Speech: Nuclear Industry Association (NIA) annual conference 2017

Introduction

Good morning and thank you to the NIA for the opportunity to address you all today.

Firstly, I want to congratulate John Hutton on his new role as Chairman of Energy UK – which means I can look forward to him lobbying me on my entire brief!

I also want to thank John, his team and the many industry leaders here today, who have contributed to the development of the Nuclear Sector Deal.

Clean Growth and Industrial Strategy

Sector Deals are a major component of the Industrial Strategy, which we published just last Monday.

The strategy is one of this government's top priorities, because it sets out, in practical terms, how we intend to build a Britain fit for the future – a Britain ready to embrace the challenges and opportunities ahead.

By focusing on the 5 foundations of productivity: ideas, people, infrastructure, business environment and place, we can unlock our potential and in doing so build prosperous communities across the UK.

We also identified 4 Grand Challenges – areas where we can seize the initiative with the technologies and industries of tomorrow. One of these is clean growth.

This follows September's Clean Growth Strategy, which set out how the whole country can benefit as we cement our place as the world leader in low carbon technologies and industries.

The nuclear industry is well placed to deliver against these important objectives – providing clean, reliable energy while growing the economy.

The sector provides tens-of-thousands of highly-skilled jobs and benefits diverse regions across the UK, from Cumbria to Somerset and from Wales to Oxfordshire.

Look at Hinkley Point C: when complete, the plant will provide enough clean energy to meet an impressive 7% of the UK's electricity needs…

…but the project has already begun to benefit the South West, which is now home to the 2,500 workers currently on site and where we have seen over £450 million in contracts let to local businesses in the first year.

We want to build on the momentum created by Hinkley and we continue to work closely with EDF, CGN, Horizon and Nugen on their proposals for future plants. I also welcome the news that Toshiba has selected a preferred bidder for the Nugen project, and we now look forward to continuing to work with KEPCO to discuss their plans.

At the other end of the fuel cycle, we continue to lead the way in waste and decommissioning and we are seeing the benefit of this at Sellafield. Today, our expertise across the nuclear sector is recognised throughout the world.

We have to use this as a springboard.

As the Industrial Strategy makes clear, we must build on the UK's strengths to take advantage of the opportunities of the future.

So I welcome today's publication from the Nuclear Industry Council of proposals for a sector deal which sets out a number of steps to deliver on that potential.

Boosting the competitiveness of the sector by driving down costs…

While supporting high skilled, well paid jobs in regions across the United Kingdom…

We will be working with industry over the coming weeks to explore their proposals in detail.

I am pleased with the progress of our discussions to date, and as co-chair of the Nuclear Industry Council, I have witnessed first-hand the determination shown by the industry's leaders to see it succeed.

Government too is committed to a thriving and innovative industry, so I am pleased to announce a package of new measures to boost innovation and provide greater clarity on our future plans.

National Policy Statement (NPS)

Government recognises the value industry places on policy certainty, so today I am pleased to launch a consultation on siting arrangements for large scale new nuclear plants. This will begin the process towards designating a new National Policy Statement for conventional nuclear power stations deployable between 2026 and 2035.

This initial consultation sets out the proposed siting process and assessment criteria for sites potentially suitable for nuclear plants with single reactor capacity above 1GW.

Having this new National Policy Statement in place will provide reassurance and certainty to developers into the 2030s.

Geological Disposal Facility (GDF)

Looking further ahead, we recognise the need to implement a responsible long term solution for the disposal of higher activity radioactive waste.

That is why early in the New Year, we will be launching two consultations as part of the process to site a Geological Disposal Facility for higher activity radioactive waste. We will be consulting on a framework for future planning decisions and separately, on our approach to working with local communities in the siting process.

Internationally, it has been shown that ‘willing host communities’ are central to a successful siting of a Geological Disposal Facility. Strong, effective and lasting relationships, built on mutual trust and a shared vision of the long-term economic benefits for the host community, are key to successful delivery of a GDF.

These consultations will help reassure industry that investment in the supply chain, both in people and capability, will pay dividends once we move into the delivery phase of this project.

Again, this will support both the objectives of our Industrial Strategy.

On our current estimates, at the peak of construction, the site will support up to 1,000 jobs, with an additional 1,000 jobs in the supply chain.

When it’s ready, the facility will sustain around 600 jobs a year for more than a century, while delivering significant investment and innovation to local communities.

Innovation and future technology

Another key element of our Industrial Strategy is a big commitment to supporting innovation, with a pledge to raise R&D investment to 2.4% of GDP by 2027.

It is only by innovating across the nuclear supply chain that will we be able to maintain our competitiveness into the future.

This means new approaches to nuclear technology that drive down costs and improve safety.

I know you will be keen to maintain the pace.

After all, the UK has the potential to become a world-leader in developing the next generations of nuclear technologies.

Your appetite is clear; industry has repeatedly called for clarity on the government’s plans for emerging nuclear technologies.

So today I am pleased to be able to set out the first steps in our proposed way forward.

We have spent the last 18 months working closely with you to understand new technological developments, and to assess their viability through the Small Modular Reactor competition.

That exercise is now closed, but it has greatly informed the evidence base and helped shape our thinking in this area.

In particular, 3 key requests came through.

The first was that you want better and earlier access to Regulators.

So, as announced in the Clean Growth Strategy, we are providing up to £7 million of funding to regulators to build the capability and capacity needed to assess and licence small reactor designs.

This funding will also provide support for pre-licensing engagement between vendors and regulators. I'm pleased to say a very successful first event took place in November with a focus on regulatory issues relating to smaller water-cooled reactors.

The second is to help turn new developer's ideas into detailed designs.

To help deliver this, over the next 3 years we will be providing up to £44 million pounds in R&D funding to support Generation IV advanced reactors.

The third request was to create the right market conditions to enable developers to bring new reactors to market.

A crucial element of this is demonstrating commercial viability – in particular, the ability of new designs and delivery mechanisms to attract investment and generate cost-competitive electricity.

Smaller scale designs, using modular and other modern manufacturing techniques offer the possibility of achieving these aims, and I am grateful to those developers who have shared their financial estimates with us.

But I want to go further, so I'm setting up an expert finance group to report to me by the spring on smaller scale designs, identifying the barriers to investment and how these might be overcome.

I will also be considering what further steps government might take to support smaller reactor designs and maximise the benefits to the UK supply chain.

In the Clean Growth Strategy we confirmed £460 million of funding to support work in areas including future nuclear fuels, new nuclear manufacturing techniques, recycling and reprocessing, and advanced reactor design.

As part of this I am happy to announce that we will soon be launching the second phase of the Nuclear Innovation Programme. This will include up to £8m pounds for work on modern safety and security methodologies and advanced fuel studies.

We have also recently awarded contracts worth over £5 million pounds for work on materials and manufacturing as part of the Small Business Research Initiative that we launched last year

… and I am happy that we will be working with AMEC, Nuclear AMRC, Fraser Nash Consultancy and the University of Sheffield on this essential work.

Our leadership in nuclear technology is not just about progress in fission technology. I also want to see us maintain our global advantage in fusion technology.

So I am delighted to confirm the announcement of £86m of funding to establish the National Fusion Technology Platform.

Our investment will support UK industry in targeting major contracts for nuclear fusion and build on our expertise in this potentially transformative field.

This builds on the pledge we made in June to underwrite our fair share of funding for JET until the end of 2020. These actions underline our commitment to close collaboration with our European partners on nuclear research and training as we prepare to leave the EU and Euratom.

Euratom

While we are leaving the European Union, we have been clear that our decision to withdraw from the Euratom Treaty in no way diminishes our nuclear ambitions.

The objective for our negotiations is to seek maximum continuity with Euratom across nuclear trade, nuclear research and nuclear regulation.

And I am pleased to say that we are making good progress with our negotiations with the EU, with the IAEA, and with our key trading partners across the globe.

The first phase of EU negotiations has focussed on legal and technical issues related to nuclear materials and safeguards arrangements.

In his report, the Secretary of State for Exiting the European Union noted that:

> We are now close to reaching agreement on the vast majority of issues set out in our position papers on Euratom.

So we are keen to continue this good progress by moving on as quickly as possible to the negotiations on the future relationship with Euratom, with the aim of maintaining a very close a relationship.

But we don’t underestimate the challenge we are facing. There are some areas, such as free movement of goods and services, which are linked to broader

negotiations with the European Union.

That is why we are putting the necessary arrangements in place to provide certainty for the civil nuclear industry that it will be able to continue to be successful under any scenario.

This includes negotiating bilateral safeguards agreements with the International Atomic Energy Agency…

… Negotiating bilateral Nuclear Cooperation Agreements with Japan, Australia, the United States and Canada…

… Delivering a new domestic nuclear safeguards regime, regulated by the Office for Nuclear Regulation …

… Exceeding the standard that the international community would expect from the UK…

… And the Nuclear Safeguards Bill, giving government the power to establish that domestic safeguards regime. Good progress has been made on the bill, which passed Commons Committee Stage on 14 November.

We've also held many discussions with the nuclear sector to better understand your concerns, including my own attendance at September's industry forum.

Most importantly, we will continue to engage closely with you in parallel with our discussions with the EU…

… And I can announce that we will be holding further industry roundtables on a recurring basis.

Today is another opportunity to engage, and in a moment you will be hearing from David Wagstaff who is the head of EU Negotiations within the Euratom team.

We also have a team of Officials from the Civil Nuclear Directorate in the event space to answer your questions on any of the today's announcements.

Conclusion

These announcements all point to the great opportunities facing the nuclear industry, but we know the sector also faces a big challenge to remain competitive going forward.

This is emphasised by the falling price of offshore wind. While this is great news for our clean growth agenda, it puts a spotlight on nuclear. And the advancement of technologies such as battery storage will only increase the pressure on nuclear to compete with other clean technologies.

To do this, it is clear we must reduce costs across the nuclear lifecycle – from new build to decommissioning.

Government will play a key role in this, but there is no doubt that industry

has to lead the way.

So I'm pleased to see you publish your vision for enduring success, based on ambitious, specific cost reduction… and I look forward to discussing these further with John and his team.

This government is committed to a bold, new Industrial Strategy, with Clean Growth as one of the central components and it is clear nuclear has the potential to deliver against these ambitions.

With a clear commitment to cost reduction, I look forward to supporting a strong and innovative nuclear industry; one which is fit to deliver for decades to come.

Thank you.

Press release: Report 18/2017: Overturning of a tram at Sandilands junction, Croydon

In its investigation into the overturning of tram 2551 in Croydon on 9 November 2016, the Rail Accident Investigation Branch (RAIB) found that the risk of trams overturning on curves was not properly understood by the tramway and so there were insufficient safety measures. All of the passengers who were killed, and many of those who were seriously injured, fell through the windows or doors as the tram tipped over. Today, the RAIB has made 15 safety recommendations to improve safety on UK trams.

Simon French, Chief Inspector of Rail Accidents said:

> The RAIB's report into the accident at Sandilands will stand as the record of the events that led to the tram overturning and the terrible human consequences. Our careful analysis of the evidence, and identification of the causal and underlying factors, has enabled us to make a number of far-reaching recommendations. These will have a lasting impact on the way that the tramway industry manages its risk.
>
> We are recommending action in five main areas. The first is the use of modern technology to intervene when trams approach hazardous features too fast, or when drivers lose awareness of the driving task. Tramways need to promote better awareness and management of the risk associated with tramway operations. Work needs to be done to reduce the extent of injuries caused to passengers in serious

tram accidents, and to make it easier for them to escape. There need to be improvements to safety management systems, particularly encouraging a culture in which everyone feels able to report their own mistakes. Finally, greater collaboration is needed across the tramway industry on matters relating to safety.

UK tramways have been aware of our key findings and the focus of our recommendations for many months now. I am very encouraged by the progress that has already been made in addressing the recommendations and the collaborative approach that is being taken.

It is vital that the right action is taken to stop such a tragic accident from ever happening again.

Summary

On the morning of 9 November 2016, tram 2551 reached the maximum permitted speed of 80 km/h as it entered the first of three closely spaced tunnels, which together extended for about 500 metres. When leaving the tunnels, the tram should have been reducing speed significantly as it was approaching the sharp curve round to Sandilands junction, where there is a 20 km/h limit. This was marked by a speed limit sign at the start of the curve. On the day of the accident, the tram was travelling at 73 kilometres per hour when it reached this sign.

The excessive speed caused the tram to overturn as it passed through the curve. Passengers were thrown around inside the tram and the tram slid along the ground on its side. Of the 69 passengers involved in this tragic accident, seven died and 61 were injured, 19 seriously.

Investigation methods included:

- obtaining data from the tram’s onboard recorder and the tramway’s signalling system
- conducting tests on the tram’s safety systems
- using computer modelling to understand the minimum speed that would overturn a tram on the curve at Sandilands
- reviewing the design of the infrastructure
- reviewing the tramway’s safety and risk management systems
- interviews with people and organisations involved
- surveying tram drivers to understand how trams were being driven on that route

The RAIB’s investigation concluded that it is probable that the driver temporarily lost awareness on a section of route on which his workload was low. The investigation has found that a possible explanation for this loss of awareness was that the driver had a microsleep, and that this was linked to fatigue. Although it is possible that the driver was fatigued due to insufficient sleep there is no evidence that this was the result of the shift pattern that he was required to work.

It is also possible that, as he regained awareness, the driver became

confused about his location and direction of travel through the tunnels. The infrastructure did not contain sufficiently distinctive features to alert tram drivers that they were approaching the tight curve.

The investigation found that:

- there was no mechanism to monitor driver alertness or to automatically apply the brakes when the tram was travelling too fast
- there was inadequate signage to remind drivers when to start braking or to warn that they were approaching the sharp curve
- the windows broke when people fell against them, so many passengers were thrown from the tram causing fatal or serious injuries

Recommendations

The RAIB has made 15 recommendations intended to improve safety. Recommendation areas include:

- technology, such as automatic braking and systems to monitor driver alertness
- better understanding the risks associated with tramway operations, particularly when the tramway is not on a road, and the production of guidance on how these risks should be managed
- improving the strength of doors and windows
- improvements to safety management systems, particularly encouraging a culture in which everyone feels able to report their own mistakes
- improvements to the tram operator's safety management arrangements so as to encourage staff to report their own mistakes and other safety issues
- reviewing how tramways are regulated
- a dedicated safety body for UK tramways

Video summary and animation

Overturning of a tram at Sandilands junction, Croydon

Explanation of RAIB's investigation following a fatal accident involving a tram near Sandilands junction, Croydon, 9 November 2016. (This video is narrated and captioned.)

Animated recreation of Sandilands derailment

Animation explaining the derailment sequence following a fatal accident involving a tram near Sandilands junction, Croydon, 9 November 2016.

[Microsleep – Unintentional periods of sleep lasting anywhere from a fraction of a second to a few minutes. They are often, but not always, characterised by the closing of eyes or head nodding actions.]

Notes to editors

1. The sole purpose of RAIB investigations is to prevent future accidents and incidents and improve railway safety. RAIB does not establish blame, liability or carry out prosecutions.

2. RAIB operates, as far as possible, in an open and transparent manner. While our investigations are completely independent of the railway industry, we do maintain close liaison with railway companies and if we discover matters that may affect the safety of the railway, we make sure that information about them is circulated to the right people as soon as possible, and certainly long before publication of our final report.
3. For media enquiries, please call 01932 440015.

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PDF, 20.4MB, 175 pages

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News story: Queen welcomes Royal Navy's largest ever ship into the fleet

The Queen spoke at a ceremony in Portsmouth's naval base this morning, attended by Her Royal Highness Princess Anne, Defence Secretary Gavin Williamson, Chancellor Philip Hammond and military chiefs.

In her role as the ship's Lady Sponsor Her Majesty addressed guests before the Ship's Commanding Officer, Captain Jerry Kyd, read the commissioning warrant. The iconic White Ensign was then raised, symbolising the commissioning of the nation's future flagship into the Royal Navy's fleet.

Defence Secretary Gavin Williamson said:

> Today marks the start of a hugely significant chapter for the Royal Navy, and indeed the nation, as the future flagship is commissioned into Her Majesty's fleet. It is an honour to witness the crowning moment of an extraordinarily busy year for the Royal Navy that has seen us name the second carrier, HMS Prince of Wales, cut steel on the first Type 26 frigates and launch the National Shipbuilding Strategy.
>
> Our new aircraft carrier is the epitome of British design and dexterity, at the core of our efforts to build an Armed Forces fit for the future. For the next half a century both carriers will

> advance our interests around the globe, providing the most visible symbol of our intent and commitment to protect the UK from intensifying threats, wherever they may come from.

Having successfully completed her second stage of sea trials off the south coast of England, the carrier is back alongside at her home port of Portsmouth. Over 10,000 people across the UK have contributed to the delivery of the ship under the Aircraft Carrier Alliance.

Completing final build activity and preparing for helicopter trials in the New Year, HMS Queen Elizabeth will head to the United States for initial flight trials off the coast in autumn 2018. There are currently 150 Royal Navy and RAF personnel training in the US on our 13 F-35 jets.

The UK has worked closely on both the F-35 and carrier programmes with the US, our pre-eminent partner within NATO, enabling us to fly aircraft from each other's ships. Both of the UK's new carriers will be able to operate alongside NATO and coalition allies.

Admiral Sir Philip Jones, First Sea Lord and Chief of Naval Staff, said:

> In hoisting the White Ensign from HMS Queen Elizabeth today, Britain has confirmed her place among the world's great maritime powers in the most majestic and muscular terms.
>
> The Queen Elizabeth-class carriers will sit at the heart of a modernised and emboldened Royal Navy, capable of projecting power and influence at sea, in the air, over the land and in cyberspace, and offering our nation military and political choice in an uncertain world.
>
> But our greatest strength of all is the young sailors and marines upon whose shoulders our continued security and prosperity rests. They are starting their careers as a new chapter opens for the Royal Navy – and like all those who have gone before them, they are ready to serve their Queen and Country.

Her Royal Highness Princess Anne also attended the commissioning ceremony. Crown Copyright.

Both new aircraft carriers will be able to perform a wide range of tasks, from humanitarian and disaster relief to fighting terrorism and high-end warfighting. In what has been termed, 'the Year of the Royal Navy' the second carrier, HMS Prince of Wales, was named in Rosyth and is structurally complete.

This year the Royal Navy has also had steel cut on the first of the Type 26 frigates and Dreadnought submarines, the launch of the National Shipbuilding Strategy, provisioning for a new class of frigate, the Type 31e, float out of the fourth Astute submarine, HMS Audacious, the naming of two Offshore Patrol

Vessels and the arrival of our first two MARS Tankers in the UK.

Last month the Defence Secretary visited HMS Queen Elizabeth for the first time while at sea, meeting the crew and thanking them for their work towards UK defence.

Chief of the Air Staff, Air Chief Marshal Sir Stephen Hillier, said:

> Congratulations from the Royal Air Force to the Royal Navy on achieving another important milestone in the UK's Carrier Strike capability. I know the RAF and RN F-35 crews are looking forward to starting to fly from HMS Queen Elizabeth next year.

News story: Technological boost for winter resilience

Roads Minister Jesse Norman visited Cumbria today (7 December 2017) to see a world-first innovation which could see communities affected by floods reconnected more quickly.

The minister saw pioneering technology which will allow bridges to be re-opened more quickly, improve resilience at key flooding hotspots and help to prevent communities from becoming isolated.

The BridgeCat, which has been developed by the Department for Transport, Cumbria County Council and Gaist Solutions, uses sonar and an underwater camera to provide detailed information about a bridge's condition. It combines this with sensors to measure the damage caused by floodwater.

Jesse Norman witnessed the first trial of the innovative equipment taking place today at Salterwath Bridge near Kendal.

In the 2015/16 winter storms, 792 bridges in Cumbria were affected. Previously divers have been sent to assess damage once floodwater has receded, but they can only visit a small number each day, causing a delay to vital road links being re-opened.

Roads Minister Jesse Norman said:

> A good transport system is vital to any community and essential to a thriving economy.
>
> The BridgeCat is an exciting, world-leading innovation which will help bridges to open more quickly after severe weather,

> reconnecting communities and minimising disruption.

In December 2015, Storm Desmond broke the United Kingdom’s 24-hour rainfall record, with 341.4 mm of rain falling at Honister Pass in Cumbria.

Since then, the department has provided more than £191 million to help authorities repair damage to their transport infrastructure and the majority of repairs have now been undertaken. The Linton Bridge in Leeds was the latest to reopen in September this year following the 2015/16 winter.

Councillor Stewart Young, Leader of Cumbria County Council, said:

> This is important technology for Cumbria – the BridgeCat trials are exciting, and if successful, will enable us to gather important information about the condition of our bridges, which in turn helps us to plan and prioritise works much more efficiently and effectively. I’m also delighted to be working in partnership with the Department for Transport and Gaist Solutions on this innovative new project – the technology will be a vital tool in our ongoing flood recovery and resilience works.

Jenny Roberts, Senior Project Manager for BridgeCat at Gaist Solutions Limited, said:

> At Gaist we focus on addressing national resilience issues to benefit local communities, collaborating on highly innovative projects aimed for social good. BridgeCat embodies these values completely and I am extremely excited to be taking this incredibly important asset on its first step in the journey towards deployment in Cumbria. We have a lot of learning to do, but we also have a great team in place and I have every confidence that we will be gathering useful data from day one.

The BridgeCat will also be used to monitor the ongoing condition of bridges across the county to keep them safe and properly maintained.

Over the coming weeks, the BridgeCat system will be trialled at a number of sites in Cumbria. The trials will enable teams to test the system components and to ensure efficient operation. It will also provide an opportunity for the BridgeCat team to gain experience of operating the equipment and analysing the data gathered by the inspection.

News story: Developing advanced reactors for nuclear: apply for contracts

Organisations can apply for a share of £4 million to carry out feasibility studies into the development of nuclear advanced modular reactors.

The Department for Business, Energy and Industrial Strategy (BEIS) has up to £44 million to invest in an advanced modular reactor feasibility and development programme.

Up to £4 million pound is available for projects that look into the feasibility of designing new reactors that maximise the amount of off-site building and can generate lower cost electricity and provide additional benefits.

A further £40 million could be available to develop the best projects from the first phase of the competition.

The funding is for contracts under the SBRI (Small Business Research Initiative).

Providing low-cost electricity

The government believes nuclear energy will be an important part of the future energy mix. However, it needs to be competitive with other sources of low-carbon energy or provide additional benefits and functionality.

BEIS is looking for projects that focus on at least one of the following areas:

- low-cost electricity generation
- increased flexibility in providing electricity to the grid
- additional functionality such as heat output for domestic or industrial use or production of hydrogen
- alternative applications that could generate revenue and economic growth such as radioisotope production

Competition information

- the competition opens on 7 December 2017, and the deadline for registration is at midday on 7 February 2018
- SBRI is open to any organisation that can demonstrate a route to market for its idea
- projects should be led by organisations with experience in nuclear reactor technologies. They are encouraged to work with innovative organisations both inside and outside the sector

- we expect contracts for feasibility projects to be up to £300,000 and for projects to last up to 8 months
- successful projects will attract 100% funded development contracts
- a briefing event will be held on 12 December 2017