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VERTIC BRIEF • 29 • AUGUST 2017

B R I E F

# Brexit’s Nuclear Fallout: Approaching the Cliff’s Edge?

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## Executive Summary

Following its decision to leave the European Union, the UK government also decided to exit the Euratom Treaty, the European nuclear cooperation agreement in place since 1957. Brexatom, as it is known, adds a whole new host of complications to the process of exiting the EU, not least of which is the unfortunate creation of an unpronounceable three-part portmanteau. This brief explores a number of these complications. First, it examines Brexatom’s potential implications for nuclear trade, research, construction, waste and healthcare. Second, it clarifies the different types of deals which the UK government will need to negotiate before Brexatom takes effect. Third, it considers whether Brexatom is even necessary, emphasizing that the decision is a matter of legal interpretation. Finally, it concludes with an analysis of the UK government’s options moving forward, relative to the EU’s strong negotiating position.

The Queen’s Speech to both Houses of Parliament on 21 June, almost exactly a year after the Brexit referendum took place, identified a nuclear safeguards bill as one of eight bills necessary to plug the policy gaps created by the UK’s departure from the EU. While the scope of the bill is currently unclear, this brief outlines the critical issues facing the UK’s nuclear industry in light of Brexatom.

## A Chain Reaction

The negative implications of Brexatom are not being exaggerated. As noted by Daniel Davies in a previous issue of *Trust & Verify* immediately following the referendum (see ‘Brexit effects: The

future of safeguards in the United Kingdom’ in T&V153), ‘[i]f no alternative mechanism is decided upon before the negotiating period ends, the safeguarding regime developed over forty years could quite simply cease.’ Nuclear trade, research, and the free movement for nuclear scientists to and from the UK could be halted entirely, with certain knock-on effects to a number of crucial sectors.

Dr. Nicola Strickland, president of the Royal College of Radiologists, has expressed concern that a Euratom withdrawal could cease the flow of radioisotopes used to treat cancer. Many such isotopes, like Molybdenum-99 and Lutetium-177, are sourced from reactors in Belgium, the Czech Republic, France, the Netherlands, and Poland. They are not currently being produced in the UK and cannot be stockpiled due to their short half-lives, as radioactive decay makes them unusable relatively quickly. As such, the UK relies upon Euratom to maintain a constant supply of these radioisotopes, and withdrawal could mean increased importing costs or simply a halt in procurement — putting lives at risk.

It is also unclear how Brexatom might affect ongoing nuclear research projects based in the UK and in Europe. The EU currently contributes approximately 45% of the development costs to the International Thermonuclear Experimental Reactor (ITER) in southern France; Bloomberg’s Jonathan Tirone notes that the UK would need to negotiate a separate equity stake if it wished to benefit from the project.

Once completed, ITER will be the world’s largest nuclear fusion research

experiment, aiming to produce more energy from nuclear fusion than is used to initiate the process. Absent a renegotiated role, the UK stands to lose out on access to such research and any follow-on technologies, such as the DEMONstration Power Station commercial fusion reactor currently being proposed.

The EU also currently covers 88% of the running costs at the Oxfordshire-based Joint European Torus (JET) nuclear fusion programme — presently the world's largest magnetic confinement plasma physics experiment. The UK government has stated that it would continue to invest in JET after Brexit, on the condition that the EU extends the project to 2020 and continues to financially contribute. However, Oxford West and Abingdon MP Layla Moran argues that the government's funding promise is akin to a 'sticking plaster.' 'The money keeps things going,' she noted in a visit to the JET site in Culham, 'but it doesn't stop the fact that by pulling out of the Euratom Treaty, we are pulling out of a network of scientists and that is more important than anything else.' The Euratom Treaty explicitly stipulates a condition of 'freedom of employment for specialists' within member states, including the freedom of movement for nuclear scientists (see Title I, Article 2(g) of the Euratom Treaty). Given that one-fifth of the 500 staff working at the JET site are not from the UK, the consequences for those from EU countries — and the project as a whole — could be severe.

Additionally, Brexatom could have serious repercussions for nuclear power plant construction initiatives like the £18 billion project at Hinkley Point

C, approved by the Conservatives in September 2016, and the proposed Wylfa Newydd nuclear power station in North Wales. Euratom is also in charge of the laboratory and related safeguards procedures at Sellafield, Europe's largest nuclear fuel reprocessing and nuclear decommissioning site. Prof Dr Glyn O. Phillips, fellow at the Learned Society of Wales, noted in an interview with BBC Cymru Fyw that the centralisation of European nuclear resources at the European Organization for Nuclear Research (CERN) in Geneva could cause significant staffing issues: 'If that link is cut and we can't keep the connection, then I can't see how we could ever produce the workforce that is vital to maintain the new power stations.'

Further complications lie with the tasks of decommissioning nuclear facilities and disposing of nuclear waste. An internal UK Nuclear Decommissioning Authority (NDA) document from July 2016, obtained by technology website Gizmodo through a freedom of information request, indicates that Brexit could seriously complicate these crucial processes. The NDA outsources its work to private companies — many of which are European — and its related initiatives are funded significantly by the EU. For example, the document reveals that the EU paid 8.7 million euros to fund a project on plugging and sealing radioactive waste (DOPAS), 5.5 million euros towards a reprocessing and dissolution initiative (ASGARD), and 5.6 million euros for a research project on enhancing the safety of the nuclear fuel cycle (SACSESS). It remains to be seen at the time of writing how the UK government plans to reconcile its present nuclear commitments with its hard-line stance on withdrawal.

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## What Lies Ahead?

The new nuclear safeguards bill is intended to empower the Office for Nuclear Regulation to meet the UK’s international safeguards and nuclear non-proliferation obligations. However, a number of challenging tasks lie ahead. Firstly, the UK will have to negotiate its withdrawal arrangement from Euratom. Secondly, given that the UK’s existing safeguards arrangement is underpinned by its current Euratom membership, the UK will need to conclude a replacement Voluntary Offer Agreement (VOA) with the International Atomic Energy Agency (IAEA), this time as a non-Euratom member. It will also have to create a State system of accounting and control for nuclear material, insofar as it has relied on Euratom to fulfill that role under its existing VOA. Finally, the UK will need to conclude new nuclear cooperation agreements (NCAs) with individual states outside the EU. These deals will all need to be concluded before official withdrawal from the EU and Euratom in March 2019.

Energy Minister Richard Harrington attempted to reassure MPs in a 12 July 2017 Westminster debate, arguing that it is ‘not only possible to do these things in parallel, we are also doing so and we will avoid the cliff edge.’ However, a prior statement by IAEA Director General Yukiya Amano casts doubt over this claim: ‘It depends very much on the progress on the UK-Euratom, UK-EU side. UK-IAEA negotiations [do not] go ahead of the UK-Euratom negotiations, we always follow,’ Amano told the Financial Times. ‘If negotiations with UK-Euratom go fast, we can fix this issue fast.’

It is unclear at this time what each of these deals will look like, and the new UK-Euratom relationship will be particularly tricky to negotiate. Theresa May’s ‘red line’ stance on the European Court of Justice (ECJ) complicates matters further. While Prime Minister May is determined to pull out of the ECJ, the EU, on the other hand, is resolute that the ECJ must continue to exercise jurisdiction over EU citizens — including European scientists — residing in the UK. This will prove to be a significant sticking point between the two negotiating camps in the coming months. James Chapman, former chief of staff to Brexit secretary David Davis, noted his displeasure with the Prime Minister’s stance on free movement: ‘I would have thought the UK would like to continue welcoming nuclear scientists, who are all probably being paid six figures and are paying lots of tax,’ he told the BBC on 30 June. ‘But we’re withdrawing from it because of this absolutist position on the European Court [of Justice]. If she doesn’t shift on this I think parliament will do it for her.’

Alternative to an absolute pull-out, it is possible that the UK could accept ‘third party’ status, similar to the USA, or ‘associated’ status, similar to Switzerland — although this arrangement could be further complicated, given the UK’s nuclear weapons state (NWS) status. Either of these could allow for continued cooperation arrangements, although it could mean that Euratom might pull its majority funding for JET and other UK-based research initiatives.

Replacement NCAs will be necessary in order to continue nuclear trade with other countries. Some countries, such as the US, require an NCA under

domestic law (known as a 123 Agreement), and others, including Australia and Canada, consider it a non-binding but strict prerequisite for nuclear trade. In a May 2017 white paper addressed to the government, the Nuclear Industry Association identified the negotiation of NCAs with Australia, Canada, Japan, Kazakhstan, South Korea, and the US as most important. Failing to complete all of these deals before time runs out could force the UK to fall back on World Trade Organization arrangements, and potentially place the UK in violation of its existing NCAs. The UK must avoid this cliff-edge at all costs.

### Is Brexatom Necessary?

The UK government says yes. Its position paper published on 13 July 2017 cites a recommendation from the European Commission which states the following: ‘It is recalled that in accordance with Article 106(a) of the Treaty establishing the European Atomic Energy Community, Article 50 of the Treaty on European Union applies also to the European Atomic Energy Community.’ As such, states the position paper, ‘the Treaties of the EU and Euratom are uniquely legally joined.’

However, the government’s interpretation is not shared by all. Legal experts Donoghue, Arora and Basu from Baker McKenzie note that there is a potential alternative interpretation: ‘an EU member state is free to leave the EU but not Euratom (or the other way around), i.e. Article 50 is the exit route for leaving the EU and Euratom separately, or both of them together, as that EU member state desires.’ This interpretation is bolstered by arguments from Prospect Law and Herbert

Smith Freehills that the treaties establishing the EU and Euratom are separate legal instruments; the withdrawal processes may be parallel, but they are distinct. Therefore, under this route, it would have been up to the UK to decide whether to trigger Article 50 for both the EU and Euratom, or just for the EU.

Regardless of this potential alternative, the UK government made its interpretation of the linkage between the EU and Euratom abundantly clear when it triggered Article 50 in March of this year. The third paragraph of the letter sent to Donald Tusk reads as follows:

*‘In addition, in accordance with the same Article 50(2) as applied by Article 106a of the Treaty Establishing the European Atomic Energy Community, I hereby notify the European Council of the United Kingdom’s intention to withdraw from the European Atomic Energy Community. References in this letter to the European Union should therefore be taken to include a reference to the European Atomic Energy Community.’*

By enshrining its declaration in such formal and legal language, the government effectively — and deliberately — tied its own hands, making the decision very difficult to reverse, and likely requiring an amendment or revocation of the Article 50 notice entirely.

This leads one to ponder: why would Theresa May’s government decide to withdraw from the Euratom Treaty at the same time as formally withdrawing from the EU Treaty — especially since a robust legal case could have been made in favour of not doing so?

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The UK government has made it clear that its interpretation of the referendum result is primarily focused on sovereignty. As such, Theresa May has vowed that she will ensure ‘the authority of EU law in this country [is] ended forever.’ This emphasis on restoring a perceived loss of sovereignty has significant repercussions for the future of the UK-Euratom relationship, as the prime minister has chosen to adopt a hard-line approach to the ECJ, which oversees Euratom on legal matters.

As such, if Prime Minister May sticks to her promise to end the ECJ’s authority in the UK, there will be no room for the UK to remain a full member of Euratom. However, several MPs — including a handful from her own party — have questioned this stance. In a 9 July editorial in the Telegraph, Conservative MP Ed Vaizey and Labour MP Rachel Reeves noted that ‘there appears never to have been an ECJ case involving the UK and Euratom [...] Whatever people were voting for last June, it certainly wasn’t to junk 60 years of co-operation in this area with our friends and allies’.

Even prominent Brexiteers like Dominic Cummings, campaign director of Vote Leave, have come out against Prime Minister May’s stance on the ECJ. Calling the government ‘morons,’ he tweeted on 10 July that the ‘Tory Party keeps making huge misjudgements re what the REF was about. EURATOM was different treaties, ECJ role no signif problem.’ He called upon prominent government officials to inform the prime minister that ‘this is unacceptable BULLSH\*T & must be ditched or she will be.’

MPs from her own party have condemned Prime Minister May’s hard-line stance over the ECJ as akin to ‘cutting off your economic and scientific nose to spite your political face.’ Particular anger was triggered by the government’s admission of the lack of a formal impact assessment and a lack of consultation with other sectors — particularly with the Health Secretary — over the potential consequences of Brexitom.

The Tory rebellion has reportedly grown large enough to defeat legislation in the House and throw the government into further disarray. However, as noted by David Allen Green in the Financial Times, any decision to amend or revoke Article 50 is in the hands of the EU, not the UK: ‘Parliament can vote as much as it likes against parts of Brexit, but it is too late [...] The country lost control of the process the moment it made the Article 50 notification.’ The EU could decide to allow such an amendment or revocation, but as Green adds ‘The EU may not even notice, still less care, what hesitant MPs now think and fear.’

## Options Following Brexitom

The UK government has not yet provided sufficient clarity on its position regarding Euratom. The government’s position is evolving, but its 13 July position paper states that it seeks to continue ‘collaborating on nuclear research’, ‘minimising barriers to civil nuclear trade’, and ‘ensuring mobility of skilled nuclear workers and researchers’. However, it remains to be seen how any of these aims could be achieved with a full withdrawal.

The position paper made no direct reference to radioisotopes and did not seek to address any of the concerns from the healthcare industry. Amid heated calls for a reversal on Brexit, Brexit Secretary David Davis has floated the idea of establishing an ‘association agreement’ with the EU and Euratom, underpinned by a new bilateral deal between the UK and the EU, instead of the ECJ. However, while an association agreement like that of Switzerland might allow the UK to collaborate on European nuclear research, Kelsey Davenport of the Arms Control Association notes that it

would not necessarily settle the all-important safeguards issue — this would depend on the degree of future cooperation agreed to by both sides. Additionally, despite reports of ‘good-will’ for such an arrangement, the EU still holds all the cards. The UK government must convince the EU that when it comes to nuclear trade and safeguards, it is in the EU’s interests to accommodate a Brexit that benefits both parties, rather than getting, as David Allen Green suggests, ‘the Brexit the EU decides it will have.’

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### Euratom At A Glance

More than 100 UK facilities are currently subject to Euratom safeguards, which verify the safety of UK-based nuclear materials and certify that no diversion of these materials has taken place. Meeting these standards is necessary in order to comply with international nuclear trade and research regulations.

Euratom inspectors verify the correctness and completeness of operators’ inventory listings, materials reports, transit flows, and related declarations. Inspections are conducted near-weekly at sites like Sellafield; monthly at enrichment plants; and less frequently at power stations and sites holding small amounts of nuclear material.

Additionally, Euratom membership establishes the free movement of nuclear specialists and allows the UK to access EU nuclear research projects like the International Thermonuclear Experimental Reactor (ITER).

Without Euratom membership, the UK will have to:

- Assume Euratom’s role in verifying UK compliance with safeguards obligations under agreements concluded with third states and the IAEA.
- Replace the current Euratom-owned safeguards equipment, infrastructure and personnel.
- Conclude a replacement Voluntary Offer Agreement (VOA) with the IAEA and new nuclear cooperation agreements (NCAs) with non-EU/ Euratom states, in order to remain compliant with its international safeguards obligations.
- Operate a domestic nuclear safeguards and accountability system in accordance with international standards. This will ensure that the handling of all UK-based ores, source materials and special fissile materials is undertaken in line with applicable international treaties.

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## Production

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## Design

Richard Jones, Studio Exile

## ISSN

1740-8083

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## About this paper

This brief outlines the critical issues facing the UK's nuclear industry in light of Brexit, the UK government's decision to exit Euratom along with the European Union. First, it examines Brexit's potential implications for nuclear trade, research, construction, waste, and healthcare. Second, it clarifies the different types of deals which the UK government will need to negotiate before Brexit takes effect. Third, it considers whether Brexit is even necessary, emphasising that the decision is a matter of legal interpretation. Finally, it concludes with an analysis of the UK government's options moving forward, relative to the EU's strong negotiating position.

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