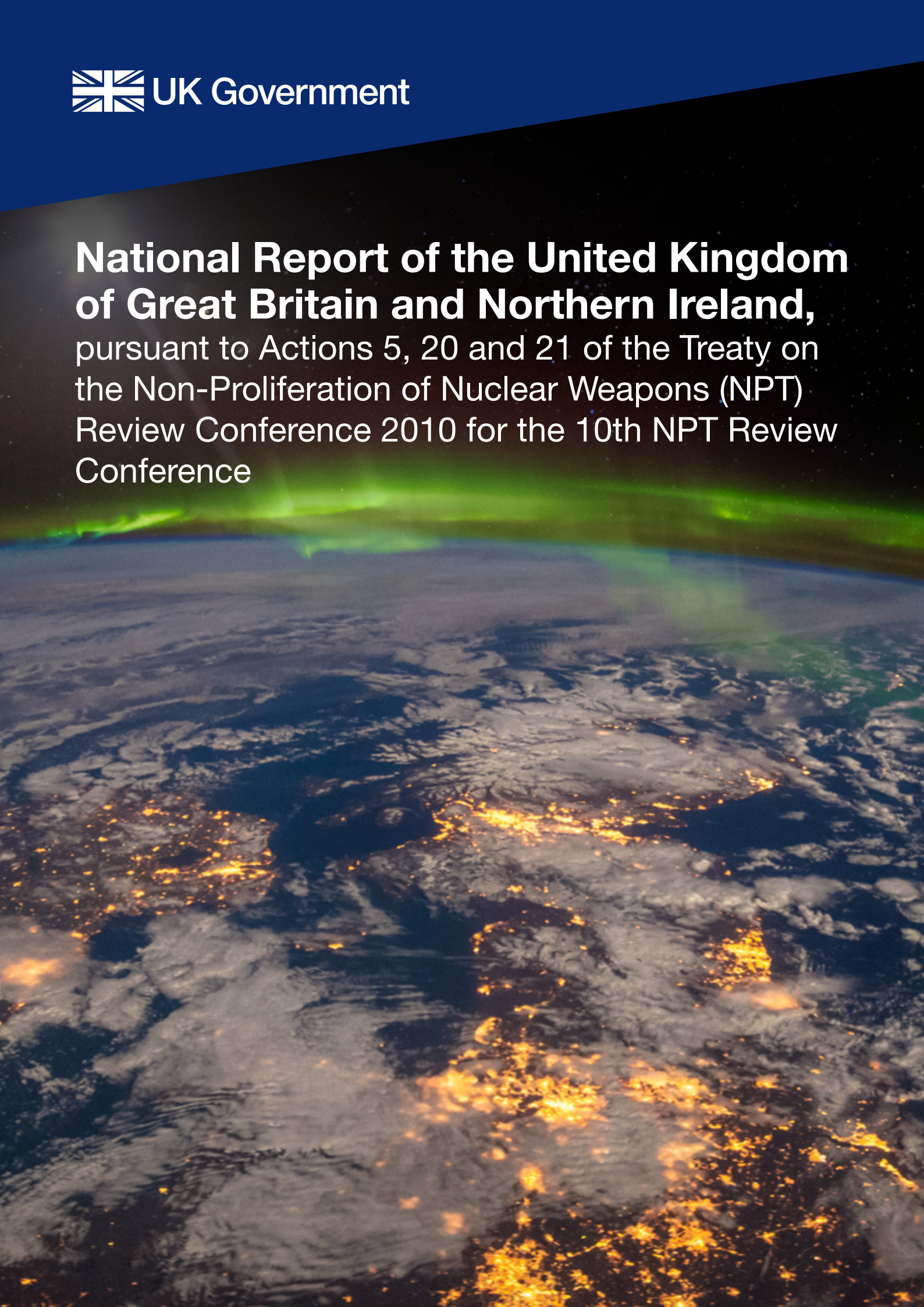
UK Government

National Report of the United Kingdom of Great Britain and Northern Ireland,

pursuant to Actions 5, 20 and 21 of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Review Conference 2010 for the 10th NPT Review Conference



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Ministerial Introduction

The last few years have been extraordinary. When the United Kingdom hosted our American, French, Chinese and Russian counterparts in London for the P5 Conference in February 2020, we could only guess at the immense challenges the following months would bring. The Covid-19 pandemic has shown us the importance of the international community standing shoulder to shoulder against shared challenges.

In early 2020, to mark the 50th anniversary of the Treaty on the Non-Proliferation of Nuclear Weapons and in anticipation of its tenth Review Conference, the United Kingdom, United States and the Russian Federation, as the NPT Depositary States, published an archive of previously classified documents relating to the original NPT negotiations. These documents demonstrate how Cold War adversaries could come together to agree measures to prevent the proliferation of nuclear weapons, and provide a pathway to their elimination. We are all familiar with the warning sounded by John F. Kennedy in 1960, that there might soon be "ten, fifteen or twenty" nuclear-armed states. We are glad to say he was wrong: today, there are still fewer than ten. It is clear that the NPT has been a decisive factor in ensuring that his dire prediction did not come to pass.

The NPT's 50th anniversary is a moment to reflect on the continued relevance of the NPT's core aims: nuclear disarmament, nuclear non-proliferation and the promotion of the peaceful uses of nuclear technology. The NPT is the means by which we all pursue our common aspirations, build trust and protect our citizens. Through the height of the Cold War and despite the proliferation challenges since, the NPT has remained the cornerstone of the nuclear non-proliferation regime and the foundation for the pursuit of nuclear disarmament and peaceful uses of nuclear technology.

This report allows us to take stock of the UK's contribution to these important tasks since the 2015 Review Conference. We are strongly committed to full implementation of the NPT in all its aspects. We believe there is no credible alternative route to effective and verifiable disarmament, and we have played a leading role by pioneering work in nuclear disarmament verification, championing transparency and advancing risk reduction. We have sought to strengthen the international safeguards system and combat proliferation. Finally, yet importantly, the UK has contributed to ensuring the benefits of the peaceful uses of nuclear technology are available to all. From medical treatments to mitigating the effects of climate change, the NPT not only contributes to global security and prosperity, but also to wider efforts to meet the Sustainable Development Goals.

Nevertheless, we cannot take the NPT for granted. Our recent Integrated Review of Security, Defence, Development and Foreign Policy[1] recognises that nuclear risks have not gone away—indeed, they are getting worse. The increase in global competition, challenges to the international order, and the proliferation

1 https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy

of potentially disruptive technologies pose a threat to strategic stability.

Every NPT State Party, not least the Nuclear Weapon States, has a responsibility to uphold the NPT. We must continue to work internationally to reduce the risk of nuclear conflict and enhance mutual trust and security that allows us to make progress towards disarmament. We must reinforce global non-proliferation efforts. We must ensure that all states can benefit from the peaceful uses of nuclear technology.

Every action the UK takes in this effort, as set out in the pages that follow, is underpinned by a firm belief in the importance of transparency. That is why we opened the doors of the P5 Conference in February 2020 to the broader NPT community, including civil society. It is also why this report was produced in close consultation with those partners, whose invaluable feedback we will continue to welcome during and after this Review Conference, and why we deposited this Report in Parliament.

Over the next pages, you will find comprehensive descriptions of the United Kingdom's implementation of its NPT obligations and commitments. Case studies at the end of each chapter illustrate the UK's leadership in specific areas of innovation and international partnership. We look forward to deepening cooperation throughout the NPT community, to strengthen the NPT as the irreplaceable foundation and framework for our common efforts.

James Cleverly, Minister for Middle East and North Africa at the Foreign, Commonwealth & Development Office

Baroness Goldie, Minister of State at the Ministry of Defence

Greg Hands, Minister of State at the Department for Business, Energy & Industrial Strategy

Introduction

This report outlines the steps the United Kingdom has taken to implement its obligations and commitments across all three pillars of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

It demonstrates that the UK is a Nuclear Weapon State (NWS) that takes its nuclear responsibilities seriously. We continue to pursue nuclear disarmament, support the International Atomic Energy Agency (IAEA) in strengthening the international safeguards system, and advocate sharing the peaceful uses of nuclear technology. We continue to press strongly for NPT universalisation and to raise this with non-NPT States Parties.

This report follows the standard reporting format adopted by the Nuclear Weapon States in 2013, consistent with Action 21 of the 2010 Action Plan. The UK published a draft at the third session of the Preparatory Committee in 2019[2], launching an innovative consultation exercise with other NPT States Parties and civil society, including a workshop at Wilton Park in September 2019. We have sought to implement feedback wherever feasible and this final version has benefited from the many constructive comments and suggestions received during that exercise.

The UK continues to recognise the validity of past commitments made at the Review Conferences in 2000 and 2010. We have endeavoured, and continue to endeavour, to implement those commitments, and have taken steps that would promote international stability, peace and security, based on the principle of increased and undiminished security for all. We have highlighted examples throughout this report.

> ***"The UK is a Nuclear Weapon State that takes its nuclear responsibilities seriously. We continue to pursue nuclear disarmament, support the International Atomic Energy Agency in strengthening the international safeguards system, and advocate sharing the peaceful uses of nuclear technology.***

The UK advocates increased attention on issues such as gender and education that span the three mutually reinforcing pillars of the NPT. The UK has made efforts to promote greater representation by women across the three pillars of the NPT, in the nuclear industry, the IAEA and Government. We support increased public understanding on nuclear issues, including through investment in STEM education.

2 NPT/CONF.2020/PC.III/7

Fifty years of the NPT

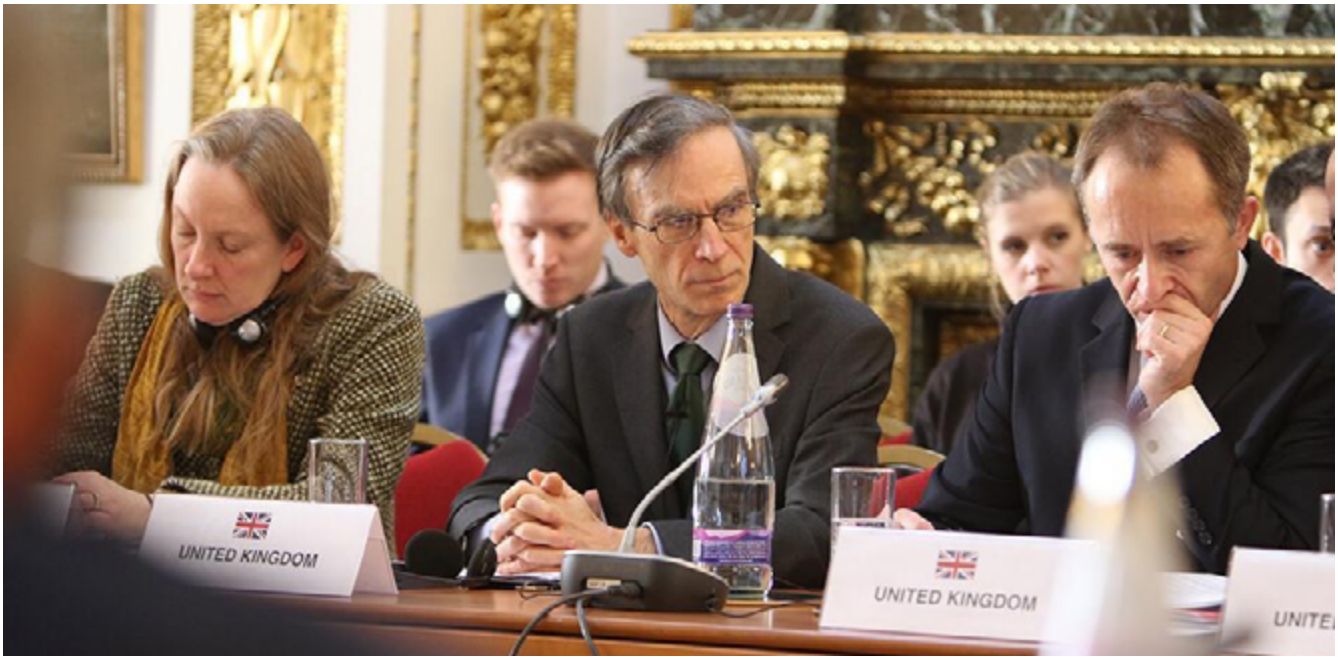
2020 marked fifty years since the NPT's entry into force. As one of the Treaty's three Depositaries, the UK joined the US and the Russian Federation in publishing an archive of previously classified documents from the original NPT negotiations.

The UK believes it is important to celebrate the NPT's successes. The Foreign Ministers of the NWS issued a statement on 10 March 2020 to mark the 50th anniversary, highlighting the Treaty's 'immeasurable contributions to the security and prosperity of the nations and peoples of the world' and reiterating their unwavering commitment to the ultimate goal of a world free of nuclear weapons.[3] The NPT remains the cornerstone of the nuclear non-proliferation regime and the foundation for the pursuit of nuclear disarmament and peaceful uses of nuclear technology.

Action 5 of the 2010 NPT Review Conference Action Plan underpins a UK commitment **to 'further enhance transparency and increase mutual confidence'** and to make a national report on Action 5 and other undertakings to the 2020 Review Conference, consistent with Actions 20 and 21.

Action 21 states: **'As a confidence-building measure, all the Nuclear Weapon States are encouraged to agree as soon as possible on a standard reporting form and to determine appropriate reporting intervals for the purpose of voluntarily providing standard information without prejudice to national security.'**

We encourage all State Parties to make similar reports consistent with Action 20.



The UK at the P5 London Conference, Lancaster House, 11-13 February 2020

3 https://www.gov.uk/government/news/joint-statement-on-the-fiftieth-anniversary-of-the-treaty-on-the-non-proliferation-of-nuclear-weapons

Section I: Reporting on national measures relating to disarmament

The UK is committed to its obligation, under Article VI, to pursue negotiations in good faith on effective measures relating to nuclear disarmament, and to the goal of a world without nuclear weapons. The UK considers disarmament to be a process as well as an end-state achievement, best achieved through a gradual, negotiated, step-by-step approach within existing international frameworks, in line with the security environment.

The framework underpinned by the NPT has been successful because it addresses the concerns of the Non-Nuclear Weapon States (NNWS) whilst reaffirming that steps leading to nuclear disarmament must promote international stability, peace and undiminished security for all. It has facilitated significant progress towards nuclear disarmament, to which the UK is proud of its contribution. We are committed to continuing to build trust and confidence between states, and to taking tangible steps towards a safer and more stable world, where countries with nuclear weapons feel able to relinquish them.

To this end, over the last review cycle we have invested in disarmament verification, championed transparency, and advanced risk reduction measures. We will continue to do so. The UK has worked, and will continue to work with our international partners, civil society and academia to reduce the risk of nuclear conflict and enhance mutual trust and confidence.

1.1 National security policies, doctrine, and activities associated with nuclear weapons

Nuclear deterrence policy

The UK's nuclear deterrence policy is set out in the Government's Integrated Review of Security, Defence, Development and Foreign Policy, published in March 2021.[4] While the longstanding fundamentals of UK nuclear policy are unchanged, the Integrated Review sets out how we are adapting to ensure that our nuclear deterrent remains at the minimum level that is credible in view of the current security environment and the actions of potential adversaries.

The UK has previously identified risks to the UK from major nuclear-armed states, from emerging nuclear states, and from state-sponsored nuclear terrorism. Those risks are increasing. The increase in global competition, challenges to the multilateral order, and proliferation of potentially disruptive technologies all pose a threat to strategic stability. We must ensure potential adversaries can never use their capabilities to threaten us or our North Atlantic Treaty Organisation (NATO) Allies.

The Integrated Review maintains our commitment to ensure that nuclear weapons play the smallest possible role in our national security strategy, in keeping with Action 5(c)

4 Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy 2021 (CP 403)

of the 2010 Action Plan, and supports our continued commitment to transparency of doctrine and capability. The nuclear deterrent exists to deter the most extreme threats to our national security and way of life, which cannot be deterred by other means. We would consider using our nuclear weapons only in extreme circumstances of self-defence, including the defence of our NATO Allies. None of our nuclear weapons is designed for tactical use during conflict. Only the Prime Minister can authorise their use, ensuring strict civilian and political control at all times. Given the strategic nature of UK capability, nuclear planning functions are conducted outside of the wider military planning process. UK nuclear deterrence policy is set by the Cabinet Office, with input from Government departments including the Foreign, Commonwealth & Development Office (FCDO), and is implemented by the Ministry of Defence (MOD).

We remain deliberately ambiguous about precisely when, how, and at what scale we would contemplate the use of nuclear weapons. Given the changing security and technological environment, we have extended this policy of deliberate ambiguity and no longer give public figures for our operational stockpile, deployed warhead or deployed missile numbers. This ambiguity complicates the calculations of potential aggressors, reduces the risk of deliberate nuclear use by those seeking a first strike advantage, and contributes to strategic stability. Our long-standing policy of ambiguity in specific areas is compatible with our wider commitment to transparency and we will continue to encourage states to openly discuss their nuclear capabilities and policies in line with this core principle of disarmament.

The Integrated Review reaffirms that the UK will not use, or threaten to use, nuclear weapons against any NNWS party to the NPT, in line with Action 8 of the 2010 Action Plan. This does not apply to any State in material breach of those non-proliferation obligations. We regard a material breach as referring to a State developing or attempting to develop or acquire nuclear weapons, not safeguards or procedural issues. However, we reserve the right to review this assurance if the future threat of weapons of mass destruction (WMD), such as chemical and biological capabilities, or emerging technologies that could have a comparable impact, makes it necessary. We are not referring to any specific technologies when making this statement, but it would be irresponsible of us not to consider potential future threats, including the development of technologies, which could have a comparable impact to WMD.

NATO, the US and France

The UK's nuclear deterrent supports the collective security and stability of the Euro-Atlantic area. Nuclear deterrence is an important part of NATO's overall defensive strategy, and since declaring our capability to NATO in 1962, the UK's nuclear forces have made a substantial contribution. Independent centres of nuclear decision-making enhance the overall stability of the region. These strengthen deterrence by complicating the decision-making of adversaries and making clear that the costs of an attack on UK vital interests will outweigh any benefits. NATO is a defensive Alliance and the fundamental purpose of its nuclear capability is to preserve peace, prevent coercion, and deter aggression. NATO's nuclear arrangements have always been fully consistent with the NPT, with NWS of the Alliance maintaining absolute control and custody of their nuclear weapons at all times. Indeed, these arrangements have

been in place within NATO since before the NPT entered into force in 1970.

> ***We are the only Nuclear Weapon State to operate a single delivery platform.***

The Alliance has continuously reaffirmed its resolve to seek a safer world for all, and to take further practical steps and effective measures to create the environment for further nuclear disarmament negotiations, in full accordance with all provisions of the NPT.5 The Alliance has also restated that the NPT remains the only credible path to nuclear disarmament, and that it is committed to the preservation, universalisation and full implementation of the NPT.

The UK continues to work closely with the US and France on nuclear matters. UK and US nuclear defence cooperation is underpinned by the 1958 Mutual Defence Agreement and the 1963 Polaris Sales Agreement.

The UK signed the Teutates Treaty with France in 2010, under which we agreed to build and jointly operate radiographic and hydrodynamic testing facilities. The Treaty underpins UK-France cooperation and information-sharing on the safety and security of nuclear weapons, stockpile certification, and countering nuclear or radiological terrorism.

Our nuclear cooperation with NATO, the US and France is fully in line with our obligations under the NPT.

1.2 Nuclear weapons, nuclear arms control (including nuclear disarmament) and verification

UK nuclear weapons

As a NWS, the UK has a special responsibility to pursue negotiations in good faith on effective measures relating to nuclear disarmament, and our commitments under the NPT have always been at the forefront of our decision-making over capability and force structure. The UK has achieved substantial reductions in its nuclear weapon stockpile. In the 1970s, when its stockpile was at its highest, we had around 500 warheads in-service across five types. We withdrew our tactical and air-delivered nuclear weapons in the 1990s and are the only NWS to operate a single delivery system. Our submarines on patrol are at several days' notice to fire and, since 1994, they do not target their missiles at any State. These initiatives help to lengthen the decision-making timeline and reduce the risk of inadvertent escalation, consistent with Action 5(d) of the 2010 Action Plan.

The UK has consistently stated that we will keep our nuclear posture under constant review in light of the international security environment and the actions of potential adversaries. In 2016, Parliament debated the principle of maintaining Continuous At Sea Deterrence and voted decisively to maintain this posture. Having considered alternatives, we assessed that four submarines are needed to ensure that at least one will always be at sea. The Dreadnought Class submarines will enter service from the early 2030s, replacing the current Vanguard Class.

5 NATO London Declaration by Heads of State and Government in December 2019 and its statements in December 2020, March 2020 and February 2021.

In assessing the minimum deterrent that is credible, we consider the decision-making processes of future potential aggressors, and analyse the defensive measures they might employ. In 2010, our assessment enabled us to declare a limit of our nuclear weapon stockpile of no more than 225 warheads. In recognition of the evolving security environment, including the developing range of technological and doctrinal threats, the Integrated Review announced that the limit of our overall nuclear weapon stockpile would increase, to no more than 260 warheads. This is a ceiling, not a target, and it is not our current stockpile number. This is fully consistent with the UK's longstanding minimum credible deterrence posture and we will continue to keep this under review in light of the international security environment.

As a NWS, we have a responsibility to ensure the continued safety and reliability of our nuclear deterrent. Maintaining and renewing elements of it at a minimum credible level, taking into account the international environment, is fully consistent with our obligations under Article VI of the NPT. We continue to develop and retain the skills and infrastructure required to maintain the safety and reliability of all elements of our nuclear capability, through replacement and updating of obsolete elements of the system as they reach the end of their operational life. This includes replacing our existing nuclear warhead and delivering our modernisation programme.

Fissile Material Cut-off Treaty (FMCT)

The UK continues to press for negotiations on an FMCT within the Conference on Disarmament and is working actively with other states, including the NWS, to explore ways of moving forward, following Action 15 of the 2010 Action Plan. The UK took an active role in the 2014-15 Group of Government Experts (GGE) and the 2017-18 High Level Expert Preparatory Group. These meetings deepened the dialogue on an FMCT and identified the issues upon which future negotiators will need to focus.

The UK has had a voluntary moratorium on the production of fissile material for nuclear weapons or other nuclear explosive devices since 1995. In 1998, the UK declared the total size of its fissile material stocks and voluntarily placed all fissile material no longer required for defence purposes under international safeguards.[6] This material continues to be liable to inspection by the IAEA. Since then, all enrichment and reprocessing in the UK has been conducted under international safeguards.

Comprehensive Nuclear-Test-Ban Treaty (CTBT)

The UK has not carried out any nuclear weapon test explosions or any other nuclear explosions since 1991. We played a central role in the negotiation of the CTBT, were one of the first states to sign it in 1996, and completed ratification in 1998.

The UK views the CTBT, and its entry into force, as a vital part of the step-by-step approach to nuclear disarmament. The CTBT's verification system contributes to these goals, and has important civil and scientific applications. The UK continues to be a vocal campaigner for entry into force, including by regularly lobbying those states in Annex 2 of the Treaty to sign and ratify, pursuant to Action 13 of the 2010 Action Plan. In 2021, Minister for the Middle East and North Africa reiterated the UK's support at the CTBT Article XIV

6 The UK retains the right to remove material from safeguards for national security reasons under the terms of the UK's Voluntary Offer Agreement (VOA) with the IAEA.

Conference. We welcome ratifications of the Treaty by Cuba and Comoros.

The UK is one of the largest financial contributors to the CTBT Organisation, providing £4.5 million annually as well as extensive technical and political support. The UK maintains the UK National Data Centre and hosts thirteen facilities spread across the UK and our Overseas Territories, which support the International Monitoring System. These include eleven monitoring stations (either infrasound, hydroacoustic or radionuclide), an auxiliary seismic array and a radionuclide laboratory. These facilities are backed up by enduring research through the Atomic Weapons Establishment (AWE) Forensic Seismology and Radionuclide Team.

Verification

As reaffirmed in the Integrated Review, effective verification is fundamental to the success of arms control and disarmament agreements, and to the fulfilment of the goals and obligations of Article VI of the NPT. Our ability to create and maintain a world without nuclear weapons will depend on confidence that others are upholding their treaty obligations.

In line with Action 19 of the 2010 Action Plan, the UK has been researching verification for over two decades, both domestically at the AWE and in collaboration with a diverse group of other countries. The UK research programme has two key aims:

» To understand how to facilitate a verification regime in the UK while protecting sensitive and proliferative information; and

» To understand how to design a verification regime in another State that provides sufficient confidence that treaty obligations are being upheld.

The programme looks at all possible aspects of the step-by-step approach to disarmament, from nuclear arms control agreements to complete nuclear disarmament, as well as cross-cutting technologies.

The UK has played an active role in initiatives such as the UN GGE, the International Partnership for Nuclear Disarmament Verification (IPNDV) and the Quad Nuclear Verification Partnership with Norway, Sweden and the United States, and will continue to do so. We also continue fruitful bilateral research partnerships with the US and Sweden on specific topics.

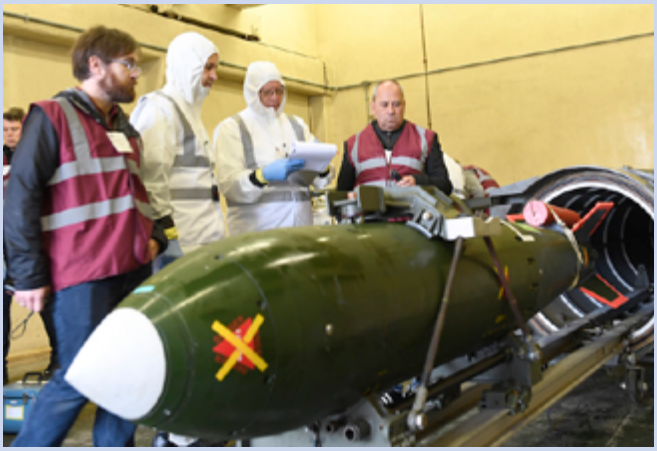
As part of the Quad Partnership, the UK hosted the first-ever multilateral nuclear disarmament verification exercise (LETTERPRESS) in 2017, and is actively working toward further research events.[7] In IPNDV, our experts have co-chaired working groups in each of the partnership's three phases, as well as working papers and supported exercises. The UK was a prominent contributor to the 2018-19 UN GGE, and funded and supported informal events to assist the Group's work and advance our collective understanding.

7 The Quad Nuclear Verification Partnership: Working paper submitted by Norway, Sweden, the United Kingdom and the United States

Case Study 1: Quad Nuclear Verification Partnership

Summary

In 2015, the UK formed the Quad Nuclear Verification Partnership ('the Quad') with Norway, Sweden and the United States to work together to solve the challenges of verifying nuclear disarmament.[8] This is a unique partnership between two NWS and two NNWS that builds on prior work by the UK-Norway Initiative and previous UK-US verification exercises.



Experts from the Quad Partnership participate in Exercise LETTERPRESS

Outcomes

In October 2017, the Quad held the first-ever multilateral nuclear disarmament verification exercise at RAF Honington in the UK. The exercise, known as LETTERPRESS, explored the challenges associated with verifying nuclear weapon declarations, as will likely be required in future disarmament treaties. It also investigated practical considerations related to the inclusion of NNWS in verification activities. LETTERPRESS allowed participants to practise techniques and procedures in a simulated real-world scenario, with RAF Honington's former nuclear weapon storage facilities adding realism.

The Quad identified a broad range of lessons from LETTERPRESS that are relevant to the future development of verification and the functioning of multilateral inspection teams. These lessons have been shared with the wider international community through reports and presentations at international fora such as NPT Preparatory Committees and the International Partnership for Nuclear Disarmament Verification (IPNDV). This included hosting a visit to RAF Honington during the December 2018 meeting of IPNDV.

Next Steps

Lessons from LETTERPRESS have also informed the topics being investigated in the Quad's next phase of work for the period 2020-25. One workstream is focused on developing verification strategies, while the other is investigating specific technological challenges, such as how to manage equipment and data so that both hosts and inspectors can trust it. The results of these workstreams will be combined into a common, substantive deliverable by 2025. We are also actively working towards further research events.

This research will make a significant contribution to tackling the outstanding challenges of nuclear disarmament verification. As part of the Quad, we look forward to keeping the international community informed of our progress and cooperating with other initiatives and groupings to share knowledge.

8 https://quad-nvp.info/

The complex challenges of verification cannot be solved by individual states alone and we place importance on building global capacity.

1.3 Transparency and confidence-building measures

Transparency

Transparency, for example through reporting by States Parties and engagement with civil society, is a key principle of disarmament, arms control and non-proliferation, as reflected in Actions 2 and 5(g) of the 2010 Action Plan.

The UK's work on transparency has included:

» discussions not only among the NWS, but with NNWS on strategic risk reduction, to develop our collective understanding;

» actively participating in the 'Creating the Environment for Nuclear Disarmament' initiative and welcoming the Stockholm Initiative for Nuclear Disarmament;

» funding projects with academia and think tanks, including the British American Security Information Council (BASIC) and the University of Birmingham exploring states' conceptions of their responsibilities in relation to nuclear weapons;[9] and

» hosting roundtables and strategic dialogues to develop greater trust, confidence, and transparency between states in relation to nuclear weapons, and foster a more self-reflective and constructive global dialogue on progressing nuclear disarmament.

Engagement with Parliament, civil society, academics and NGOs

Consultation with NGOs, civil society, Parliament and academia is an important contribution to the UK's commitment to transparency and Action 19 of the 2010 Action Plan.

We welcome dialogue with experts and invite ambitious ideas about how to optimise conversations between civil society and government. In 2019, we hosted four workshops at Wilton Park, an executive agency of the FCDO. In 2019, we also commissioned King's College London (KCL) to convene track 1.5 talks on the P5 Process and the NPT Review Conference. Similarly, in 2021, senior UK officials from the FCDO, MOD and Department for Business, Energy and Industrial Strategy (BEIS) briefed civil society groups at roundtables convened by the British Red Cross.

Alongside the P5 London Conference in February 2020, we hosted an interactive workshop on the P5 Process facilitated by KCL and the European Leadership Network. 150 participants from NWS, NNWS and civil society participated in five break-out sessions over a three-day conference.

We value our engagement with UK Parliamentarians on the UK's nuclear deterrence policy and the NPT, including following the 2019 report on nuclear risk and non-proliferation by the International Relations and Defence Committee of the House of Lords. We are implementing a programme of regular engagement with Parliamentarians, designed to increase their understanding and awareness of the UK's nuclear deterrence and

9 https://basicint.org/report-nuclear-responsibilities-a-new-approach-for-thinking-and-talking-about-nuclear-weapons/

disarmament policy, and provide opportunity for dialogue.

We provide annual updates to Parliament on the progress of the Dreadnought Class submarine programme and other related Defence Nuclear Enterprise programmes. The most recent report was published on 17 December 2020.[10]

Building trust and confidence: the P5 Process

The five NWS have a special responsibility for the continued strength and implementation of the NPT. The UK established the P5 Process in 2009 to build trust and confidence among the NWS and to improve coordination and dialogue on nuclear issues, taking us further towards our shared goal of a world without nuclear weapons.

From May 2019 to September 2020, the UK coordinated the P5 Process, and hosted the ninth P5 Conference on 12-13 February 2020 in London. During this period, the NWS discussed a number of key nuclear disarmament issues. In particular, the UK led a number of expert-level working groups on nuclear doctrines and risk reduction.

During the doctrines discussions, each NWS presented their nuclear doctrine, drawing out key factors such as their rationale for maintaining a nuclear deterrent, their doctrine oversight and review process, operational and declaratory postures, and collective security commitments, and engaged in a frank initial exchange of our collective understanding of these issues. We identified areas for further discussion, and agreed to host a side event at the NPT Review Conference and to continue these discussions thereafter.

Women in security: women made up a majority of the UK's delegation to the P5 London Conference

The UK co-led work with France on developing a common understanding of strategic risk reduction. This work has focused on measures and activities that decrease the risks of nuclear war. We identified three key elements of strategic risk reduction: one, building confidence; two, increasing mutual understanding and comprehension about nuclear posture and capabilities amongst the P5; and three, effective crisis management and crisis prevention tools. These elements are underpinned and complemented by a robust commitment to the safety and security of nuclear weapons and special nuclear material. Following initial discussions at the London P5 Conference, the NWS underlined the importance of reducing nuclear risk and promoting stability. We agreed that experts should continue and deepen their dialogue on strategic risk reduction up to and beyond the Review Conference.

10 https://www.gov.uk/government/publications/the-united-kingdoms-future-nuclear-deterrent-the-2020-update-to-parliament

Case Study 2: UK P5 Coordination

The UK coordinated the P5 Process in 2019-20. As part of this, we convened the NWS in London on 12-13 February 2020 for the ninth P5 Conference. Over the course of two days, the NWS discussed preparations for the tenth NPT Review Conference and agreed a package of workstreams.

We engaged civil society through a public event with King's College London and the European Leadership Network. This featured participants from the NWS and 16 NNWS. Discussions between NWS delegates and civil society included areas such as transparency, risk reduction, doctrines, prospects for the 2020 and 2025 NPT Review Conferences. This engagement is now firmly embedded in the P5 Conference format and is an important contribution to transparency in the NPT.

The London Conference provided a forum for honest and productive discussions amongst the NWS, and resulted in a clear action plan for the 2020 Review Conference and a fully endorsed Chair's statement. At the Conference, the P5:

» Welcomed the continued exchange of views on their **respective nuclear doctrines and policies**, and confirmed their intention to hold a side event presenting them at the Review Conference. They agreed to continue these official consultations.

» Underlined **the importance of reducing nuclear risk and promoting stability**, and agreed that officials should continue and deepen their dialogue on strategic risk reduction up to and beyond the Review Conference.

» Endorsed progress on the P5 Nuclear **Glossary** and agreed to publish the results ahead of the Review Conference.

» Announced their intention to host a **joint P5 side event focusing on peaceful uses** at the Review Conference. This is part of the P5's commitment to share with the international community the many benefits of nuclear technology and its applications for peaceful purposes, which includes continuing contributions to IAEA or bilateral development projects.

» Agreed to publish **national implementation reports** to the NPT, based on the 2013 agreed reporting format.

» Reiterated their readiness to negotiate, a non-discriminatory and effectively verifiable, **Fissile Material Cut-Off Treaty** on the basis of consensus and with the relevant countries, and to continue P5 discussions on FMCT-related issues; and willingness to continue discussions with ASEAN countries on the Protocol to the **South East Asia Nuclear Weapon Free Zone**.

In total nearly 150 people attended, including 80 representatives from civil society and from sixteen NNWS.

The UK also continued to support China on the second phase of a Working Group on the Glossary of Key Nuclear Terms. These discussions help build common understanding through harmonising and clarifying terminology across the NWS. The results of the Working Group will be published ahead of the Review Conference.

At the London P5 Conference, the NWS held full and frank discussions on a wide range of issues related to the NPT, including the strategic security environment, and broadened and deepened their engagement with the NPT community. The Review Conference President-designate and Bureau took part for the first time, as did representatives of 16 other countries and civil society—an important contribution to transparency in the NPT.

Risk reduction

The NWS have a responsibility to reduce the risk of nuclear conflict, and the UK has a strong record on risk reduction measures. These include the de-alerting and de-targeting of our submarines; creation of the P5 Process; a robust defence nuclear safety and security framework; and risk reduction agreements, such as the 1977 agreement with the Union of Soviet Socialist Republics (USSR) on the prevention of accidental nuclear war, and the establishment of a direct communication link between 10 Downing Street and the Kremlin in 1967.

We will continue to work to reduce the risk of nuclear conflict and enhance mutual trust and security. We will champion strategic risk reduction and seek to create dialogue among states possessing nuclear weapons, and between states possessing nuclear weapons and NNWS, to increase understanding and reduce the risk of misinterpretation and miscalculation.

1.4 Other related issues

Conference on Disarmament (CD)

The UK is an active participant at the CD. In 2016, the UK submitted a draft proposal for a Programme of Work and to establish an associated working group, including provisions for FMCT issues. The proposal had near universal support, but was not able to reach consensus. Following the creation of five Subsidiary Bodies in 2018, four of which adopted reports by consensus, the UK, as President of the CD, tabled a draft decision in March 2019 that would have taken forward this work and helped move the CD closer to developing negotiating mandates on its four core agenda items. The decision had strong support from across the membership but was blocked by a small number of states. We will continue our efforts to support the CD and agree a Programme of Work.

Section I: Conclusion

After over 50 years of the NPT, it is important to recall the factors that allowed us to make this progress towards disarmament. We remain committed to working with Allies and partners to achieve our joint commitments under the NPT. The Integrated Review highlighted that our work will continue to focus on practical, effective initiatives such as verification, transparency and risk reduction that improve trust between states. The UK is, and will remain, committed to building the necessary conditions and confidence for multilateral nuclear disarmament.

Section II: Reporting on national measures relating to non-proliferation

Non-proliferation is vital for global security. It also supports our prosperity by facilitating safe trade of peaceful nuclear technologies. This in turn helps generate jobs, boosts development (including in medicine and agriculture) and supports our climate ambitions to reduce carbon emissions by enhancing public confidence in nuclear energy.

Taken together, the NPT and the international system of safeguards operated by the IAEA form a fundamental part of the rules-based international system, and have successfully kept the number of States possessing nuclear weapons in single figures. The UK works to promote the adoption of the Additional Protocol (AP) and Comprehensive Safeguards Agreement by NPT States Parties. We recognise that, together, they are the universal verification standard. Increased adoption of the AP has provided greater assurances on the absence of undeclared nuclear material and has contributed to a safer international system.

The UK supports robust export control systems that allow safe trade to flourish. We also continue to work for full implementation of UNSCR 1540 to prevent nuclear, chemical and biological material falling into the hands of terrorists. The UK has played an active role in responding to nuclear proliferation crises in the Middle East and Asia, including through its participation in, and support of, the Joint Comprehensive Plan of Action (JCPoA) and as a member of the UN Security Council.

2.1 Safeguards

Following the UK's departure from the EU and Euratom, we continue to demonstrate our commitment to the highest standards of nuclear safeguards and non-proliferation. We successfully negotiated our own Voluntary Offer Agreement and AP with the IAEA in 2018, which came into effect on 31 December 2020, and developed, delivered and implemented a UK State System of Accountancy for and Control of Nuclear Material (UK SSAC) in 2020. This supports robust safeguards implementation of the UK's new bilateral safeguards agreements with the IAEA, and the requirements in the Nuclear Safeguards (EU Exit) Regulations 2019.

The Office for Nuclear Regulation (ONR) is responsible for operating the UK SSAC and regulating safeguards in the UK through accountancy and system inspections, desktop assessments and measures to address non-compliance. In addition, the IAEA continues to conduct independent inspections and verification activities in the UK.

Voluntary Offer Safeguards Agreement

Prior to our new bilateral Voluntary Offer Safeguards Agreement with the IAEA, the UK was party to the trilateral Voluntary Offer Safeguards Agreement with the IAEA and Euratom which was terminated on 31 December 2020.

Our current bilateral safeguards agreement allows for the application of safeguards on all source or special fissionable material in facilities within the UK, subject to exclusions for national security reasons only. The

language in this agreement has been updated to be gender neutral, reflecting the UK's leadership on gender parity in the IAEA, and the nuclear industry more generally.

Under the new bilateral agreements, the ONR provides nuclear material accountancy reports for UK facilities to the IAEA. The IAEA may 'designate' any facility, or part thereof, for inspection. Some of the plutonium stores at Sellafield and the gas centrifuge enrichment facilities at Capenhurst are designated for IAEA inspection under the bilateral agreement, continuing the arrangements from the trilateral agreement.

The UK has published information on holdings of civil separated plutonium every year since 1986. In 1997, to improve transparency and public confidence, we voluntarily agreed to also publish additional information on holdings of high enriched uranium (HEU) and depleted, natural and low enriched uranium (LEU) in the civil nuclear cycle from 1998. The latest figures, as of 31 December 2019, are available on the ONR's website.[11]

Additional Protocol

The UK's current AP is based on the model agreement (INFCIRC/540 corr.), in line with Action 21 of the 2010 Action Plan. It contains measures aimed at increasing the IAEA's capability to detect any undeclared nuclear material and activities and to enhance the effectiveness and efficiency of IAEA safeguards in the UK.

International Implementation of Safeguards

The NPT requires NNWS to have Safeguards Agreements in place. We consider that a Comprehensive Safeguards Agreement plus an AP, and where relevant a modified small quantities protocol (SQP), should be treated as the universal verification standard in line with Action 25 of the 2010 Action Plan. In this context, the UK welcomes the entry into force of APs in Benin, Eritrea and Ethiopia, and the adoption of modified SQPs in Belize, Brunei Darussalum, Haiti and Sudan. We take every opportunity to call upon all states that have not yet done so to bring an AP or modified SQP into force as soon as possible, in line with Action 28 and 31 of the 2010 Action Plan, and are developing a support programme for states interested in doing so.

Strengthening IAEA safeguards

The UK supports the IAEA's continued efforts to strengthen the international safeguards system, including through the UK Safeguards Support Programme (UKSSP). Since 1981, the UK has provided practical assistance to support the strengthening of the NPT non-proliferation regime. This work supports Actions 22 and 26 of the 2010 Action Plan.

Between 2015 and 2021, the UK has delivered:

» access to facilities and experts for the training of IAEA personnel in advanced techniques applied in safeguards inspections and on fuel cycle plants;

» services to support the IAEA in analysing nuclear material arising from samples taken in the course of safeguards inspections, including through the participation of two UK laboratories in the IAEA Network of Analytical Laboratories;

11 https://www.onr.org.uk/safeguards/materials.htm

» open source information from two regional information collection centres;

» assistance through the provision of expert staff to complete specialised programmes of work including provision of a Cost Free Satellite Imagery Analyst Expert in 2019;

» support to the completion of the Modernization of Safeguards Information Technology (MOSAIC) programme, which will enable safeguards to work more efficiently and effectively;

» and support to the IAEA's COMPASS initiative to build State capacity on safeguards implementation.

In addition, the UKSSP also fields UK experts to engage in discussions with the IAEA on:

» the further development of safeguards strategies;

» the development of techniques, methods and procedures for safeguarding facilities in the nuclear fuel cycle; and,

» the development and assessment of equipment, instruments and methods for safeguarding the nuclear fuel cycle.

AUKUS

Under the UK, Australian and US enhanced trilateral security partnership (AUKUS), we have committed to an 18-month programme to work to identify the optimum way to deliver nuclear-powered submarines to the Royal Australian Navy. These will not carry nuclear weapons. Any progress will be consistent with our international obligations and our respective safeguards obligations.

2.2 Export Controls

United Nations Security Council Resolution (UNSCR) 1540

Since the 2015 Review Conference, the UK has continued to promote the full implementation by all states of UNSCR 1540. In 2020 we updated our national 1540 implementation report to demonstrate our implementation of 1540 obligations.

As a vice-chair of the 1540 Committee, we work with states and international organisations such as the IAEA and the G7 Global Partnership to monitor and assist this implementation. Since 2015, for example, we have approved provision of a range of equipment to improve border security in partner states. In 2020, we co-hosted a Wilton Park Conference with Canada on UNSCR 1540. We hope to implement its findings in the 2021 Comprehensive Review, strengthening global efforts to stop the proliferation of WMD to non-state actors.

Since leaving the EU, the UK has transposed EU Dual-Use Regulation 428/2009 into UK law. The UK maintains extensive controls on the export on the export and transfer of controlled military and dual-use items, in additions to controls on brokering, transit and transhipment as well as WMD Catch-All and Technical Assistance based controls. We continue to apply the eight criteria of the Consolidated EU and National Arms Export Licensing Criteria.

Nuclear Suppliers Group (NSG) and the Zangger Committee

The NSG is important in preventing the proliferation of nuclear weapons through the application of national export controls on

nuclear and nuclear-related material, dual-use material, equipment, software and technology, in pursuit of Actions 35, 36 and 37 of the 2010 Action Plan. This complements effective safeguards and the protection of existing nuclear materials.

We authorise an export only if it accords with the guidelines of the NSG and our commitments to the Zangger Committee. We provide standing secretarial support to Zangger Committee meetings, regular technical expertise to the NSG through its Technical Experts Group, and share best practices and national experience in implementing the NSG Guidelines through virtual meetings of the NSG Consultative Group.

In 2021 the Nuclear Cooperation Agreements (NCAs) signed by the UK with Australia, Canada, the US and Euratom came into force and the administrative arrangements underpinning these NCAs are consistent with our obligations under the NSG guidelines. In 2019, we reviewed our interpretation of the guidelines and strengthened our controls on re-export of UK items already abroad through the ongoing exchange of government-to-government assurances where they are needed.

2.3 Nuclear security

International Nuclear Security

Nuclear security is a national responsibility. However, it cannot be achieved unilaterally. The UK seeks to preserve public confidence in the peaceful use of nuclear technologies through our firm support for the IAEA and other international organisations. We are committed to implementing and universalising nuclear security conventions, sharing best practice and expertise with international partners, and supporting global nuclear security assistance.

Following the Nuclear Security Summits, which began in 2010, we have worked to meet our commitments and enhance global nuclear security. In 2016, the UK contributed over £11 million to various international nuclear security assistance projects. We have continued to make annual contributions to the IAEA's Nuclear Security Fund (NSF), totalling over £15 million from 2017 to 2020. Demonstrating our commitment to civil HEU minimisation, in May 2019 the UK completed the transfer of around 700kg of HEU from Dounreay to the US for down blending. The UK also continues to be an active member of the Nuclear Security Contact Group to maintain the global momentum generated by the Nuclear Security Summits.

> ***"We have continued to make annual contributions to the IAEA's Nuclear Security Fund (NSF), totalling over £15 million from 2017 to 2020.***

Through our Global Nuclear Security Programme (GNSP), worth around £10 million per year, the UK works with other countries to minimise and secure fissile material, enhance counter-smuggling capabilities, and ensure sustainability through effective nuclear security culture. The UK delivers GNSP projects with multiple international partners, including the IAEA, INTERPOL, the UN Interregional Crime and Justice Research Institute and various non-governmental organisations.

Sharing best practice in civil nuclear security

UK experts regularly participate in events organised by the Global Initiative to Combat Nuclear Terrorism, which brings together representatives from 88 countries to build capacity to prevent, detect and respond to nuclear terrorism. Since 2017, the UK has chaired the initiative's Nuclear Detection Working Group and facilitated or contributed to numerous detection, response and forensics exercises.

UK experts also contribute to drafting IAEA Nuclear Security Guidance, and between 2015 and 2019, UK nuclear security experts participated in IAEA International Physical Protection Advisory Service (IPPAS) missions to 13 countries.

Universalisation of conventions

The Amended Convention on the Physical Protection of Nuclear Material (ACPPNM) represents a vital tool for standardising national approaches to nuclear security around the world. We are reviewing the adequacy of the ACPPNM ahead of its 2022 Review Conference, and will share experiences in implementation with international partners.

The UK ratified the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) in 2009, in line with Action 45 of the 2010 Action Plan. It provides a legal basis for international cooperation to investigate, prosecute and extradite those connected to terrorist acts involving radioactive material or a nuclear device.

We actively encourage all states to sign and ratify the ICSANT and the ACPPNM at the earliest opportunity. The UK supports UN and IAEA universalisation efforts, and the Canadian-led G7 Nuclear Safety and Security Group global demarche.

Support for the IAEA

The UK played an active role at the IAEA's International Conference on Nuclear Security in February 2020. We joined all Member States in endorsing a Ministerial Declaration that recognised the importance of the IAEA's work in assisting Member States to establish effective and sustainable nuclear security regimes. For the first time the Declaration highlighted the role of nuclear security in supporting the use of nuclear technology for development. The Declaration also highlighted the importance of addressing emerging challenges and threats, and promoting gender diversity.

UK Ambassador and Permanent Representative to the IAEA, Corinne Kitsell OBE at the donor wall for the Seibersdorf Laboratories

The UK is the second largest Member State contributor to the IAEA's extra-budgetary NSF, which enables the IAEA to deliver its Nuclear Security Plan and assist Member States. In 2021, the UK announced a contribution of around £1.4 million to support the development of a Nuclear Security Training and Demonstration facility at the IAEA's Seibersdorf Laboratories. The UK has also

contributed to other projects via the IAEA, including a contribution of £650,000 in 2018 towards the conversion of Nigeria's research reactor to use LEU fuel, and the safe removal of its HEU core.

We will continue to urge further Member States to make financial contributions to the NSF, and for a greater share of the IAEA's Regular Budget to be allocated to support its nuclear security activities.

Defence Nuclear Security

The UK takes its responsibilities for protecting its defence nuclear material extremely seriously. Arrangements to account for and control defence nuclear material are robust –comparable with, or exceeding, those for civil nuclear materials under UK legislation and industry best practice. The UK bases its security framework on the principle of no unauthorised access, through multi-layered, integrated, security arrangements that are designed to counter a range of threats, and which are kept under review. We maintain robust national security controls on personnel responsible for, or who have access to, defence nuclear material and associated information. The UK also has a well-established and on-going programme of activity to protect defence networks and the information they hold from unauthorised access and misuse.

Defence Nuclear Safety

The safety of the public and protecting the environment are of the highest priority for the UK. We take our responsibilities for safety and environmental protection extremely seriously and have rigorous measures in place to ensure that our defence nuclear programme and activities operate safely. We meet the high standards for safety and environmental protection set by all applicable legislation. Where legislative arrangements conflict with defence and security activities, and defence has derogations, exemptions or disapplications from UK law, we maintain arrangements that produce outcomes that are, so far as reasonably practicable, at least as good as those required by UK legislation. All aspects of the defence nuclear programme are subject to a rigorous assurance process including regulatory oversight.

2.4 Nuclear weapon-free zones

The UK continues to support the principle of Nuclear Weapon-Free Zones (NWFZ). Accordingly, the UK can provide legally-binding negative security assurances that they will not use or threaten to use nuclear weapons against members of a NWFZ by signing and ratifying a protocol to the NWFZ treaties.

Existing zones

The UK has signed and ratified protocols to four NWFZ treaties, granting treaty-based negative security assurances to almost 100 countries in Latin America (Treaty of Tlatelolco), South Pacific (Treaty of Raratonga), Africa (Treaty of Pelindaba) and Central Asia (Treaty of Semipalatinsk), which supports Action 9 of the 2010 Action Plan. In each of these instances, the UK has made a declaration aligned with our national negative security assurance. We also support the parallel political declarations adopted by the NWS and Mongolia concerning that country's nuclear weapon-free status.

Case Study 3: UK UNSCR Sanctions Enforcement

Following the Following the Democratic People's Republic of Korea's (DPRK) first nuclear test in 2006 first nuclear test in 2006, the UN Security Council adopted a series of ten resolutions related to the DPRK's nuclear and ballistic missile programmes. The UK, alongside like-minded partners, is actively working to ensure the comprehensive enforcement of all UNSC resolutions relating to the DPRK.

» We continue to support, and cooperate with fully, the work of the United Nations DPRK **Panel of Experts**. The UK has reported violations of DPRK sanctions to the Panel, and has actively assisted in providing information relevant to the Panel's investigations and offer briefings to the Panel ahead of its reporting deadlines.

» The UK has supported a number of **international sanctions designations** on individuals, entities and vessels where we have judged the evidential threshold to be met: including on illicit maritime activity, shell companies and violations on facilitating overseas DPRK workers.

» We have showed leadership in the maritime shipping industry. Thirteen of the major international P&I (protection and indemnity insurance) clubs, who insure around 90% of world merchant tonnage, operate from management offices in the UK. Alongside the US, the UK has co-hosted three major **public-private outreach workshops** in London, most recently in February 2020 with attendance including from the finance, insurance and oil and gas sectors

» The Office of Financial Sanctions Implementation (OFSI), part of HM Treasury, released **Maritime Guidance** for entities and individuals, which operate in, or with, the maritime shipping sector. This guidance draws attention to illicit and suspicious practises including ship-to-ship transfers and Automatic Identification Systems (AIS) concealment.

» The UK is the biggest European contributor to sanctions enforcement. Since mid-2018, multiple **Royal Navy ships** have conducted numerous operations and gathered vital information and intelligence in Indo-Pacific waters, most recently in 2021.

» The UK has publicly attributed the 'WannaCry' 2017 cyber-attack to DPRK state-sponsored actors, the Lazarus Group. In July the EU **imposed sanctions** on *Chosun Expo* for the "WannaCry" attacks, the first designations under the cyber sanctions regime, sending the message that malicious cyber activity has consequences. The Panel of Experts has estimated that as of 2019, the DPRK had raised up to US$2 billion through criminal cyber operations. We engage with a range of international and industry partners to provide technical assistance to combat DPRK's ongoing efforts to fund its regime through cybercrime and the circumventing existing sanctions.

The UK has been ready to sign and ratify the Protocol of the Treaty of Bangkok establishing a NWFZ in South-East Asia since 2012, with a declaration aligned with our national negative security assurance. However, difficulties over proposed reservations and declarations have delayed the signing by the NWS. With other NWS, the UK will continue to engage with States Parties to the Treaty in order to allow signature and ratification of the Protocol to that Treaty in the near future.

Middle East Weapons of Mass Destruction Free Zone

We remain fully committed to the 1995 Resolution on the Middle East, and to the establishment of a zone in the Middle East free of nuclear and all other weapons of mass destruction and their delivery systems. It is our long-held view, consistent with the principles and guidelines for NWFZs adopted by the UN Disarmament Commission in 1999,[12] that all processes related to such a zone should be based on consensus and on arrangements freely arrived at by all states in the region.

As a co-sponsor, we fully recognise our responsibilities under the 1995 Resolution. We remain prepared actively to support and facilitate renewed regional dialogue aimed at bridging the differing views in the region on arrangements for a Conference that is as set out in the NPT 2010 Action Plan.

The UK attended the Conference convened by the UN in 2019, demonstrating our commitment to the establishment of the zone, whilst also voicing our reservations about the credibility of a process that does not have the support of all states of the region.

2.5 Compliance and other related issues/concerns

Syria

We are deeply concerned about the Syrian Arab Republic's continued non-compliance with its IAEA safeguards agreement under the NPT in connection with its construction of an undeclared nuclear reactor at Dair Alzour. Over ten years have passed since the IAEA Board of Governors found that Syria's activities constituted non-compliance with its safeguards agreement with the IAEA. Syria's IAEA safeguards non-compliance remains a serious concern and we call for Syria to cooperate with the IAEA fully in regards to the Dair Alzour site.

Democratic People's Republic of Korea (DPRK)

The UN Security Council (UNSC) has called for the complete, verifiable, and irreversible denuclearisation of the DPRK. We regret that the DPRK has not undertaken meaningful steps to denuclearise and we urge the DPRK to engage constructively and refrain from provocations. Until such steps are taken, sanctions must continue to be implemented effectively and strictly enforced.

The UK actively works to ensure the comprehensive implementation of all UNSCRs relating to the DPRK. The DPRK's development of nuclear weapons and ballistic missile programmes violates numerous UNSCRs. The DPRK undertook its sixth nuclear test in 2017 and has continued to test ballistic missiles. UN Panel of Experts reporting confirms the DPRK's continued evasion of

12 A/54/42(SUPP)

sanctions through maritime activities and overseas labour teams, and increasingly ambitious cyber-attacks. This demonstrates the importance of continued international vigilance and adherence to UNSCR sanctions. We strongly support and cooperate fully with the Panel of Experts by reporting sanctions violations, providing information and through in-person and virtual briefings. The UK has deployed Royal Navy vessels and military personnel to support maritime sanctions enforcement, most recently in 2021.

In order to raise awareness of the DPRK's illicit activities and promoting greater sanctions compliance, the UK funded and hosted a Compliance and Transparency week in Singapore in September 2019, including a day on DPRK sanctions enforcement. This increased public and private sector awareness of these illicit activities and encouraged the effective implementation of sanctions measures. The UK and US co-hosted three private sector outreach events in London engaging with stakeholders from the insurance, banking, oil and shipping registry industries. In July 2020, the UK Office for Financial Sanctions Implementation (OFSI) released Maritime Guidance that provides financial sanctions guidance for entities and individuals which operate in, or with, the maritime shipping sector. In March 2021, OFSI shared its experience of creating this guidance with 52 jurisdictions. In September 2021, the UK published its first national risk assessment of proliferation financing to highlight the proliferation financing threats facing the UK and to strengthen our regulatory frameworks to mitigate these risks.[13]

The UK welcomes the IAEA's commitment to ensure its readiness to play an essential verification role in any agreement on the DPRK's nuclear programme, and encourages the return of IAEA inspectors to the DPRK should a deal be reached.

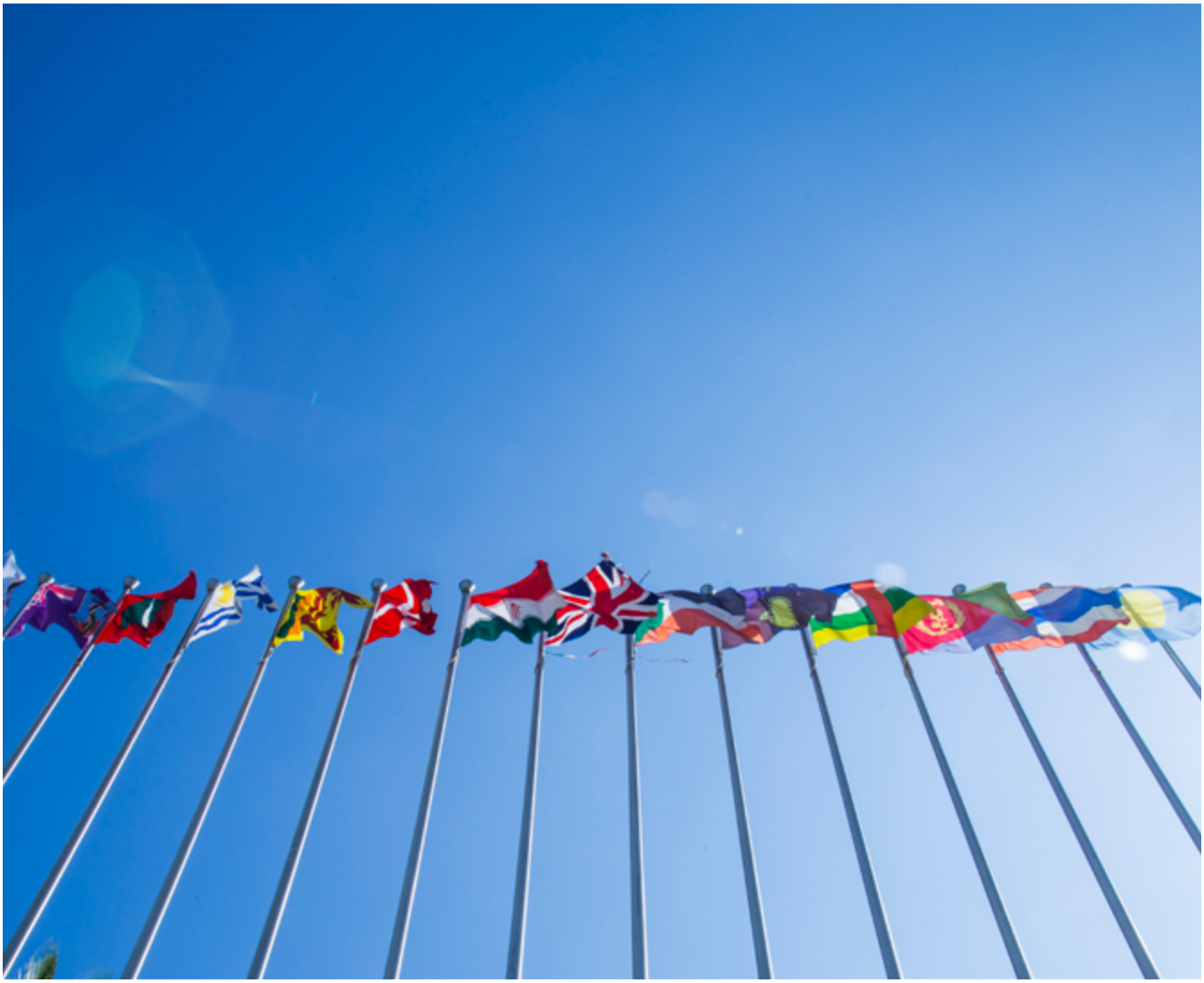
2.6 Other contributions to nuclear weapons non-proliferation

Iran

The UK's priority is to prevent Iran from obtaining nuclear weapons capability. It is critical that Iran complies with all of its nuclear-related obligations and commitments, including under the JCPoA, UNSCR 2231, the NPT, its IAEA safeguards agreement and the AP. We have worked tirelessly to support the JCPoA and have implemented our commitments in full. Iran has been in non-compliance with its JCPoA commitments since July 2019, and continues to take steps that are permanently and irreversibly upgrading its nuclear capabilities. Iran's nuclear programme has never been more advanced or more worrying than it is today. Between April and June 2021, we engaged in negotiations in Vienna to secure Iran's return to its JCPoA commitments. Iran paused talks on 20 June. We stand ready to return to Vienna talks as soon as possible for a swift conclusion of a deal.

The UK supports the IAEA's mandate to provide professional, impartial and robust verification and monitoring of Iran's nuclear programme. We deeply regret Iran's steps to significantly reduce IAEA access and oversight from 23 February 2021, and urge Iran to fully co-operate with the Agency, including on all issues related to its separate safeguards investigation. As an active member

13 https://www.gov.uk/government/publications/national-risk-assessment-of-proliferation-financing



of the IAEA Board of Governors, the UK continues to emphasise the importance of the independence and technical expertise of the Agency.

Since the implementation of the JCPoA, the UK has provided over £3 million in support of the IAEA's verification work on the deal. The UK has also supported JCPoA implementation through its co-chair position on the Arak Modernisation Project, which it has held since May 2018, to convert the Arak Heavy Water Reactor to a research reactor with a non-proliferative design.

The UK is concerned about Iran's ballistic missile programme and its destabilising transfer of missiles to armed groups in the region. UNSCR 2231 (2015) calls on Iran not to undertake any activity related to ballistic missiles designed to be capable of delivering nuclear weapons. Since the adoption of UNSCR 2231, Iran has conducted various launches using ballistic missile technology inconsistent with this resolution, including under the auspices of its space programme. Iran must comply with all relevant UNSCRs regarding the development and proliferation of its missile programme.

G7 Global Partnership

The UK contributes significantly to the G7 Global Partnership against the Spread of Materials and Weapons of Mass Destruction (GP). From 2002-2020, the UK has committed over £350 million of funding to GP projects.

The UK chairs the GP as part of our G7 Presidency in 2021. UK initiatives and priorities for 2021 include: nuclear security; reinvigorating discussions on the risks posed by civil stockpiles of HEU globally; raising the profile of HEU minimisation at the policy level; examining the impact of COVID-19 on resilience and assessing how programme activity can help to

address lessons from COVID; and evaluating the effectiveness of programme activity during COVID restrictions and lessons for future programmes.

Under the UK's G7 Presidency, we chaired the G7 Non-Proliferation Directors Group (NPDG). The G7 NPDG published its statement in April 2021, which sets out our common efforts on a range of non-proliferation issues and addresses a range of nuclear issues.[14]

Academic Technology Approval Scheme (ATAS)

ATAS seeks to stop the spread of knowledge and skills from academic programmes that could be used in the proliferation of advanced conventional military technology, WMD and their means of delivery.

In October 2020 the UK expanded the remit of ATAS to include advanced conventional military technologies. ATAS was expanded further in May 2021 to include all researchers in these proliferation-sensitive subjects.

Academic institutions have a mandatory obligation to comply with UK visa requirements. Obtaining a certificate under the scheme is a requirement for all students applying for student visas and post-graduate studies or research in certain designated subjects.

Section II: Conclusion

Non-proliferation is integral to security and prosperity around the world. It helps to maintain regional and global stability, reduces threats to the international community and facilitates safe trade. The UK will continue to champion non-proliferation as a crucial component of international security and will continue to work with international partners to counter threats and reinforce the global non-proliferation architecture against growing pressures.

14 https://www.gov.uk/government/publications/g7-non-proliferation-directors-group-statement-19-april-2021/g7-non-proliferation-directors-group-statement-19-april-2021

Section III: Reporting on national measures relating to the peaceful uses of nuclear energy

The NPT framework for the safe and secure transfer of peaceful nuclear technologies plays an essential part in global development. Peaceful uses of nuclear technologies contribute to achievement of the United Nations Sustainable Development Goals (UNSDGs) in areas including human health, access to food and water, clean energy and the environment.

The UK has long advocated the peaceful uses of nuclear technologies. We are committed to ensuring that other countries benefit from the UK's expertise and experience through our full participation in bilateral and multilateral fora, as well as providing financial support to efforts such as the IAEA's Technical Cooperation Programme (TCP) and the Peaceful Uses Initiative (PUI). The tenth NPT Review Conference offers an opportunity to celebrate the successes of peaceful uses of nuclear technologies, and also to consider what more can be done to expand access to these benefits, particularly to least developed countries (LDCs).

3.1 Promoting Peaceful Uses

Civil Nuclear Industry

The UK has an internationally integrated civil nuclear industry operating across the nuclear lifecycle. UK industry provides facilities and services for enrichment, chemical conversion, fuel production, generation, decommissioning, waste management and research. The UK has 30 licensed civil nuclear sites, which include generating nuclear power stations (housing a fleet of 13 reactors), fuel cycle facilities, waste management sites and decommissioning sites.

Nuclear power will continue to have a crucial role to play in the UK's energy mix as we seek to achieve net zero emissions by 2050. Nuclear power is required to complement variable renewable generation in order to ensure a low-cost, stable, reliable, low-carbon system in 2050. It is the only technology that is currently proven and can be deployed on a sufficiently large scale to provide continuous low-carbon power.

The UK is strongly committed to transparency on civil nuclear matters. We hold a regular Nuclear NGO Forum, in which members of the public and NGOs provide constructive challenge on pertinent issues.

Energy White Paper

The UK published an Energy White Paper in December 2020.[15] This builds upon the Prime Minister's Ten Point Plan for a Green Industrial Revolution which committed to pursuing both large scale new nuclear projects and advanced nuclear technologies, with £525 million to be invested into the nuclear sector.

We are committed to the transformation of our energy system, continuing to break dependency on fossil fuels and moving homes and businesses to clean energy solutions.

15 https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

Case Study 4: Nuclear Innovation

In 2015 the UK Government committed to invest in an ambitious nuclear research and innovation programme and has since committed over £100 million to support the development of advanced nuclear technologies, the supply chain and regulatory environment. The Prime Minister's 10 Point Plan for a Green Industrial Revolution and the Energy White Paper were published in 2020, confirming the Government's commitment to advancing large, small and advanced reactors. An Advanced Nuclear Fund of up to £385 million was announced, including up to £215 million for Small Modular Reactors (SMRs) and £170 million for Advanced Modular Reactors (AMRs). In May 2021, the UK government opened up the Generic Design Assessment (GDA) to advanced nuclear technologies.[16] This process allows the UK's independent nuclear regulators to assess the safety, security, and environmental implications of new reactor designs and to provide the confidence that these new designs are capable of meeting the UK's statutory regulatory requirements.

Funding committed so far includes:

» An initial award of £18 million to develop a first of a kind SMR in the UK, as detailed below;

» £215 million to support the development of a domestic SMR design, deployable in the early 2030s, which will unlock up to £300 million of private investment.

» £170 million for an ambitious AMR research and development programme, including supporting the selection and development of an AMR demonstrator by the early 2030s, at the latest.

» Nearly £4 million for feasibility studies into eight AMR designs, and up to £30 million to continue development of the three successful designs;

» Up to £12 million to build regulatory capability to take future licensing decisions on Small and Advanced Modular Reactors;

» Up to an additional £40 million in developing the regulatory frameworks and supporting UK's supply chain to bring the technologies to market;

» A £25 million phased Advanced Manufacturing and Materials programme to help decrease the capital costs of nuclear power stations and to meet the cost reduction targets in Nuclear Sector Deal.

Small and advanced modular reactors have the potential to deliver nuclear cost reductions through technology and production innovations, whilst creating high-skilled jobs and helping the UK meet our net zero target.

Small Modular Reactor—Low-Cost Nuclear Challenge

In November 2019, the UK Government awarded £18 million to a Rolls-Royce led consortium for Phase 1 of the LowCost Nuclear Challenge to **develop a Small Modular Reactor designed and manufactured in the UK**.

The consortium is aiming to develop a Small Modular Reactor capable of producing cost effective electricity, to be deployed both domestically and internationally, by the early 2030s. The consortium believes that a UK Small Modular Reactor programme can support up to **40,000 jobs** at its peak with each Small Modular Reactor capable of **powering 750,000 homes**.

We stand ready to share information and experiences with Member States and the IAEA, as well as the OECD-Nuclear Energy Agency (NEA), as progress is made and lessons are learned, and fully support the Agency's role in ensuring the safety of SMRs internationally as they move towards implementation.

16 https://www.gov.uk/government/publications/entry-to-the-generic-design-assessment-for-advanced-nuclear-reactors

The White Paper is clear that nuclear power continues to be an important and proven source of reliable clean electricity and includes a major programme of investment in nuclear. The UK is pursuing large-scale nuclear, whilst also looking to the future of nuclear power in the UK through further investment in Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs).

Nuclear Sector Deal

The UK's Nuclear Sector Deal,[17] launched in June 2018, enables the UK Government and industry to work in partnership to enhance safety and develop a vibrant future workforce at the forefront of nuclear innovation. By 2030, the sector has committed to deliver a 30% reduction in the cost of new build projects, savings of 20% in the cost of decommissioning compared with current estimates, 40% women in the nuclear workforce, and £2 billion in domestic and international contract wins.

Good progress has already been made across the deal's targets, including:

» in June 2019, the UK Nuclear Industry Association published the National Decommissioning and Waste Management Pipeline to bring together all of the UK's decommissioning and waste management plans;

» in November 2019 and July 2020, multiple research and development grants were awarded to promote nuclear innovation. This includes grants under the UK's Advanced Manufacturing and Materials programme and the initial Low-Cost Nuclear Challenge award;

» in December 2019, the UK Nuclear Skills Strategy Group, together with Women in Nuclear UK, launched the Nuclear Sector Gender Roadmap and the Nuclear Sector Gender Commitment. The Roadmap is accompanied by a Commitment Pledge which sees employers and individuals pledging their support to the Nuclear Sector Deal commitment target of a 40% female workforce by 2030.

Sharing UK experience and expertise

The UK plays an active role in multilateral organisations to promote the peaceful uses of nuclear technologies, including through the International Framework for Nuclear Energy IFNEC, the Nuclear Innovation: Clean Energy Future initiative, the Nuclear Energy Association, and the IAEA.

We regularly support UK nuclear professionals to engage with these expert groups and forums, and encourage UK academic institutions to participate in multilateral networks that facilitate international cooperation on peaceful uses. For example, the UK's National Nuclear Laboratory (NNL) and the Institute for Global Food Security (IGFS) were both designated as IAEA Collaborating Centres in 2020. The IAEA's partnership with NNL will develop nuclear fuels and technologies of the future, while collaboration with the IGFS will advance the global food security agenda, using nuclear analytical techniques to detect the contamination and adulteration of feeds and food. This work supports Actions 48 and 49 of the 2010 Action Plan.

17 https://www.gov.uk/government/publications/nuclear-sector-deal

Approach to Nuclear Cooperation Agreements (NCAs)

The UK recognises the important part that NCAs have to play in encouraging cooperation between partner countries because they promote high standards of safety, security, safeguards and non-proliferation whilst creating a framework for cooperation. We review all the NCAs that we have regularly, and are actively considering NCAs with other partners where it would be mutually beneficial to have such an Agreement in place. We ensure that all our NCAs reflect our strong commitment to non-proliferation.

Expanding access to peaceful uses

The UK is committed to supporting countries, especially NNWS, to benefit from the peaceful uses of nuclear technologies and expanding access to these technologies. Nuclear energy and technologies play key roles in tackling global challenges, from treating diseases such as cancer, to addressing food insecurity, to mitigating climate change.

The UK has contributed to preparations for the tenth Review Conference by supporting consultations with States Parties on expanding access to peaceful uses. Understanding the challenges of accessing peaceful uses of nuclear technologies is key to addressing them. The UK participated in initial workshops held in Abuja, Nigeria in December 2019 and Magaliesburg, South Africa in February 2020. This engagement continued virtually in 2021, with a series of webinars diving deeper into specific applications of nuclear technologies for radiotherapy and food security, and regional workshops for Southeast Asia and the Pacific, and Latin America and the Caribbean. These involved peaceful uses practitioners and considering the specific challenges they face in accessing and implementing peaceful uses, as well as considering potential solutions and meaningful changes to tackle these challenges. In late August 2021, we hosted a virtual forum to review the outcomes of these meetings and to consider steps that could be agreed by States Parties to address the issues raised. Participants came from a range of countries and regions, as well as regional institutions and the IAEA, bringing a breadth of experience and of views. Next steps include considering aspects of a proposal States Parties could consider bringing to the Review Conference.

Climate change

As the first major economy in the world to pass laws to end our contribution to global warming by 2050—committing to reduce our greenhouse gas emissions to net zero—the UK is committed to tackling the scourge of climate change.

The latest Intergovernmental Panel on Climate Change (IPCC) report—showing the impact humans have had on our planet—is a wake-up call, highlighting the need for drastic, dramatic action now, to protect the earth for generations to come. Safe and secure nuclear power will be an important component in our plans to reach net zero and COP26 in November 2021 provides an important opportunity to highlight the role that nuclear technologies have to play in tackling climate change.

At the end of 2020, the UK Prime Minister's 10 Point Plan set out the UK's aim to approve at least one more large-scale nuclear power plant by 2024. It also committed £385m to unlock the opportunities of advanced nuclear technologies.

Case Study 5: Recent extra-budgetary UK TCF contributions

The IAEA's Technical Cooperation programme demonstrates the many and varied uses of nuclear technologies that can help to meet global goals—such as the Sustainable Development Goals—and tackle global challenges—such as climate change and the Covid-19 pandemic. The UK has been pleased to contribute to the following programmes and support the IAEA in its work.

Sterile Insect Technique

In 2018 the UK pledged £260,000 through the Peaceful Uses Initiative for the procurement of an X-ray irradiator and associated research to develop new methods to control Aedes mosquitoes as vectors of human pathogens, particularly the Zika virus, without the use of highly radioactive sources.

This project is part of the IAEA's work on the Sterile Insect Technique, which uses irradiation to sterilise insect pests, such as mosquitoes, which are then realised into the wild. The insects remain sexually competitive, but cannot produce offspring, resulting in an environmentally-friendly form of pest control. It will further develop the IAEA and Member States' abilities to combat infectious disease.

Renovation of the Nuclear Applications Laboratories (ReNuAL)

The UK has contributed over £2.4 million in extra-budgetary support to the IAEA for the ReNuAL (£700,000), ReNuAL+ (£200,000), and ReNuAL 2 (£1.5 million) projects. This includes support to the establishment of a Neutron Science Facility in the Nuclear Science and Instrumentation Laboratory, and to the rebuilding of the Plant Breeding and Genetics Laboratory (PBGL), the Terrestrial Environment Laboratory (TEL), and the Nuclear Sciences and Instrumentation Laboratory (NSIL). The Seibersdorf laboratories are a critical part of the IAEA offer to Member States, supporting research, development, training and capacity building.

Covid-19 response

The IAEA's project to deliver diagnostic equipment to Member States following the outbreak of Covid-19 is an example of the vital importance of the Agency's work in tackling shared global challenges and the relevance of peaceful uses of nuclear technologies. The UK provided £500,000 to support the delivery of diagnostic equipment. We also worked with E3 partners to ensure that safeguards inspections could continue safely throughout the pandemic.

Marine plastics: Tackling the Challenge using Nuclear Applications

In 2020 the UK contributed £139,000 to support the IAEA's Monaco laboratories work using nuclear techniques to better understand the scourge of marine micro and nano-plastics and the pollutants associated with them. The UK is committed to protecting the world's oceans and has a significant programme of work dedicated to this.

Marie Skłodowska Curie Fellowship Programme (MSCFP)

In 2021 the UK contributed over £460,000 to the MSCFP, a programme supporting women from around the world in studying a Master's degree in nuclear fields. This provides up to 12 fellowships and includes funding from the UK's National Nuclear Laboratory (NNL). The UK is proud to support the programme, which complements our Nuclear Sector Deal ambitions for women in the sector.

It is essential that the contribution of nuclear technologies in monitoring, mitigating and adapting to climate change is better understood by the public and by policy makers, so that these technologies can be used to their full potential. The UK is supporting the IAEA's efforts to research, develop and apply these technologies through the secondment of a national expert who is helping to develop and raise awareness of the Agency's climate change work.

COP26 President Alok Sharma gave a keynote address to the IAEA's Scientific Forum in September 2020, emphasising the role of nuclear power in the transition to clean energy. He also highlighted the potential for nuclear technologies to enable decarbonisation beyond the electricity sector and the role of innovation in helping nuclear to fulfil its potential to reduce global emissions.

3.2 Technical assistance through the IAEA to its Member States

The UK strongly supports the IAEA's Nuclear Applications and Technical Cooperation efforts. The TCP provides necessary support to enable countries to benefit from the use of nuclear technologies in a safe, secure and effective way.

It is important that the IAEA has certainty of funding. We pay our Technical Cooperation Fund (TCF) contributions in full and on time every year and encourage others to do the same. Since 2015, the UK's contribution to the TCF each year was over £3 million. The UK has also worked with other Member States and the IAEA over several years to reach agreement on improvements to the Due Account Mechanism, which encourages the timely and full payment of TCF contributions by all Member States. We also regularly provide extra-budgetary contributions to TCP and PUI projects.

The UK's extra-budgetary contributions to the TCP are used to continue to expand access to peaceful uses and primarily benefit those countries which most need support. We encourage the IAEA and other partners to prioritise LDCs in benefiting from projects or research where the UK has provided funding.

> ***"Since 2015, the UK's contribution to the Technical Cooperation Fund each year was over £3 million.***

We continue to provide technical expertise and access to our world-leading research institutes to assist the IAEA's research and development work. UK institutions are currently engaged in over 30 Co-ordinated Research Projects (CRPs) covering environmental issues, water resources, human health, medical research, food and agriculture. We will continue to work with the Agency to identify further areas where the UK's expertise and support can be harnessed to advance the development of the peaceful uses of nuclear science and technology. These efforts support Actions 52, 52, 54 and 55 of the 2010 Action Plan.

3.3 Civil nuclear safety and civil nuclear liability

Civil nuclear safety

The UK is committed to achieving high nuclear safety standards and meeting our obligations as a Contracting Party to international nuclear safety instruments such as the Convention on Nuclear Safety. The UK routinely invites inward

international peer reviews for nuclear safety, such as the Integrated Regulatory Review Service (IRRS) and Operational Safety Review Team, to enhance its own safety framework and to share learning and best practices with international parties.

The UK participated in the sixth Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management in May 2018. Through the peer review process, the UK's Country Group commended the UK's waste hierarchy characterisation as areas of 'good performance', the Convention's highest possible accolade. The UK published the seventh National Report on Compliance with the Obligations of the Joint Convention on the Safety of Spent Fuel and on the Safety of Radioactive Waste Management in July 2021.

Civil nuclear liability

The UK is a Contracting Party to the Paris Convention and Brussels Supplementary Convention on nuclear third-party liability. These provide adequate compensation to the public for damages resulting from a nuclear incident, whilst not placing an unbearable burden of liability on the nuclear industry.

Changes to the Conventions were agreed in the form of the 2004 Protocols to the Paris Convention. Once ratified, these will update the existing regime to ensure that, in the event of an incident, more compensation will be available to more claimants in respect of a broader range of damages over a longer period. Ratification of the 2004 Protocols by Contracting Parties is expected on 1 January 2022.

The Paris-Brussels liability regime is implemented domestically through the Nuclear Installations Act 1965,[18] which was prospectively amended by the Nuclear Installations (Liability for Damages) Order 2016,[19] to reflect the changes agreed in the 2004 Protocols. Ratification of the Protocols will trigger the 2016 Order coming into force.

Emergency preparedness and response

The UK is committed to providing the necessary reassurance to the global public that the UK and other states use nuclear technologies responsibly and commit to ensuring public safety. We strive to continuously improve our emergency preparedness and response requirements and incorporate international best practice.

The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR 2019)[20] and the Carriage of Dangerous Goods (Amendment) Regulations 2019 (CDGs) were made in March 2019.[21] REPPIR 2019 and the CDGs require all hazards capable of causing a radiation emergency at a civil nuclear site or in civil nuclear transport (by road, rail and inland waterway) to be identified, their consequences assessed and commensurate emergency arrangements put in place. The 2019 IAEA IRRS mission[22] found that the UK's 'EP&R legislation is comprehensive and provides for a

18 https://www.legislation.gov.uk/ukpga/1965/57

19 https://www.legislation.gov.uk/uksi/2016/562/contents/made

20 https://www.legislation.gov.uk/uksi/2019/703/contents/made

21 https://www.legislation.gov.uk/uksi/2019/598/contents/made

22 https://www.gov.uk/government/publications/nuclear-and-radiological-safety-review-of-the-uk-framework-2019

robust and consistent regulatory framework for all facilities and activities.'

The UK is also a Party to several international agreements which demonstrate commitment to provide assistance to other states in the event of nuclear accidents and emergencies. These include the Convention on the Early Notification of a Nuclear Accident, which commits the UK to sharing information with the international community in the event of a nuclear or radiological accident within UK jurisdiction which may impact on other states, and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, under which the UK has agreed to notify the IAEA of assistance which might be provided in the case of an accident in another country.

Integrated Regulatory Review Service (IRRS) mission

In October 2019, the UK hosted an IAEA IRRS mission. This was the UK's first full-scope mission covering all aspects of radiological and civil nuclear safety. The UK previously hosted a number of 'partial scope' missions focused on specific areas of nuclear safety.

The review team found that the UK is committed to strengthening its regulatory framework for nuclear, radiation, radioactive waste and transport safety. In keeping with the approach of IRRS peer reviews, the mission team provided recommendations for the UK to enhance its safety framework

We are working to address the mission team's findings through the Government-chaired Radiological Safety Group and the Radiological Safety Working Group. We look forward to welcoming a follow up mission of the IRRS in 2024.

3.4 Other Related Issues

Civil nuclear security

The UK has a robust regime for security in the civil nuclear industry, which implements its Treaty obligations and takes account of IAEA nuclear security guidance and other relevant instruments. Security arrangements are based on the principles of the graded approach and defence in depth, and are kept under constant review to ensure they address current and emerging security risks.

Civil nuclear security regulation

The ONR has implemented an outcome-focused approach to regulating civil nuclear security, embodied in the publication in March 2017 of its Security Assessment Principles (SyAPs) guidelines. This approach gives civil nuclear sites increased scope to develop innovative security solutions that align with their business needs. SyAPs also provide an enhanced framework for cyber security against which the industry must demonstrate its arrangements are effective. This work supports Action 60 of the 2010 Action Plan.

Nuclear information and cyber security

The UK considers that cyber security requires greater global attention and has led efforts to secure sensitive nuclear information both domestically and internationally within the framework of the Nuclear Security Summits, the Global Partnership and the IAEA.

In 2017, the UK published a Cyber Security Strategy for the civil nuclear sector. This set out the measures being taken to enable our nuclear sector to defend against, and recover from, cyber threats. The strategy's five-year plan details the desired outcomes, whereby

industry will be better equipped to understand and tackle cyber security. This approach aims to ensure that the UK civil nuclear sector has a mature approach to understanding the cyber threat and is delivering outcome-focused solutions. The successor to this strategy is currently under development.

Detection and radioactive source security

The UK values the IAEA's Incident and Trafficking Database (ITDB) as a vital tool for countries to notify and share information with each other on nuclear and radiological materials which are lost or discovered outside regulatory control. We have notified the IAEA of several incidents since 2015 via the ITDB and regularly circulate a report of world-wide incidents to ensure awareness of security risks and trends.

In our efforts to enhance security while maintaining access to the benefits of radiation technology, the UK is undertaking work to replace Caesium irradiators used in our health and research sectors with safer alternative technologies, and to reduce future demand for such radioactive sources where possible

International Physical Protection Advisory Service (IPPAS)

In February 2016, the UK became the first NWS to have hosted both an initial IPPAS security peer review mission, completed in 2011, and a follow-up mission in 2016. These performed national-level reviews of the UK's legal and regulatory framework for civil nuclear security, as well as a review of the security measures and procedures in place to execute this framework at facilities and during transport. Following this, in November 2016, the UK funded and hosted the second International Seminar to Share Experience and Best Practices from Conducting IPPAS Missions in London.

> ***"We are committed to sharing our experience and learning of implementing our high standards of nuclear safety, security and safeguards with other States Parties, ensuring that all countries are able to benefit from the energy, health and development applications of peaceful nuclear technologies.***

Section III: Conclusion

The UK has benefited hugely from access to the peaceful uses of nuclear technology. Nuclear power is playing a key role in decarbonising electricity, supporting our net zero ambitions though large-scale power plants and in the future through innovative new technologies such as SMRs and AMRs.

We are committed to sharing our experience and learning of implementing our high standards of nuclear safety, security and safeguards with other States Parties, ensuring that all countries are able to benefit from the energy, health and development applications of peaceful nuclear technologies.

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