non-nuclear defence-based policy. It would allow us to reconfigure our policies and our infrastructure while if necessary, if we have to cling to the voodoo blanket for a few more years, we know we could still take a Trident out on patrol, as we put our resources, our intelligence, Aldermaston, the other facilities, towards creating the future in 2025, where nuclear weapons are marginalised.

Dr Hudson: To put a gloss on that, if I may, we have had a commitment since 1968 to pursue negotiations in good faith. That was reinforced in the mid 1990s with the addition of the 13 practical steps to the NPT. In 2000 we then acquired the demand for an unequivocal undertaking to accomplish the total elimination of our nuclear arsenal. So that is the strengthening of that. The urgency also is absolutely added by the need to advance the non-proliferation agenda, and many people have observed that if countries like Britain go for new nuclear weapon systems, what kind of message is that going to send to --

**Q54 Mr Havard:** So you would argue the urgency is we should get on with making a declaration that helps to get rid of them and the people involved with wanting them would say, "We have to make a decision now if we have to have them because the current process is dying on us and we need to make long-term decisions about replacement"?

Dr Hudson: Yes.

**Q55 Mr Havard:** As I understand it, the Ministry of Defence are not helping us with regard to this inquiry, and you will understand that. At the moment they are declaring no decisions are made, they are still studying it, the Secretary of State has said all of that; we are trying to clear the brushwork so we can have this discussion but, as I understand it, there are projects taking place and you mention the replacement of one particular platform, the submarines, and there could be a capability gap in 2019 unless decisions are made quite clearly, very soon, about whether or not you are going to replace the boat as the platform. So I understand all of that and that is set against projections about what Iran will be able to do and China and all the rest of it. But what I would like to get to is what you said at the start which is that maybe there are different options. All the decision-making we have heard about so far is predicated on one point which is a replacement of the platform for the interballistic missile

which is Trident and its integrity. Are there different and other options that could be taken, and what are the timelines for those? I understand what the procurement processes are.

Dr Willett: I have done a fair deal of looking at what the options are and there are pros and cons on all sides. It is worth pointing out that the Government needs to continue with the answer being "Yes" until it decides that it is "No", so until we come to decision that we do not want it we must always plan and prepare for the fact that it will be "Yes" and it will be looking to retain and that is why the MoD as you suggest will be studying all options. The options basically are the submarine-based deterrent we already have and what you want with a deterrent is to ensure that your adversary cannot deter you; you want a deterrent that is survivable and that can guarantee that you can deliver the effect that you wish to deliver when you want to deliver it where you want to deliver it, and the only option in my view that delivers that is a submarine-based capability. A land-based option would involve a ballistic missile that would need to be deployed on United Kingdom soil somewhere; that makes a rather large target somewhere on the United Kingdom mainland as opposed to a submarine that is continuously deployed at sea; there is the question that of course we do not have our own ballistic missile and would have to develop one either with the US or independently; there is the question of air-launched options, air launched cruise missiles. Well, we do not have a strategic bomber, we do not have short-range aircraft so we do not have a platform with the range to be able to give you the global coverage that a ballistic missile gives you; the Americans are not developing a bomber programme that would help us at this point --

Chairman: Can I stop you here because these are all issues --

**Q56 Mr Havard:** Can I ask the question the other way up? Some of us have said that the MoD's claim is that nuclear capability is not for war-fighting because this is a question of it being simply for deterrence and, Mr Codner, you said this was "not a very meaningful notion" and that largely this is about them having some war with the Treasury on who might provide the money and that this was very interesting in terms of how we might deploy nuclear capability in the future, perhaps based on different platforms. So I am trying to explore the question I asked earlier - that there are clearly other alternatives. Are we in a situation where all these other combinations are still in play in some fashion, or not, and how do they mix into this question about when decisions have to be made. With boats the decision is quite clear; it is

2007 for the concept phase alone.

Mr Plesch: Very briefly, the new chapter makes clear that the Government sees there are military uses for nuclear weapons and, secondly, no attention is given to the re-negotiation of the mutual defence agreement that took place in 2004 managed by John Bolton's department in the State Department --

**Q57 Mr Havard:** God help us!

Mr Plesch: Indeed - but are we asked to believe, this is not a question of conspiracy, that there was no substantive political negotiation over the terms under which that agreement was renewed and that it did not involve issues concerning systems and political intent by the United Kingdom for the period to 2014? I do not find that credible in my knowledge of John Bolton and, indeed, of a realistic understanding of the relationship between states and what we know about the British/American relationship on these issues.

Chairman: Can I stop this point, please, because we have three further issues that I want to discuss very quickly.

**Q58 Mr Borrow:** I want to come back because I think this timing of decisions is crucial from a democratic point of view, and it is really Dr Johnson's point. Am I right in assuming that if the United Kingdom Government now decided not to go ahead with replacing the nuclear deterrent, then whatever government was elected at the next election would be unable, within the timeframe, to restart that programme and ensure that we could replace Trident when it ran out? That is a crucial issue for democratic politics in this country.

Sir Michael Quinlan: I do not think it is as clear-cut as that. I suspect that if you leave it right through to the end of this Parliament you may find that some things are getting compressed, you may have to spend a bit more, you may be at risk of doing things in a bit more of a hurry than is prudent. I doubt if there is a clear cliff edge this side of the next election.

**Q59 Chairman:** Mr Plesch?

Mr Plesch: The Government argues in one breath that 35 countries could get nuclear weapons in the blink of an eye and in another that if we did not do this immediately we can never ever be a nuclear power again.

Chairman: Thank you. Now we have three further questions about

the impact of US decision-making, about the prospects for Trident service life extension and about the civil nuclear programme, and I want three snappy questions, please, and a few snappy answers!

**Q60 Robert Key:** Chairman, I would like to explore the extent to which the United Kingdom is locked into United States' decision-making. First, for Rebecca Johnson, how is American decision-making on the future of its deterrent likely to affect the substance of United Kingdom decision-making and, for Lee Willett, how might US decision-making affect the timetable of United Kingdom decision-making?

Dr Johnson: I responded earlier on the missiles and unless we go back to some kind of freefall from bombs from aircraft we are going to be dependent on US missiles and, indeed, other US components like Treaty Yemen and so on, and with US decision-making as it currently stands it is likely they will carry on being dependent on Trident missiles until the year 2042. If we replace Trident like-for-like, however, we are going to be the ones to build a submarine that is expected to last until at least 2055, so that poses the question: "Will they carry on their system or not and what influence might we have on that?" I have to say from my conversations in Washington I think the influence we will have on that is negligible. The US will make its own decisions based on its own industrial and military perceptions.

Dr Willett: It is obviously important to point out that what the US is trying to do is bring its missile timelines on that into sync with that of the life of its platform because its last platform comes out in about 2042, surprisingly enough the same time as the missiles so the US have done a good job in bringing those two programmes together. That therefore leads into the next issue of what the US will look to replace that with. The US is looking at a replacement submarine, and the D5 life extension programme does give it the option to build more of the new missiles. Of course, the key, however, is their relation to the United Kingdom and there is a slight mismatch at this stage between what the United Kingdom would do if it was to make the decision now to buy a new submarine. The submarine would last until 2050 odd; the missiles at this stage would only last until the 2040s, and the warhead current is slightly shorter, about 2025 to my understanding. So there are those issues that need to be addressed.

Chairman: Kevan Jones?

**Q61 Mr Jones:** This is really about the decision of the US to



extend Trident life. Is there anything in there for us and, secondly, are there any technical reasons why Trident cannot be extended?

Dr Willett: The life expectancy of the submarine is dependent on the durability of the hull and of the reactor. At the moment the United Kingdom has in place a very stringent set of safety measures that the MoD argues that when it comes to end of 25 years the submarine and the reactor have reached the end of their service life. The United Kingdom can extend this for up to five years; beyond that the MoD would argue that perhaps it is too expensive to maintain submarines and to ensure the safety of the reactor and the recertification processes.

Chairman: Now the relationship with the civil nuclear programme. Linda Gilroy?

**Q62 Linda Gilroy:** Kate, we have already touched on the relationship between civil nuclear power and decision-making on the future of the UK's nuclear deterrent. How do you think a decision not to replace the United Kingdom's domestic nuclear power stations would affect our ability to stop power reprocess and store weapons-related nuclear material?

Dr Hudson: Currently?

**Q63 Linda Gilroy:** Yes.

Dr Hudson: I am not absolutely certain.

**Q64 Linda Gilroy:** Does Rebecca have a view on that?

Dr Johnson: Clearly nuclear power and nuclear weapons were intimately involved as we were developing nuclear weapons during the 1950s and extricating them from one another is not very easy. I personally think we do not need either nuclear energy or nuclear weapons and we would be much better off in terms of a secure future for this country finding alternatives to both.

Sir Michael Quinlan: Very briefly, we are talking about whether we have enough weapon-usable material. My understanding is that we have. We were I believe prepared to move towards negotiating for some material cut-off treaty but it was the Americans who blocked that, so I do not myself believe, though you would need to verify this with the MoD, that --

**Q65 Linda Gilroy:** It is also a question of dealing with the

nuclear waste that arises from the programmes.

Sir Michael Quinlan: Yes, but in terms of have we got enough nuclear material to keep going with weapons, the answer I think is "Yes".

Mr Plesch: For most of the post-war period governments denied there was a connection. Finally under the Clinton administration a series of barter agreements involving the exchange of tons of material was made public, so the President is not good to say "We actually know what is going on here". Secondly, there are a number of specialist nuclear materials required for nuclear weapons which are imported from the US at a minimum. I think those points to my mind also go to the larger question that, when it comes to the United States looking at renewing support for Britain, Britain is required to show that it is a serious nuclear power and the question will I think arise immediately in the mind of John Bolton and his colleagues as to how can Britain be an independent nuclear state of any description if it has decided to phase out its civil nuclear industry.

Sir Michael Quinlan: With respect, Chairman, I take it the question is do the possible needs of our military nuclear capability impose any particular direction upon our decisions about civil nuclear energy, and the answer to that I think is no.

**Q66 Linda Gilroy:** And vice versa, to which the answer may be yes. You mentioned the US view on how we may be viewed but what about public opinion on the future of civil nuclear power? How does that compare with public opinion on the future of the nuclear deterrent? Is there any correlation between the two?

Dr Hudson: As far as I understand it from public opinion polls there seems to be at the moment a slim majority against both replacements of Trident and the development of new nuclear power stations. I think it depends really how extensively the public debate can be and how informed. Obviously the recent findings by the Porritt Committee will have helped.

**Q67 Linda Gilroy:** Indeed. If that debate you have referred to, putting cost into the equation of the nuclear weapon, affected people's perception, how would that pan out in your view if cost was put into the equation of energy and future energy costs to domestic users if we were facing such pressures and cost pressures on other sources - sources that were not renewable, with fossil fuels going up and up relentlessly and

renewables not being able to fill the gap? Do you think that would affect the public perception, ie that it would significantly bring down the cost of domestic fuel?

Dr Hudson: Certainly all the evidence I have seen indicates that nuclear power is an extremely expensive and highly subsidised form of fuel, and that even if the number of nuclear power stations were doubled it could only contribute to 88 per cent of our total energy needs, and it would also take an extremely long time to come on-stream, perhaps 10 or 15 years, and the amount of money that could be invested in that would be better invested in renewables and other forms of clean carbon energies and so on, carbon storage energies, which could be brought on-stream much more rapidly. So in terms of economic argument certainly there is not much to sustain a credible case about nuclear power.

Chairman: Thank you very much. What I would next like to do is welcome to this meeting the visitors from the Parliaments of South Eastern Europe who are here with the Geneva Centre for Democratic Control of Armed Forces. I hope you have enjoyed this. I cannot think of a more important form of democratic control than the discussion of whether we replace a nuclear strategic deterrent or not. I am now going to bring this meeting to a close but in doing so may I thank deeply the Members of the Committee and the Members of the Panel who have co-operated so well in keeping their questions and their answers tight and relevant. I think it was an unachievable achievement. Thank you.

