



The Energy and Climate Change Committee

Oral evidence: [The Nuclear Decommissioning Authority](#), HC 748

Tuesday 22 October 2013

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Members present: Sir Robert Smith (Chair); Dan Byles; Ian Lavery; Dr Phillip Lee; Mr Peter Lilley; Albert Owen; Christopher Pincher

Questions 1-91

Witnesses: **John Clarke**, Chief Executive Officer, Nuclear Decommissioning Authority, **Ken McCallum**, Director, Shareholder Executive, and **Mark Higson**, Chief Executive, Office for Nuclear Development, gave evidence.

Chair: Thank you very much for agreeing to come and give evidence. Sorry for the late start; there was quite a lot of private business to go through. For the record, could you introduce yourselves, starting on the left, with your name and organisation?

John Clarke: I am John Clarke, Chief Executive of the Nuclear Decommissioning Authority.

Ken McCallum: I am Ken McCallum, a director within the Shareholder Executive.

Mark Higson: I am Mark Higson and I head up the Office for Nuclear Development, which is part of the Department of Energy and Climate Change.

Q1 Chair: Putting aside inflation and interest rates, what are the main reasons the estimated cost of decommissioning keeps rising? Obviously, it is a huge budget as it is. What has added the £1.7 billion to the cost in this last year?

John Clarke: If you look across our estate as a whole, the picture excluding Sellafield is one where costs have risen in the past. They have now peaked and are starting to come down. That really reflects experience in the United States, where, as you get a good understanding of the scale of the challenge and of some of the older facilities that are being dealt with, you get a good grip on both the schedule and the cost going forward, and then you are able to innovate and bring costs down. What we are seeing at Sellafield, which is the driver that is taking the cost up, is that we are still uncovering some of the

issues at Sellafield and still understanding the complexities, the timescale and the cost that will be required to retrieve waste from some of these very old facilities with very high inventories of radioactive material in them. It is really a process of understanding and better characterising the waste and the facilities.

Q2 Chair: We are going to come to Sellafield-related questions specifically, but on the wider picture, who determines what is necessary in decommissioning and how are the cost estimates challenged or questioned? What do you do to make sure you are not paying more just because it is the easy option?

John Clarke: There are two key players in determining what work is required. There is ourselves as the Nuclear Decommissioning Authority, the owner of the sites, and we decide on a strategic basis what activities we wish to be conducted. We do that in conjunction with the site licence companies—the companies that are the legal operators of the sites. They hold the nuclear site licence and the environmental permits for operating the site, and they are obliged to act in the best interests of safety, security and environmental protection. It is a combination of discussion between ourselves as the owner and the licence companies as the legal duty holder for operating the site to decide what work is necessary. The licence companies then put together plans for how they will tackle the work that needs to be done, how long they believe that will take and how much they think it will cost. We review those plans on an audit basis: we carry out benchmarking where we can, we bring in independent expertise to look where appropriate, and we take a judgment as to whether we think the estimates are appropriate or not. Ultimately, when we are satisfied, we approve the plan and then we measure performance against that plan going forward.

Q3 Chair: How do you incentivise the site companies to come up with accurate figures?

John Clarke: Incentivisation is complex and different depending on the nature of the contracts that we have. If I take Dounreay, for example, in the far north of Scotland, we have a target cost contract there, where the operators of the site have bid a schedule and a cost to complete a defined scope of work. It is clearly in their interests to make sure that that cost and schedule are as tight as possible because we go through a competitive process and essentially the lowest bid wins. They are then incentivised to beat that where possible. Where we have a target cost, there is a competitive tension to bring estimates down and then to beat them.

Elsewhere in the estate where we have cost reimbursable contracts, we rely on the fact that we carry out benchmarking and we carry out audits to ensure that the plans are appropriate and are not unnecessarily fat. We then incentivise the licence companies to achieve targets against those plans.

Q4 Chair: How easy is it to do benchmarking? Is there a similar process going on elsewhere or are a lot of the sites fairly unique in their needs?

John Clarke: It is very difficult in a number of areas, particularly if you take Sellafield. There are no real comparators for some of the old facilities at Sellafield. The closest you can get are one or two of the facilities in the United States Department of Energy clean-up

programme, but even there you are not really looking at the same levels of radioactivity, the same inventories or, indeed, the same congestion on the site. We are able to benchmark against certain activities, particularly new build construction—we can do certain benchmarks there—but it is quite difficult against some of the older facilities. We have been looking progressively to find better benchmarks; indeed, there are actions that have arisen from other investigations, National Audit Office recommendations and so on, which we are pursuing.

Q5 Chair: In your annual report you mention how sensitive future costs are to unknowns such as the disposal site and the geology of it. How can you narrow down the unknowns so that the budgeting to the future can be more determined?

John Clarke: We operate on the basis of ranges wherever possible. We try to make sure that we have a good estimate of the range of possible costs and durations and then we use management judgment for a best estimate. On things like disposal, until there a site is identified, there will be unknowns. We will be looking on a generic design that is suitable for a range of geologies. In terms of storage, we are assuming that we need to store for a fixed period of time, but we are also looking to make sure that stores are extendable both in their lives and in terms of size. We are constantly looking to make sure we have built in as much contingency as we can, but always trying to make sure that we have the best estimate that we can going forward.

Q6 Chair: Obviously, here we are dealing with the legacy of past generations' nuclear programme and investment and decision making. Yesterday, obviously, we took a further step towards a new nuclear programme where, it is claimed, the decommissioning costs will all be covered in the upfront costs and estimates. Have you had any input into how those costs have been determined?

John Clarke: We have. Mark, do you want to talk about the process generally?

Mark Higson: There are two important aspects to dealing with waste generated by new build; first, there should be a plan to deal with that waste, and I think that distinguishes it distinctly from the position at Sellafield; and secondly, funds have to be put aside progressively to cover the estimated costs of those plans. Yes, there is uncertainty relating to the costs of waste disposal, but in many ways it is like a pension fund where you have assets that are building up, future assets uncertain and a certain degree of uncertainty about the liabilities. Part of the requirement for new build is that there is a process for repeatedly assessing the assets and liabilities and making sure that the costs are prudently covered at all times.

Q7 Chair: You alluded to it, but do you foresee more certainty than the previous generation left us with?

Mark Higson: Certainly, as experience builds on decommissioning nuclear power stations. Many of the issues about the costs of clearing up at Sellafield relate to the uncertainty of how the material should be disposed of and treated and, earlier on, uncertainty about what exactly the material was. What we are proposing for new build going forward is that the waste in terms of spent fuel should be stored onsite in facilities

capable of lasting at least 100 years and then transferred into canisters and placed in a geological disposal facility when it is ready.

Q8 Chair: Thanks very much. One of the ways you reduce your cost to the taxpayer is by recovering costs from third parties—I think it was £2 billion of the £59 billion total. Is there more you could do to earn money to defray the tax bill?

John Clarke: The £2 billion is the contribution of the nuclear provision that is liable to third party owners of material. That really arises from contracts that have existed for many years which were inherited by the NDA from primarily British Nuclear Fuels Limited, where services were provided to overseas customers particularly for spent fuel management. As a result of those services, there are waste management contracts going forward that have third party funding obligations associated with them. What more we can do is limited in that really those costs are associated with foreign-owned material. The vast majority of the material we are dealing with is UK owned and there is only one funder for UK-owned material. What we are of course doing, though, is looking at where we can liberate funds from the sale of surplus assets, land or sites that we no longer require, or indeed on occasions small businesses that we have held that we could possibly sell off as well, but they will not make an enormous contribution to the substantial UK provision.

Q9 Mr Lilley: Some of my colleagues have nuclear plants in their own constituencies so they physically see what is going on. I have absolutely no concept of what decommissioning a plant physically means and why it costs such eye-wateringly large sums. You could build HS2 for the sum we are talking about. Every extra billion pounds you spend is equivalent to 10,000 people earning or costing £100,000 each for a year. What are these thousands of people doing?

John Clarke: I accept the numbers are very large. The sites we deal with are many and various, and some of the sites the work that is going on is reasonably agricultural in nature.

Mr Lilley: Farmers do not get paid this sum and they get paid enough.

John Clarke: They do not but very substantial sites. For example, I was at Bradwell in Essex yesterday, which is a Magnox power station that has been closed down for many years. In the next two years, we will have finished all of the work associated with it to put it into what we call care and maintenance, where it will sit for many decades until there is a waste depository available to take it down and put it away. That is an enormous building. In order to make sure that it is safe and secure for decades, it is being completely reclad. There are armies of people working on fastening new structural steelwork to the outside of the building, cladding it—there is an enormous amount of work going on. There are 900 people working on the site at the moment; there were only 300 people working on the site when it was operational. You need an enormous number of people to make sure that you can take out material that is there, put material on, put cladding on the building, et cetera, to look after it.

That is quite a small proportion of the spend, though. When you move to places like Sellafield, you are dealing with very large buildings containing enormous radioactive inventories that need to be kept safe today, secure today, and then we need to devise ways of taking the waste out of them that ensures that safety and security are maintained while

they are being taken out. We are building very significant facilities to enable that waste to be removed. A lot of it involves robotic handling, remote handling because of the high radiation fields, and these projects take an awful lot of time. There are dozens and dozens and dozens of engineers working on each project.

I accept it is quite difficult to grasp. If you have the opportunity to come to one of our sites, you would be more than welcome and might get a feel for what it looks like.

Mr Lilley: It is still quite daunting to imagine why it costs so much to either clad something or take it apart and put it in a hole in the ground.

Q10 Chair: Is the supply market of what you need and the skills too tight to be able to get costs competitive?

John Clarke: It is variable. There are constraints in the supply chain, particularly at the high tech end. If you take the Bradwell example, there is a very competitive market for people doing the sort of work that is being done at Bradwell—many people are bidding for work and you are able to get a good, competitive price for it. It becomes more challenging with some of the highly technical, highly complex areas of work, where we are competing with other industries who are looking for scarce sites and engineering resource.

Q11 Dr Lee: Presumably, this is happening all round the world?

John Clarke: It is happening in other places in the world, places that have nuclear programmes.

Q12 Dr Lee: Okay, so do you go looking for recruits in other parts of the world for this highly technical work?

John Clarke: We do, and indeed people from the UK go to other parts of the world to do work there.

Q13 Dr Lee: There is a buoyant market in the skills?

John Clarke: There is a market but it is generally under-resourced across the world. People are competing very keenly.

Q14 Dr Lee: What proportion of your staff need to be highly skilled?

John Clarke: A very significant proportion. We have very—

Q15 Dr Lee: How many? What percentage approximately?

John Clarke: Everybody who works on a nuclear site licence is what is called suitably qualified and experienced.

Q16 Dr Lee: What does that mean? In practice, what does that mean?

John Clarke: It means that they undergo detailed training, detailed authorisation, annual reassessments of their competence.

Q17 Dr Lee: Okay. Essentially, these big figures arise because we fear the unknown in radioactivity and what it can do, i.e. there is an assessment of risk. Essentially, these people are getting danger money. Is that an acceptable conclusion?

John Clarke: No, I do not think that is the case at all.

Q18 Dr Lee: So why are they paid so much more? When I worked as a doctor, I had potential risk from needle sticks. If I worked in a hospital where there was a greater proportion of people who may have been exposed to hepatitis or HIV, I took on a greater risk. I was not paid more.

John Clarke: Well, I do not think people are paid for the risk that they are taking. People are paid for—

Q19 Dr Lee: In which case, why are they paid so much money?

John Clarke: Well, they are paid competitive rates for what is required.

Q20 Dr Lee: But as my colleague said, it is a significant sum of money for doing work that once qualified is, I suspect, relatively straightforward.

John Clarke: I would suggest that some of it is far from straightforward. There are serious unknowns. As an example, we have facilities at Sellafield where, as Mark has said, the inventories of these facilities are unknown. There is a general knowledge of what is in there, but the precise records from the 1940s and 1950s, in the very early stages of the nuclear weapons and energy programme, were not thorough, so we cannot assume that we know what is in these facilities. It requires care. It requires attention. To some extent, it is a take one step forward, stop, review, seek to understand, come back, think again.

Q21 Dr Lee: For, say, the great majority of your workforce, how long does it take to become qualified?

John Clarke: It varies in terms of the nature of the work that you are doing. Typically, for those who are operating nuclear facilities, it is 18 months to two years.

Q22 Dr Lee: Okay. Take the average salary in the areas where those decommissioning sites are: how much above an average salary for an average person, an average worker, is your pay? Looking at some of the sites, I am sure that there are some pressures on employment in those areas. Presumably, if somebody wants to earn a decent wage, they are going to be interested in working for your organisation. I just wondered how much demand there was for the work or is it somewhat of a closed shop, the same sort of people within it? Is there much turnover of staff?

John Clarke: There is actually increasing turnover. Historically, there has been quite low turnover in the site licence companies, but over the last few years that has grown considerably. If you take Sellafield at the moment, they are having to recruit 500 people per year to stand still. There are 500 people out of a 10,000 strong workforce leaving each year to go to other either nuclear or non-nuclear sectors. As I say, it is a buoyant market and we are competing in a very competitive market to obtain the resources that we need.

Chair: Chris?

Christopher Pincher: No, I will let Peter finish.

Mr Lilley: I have barely started.

Chair: I just wondered if Christopher's point was on this before we get to contracts.

Christopher Pincher: It was, actually, if I may, Peter.

Mr Lilley: Fire away.

Q23 Christopher Pincher: You said, Mr Clarke, that the industry is under-resourced, and therefore you have a rather buoyant market in which you operate. There are something like 60 nuclear stations currently under construction around the world and something like 150 that are planned for construction, including at Hinkley C. Do you think, therefore, there is going to be a pinchpoint in terms of available resources—people, experts and materials—which will mean that the costs for decommissioning and also for the development of new sites are only going to go up, and the timeline to develop them is only going to extend?

John Clarke: I think the more work that comes online through new build or, indeed, through non-nuclear activities—decommissioning of North Sea oil rigs, for example, is pulling on the same sort of resource—will mean we are going to have an inevitable drive. It is supply and demand. What we are lacking in this country is sufficient science and engineering graduates coming through to really fill the demand for industry as a whole. I think there is a real risk that we will see a premium being paid for some of the resources we are looking for. We work very closely with the national skills councils and Cogent and we are looking to try to predict the types of resource and the numbers of resource that we need going forward across the whole industry to make sure we are given the best possible forecasts, but all the forecasts show that there is likely to be a shortage as we go forward.

Chair: The mention of decommissioning reminds me that I should draw to the attention of the Committee my interests in the oil and gas industry entry in the register of members' interests. Peter, contracts?

Q24 Mr Lilley: I am still trying to work this out. Ultimately you are going to clear these sites entirely? What is going to happen to everything that is on them? Just to speed up the process of questioning, if you had the ultimate disposal site or sites agreed, would it substantially reduce the price? Would you not have to clad things—you'd just pull them down and take them straight to disposal?

John Clarke: The plan at the moment is that we will take sites to what we call a care and maintenance regime, so Bradwell by 2015, as I say, which will mean that there is nobody working there, it is able to sit and wait. There are two reasons for that. One is it allows some of the radioactivity there to naturally decay, which means that it is simpler to dismantle when the time comes. The second reason is that until you have somewhere to put the material, it is not cost effective to take it down and move it and put it somewhere else when it is in a good store now. For many of the sites, though—I keep coming back particularly to Sellafield but it does represent about 60% of the expenditure of our estate—the mission there is decades long to retrieve some of this waste, condition this waste and store this waste. While we would be very keen to have a geological disposal facility in good time, it is not driving the main costs at that point. If there is not a geological disposal

facility in the fullness of time, then we do have the potential to have to store for a longer period and eventually incur the final demolition costs.

Q25 Mr Lilley: You described highly skilled people investigating what is in Sellafield, picking it out and deciding how serious it is. If you had a disposal site, could you just chuck it all in?

John Clarke: No.

Mr Lilley: I am using loose terminology.

John Clarke: No. The words “chucking in” are not words that we would use.

Mr Lilley: I appreciate that. You get my drift.

John Clarke: Indeed. What we are doing is we are currently designing facilities to enable us to access these old facilities and remove waste, often by means of remote grabs. It needs then to be confirmed what the waste is. The waste then has to be conditioned, usually involving solidifying it with concrete in stainless steel or ductile cast iron containers, and then placed into storage. At that point, it would be suitable to go into geological disposal. The big cost is associated with retrieval. The onsite storage is a relatively modest cost in comparison to the retrieval cost.

Q26 Mr Lilley: Now, I am also required to ask you what is the advantage to the NDA of letting contracts to parent body organisations to run the companies managing these sites rather than the NDA managing the sites itself, perhaps through having its own arm’s length companies?

John Clarke: A decision was taken at the start of the NDA to look to get the private sector involved through a competitive process. In the early days of the forerunner to the NDA, the decision was taken that the best way to do that was to bring in what we call a parent body organisation. That is a private sector company or a consortium of private sector companies that comes in and takes temporary ownership of the licence company for the period of a contract. We have found that has worked well across the estate generally and we find it works particularly well where we are able to have very clearly defined scope and we can ask the private sector to bid, schedule and cost against that scope. Dounreay would be a good example of that and we are currently running through a competition for the Magnox research reactor sites—12 sites spread across the UK—where we expect the same sort of issue to arise.

We have a slightly different dynamic where you have less clarity on scope and, therefore, it is not possible for a parent body organisation to bid, schedule and cost. In that case, we use the parent body organisation primarily as a resource enhancer. It brings in a high quality executive team to run the site and provides reach back into its parent body companies to provide specific expertise to aid the process going forward. We have found that model works pretty well to date and that is the model we are continuing with.

Q27 Mr Lilley: Are there any lessons to be learnt from the Dounreay contract on letting contracts for other sites?

John Clarke: Certainly. We learnt a lot from the Dounreay contract. That was, we think, a very successful competition. It reduced the forecast costs of decommissioning Dounreay

by about £1 billion and reduced the forecast schedule by around 15 years. We have taken that learning through into the competition that is now running for the Magnox and research reactor sites.

Q28 Mr Lilley: For those new Magnox sites and contracts, who will bear the risk of costs escalating?

John Clarke: The aim at the Magnox sites is that we will have a target cost contract. Effectively, bidders will give us a target cost of what they believe it will take to complete the scope of work we have defined. Then we have a pain/gain share. For a cost underspend, we will get some of the advantage of the cost underspend and the contractor will get some of the advantage of the cost underspend. For the cost overspend, we will bear some of the cost overspend and they will bear some of the cost overspend. There is a pain/gain share around a target cost.

Q29 Mr Lilley: Can you give a percentage on that pain/gain?

John Clarke: I cannot yet for the Magnox competition. We have not concluded that yet.

Q30 Mr Lilley: Fair enough. My other question was going to be what incentives are there for contractors to keep costs down rather than just pass them on, but I think you answered that to the Chairman, unless you have anything to add?

John Clarke: Keeping costs down is a key part of incentivisation. What we want to do is make progress. We try to make sure we balance our incentivisation to encourage people to achieve the schedule, making sure that we are making progress but also keeping costs down. It is a key element of our incentivisation suite.

Q31 Albert Owen: Just before I move on to Sellafield-specific questions, on the skills thing, I have, as you know, a Magnox station in my constituency, which is generating and decommissioning at the same time. Isn't it a bonus to the industry that many people who work in generation will be retrained to go into decommissioning and then at the next stage of new build they will be able to transfer to that? Isn't that a resource that you are keen to hold on to and perhaps enhance for future new build?

John Clarke: Absolutely. We are working very closely with potential new builders, and particularly at Wylfa, where we have the one remaining operational reactor in our fleet and where there is a possibility of new nuclear. We are working very hard to see where we can identify when resources will become available and try to match those up where resource demands might come available. In a number of areas there are gaps, it is fair to say, where we—

Q32 Albert Owen: But you have a retraining programme and upgrade skills?

John Clarke: We do and we have trained a number of people who have moved sites. We have had a number of people who have changed some of their core competencies and moved from different types of work. We are doing our best to work with, again, the skills academies, who are being very helpful on this, to try to make sure that we can balance that supply and demand, so as things are turned off in one area we are balancing it with the demand kicking up in other areas.

Q33 Albert Owen: Thank you. Moving on to Sellafield, you will be aware more than anybody probably of the Public Accounts Committee's very critical report of the NDA and its business in Sellafield. What has the NDA done since then to strengthen its oversight of Sellafield?

John Clarke: We have reviewed the processes that we use to carry out oversight at Sellafield. We have enhanced them in some areas. We have put some additional resource of our own in place and we have also brought in some additional external resource where appropriate. I think the issue is less about oversight itself and more about the inherent uncertainties that there are in some of the projects. This is going to sound slightly glib but paying more attention to it from an NDA perspective is not going to fundamentally reduce the level of uncertainty and risk in some of these projects. That is not to say that we should not make sure that we are carrying out good oversight; we are absolutely committed to that, but it is not just the level of oversight from ourselves. There is a fundamental issue with many, not all, of the projects at Sellafield where there are significant uncertainties and unknowables at this stage. I think we have to acknowledge that there is likely to be further cost impacts as we go forward.

Q34 Albert Owen: The Public Accounts Committee, you will appreciate, has a remit—

John Clarke: Absolutely.

Albert Owen: —and is concerned about overruns year on year.

John Clarke: Indeed.

Albert Owen: So I am asking the question in that context.

John Clarke: I understand. We try to differentiate where costs have increased due to poor performance and where costs have increased due to better understanding or something inadvertent happening. I think if you look at the projects that the PAC looked at in November last year, there is a combination of some poor performance against some of those plants where we hold the contractor to account and their fee is significantly reduced as a result of that, but there are some projects where it is not about performance; it is about understanding and the discovery of unknowns. That will unfortunately be the case for quite some time until we have got into these plants and started withdrawing the material from them.

Q35 Albert Owen: What resources does the NDA have to monitor its own performance? I know you say it is not just about the NDA's performance, but I am afraid you are the witnesses in front of us today and we are asking you these specific questions. What resource do you have to review these proceedings yourself? It is easy to say, "We have a contractor there. If they do not find something, then we come down heavy on them." What about yourself as a government body, arm's length body?

John Clarke: We are about a 210-strong organisation excluding the part of the organisation that is specifically looking after geological disposal, which is about another 100 people. Of those 210, we have about 50 people focused specifically on Sellafield. We have other people focused on Dounreay, the Magnox estate, et cetera. Then we have a core central team, which carries out what we call a national assurance programme. We look to

see where we think the greatest risks are around our estate and that national assurance programme team goes to various parts of the estate to carry out additional assurance and brings in external expertise as appropriate, be it financial expertise, engineering expertise or specific technical expertise where we are looking at particular technically demanding projects and programmes. Our core team is, as I say, about 210 but we supplement that with external resource as required.

Q36 Albert Owen: You have strict monitoring of performance then?

John Clarke: Absolutely.

Q37 Albert Owen: Has the NDA received the Major Projects Authority's review of the NDA's assurances process yet?

John Clarke: We have.

Q38 Albert Owen: What are the MPA's findings?

John Clarke: Generally positive. They found that we have good processes and procedures in place, that we have a number of areas of what they termed as good practice. They found that we had a number of areas of exemplary practice. We have modelled our assurance process to a large extent on the processes used by the Major Projects Authority and, indeed, many of our staff contribute to Major Projects Authority reviews elsewhere round the UK. I think it was a pretty positive review. As ever, there are areas for improvement and, of course, we will make those.

Q39 Albert Owen: Let us concentrate on them. I do not want to dismiss the positives, but there has been a report by a Commons body that was critical. The Major Projects Authority has looked into it. There are bound to be issues. How you are addressing those issues is, I think, the concern for us as a committee and possibly the taxpayer as well.

John Clarke: There are specific actions that came from the National Audit Office report that led to the Public Accounts Committee hearing, there were specific actions from the Public Accounts Committee hearing itself, and now we have some additional actions from the Major Projects Authority review. All of those we have recorded. We have identified actions that we will take, which we have agreed with the people who raised them, and we are tracking those through.

Q40 Albert Owen: Can you share some of them with us? Can you give us some examples of what actions you have taken specifically from those two reports that you were not doing before?

John Clarke: An example was benchmarking. There was a lot of encouragement for us to increase the level of benchmarking. We have introduced a new benchmarking tool since the PAC, really directly as a result of the findings of the NAO and the PAC. We have trialled that in one part of the estate. It looks to be useful. It looks to be helping us get a better grip on the accuracy of some of the costs and schedules going forward. We are using it currently to give ourselves a greater degree of assurance of the revised plan for Sellafield that is being constructed by Sellafield Limited at the moment. That is an example.

Q41 Albert Owen: That is the NDA's perspective. Can I have a perspective from the other two that are here this morning? Again, asking a similar question, do you think the NDA have the resources specific to Sellafield and are they doing what the NAO and the Public Accounts Committee feel they should be doing?

Ken McCallum: I think my answer to that would be that, particularly at Sellafield, this is a genuinely difficult challenge with a great deal of uncertainty. The NDA has come a long way in the eight years since it was established. The findings of successive annual NAO work and the findings from the Major Projects Authority, including through the Major Projects Review Group mechanism, consistently bear out the fact that the NDA is a competent NDPB that is doing a difficult job. There will continue to be unforeseen difficulties and obstacles due to the inherent uncertainties particularly at Sellafield, but I think the evidence of the way the competitions have been run and the way that projected lifetime costs are coming down everywhere in the NDA's portfolio except at Sellafield does provide grounds for solid confidence that this ambition is heading in the right direction. There are still formidable challenges, particularly at Sellafield as I say, but we do have strong assurance through those independent mechanisms, through the way that the competitions are run and then delivery against those contracts is monitored, that progress is being made from a very difficult starting position.

Mark Higson: I have nothing to add to that answer other than to say that the Shareholder Executive is responsible for the governance in the department of the NDA.

Q42 Albert Owen: Again to Mr Clarke, what lessons can be learnt and applied to Sellafield from the Authority's management of other sites? Can you bring some expertise from other sites to Sellafield?

John Clarke: I think that operates on at least two levels. First of all, Sellafield Limited itself is learning, with our encouragement, from activities that have occurred elsewhere on other sites. As an example, ponds, which are large concrete swimming pools effectively that are used for storing spent fuel in, we have a number of ponds that have been cleaned up now at some of the older Magnox sites. There are people now at Sellafield bringing that expertise of how those ponds were cleaned up, the different technologies that we used and whether they applicable to the challenges at Sellafield, so there is a technical exchange and understanding going on.

From our perspective, I think it is really about looking to see where we are able to make sure that we have clear alignment between the goals of ourselves as the owner, the parent body as the temporary owner of the licence company and the licence company itself, and making sure that we have the right contractual levers to get the best possible outcome. Repeating what I said before, I think our experience has shown that that works best where we can clearly define scope and then we can allow the private sector to bid, schedule and cost against that. We are some way away from that at Sellafield still because of the inherent unknowns there.

Q43 Albert Owen: One final point is one of the concerns that the public have about Sellafield is a lack of information. They see these reports. They see the headlines in newspapers. Do you think the NDA and site owners are doing enough to allay people's fears

and perhaps some myths that may exist? What I am saying is, okay, you have only been going for eight years and you have a difficult job; you say it is complex, but a lot of people think, “Are they hiding something by saying this?” Is there anything that you think you can do as an organisation, or maybe the Shareholder Executive and others can do, to be more transparent and open and provide more information?

John Clarke: We try very hard to be transparent and open. We are committed to that. We make a large amount of information available. We have improved, again on a recommendation from the Public Accounts Committee, the level of reporting on the performance of major projects on our website and we will continue to improve that further as we go forward. We have looked at other public bodies in terms of what they report to see what we can learn from them. The experience that we have seen so far, and we have taken guidance from the Major Projects Authority on this, is that the level of transparency we give on project performance is greater than that given in many areas, including the Olympics during its construction phase. That said, we are always looking to find ways of providing information that is meaningful and helpful to people. I accept we can always do more, but I think it is really quite difficult to counter people who have quite strong views about what goes on there.

Q44 Albert Owen: Sure, but is there a public information centre there, for instance, where people can go out of interest and find out exactly what is going on in the nuclear industry, including decommissioning?

John Clarke: There are visitor centres at various places that people can access. We are looking at opening a new visitor centre close to Sellafield. There used to be a visitor centre at Sellafield; it was closed some years ago for a variety of reasons, and we are looking at placing a new one somewhat more distant from the site. As I say, we also have a huge amount of information on our website, accessible from the website. We hold regular stakeholder engagement meetings at all 19 of our sites, we attend public meetings at all sorts of locations, and we speak at events. We are genuinely committed but I am sure we could always do more.

Q45 Dr Lee: Focusing on the unknown element to Sellafield, have you made any estimate of how much trying to deal with something when you are not really sure what you are going to find has increased your costs? The reason I ask is that often the anti-nuclear brigade always talk about, “Look how much it is costing to decommission,” and I wonder what proportion of the costs you are encountering are because you just do not know what you are dealing with.

John Clarke: I am not sure I could give a precise answer on what is down to the unknowns, but if you look at the—

Q46 Dr Lee: In the future. We have just committed to another nuclear reactor, which is going to produce waste. There is an argument—I think a compelling argument—that we should not be building reactors that produce waste, but we have. In view of that, is that going to be cheaper to clear up because we are going to know—because, I presume, we are going to keep an audit of what is there—unlike previously when we did not because it was secret, because it was about weapons materiel manufacture?

John Clarke: Yes. Certainly based on our experience within the NDA, where the material that you have is well quantified, well characterised, we have seen costs increase to some extent but then come down, and we are now pretty confident that we have a very good grip on those. If you look at the more modern reactors, they are designed with decommissioning in mind. The original reactors were not designed with decommissioning in mind, so that presents an extra degree of challenge. I think the real area where the comparison with new nuclear power stations and Sellafield is false is the facilities that you referred to based back in the original weapons and early research programmes where waste was not characterised. There was no thought given for how it would be retrieved. That sort of regime will not exist at all as we go forward. I could not put a number on it, but we spend about £700 million per year on four of the major high-hazard facilities at Sellafield, so it is a not insignificant part of our budget. That is the area where there is the greatest risk. I do not know what element of that cost is down to the unknowns.

Q47 Ian Lavery: With regards to the extending of the contract at the Sellafield site, Nuclear Management Partners have a 17-year contract at break points of five, five, five and two. I am absolutely amazed, I have to say, Mr Clarke, that it was you who said that it was the right decision to extend this contract, bearing in mind—if I can just mention two or three things or possibly more than that—that the National Audit Office said there was huge concerns over value for money; there have been cost increases; there have been delays of between two to 19 months in 2011 to 2012; they failed to achieve 10 out of 32 of their targets; they have been fined for sending waste to landfill; and there have been claims of incorrect expenses. Why on earth did you extend the contract?

John Clarke: As you say, it is a 17-year contract with five-year review points. We have reached the first of those five-year review points, which comes to fruition at 31 March next year. We looked at performance in the round at Sellafield. There has been some very good performance and there has been some very disappointing performance. Some of the disappointing performance was highlighted by the National Audit Office review and the Public Accounts Committee hearing. I think it is important to note that the scope of the National Audit Office review and, therefore, the PAC hearing itself represented less than 25% of the total amount of work done at the site. It is an important 25% but it does not represent all of the work done there. We did look at the overall performance of Nuclear Management Partners and we looked at alternatives to extending the contract. Our conclusion at this point is that the way forward that represents the best likelihood of achieving the outcome that we wish at Sellafield and represents the best likelihood of delivery and value for money as we go forward at this stage was to extend the contract.

Q48 Ian Lavery: How are we going to ensure that the targets that have been set will be achieved? Have you given them a yellow card or the nearer red card?

John Clarke: We have made very clear our expectations by way of improvement moving into a second five-year period—both improvement in terms of delivery of projects, programmes and operational performance on the site itself and an improvement in the capability and capacity of the site to deliver those programmes, or what we call enabling activities to bring about an improved capability. We have made it very clear that some of the things that have gone on have not been satisfactory and we expect to see improvement, but equally, going back to one of my earlier comments, I think we have to expect that there will continue to be disappointments, setbacks, cost increases, schedule delays in a

number of these projects as we move forward as we uncover things that we do not currently understand and we get a better understanding of those. That is not to excuse poor performance in any way, shape or form and we absolutely take punitive action when performance is poor. The fee has dropped considerably.

Q49 Ian Lavery: There is a difference, though, isn't there, with cost increases and delays as compared to claims of expenses from senior executives and, of course, sending waste to landfill? There is a complete difference there. We might expect that there might be delays. We might accept that there would be cost increases that were unforeseen. We would not expect senior executives to fiddle their expenses and we would not expect anyone sending waste to landfill, would we?

John Clarke: We should not expect either of those. On the latter of those, the landfill, that was taken forward by the Environment Agency and the Office of Nuclear Regulation. Sellafield Limited was prosecuted for that and fined, I believe, £700,000 in Crown Court for that, so significant action taken against them for that.

On the expenses, that was brought to light by an audit that the NDA had done. We discovered that expenses were being incorrectly categorised. In fairness to Nuclear Management Partners, the day we informed them of our findings they took immediate action. They refunded all claims that had been incorrectly categorised and have put in place revised procedures to make sure that claims that are legitimate—expenses that are legitimate costs that would be borne by Sellafield Limited and therefore the taxpayer—are treated in one way and those costs that are attributed to Nuclear Management Partners as a private sector organisation in running its own business are treated in a different way, which is a matter of their business. What had happened is some that should have been treated in one way had been incorrectly categorised to Sellafield Limited and that has been corrected.

Q50 Ian Lavery: Obviously, you have learnt a lot from the first five years, the first five years leading up to the 17-year contract.

John Clarke: Indeed.

Ian Lavery: What sort of measures have you put in place because of what has happened in the first five years? How are we going to measure the performance of NMP?

John Clarke: As you say, we have learnt an awful lot and I think NMP, Sellafield Limited and the NDA have all learnt a lot. The roles of the three players in that system are now clearer. The NDA is now better able to express its requirements of the parent body compared to the licence company. I am not sure we were quite as clear as we could have been on that in the early days. I think Nuclear Management Partners have learnt an awful lot about how the site works, about how work is done, and they have certainly made some mistakes, including the expenses one, from which they have learnt. We can take those lessons forward now and with some more time I hope that we will see some improved delivery and improved performance from all three players in the system.

Q51 Ian Lavery: Have they had a written warning or a final written warning because of the performance of the first four and a half years?

John Clarke: Well, we have had a lot of exchange of correspondence. I am not sure it would constitute a final warning. As I say, we have made it very clear what our expectations are going forward. We have written those expectations down. We are very clear on how we will incentivise performance because we want to operate in a positive encouragement and incentivising rather than a negative. We want carrot rather than stick to move forward.

Ultimately, if we are not satisfied with performance then the contract always contains a termination clause and we would have the ability to do that if we did not believe we were getting the outcomes that we want and we felt we had an alternative that offered a better value proposition going forward.

Q52 Ian Lavery: Do you have a termination clause between the five-year break points?

John Clarke: We have a termination clause for convenience at any point with 12 months' notice.

Q53 Dr Lee: Moving on to the geological disposal facilities, Cumbria County Council rejected the proposal, as we all know. What impact has that decision had on time, cost, staff resources and your longer term strategy for disposal geologically?

John Clarke: Shall I start?

Mark Higson: You start and I will pick it up.

John Clarke: It has not had any immediate impact on the NDA's work in that the timescales are still some decades out. Our plans assume that we will retrieve waste, condition waste and store waste for a considerable period of time. At this stage it has not had a direct impact, but perhaps Mark can say a bit more about it.

Mark Higson: Obviously, we were disappointed that Cumbria County Council voted not to continue with the MRWS—Managing Radioactive Waste Safely—process. We were clear and Ministers made this clear that our long-term policy remains that geological disposal is the right solution. Our policy remains that we should do this in partnership with a community that is consenting to host a geological disposal facility.

We had a period of inviting people to make representations, a call for evidence. As a result of this, we launched a consultation on 12 September to set out some proposals for a revised process for identifying a suitable site for a geological disposal facility. We are currently out to consultation. That consultation will close around the end of the year and as a result of that, subject to consultation, we are expecting to make fairly significant changes to the process of how we go forward with the geological disposal facility.

Q54 Dr Lee: What has changed from last time? You seem to put district councils at the forefront. Is this about circumventing a slightly troublesome county council?

Mark Higson: There are a number of things that, again, subject to consultation, we would be thinking about changing. One of them is certainly who is the decision-making body. One is issues around can we make more information available about the geology early on,

before people are feeling they have to take significant decisions. There are issues around how we identify a demonstration of community support, and a series of issues around community benefits and whether we as Government can say more about what we are proposing to do. On all of those issues we have set out proposals in the consultation document and believe that it is going to be possible to devise a process that works rather more effectively than the MRWS process, which came to a close in Cumbria.

Q55 Dr Lee: Which other parts of the country are you considering now?

Mark Higson: We are going forward on a volunteer basis. There are no specific areas of the country that we are considering. We will want to make sure that local authorities anywhere in England and Wales and Northern Ireland are aware of the opportunities the geological disposal facility presents. We will have a period—again, these are provisional views subject to public consultation—after we have settled the policy to make sure that local authorities have an opportunity to consider before we open the doors to volunteer communities to come forward.

Q56 Dr Lee: This is a national challenge. In principle, should it have been localised? We have this material because of national defence requirements, so why are we localising the decision when it is a national challenge?

Mark Higson: That is a genuine policy choice, which is born from experience around the world, in this country and in the United States. We have come to the conclusion that proceeding with consent in an open democratic society is the best way to achieve conclusion of successful identification of a site and construction of a facility.

Q57 Dr Lee: Okay. What will the NDA do to reduce the uncertainty over costs of this facility such as the potential addition of £1.6 billion referred to by the Committee on Radioactive Waste Management in its annual report?

Mark Higson: I am going to hand over to John, but I would say that a major part of the uncertainty is necessarily going to exist until a site has been determined. There are a number of rock types with different costs associated with them and until we have a site then it will be difficult to narrow down the inevitable uncertainty. John, did you want to add to that?

John Clarke: A little. We will continue to collaborate with international partners. We are members of various groups that are sometimes further ahead, sometimes not as far ahead, as the UK with their programmes of geological disposal. We are learning from where they are—particularly Sweden and Finland, which are ahead of the game—looking at what their approach is both from a community perspective but particularly from a technical perspective. We continue to refine the inventory of waste that will be going into the repository but, as Mark says, until we have a site and a geology then we have what is called a generic design for the repository, which is suitable to go into clays, in salts, in hard rocks. The repository will look somewhat different depending on the nature of the geology when a site is identified.

Q58 Dr Lee: Okay. The NDA has a UK mandate but Scotland is unlikely to accept a proposal to take UK-wide nuclear waste. Has the NDA ruled out Scotland as a site for any

geological disposal facility, including that generated from Scotland, and has the NDA any contingency plans for if Scotland goes independent next year?

John Clarke: Waste disposal is a devolved matter and the Scottish Government has come to the conclusion that it does not wish to go forward with geological disposal. We are not proposing to site a geological disposal facility in Scotland, nor consider sites in Scotland.

Q59 Dr Lee: The English have to swallow the waste developed by the Scottish—is that what you are saying?

John Clarke: The spent fuel from, for example, the Magnox facilities has already been taken to Sellafield for reprocessing.

Dr Lee: The point being—

John Clarke: The amount of highly radioactive spent fuel currently in Scotland is quite limited.

Q60 Dr Lee: Is the English taxpayer going to pick up the bill for further decommissioning of that waste? Has it already been relocated?

John Clarke: The costs will be borne by the Government through the NDA.

Q61 Dr Lee: So what you are saying is it should be mentioned in any financial deal? I am getting fed up with the Scottish forever saying that they get this, that and the other money-wise. Are you saying that there is an ongoing cost for the management of the waste that was developed in Scotland?

John Clarke: Clearly, the costs of a geological disposal will need to cover the costs of disposing of the highly active material that once formed part of the spent fuel for Magnox stations that generated electricity in Scotland.

Q62 Dr Lee: Is that audited and do we know exactly what that figure is currently? Is it known about the waste that Scotland has produced?

Mark Higson: We know the quantities.

John Clarke: Yes, I am sure it will be.

Q63 Dr Lee: Fine, okay. Just to clarify: this waste that we are worrying about getting rid of, is it the sort of waste that could be used in a PRISM reactor, the GE Hitachi thing?

Mark Higson: No. The waste that we are talking about obviously needs to be disposed of. For the GE Hitachi PRISM reactor, we are talking about plutonium. Plutonium has been extracted through reprocessing and is currently stored at Sellafield. At the moment, our preferred option is that we will use that plutonium to make mixed oxide fuel.

Q64 Dr Lee: Yes, I am aware of that. I am just trying to clarify whether the waste that you are dealing with has a potential use. Is there any technology where we do not have to dig a hole or find a cave? Is it useable?

Mark Higson: That small part that is represented by plutonium, yes.

Q65 Dr Lee: But the other stuff we just have to manage?

Mark Higson: The fission products are waste.

Q66 Dr Lee: This is waste so you just cannot—

Mark Higson: They will need to be transferred to a geological disposal site whether or not we build a PRISM reactor.

Q67 Dr Lee: Sure, but I am just saying that the waste cannot be used. Currently, as technology stands, it cannot be used for any other purpose?

Mark Higson: Correct.

Q68 Albert Owen: Can I just come in on this? It is an issue I have raised quite a few times and I have not had a significant answer. Perhaps I have not asked the question directly, but I am asking it now. What percentage of waste comes from historical civil nuclear, from the defence industry and from medical practice? It is not all produced by civil nuclear as it is often portrayed, although I know it is all historical and has to be dealt with. Are there any figures that if you do not have them at hand could be given to the Committee? For instance, X-rays in medical facilities, research in medical facilities into radiation and things, that all has to be dealt with separately and properly. Is there any way we could get those figures or do you know them off the top of your head?

John Clarke: I do not know those figures off the top of my head. Certainly, the proportion of waste that we deal with that comes from medical and research sources is really quite modest. There is a significant proportion of the waste that came from the original defence programme; many of the facilities at Sellafield and elsewhere were built specifically for the weapons programme. There is a period of time when the weapons programme merges into early commercialisation of nuclear power and there was dual usage of some of the facilities and then finally into purely power generating. I do not have those figures but I could look to see what information we have and provide a note.

Q69 Albert Owen: It would be useful to have a breakdown of what is high radioactive, what is medium in potential terms and what is low as radiation. I presume X-rays you would class as low waste?

John Clarke: X-ray sources are intensively radioactive. They are generally short-lived radioactive. That is their nature. Something that gives off most radiation is shorter lived and something that gives off lower levels of radiation is longer lived generally. That is a bit of a simplification. Most of the higher activity waste that we have comes from the civil power programme because of the nature of the operations that you take on.

Q70 Albert Owen: Are you talking in terms of volume now?

John Clarke: Volume and activity, but I can provide a note as to what that is. I do not have the numbers to hand.

Albert Owen: That would be useful, thank you.

Q71 Chair: We have already touched quite a lot on the jewel in the crown, which seems to be Dounreay. Is there enough effort being taken to make sure that all the positive lessons learnt in Dounreay are being shared around the industry?

John Clarke: I believe so. Certainly, we have done an awful lot to make sure that we learn the contractual and commercial lessons from Dounreay. I think there is a vibrant community of sharing experiences around the sites. Many different companies are working on many different sites, which enables you to move information around. The NDA is very keen that we hold the vast majority of the intellectual property associated with any of these facilities and we make that freely available to all of the different sites to use. We are careful that we do not allow particular development of work done on our sites with our material to generate IP that is used by other people. There is specific IP that people bring in, which is theirs and is protected, but anything that is generated from on the sites is our IP and we make sure it is widely shared.

Q72 Chair: Are you able to commercialise that IP abroad at all?

John Clarke: To some extent. We are doing some work in Japan at the moment. We are working with both the Rokkasho-mura reprocessing plant in the north of Japan, but we are also providing access to UK companies or assisting UK companies in accessing work at Fukushima on the clean-up programme there where there is some directly transferable experience and information.

Q73 Dan Byles: I would just like to explore some of the governance arrangements a little. Mr McCallum, you have not really had the opportunity to shine yet this morning so now is your moment. How does the Shareholder Executive achieve the right balance between overseeing the NDA and supporting the NDA? Is there an inherent conflict in those two goals?

Ken McCallum: I do not think it is an inherent conflict but there is absolutely a balance to be struck and that, I suppose, is the art of what the Shareholder Executive exists to do on behalf of a number of government departments. Clearly, over the course of a working month there will be lots of day-to-day contact between my team and the Nuclear Decommissioning Authority on delivery, monitoring, tracking spend, tracking delivery of milestones. There will be formal meetings. Once a month we chair a monthly governance meeting, once a quarter a higher level version of that same meeting involving not just my team but stakeholders from the Scottish Executive, from the Treasury and elsewhere, to make sure that progress is being tracked, milestones if they are being missed are being flagged and there is proper follow-up. There is also a great deal of involvement from the Department of Energy and Climate Change, where Baroness Verma sees the NDA chair and Mr Clarke once a quarter, the Secretary of State on a six-monthly basis, and a range of reporting that flows formally from the NDA through the Shareholder Executive and upwards within the Department of Energy and Climate Change once a month. There is absolutely a balance to be struck, which is precisely the function that the Shareholder Executive exists to perform, as I say, on behalf of Government as a whole, particularly where there is a requirement for governance, finance and commercial expertise.

Q74 Dan Byles: What about this triangular relationship between the NDA, the Scottish Executive and the Secretary of State? Is there a tension there? How can the NDA and yourselves as the interface be accountable to two different Governments?

Ken McCallum: John may wish to make his own remarks on that in a second, but from where I am sat, the arrangements do work well in practice. George Burgess in Edinburgh is part of the quarterly governance meeting I chair that takes stock of how progress is being made, where the obstacles are, and what challenges we need to tackle. Clearly, the governance arrangements differ within Scotland as against the rest of the United Kingdom, but for the most part I have not come across any inherent conflict between those two roles.

Q75 Dan Byles: What would you say to that, Mr Clarke?

John Clarke: I agree entirely. We touched on waste policy earlier. There is a different waste policy in Scotland. We are working with the Scottish Government in terms of how that works. They have a near site, near surface approach, rather than a deep geological disposal approach. We just have to work slightly differently with the two different jurisdictions, but I do not see any conflict.

Q76 Dan Byles: There are no parts of what you do that are being pulled in different directions because of the dual accountability? Is there quite a clear distinction between what you are accountable to the Scottish Executive for and what you are accountable to the Secretary of State for?

John Clarke: Yes.

Q77 Dan Byles: You share that view on your side, okay. DECC has recently published a framework document for the NDA. Has that new framework changed the nature of these governance arrangements at all?

Ken McCallum: I think it is probably fair to characterise the framework document as an update and a current capture of how the arrangements were already working in practice in terms of the flows of reporting, the cycle of meetings and interactions.

Q78 Dan Byles: Does the Shareholder Executive have any role in approving remuneration at the NDA?

Ken McCallum: The Shareholder Executive on behalf of the Secretary of State approves the remuneration of the non-executive chair of the organisation and the other five non-executive directors. The Secretary of State also has, in effect, a right of veto over the appointment of the chief executive of the NDA. Beyond that, by design at the time when the Energy Act was created in 2004, central Government does not have a role in setting NDA executive pay.

Q79 Dan Byles: How is that set? Do you have your own separate remuneration committee within the NDA?

Ken McCallum: We do.

Q80 Dan Byles: It does seem that compared with many other public sector organisations the NDA has a very large number of very highly paid executives. We have already touched on the high level of pay for the skilled engineering staff, but compared to other public sector organisations, you have a very large number of highly paid executives receiving over £150,000 a year. Why would you say that is?

John Clarke: I think there are three people in the NDA who have salaries above £150,000 per year.

Q81 Dan Byles: But for a public sector organisation you accept that is probably unusual?

John Clarke: I accept that entirely. Our remuneration committee operates on the basis that it seeks to attract the right level of talent and expertise in a competitive market. It pays rates that it feels are appropriate to attract and retain those individuals.

Q82 Dan Byles: That is not something that you have any governance over?

Ken McCallum: Formally and, as I say, by design, the setting of any executive pay is not within the powers of the Secretary of State.

Q83 Dan Byles: Do you think there is a potential gap here? In most other organisations that have a shareholder, if you are there acting as the proxy shareholder, there would be more oversight over executive remuneration.

Ken McCallum: In practice, how this seems from where I am sat is that at the point when the NDA was being imagined and then established and the legislation was being passed, it was very clear that the UK had a large problem that had been under-addressed by successive generations. I think there was a broad consensus that bringing to bear private sector skills, private sector innovation and competitive pressure has to be the right way to go about tackling this very challenging set of circumstances. Accordingly, it is necessary to pay market rates to bring in individuals with suitable qualifications and expertise from a range of industries—the nuclear industry, the oil and gas industry, big infrastructure; you understand the rest of the list—and therefore by design creating an executive, non-departmental public body with sufficient distance from Central Government to be able to operate in a competitive commercial marketplace, did feel and continues to feel like the right answer. The Secretary of State does have effectively the right of veto over the chief executive appointment, including the remuneration package, and directly sets the remuneration, in consultation with the Cabinet Office and elsewhere in Government, of the non-executive members of the NDA board. Ultimately, of course, if the NDA board, including its remuneration committee, is taking decisions that Central Government profoundly disagrees with in terms of executive pay, Government obviously has the levers to change the NDA board if radical action of that sort is required.

Q84 Dan Byles: Would you see an advisory role from your organisation if the Government were going down that line?

Ken McCallum: Absolutely.

Q85 Mr Lilley: I have two factual questions. First, have you ever had to decommission a nuclear unit from a submarine? Have any of them yet been decommissioned?

John Clarke: The NDA has no role in that activity at all.

Q86 Mr Lilley: Well, maybe there have not been any decommissioned, I do not know. Have any come to the end of their life and had to be decommissioned? That is what I wanted to know.

Mark Higson: We can check this point, if you like. I believe they have not. Submarines that have come to the end of their life are basically stored as floating submarines.

Q87 Mr Lilley: Right. That itself is interesting.

On Hinkley Point, have you been consulted by the proposed operators for the design of the plant so that they can design it to make it easier to dismantle?

John Clarke: We have not been specifically consulted on that aspect, no.

Q88 Mr Lilley: Isn't that astonishing?

John Clarke: Well, we have been consulted in terms of waste management, in terms of those sorts of activities, but the direct consultation as such has not taken place. You are looking at really quite different reactor designs and quite different approaches.

Q89 Mr Lilley: Nonetheless, it would be very important, I would have thought, to reduce future costs to build in decommission-ability, and you know more about decommissioning than everybody else does.

Mark Higson: The answer is that reactor designs, particularly the EPR, have been designed with decommissioning in mind. The funded decommissioning plan needs to be approved by the Secretary of State before construction can begin, and we will be advised by the NDA as to whether it is realistic and deliverable.

Mr Lilley: Right. Well, let us hope they get involved as soon as possible.

Q90 Albert Owen: Just on that point, my understanding of the 2008 Act was that before it goes ahead, the developer and the generator would have to build in decommissioning costs, so construction, generation, decommissioning and waste would all have to be dealt with within the project. Is that your understanding?

Mark Higson: That is correct, yes. There needs to be a plan for decommissioning and waste management and that plan needs to be approved by the Secretary of State before construction can start.

Q91 Chair: What view do you have on the levers and tools that Government should be prepared to use if EDF and its consortium partners fail to clean up properly?

Mark Higson: The requirement is that they should build up funds for the decommissioning. Ultimately, the Government would be responsible and could take over the decommissioning of the nuclear power station drawing on the funds.

Chair: Well, thank you very much for the evidence you have given. If there is anything you think you could expand on in writing afterwards that you did not get across, we would welcome that. Similarly, if there is anything that occurs to us we will be back in touch. Thank you again for your evidence. It has been most helpful.

