House of Commons
Committee of Public Accounts

Defence Nuclear Infrastructure

Second Report of Session 2019–21

Report, together with formal minutes relating to the report

Ordered by the House of Commons
to be printed 6 May 2020
The Committee of Public Accounts

The Committee of Public Accounts is appointed by the House of Commons to examine “the accounts showing the appropriation of the sums granted by Parliament to meet the public expenditure, and of such other accounts laid before Parliament as the committee may think fit” (Standing Order No. 148).

Current membership

Meg Hillier MP (Labour (Co-op), Hackney South and Shoreditch) (Chair)
Mr Gareth Bacon MP (Conservative, Orpington)
Kemi Badenoch MP (Conservative, Saffron Walden)
Olivia Blake MP (Labour, Sheffield, Hallam)
Sir Geoffrey Clifton-Brown MP (Conservative, The Cotswolds)
Dame Cheryl Gillan MP (Conservative, Chesham and Amersham)
Peter Grant MP (Scottish National Party, Glenrothes)
Mr Richard Holden MP (Conservative, North West Durham)
Sir Bernard Jenkin MP (Conservative, Harwich and North Essex)
Craig Mackinlay MP (Conservative, Thanet)
Shabana Mahmood MP (Labour, Birmingham, Ladywood)
Gagan Mohindra MP (Conservative, South West Hertfordshire)
Sarah Olney MP (Liberal Democrat, Richmond Park)
Bridget Phillipson MP (Labour, Houghton and Sunderland South)
Nick Smith MP (Labour, Blaenau Gwent)
James Wild MP (Conservative, North West Norfolk)

Powers

Powers of the Committee of Public Accounts are set out in House of Commons Standing Orders, principally in SO No. 148. These are available on the Internet via www.parliament.uk.

Publication

© Parliamentary Copyright House of Commons 2020. This publication may be reproduced under the terms of the Open Parliament Licence, which is published at www.parliament.uk/copyright/.

Committee reports are published on the Committee’s website and in print by Order of the House.

Evidence relating to this report is published on the inquiry publications page of the Committee’s website.

Committee staff

The current staff of the Committee are Bradley Albrow (Second Clerk), Hajera Begum (Committee Assistant), Jessica Bridges-Palmer (Media Officer), Ameet Chudasama (Senior Committee Assistant), Richard Cooke (Clerk) and Shai Jacobs (Chair Liaison).
Contacts

All correspondence should be addressed to the Clerk of the Committee of Public Accounts, House of Commons, London SW1A 0AA. The telephone number for general enquiries is 020 7219 5776; the Committee’s email address is pubaccom@parliament.uk.

You can follow the Committee on Twitter using @CommonsPAC.
# Contents

Summary 3

Introduction 4

Conclusions and recommendations 5

1 The performance of the three infrastructure projects 9
   Nuclear-licensed sites 9
   Progress to date 9
   Starting projects without mature designs 10
   The current funding regime 10

2 Commercial management 12
   Operating in a monopolistic environment 12
   Improving commercial arrangements 12

3 Improving future performance 13
   Relationships with the regulators 13
   The importance of a corporate memory and skills 14
   Ownership of the sites 14

Formal minutes 16

Witnesses 17

List of Reports from the Committee during the current Parliament 18
Summary

The Ministry of Defence (the Department) maintains a submarine-based nuclear deterrent, which relies on a network of programmes, equipment and people, including specialised infrastructure. Poor management of three on-going critical infrastructure projects on nuclear-regulated sites has contributed to a combined cost increase of £1.35 billion and delays of between 1.7 and 6.3 years. Each project suffered significant problems in its early stages and the Department said it immensely regretted the amount of taxpayers’ money lost. It accepts that poor contracting had made it difficult to incentivise better performance from contractors, and that it had not engaged effectively with the nuclear regulatory bodies. It also describes its arrangements for the Nuclear Enterprise in the past as ‘fragmented and balkanised’, with insufficient recognition of the interdependencies between projects.

Since 2016, the Department has negotiated some changes to the contract at one of the three programmes—MENSA—to reduce its financial risk exposure. It has also made some improvements to the oversight of the nuclear enterprise, including the infrastructure projects, through creation of the Defence Nuclear Organisation and the Submarine Delivery Agency. As a result, the Department considers it now has a better understanding and control of the programmes. It has also worked to develop better relationships with the regulators to ensure there is a more effective discussion about the balance between risk and value for money, although it is too early to assess whether all these reforms have been effective. The Department acknowledges that it still has shortages of the specialist skills it needs.
Introduction

The Ministry of Defence (the Department) maintains a submarine-based nuclear deterrent, operating four nuclear-armed submarines to support the government’s national security policy. To do this, it relies on a network of programmes, equipment and people, often referred to as the Nuclear Enterprise (the Enterprise). Within the Enterprise are eight sites critical to producing, installing, operating, maintaining and disposing of nuclear reactor cores and weapons.

A number of major infrastructure projects are under way to modernise some of the sites. They include MENSA at the Atomic Weapons Establishment site at Burghfield (forecast cost £1.8 billion, forecast completion 2023), where the Department is building a new nuclear warhead assembly and disassembly facility; the Core Production Capability facilities at Raynesway (forecast cost £474 million, forecast completion 2026), where the Department is replacing facilities so it can produce the latest nuclear reactor core designs; and the Primary Build Facility (forecast cost £240 million, forecast completion 2022) to allow a modular-build approach for the Dreadnought-class submarines. The sites are subject to regulation by two regulators—the Office for Nuclear Regulation and the Defence Nuclear Safety Regulator, depending on who owns the sites—which assess whether the sites and the buildings on them are safe to operate. Where regulators are not content, they can prevent or stop construction until the concerns are dealt with.
Conclusions and recommendations

1. The Department’s nuclear infrastructure projects have suffered from major cost increases and delays. While we acknowledge the unique complexity and scale of these projects has contributed to costs escalation and this is common to other comparable programmes in other countries, UK cost overruns were caused in large part by avoidable mistakes, such as beginning construction work without mature designs. The three projects will not be delivered to the original plans, will be delayed by between 1.7 and 6.3 years, and will cost a total of £1.35 billion more than originally planned. In particular, MENSA had seen a cost increase of £1.07 billion. Some of these cost increases were the result of poor planning decisions and were avoidable. For example, 48% of the total increased costs and nearly £400 million for MENSA was a result of construction starting before requirements or designs were sufficiently clear, which was time-consuming and costly to subsequently rectify. The Department states that it immensely regrets the amount of taxpayers’ money lost as a consequence, but acknowledges that costs could continue to increase. It notes that similar projects in other countries had also gone over budget, because of the unique complexity, scale and safety standard requirements of nuclear projects. It states that the big lesson from these experiences was the crucial necessity for proper planning before starting to build.

2. We understand the need to make early progress given the interdependencies between the infrastructure programmes and the requirements of the Dreadnought programme, but the Department did not properly anticipate and manage the risks of starting early. The Department told us it has learned from these experiences and has paused another Atomic Weapons Establishment project—Project Pegasus for the construction of a manufacturing facility for enriched uranium—in order to ensure that the design is mature enough and that requirements for the future warhead are clear.

   Recommendation: In the future, the Department must more explicitly identify and manage the risks of initiating infrastructure projects without a fully mature programme design, and plan using appropriate checkpoints within contracts to assess progress.

3. The Department’s previous contracts have been poorly designed, which has left the taxpayer to shoulder the burden of cost increases while doing little to incentivise contractors to improve performance. The defence nuclear field is a monopoly environment and very few companies are able to carry out such work; four contractors hold 97% by value of the Enterprise contracts. The Department says that the defence sector has become increasingly concentrated in a small number of companies. The 1958 Mutual Defence Agreement also means that only Rolls Royce has the capacity to design and manufacture nuclear propulsion systems.

4. The contracts for the three infrastructure projects did not allow the Department to share the financial risk. This means the taxpayer has borne the full cost of budget overruns, including those of its sub-contractors. The Department accepts the National Audit Office’s criticism that its contracts were not well designed and says it would not operate in this way in the future. The Department tells us that a number of steps have been taken to ensure it has more appropriate contracting mechanisms
and avoid repeating these mistakes. For example, before any contract is let by a primary contractor for Dreadnought work, it is scrutinised by a new contracts permissioning group chaired by the Submarine Delivery Agency Chief Executive. In addition, around £37 billion of contracts—some 252 in total—are now subject to the Single Source Contract Regulations (the Regulations), which the Department says have helped increase transparency over costs. However, so far it has been unable to persuade Rolls Royce to agree to move the Core Production Capability contract to come under the Regulations.

Recommendation: In the 2020 report to Parliament on the Dreadnought programme, the Department should update us on how it is taking full advantage of the Single Source Contract Regulations, making full use of target cost or firm price contracts, and ensuring that it effectively shares risk with site owners when negotiating commercial arrangements.

5. The current funding regime does not work for the Nuclear Enterprise due to its uniquely long project timescales, and given the impact on the stretched overall defence budget. Instead, there is a strong case for ring-fencing the nuclear budget. The nuclear budget is around 18–19% of the UK defence budget, whereas it is 6–7% of the defence budget of the United States. The Department says it currently has the funding it needs, but will negotiate with the Treasury about future funding as part of the Spending Review. Under current arrangements, the nuclear budget remains subject to the same pressures as other expenditure. The Department is keen to place some form of ring-fence around the nuclear budget, given its high priority and importance.

6. The Department finds that the demands of Treasury annularity expectations and managing to a 31 March deadline are hard for long-running major capital programmes. The need to achieve in-year affordability savings has had some terrible consequences, such as work being deferred, which in the case of MENSA has led in the past to increased costs, with AWE receiving additional fees as part of a £97 million cost increase. It has embarked on a huge programme of recapitalisation across the whole Nuclear Enterprise, involving new nuclear submarines, new propulsion systems and new infrastructure, many of which will be in the top ten largest for the Department. As a result, there are peaks of spending in the coming years, at a time when, as the Committee has reported on a regular basis, the overall defence budget is stretched. This emphasises the importance of managing the portfolio of programmes as a whole, trying to smooth spending and managing the overall risk profile.

Recommendation: Given its impact on the overall defence budget, the Department should make a case to the Treasury for ring-fencing the nuclear budget in the course of the discussions in 2020 for the current Integrated Review and the Spending Review.

7. The Department has belatedly learned through experience the importance of strong relationships between it, the nuclear regulators and the site owners. This has been a missed opportunity to improve mutual understanding and tackle challenges, to the detriment of the Nuclear Enterprise. Regulatory arrangements for nuclear sites involve the Department, the site operators and one or both nuclear
Defence Nuclear Infrastructure

regulators, depending on whether the Department or industry own the site. The Department must pay for the infrastructure it needs, but it is the site operator that holds the nuclear licence and must satisfy the regulators’ requirements. Because the Department does not operate most of the nuclear-regulated sites, it does not hold a regulatory role. All parties accepted that some ‘gold-plating’ of specifications had taken place, although the Department does not consider that the regulators try to force expensive facilities on it.

8. More recently, the Department says there has been improved dialogue via senior leadership groups which bring together different responsible parties at Devonport and AWE sites. We commend this continuous learning from experience. A Defence Nuclear Organisation team is also now located on site at MENSA and there is a shared cost management system to share schedule and cost data in real time. The Department says that the Office for Nuclear Regulation has been happy to discuss costs and help avoid ‘gold-plating’ of specifications. It is also confident that there are many issues around the design and build that it can continue to discuss with the regulatory community, which do not require any changes to the current arrangements.

**Recommendation: To secure performance improvements across infrastructure programmes, the Department must continue the commendable practice of admitting failures early and learning from its mistakes. We expect to see as standard more robust liaison arrangements between the Department, site owners and regulators, including the use of co-location of teams, consistent with practice in the civil sector to accelerate the process of reviewing and learning.**

9. It is unacceptable that the Department in other areas has repeated past mistakes, and has failed to learn lessons from elsewhere. This underlines the importance of developing a strong corporate memory and retaining experienced staff wherever possible. Many of the mistakes made on these projects are similar to those on which the Comptroller and Auditor General reported more than 30 years ago, and have also been seen in the civil nuclear sector and in the United States. The Department cannot explain why its leadership has not ensured that it learned from these experiences, started before requirements were sufficiently mature, and had not engaged sufficiently with the regulators in the past. It accepts that the NAO report contains a full set of lessons and that it should not operate in the same way in the future.

10. The failure to learn from the past underlines the importance of the Department maintaining a robust corporate memory, particularly given that specialist staff are in demand and may move to posts elsewhere in government and the private sector. The creation of the Defence Nuclear Organisation was in part designed to consolidate knowledge in one place, and the recently appointed Director-General Nuclear stated that she had specialists with 20–30 years of experience, but there are personnel shortages. The Permanent Secretary states that he wants a mix of internally developed staff and external expertise, and that it is important that the Department is able to generate its own talent. The Department continues to discuss how to improve the position on specialist skills with the Department for Business, Energy and Industrial Strategy and the Department for Education.
Recommendation: Given the specialist nature of this field, it is essential that the Department has in place effective arrangements to maintain corporate memory, and works with industry and other government departments to develop the skills needed to be able to take forward nuclear work in line with best practice. The Department should update us on the progress it is making in this regard in the 2020 report to Parliament on the Dreadnought programme.

11. Ultimately, the Department retains the risk associated with these programmes and must manage them itself, regardless of whether it owns the relevant sites or not. The Department uses eight nuclear-regulated sites. It owns and operates two of them, with contractors owning or operating the others. The Department acknowledges that the scale of the risks of nuclear programmes, civil or military, means they are too large for private companies to carry and the risk of failure or cost overruns rests with the state, regardless of ownership. The Department accepts that contracts it had signed in the past have not reflected this reality as well as they should have done.

12. On whether it is considering taking on the risk directly and then contracting out the facility to a private company, the Department responded that it is considering where ownership of risk should lie for future projects. We are also concerned that when the Department makes a contract it does not at least jointly own the intellectual property. The Department says that it makes a balanced decision about who should own or use the facilities and intellectual property. Sometimes the contractors have the intellectual property that the Department wishes to benefit from, and on other occasions, the Department generates it.

Recommendation: The Department must avoid writing contracts which purport to transfer risk to the private sector when in reality this is illusory. The Department must only write contracts which are explicit about where risks lie and how those risks will be monitored and managed by both the Department and the contractor. The Department should write to us by 31 December 2020 to provide a detailed assessment of whether the current ownership arrangements for nuclear regulated sites are in the best interests of the taxpayer and whether more could be done to exploit the intellectual property arising from developments on the sites in the national interest.
1 The performance of the three infrastructure projects

1. On the basis of a report by the Comptroller and Auditor General, we took evidence from the Ministry of Defence (the Department) about three crucial nuclear infrastructure projects.¹

Nuclear-licensed sites

2. The Ministry of Defence (the Department) maintains a submarine-based nuclear deterrent, operating four nuclear-armed submarines to support the government’s national security policy. This is made up of a network of programmes, equipment and people, often referred to as the Nuclear Enterprise (the Enterprise). Within the Enterprise are eight locations critical to producing, installing, operating, maintaining and disposing of nuclear reactor cores and weapons. These are the naval bases at HM Naval Base Clyde (comprising Coulport and Faslane) and Devonport, the AWE plc sites at Burghfield and Aldermaston, the BAE Systems-owned Barrow shipyard, and the two Rolls Royce owned/operated areas at Raynesway.²

3. A number of major infrastructure projects are under way to modernise facilities on some of these sites, some of which were built in the 1950s when the UK first invested in a nuclear deterrent. Three of the most significant under construction are Project MENSA at Burghfield (forecast cost £1.8 billion, completion 2023), where the Department is building a new nuclear warhead assembly and disassembly facility; the Core Production Capability facilities at Raynesway (forecast cost £474 million, completion 2026), where the Department is replacing facilities so it can produce the latest nuclear reactor core designs; and the Primary Build Facility in Barrow (forecast cost £240 million, completion 2022) to allow a modular-build approach for the Dreadnought-class submarines.³

4. The sites are subject to oversight by one or both regulators—the Office for Nuclear Regulation (ONR) and the Defence Nuclear Safety Regulator (DNSR)—depending on who owns the sites. The ONR licenses defence sites operated by third parties, whilst the DNSR oversees sites owned and operated by the Ministry of Defence. The Department has committed to applying the same standards, and the two regulators work together at times. Site operators must demonstrate that they meet specific nuclear safety standards and, for example, that their sites can withstand explosions and earthquakes.⁴

Progress to date

5. The three major infrastructure projects examined by the National Audit Office represented around a quarter (by initial value) of the Ministry of Defence’s 52 nuclear projects.⁵ These projects will not be delivered to the original plans, and will be delayed by between 1.7 and 6.3 years, and cost a total of £1.35 billion more than originally planned.

¹ C&AG’s Report, Managing infrastructure projects on nuclear-regulated sites, Session 2019–20, HC19, 10 January 2020
² C&AG’s Report, para 1.3, Figure 1
³ C&AG’s Report, Figure 1
⁴ C&AG’s Report, para 1.2
⁵ C&AG’s Report, para 1.11
In particular, MENSA has experienced a cost increase of £1.07 billion. The Department stated that it immensely regretted the amount of taxpayers’ money lost, and pointed out that these figures could still go up as the figures were points in a possible range. It noted that nuclear projects in other countries had also gone over budget, arguing that this was due to their common complexity and scale, and the safety standards to which all are subject.6

6. Since 2016, some progress has been made with delivery of the projects. At Barrow, the first building of the primary build facility is complete and being fitted out, and foundations are being dug for the second. Similarly, at Raynesway the first building is being fitted out, and the second building is being planned. The latest forecast delivery dates were between 2022 (Barrow) and 2026 (Raynesway).7 The facilities at MENSA are currently being fitted out and we asked the Department whether we should be concerned if the site was not completed to its revised forecast date of 2023. It advised us that the facilities that MENSA will replace have regulator approval until 2026. The Department did not believe there was a threat to the maintenance of the existing warhead, or the development of a new one.8

Starting projects without mature designs

7. The Department told us that the big lesson from the experiences set out in the National Audit Office report was the crucial necessity for proper planning before starting to build. We understand the need to make early progress given the interdependencies between the infrastructure programmes and the requirements of the Dreadnought programme, but the Department did not anticipate and manage the risks effectively or provide contingency in the budgets. As a result, 48% of the total increased costs, including nearly £400 million for MENSA, were due to construction starting before requirements or designs were clear.9

8. The Department told us that it had learned from these experiences. It was very clear now that it needed to identify the big infrastructure requirements early and must not start building until it had a design.10 We asked for an example of such learning and the Department advised that it had paused another Atomic Weapons Establishment project—Project Pegasus—the construction of a manufacturing facility for enriched uranium—in order to ensure that the design was mature and requirements clear for the future warhead.11

The current funding regime

9. The Department told us that its nuclear budget is around 18–19% of the total UK defence budget, whereas the nuclear component of the defence budget of the United States is about 6% or 7%.12 The Department said it currently had the funding available but would negotiate future funding with the Treasury as part of the Spending Review later this year. It was keen to place some form of ring-fence around the nuclear budget given that it is the Department’s top priority and must be funded. Under current arrangements, it remained subject to the same pressures as other expenditure.13
10. We asked the Department about whether any progress was being made with Treasury about establishing longer-term funding plans for the nuclear work. It told us that it did discuss a 10-year planning horizon with Treasury, which was unusual in government, but funding was not guaranteed over this period. It said that the demands of Treasury annularity expectations and managing to a 31 March deadline are very difficult for long-running major capital programmes. The need to achieve in-year affordability savings has also led to increased costs. For example, the deferral of work on MENSA to secure savings led to AWE receiving additional fees as the deferred costs were classed as a saving. The Department also continued to pay management fees to AWE during the delay, contributing to a £97 million cost increase. We made a similar point about the value of longer-term budgeting arrangements in our report on the Department’s Equipment Plan 2018–28.

11. The Department explained that it had embarked on a huge programme of recapitalisation across the whole nuclear enterprise, involving new nuclear submarines, new propulsion systems and warheads, and new infrastructure. Many of these programmes are individually in the top 10 largest overseen by the Department. As a result, there are peaks of spending in the coming years, at a time when, as the Committee has repeatedly reported, the overall defence budget is stretched. This emphasises the importance of overseeing the portfolio of programmes as a whole, trying to smooth spending and managing the overall risk profile.
2 Commercial management

Operating in a monopolistic environment

12. The defence nuclear field is a monopolistic commercial environment and very few companies are able to carry out such work; in 2018 four contractors held 97% by value of the Nuclear Enterprise contracts. The Department told us that the defence sector had become increasingly concentrated in a small number of companies, which it considered made contracting more complicated than if there was competition. As a result, it was very reliant on BAE Systems, Rolls-Royce and Babcock, as only a small number of contractors can design and construct buildings for the nuclear enterprise. The 1958 Mutual Defence Agreement with the United States also meant that only Rolls Royce has the capacity to design and manufacture nuclear propulsion systems.\(^{18}\)

13. The contracts the Department prepared did not allow it to share the financial risk, which meant that it bore the full impact of cost increases, including those of its sub-contractors. For example, at Barrow, BAE Systems received a £65 million increase in claims from its subcontractor, which were passed on to the Department. Under the contract, BAE Systems also got an increase in its management fee, which rose along with the costs incurred.\(^{19}\) We pointed out that our predecessors had criticised the Department for cost-plus based contracts almost thirty years ago.\(^{20}\)

Improving commercial arrangements

14. The Department accepted the National Audit Office’s criticism that its contracts had not been well designed in the past and said it would not operate in this way in the future. It told us that a number of steps had been taken to ensure it had more appropriate contracting mechanisms and to expunge some past practices.\(^{21}\) For example, before any contract is placed by its main contractors for Dreadnought work, it is scrutinised by a new contracts permissioning group chaired by the Submarine Delivery Agency Chief Executive to see what is to be delivered down the delivery chain.\(^{22}\) The Department said it had also made improvements to supply chain management, with 85% of contracts for MENSA moved to a fixed cost or target cost forecast basis.\(^{23}\)

15. In addition, around £37 billion of contracts—some 252 in total—are now subject to the Single Source Contract Regulations (the Regulations), which the Department stated had helped increase transparency over costs and strengthened the Department’s position. However, although Rolls Royce had signed up to the Regulations for new contracts, so far the Department had been unable to persuade it to agree to move the Core Production Capability contract to come under the Regulations. This is subject to commercial negotiations.\(^{24}\) More generally, the Chief Executive of the Submarine Delivery Agency said that the body was significantly strengthening supervision and oversight of its contracts, and was recruiting people with greater contract management experience.\(^{25}\)

\(^{18}\) Q 80; C&AG’s Report, para 3.2
\(^{19}\) Q 75; C&AG’s Report, para 3.6
\(^{20}\) Qq 70, 79, 76, 82
\(^{21}\) Q 79
\(^{22}\) Q 74
\(^{23}\) Q 61
\(^{24}\) Qq 76, 82
\(^{25}\) Q 85
### 3 Improving future performance

#### Relationships with the regulators

16. Because of the risks associated with defence and civil nuclear sites and the handling of nuclear material, they are subject to strict regulation. When constructing new facilities, the site operator is usually required to obtain the regulators’ agreement that the design and construction meet safety and regulatory requirements. Safety cases will include detailed information on the material used, how the facility has been built to required engineering standards, the requirements for examination and testing of equipment, and evidence that nuclear risks have been reduced as far as possible.\(^{26}\)

17. Regulatory arrangements for nuclear sites involve the Department, the site operators and one or both nuclear regulators. The Office of the Nuclear Regulator licenses defence sites operated by third parties. The Defence Nuclear Safety Regulator oversees sites owned and operated by the Department. The Department must pay for the infrastructure it needs, but it is the site operator that holds the nuclear licence and must satisfy the requirements of the regulator. Because the Department does not operate most of the nuclear-regulated sites, it does not hold a regulatory role and as a result has been less able to influence value for money.\(^{27}\) The National Audit Office reported that all parties accepted that some ‘gold-plating’ of specifications had taken place, such as over-engineered blast doors at MENSA.\(^{28}\)

18. The Department said that the importance of improved relationships with the regulator was one of the three most important lessons it had learned from these projects.\(^{29}\) In response to past problems, it had improved the dialogue via senior leadership groups which brought together different responsible parties. At Aldermaston, this was the A6 group and at Devonport, the D6. These groups discussed regularly how projects were progressing and were designed to involve regulators early.\(^{30}\)

19. The Department considered that the more the different parties worked together, the greater likelihood that money would be well spent, and the Chief Executive of the Submarine Delivery Agency confirmed that all future infrastructure projects would take as joined-up an approach to planning as possible.\(^{31}\) A Defence Nuclear Organisation team is also now located on site at MENSA and there is a shared cost management system to share schedule and cost data in real time.\(^{32}\)

20. We asked the Department whether the current regulatory model was the best way of working. It said it was not contemplating constitutional changes to regulatory arrangements and there was much learning possible with the regulatory community that did not require such change. There was now a good, constructive dialogue with the regulators, and at Devonport, for example, the Department stated that substantial costs had been taken from future infrastructure plans as a result of working with the regulators to make a quite radical improvement.\(^{33}\) It added that ONR did not try to make the Department choose the

\(^{26}\) C&AG’s Report, para 1.9  
\(^{27}\) C&AG’s Report, para 2.5, Figure 7  
\(^{28}\) C&AG’s Report, para 2.7  
\(^{29}\) Q 66  
\(^{30}\) Q 58  
\(^{31}\) Q 58  
\(^{32}\) Q 60  
\(^{33}\) Qq 92–93
most expensive facilities and were pragmatic and reasonable.\textsuperscript{34}

### The importance of a corporate memory and skills

21. Many of the mistakes made on these infrastructure projects were similar to those on which the National Audit Office and the Committee have reported in the past, and have also been seen in the civil nuclear sector and in the United States.\textsuperscript{35} The Department could not explain why it had not learned from these experiences, and had started building before requirements were sufficiently mature. It also could not explain why it had taken so long to identify the problems at MENSA between 2013 and 2015. It fully accepted the NAO conclusions and recommendations, and said it would not operate or contract in the same way in the future.\textsuperscript{36}

22. The failure to learn from the past underlines the importance of maintaining a robust corporate memory within the Department, particularly given that its specialist staff are in demand and may be expected to move to posts as part of the normal churn of government. The creation of the Defence Nuclear Organisation in 2016 was, in part, designed to consolidate knowledge in one place. We asked the Director-General Nuclear how she ensured an accumulation of institutional memory. She told us there was deep expertise within the organisation, not least the Submarine Service, as well as amongst weapons and nuclear scientists. Some had 20–30 years of experience, but the Department was also developing new staff and bringing people in from outside the organisation.\textsuperscript{37} A nuclear strategic workforce planning project was established in spring 2019 and is identifying necessary actions to address skills gaps.\textsuperscript{38}

23. Despite this, there are shortages of personnel with crucial specialist skills. The Department noted, for example, there was a lack of those able to write safety cases, which contain the information the regulators need to be able to draw evidence-based conclusions on whether nuclear standards have been met.\textsuperscript{39} The Permanent Secretary told us that he wanted a mix of internally grown staff and external expertise, but thought it was critical that the Department thought carefully about its talent management and developed its own people.\textsuperscript{40} He said that the Department wrestled with the challenge of having sufficient specialists but there were not as many as the country needed. He continued to discuss how to improve the position with the Department for Business, Energy and Industrial Strategy and the Department for Education.\textsuperscript{41}

### Ownership of the sites

24. The Department uses eight nuclear-regulated sites. It owns and operates two of them, with contractors owning or operating the others.\textsuperscript{42} We asked the Department whether it was considering taking on the risk and owning some of the assets that are currently held by site operators directly. The Department acknowledged that the scale of the risks

\textsuperscript{34} Q 102
\textsuperscript{35} C&AG’s Report, Figure 11, para 3.19
\textsuperscript{36} Qq 60, 70–71
\textsuperscript{37} Q 68
\textsuperscript{38} Letter from Sir Stephen Lovegrove, 25 March 2020
\textsuperscript{39} Q 104
\textsuperscript{40} Q 67
\textsuperscript{41} Q 99
\textsuperscript{42} C&AG’s Report, para 1.3
of nuclear activity, civil or military, means these risks are typically too large for private companies and ultimately rested with the state, regardless of ownership. It accepted that historically the contracts that it had signed had not reflected this reality as well as they should have done, and some of the current tensions arose from that. The Department told us that consideration was being given to where ownership should lie for future projects, aligning it more closely with the real adoption of risk by the Department. It was harder to change existing arrangements, where it was bound by contract law. It did, however, have ‘step-in’ rights if needed.\footnote{Qq 89–90}

25. We asked the Department about the ownership of intellectual property where it is not the site owner, and why, when it had contracted, it did not at least jointly own the intellectual property. The Department said that it made a balanced decision about who should best own or use the facilities and intellectual property. Sometimes the contractors have the intellectual property that the Department wished to benefit from, and on other occasions, it generated it.\footnote{Qq 82–84}
Defence Nuclear Infrastructure

Formal minutes

Wednesday 6 May 2020

Virtual meeting

Members present:

Meg Hillier, in the Chair

Mr Gareth Bacon          Sir Bernard Jenkin
Olivia Blake             Shabana Mahmood
Sir Geoffrey Clifton Brown Gagan Mohindra
Dame Cheryl Gillan       Sarah Olney
Peter Grant              Nick Smith
Mr Richard Holden         James Wild

Draft Report (Defence Nuclear Infrastructure), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 25 read and agreed to.

Summary agreed to.

Introduction agreed to.

Conclusions and recommendations agreed to.

Resolved, That the Report be the Second of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Monday 11 May at 1:45pm]
Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the inquiry publications page of the Committee’s website.

Wednesday 11 March 2020

Sir Stephen Lovegrove, Permanent Secretary, Ministry of Defence, Charlie Pate, Finance Scrutiny and Plans Director, MOD, Vanessa Nicholls, Director General Nuclear, Defence Nuclear Organisation, MOD, and Ian Booth, Chief Executive, Submarine Delivery Agency.
## List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the [publications page](#) of the Committee’s website. The reference number of the Government’s response to each Report is printed in brackets after the HC printing number.

### Session 2019–21

<table>
<thead>
<tr>
<th>First Report</th>
<th>Support for children with special educational needs and disabilities</th>
<th>HC 85</th>
</tr>
</thead>
</table>