

# NFLA Policy Briefing No.178



Date: 20<sup>th</sup> August 2018

Subject: **Creating a Domestic UK Nuclear Safeguards Regime to replace the Euratom Treaty's nuclear safety arrangements – responding to UK Government consultation**

## 1. Background

Following its planned withdrawal from the European Atomic Energy Community (Euratom), the UK will be introducing new Nuclear Safeguards Regulations to enable a domestic nuclear safeguards regime to operate in the UK. The Government is seeking views on the operability and effectiveness of a draft of these new Nuclear Safeguards Regulations.

The Nuclear Safeguards Act, under which these draft Nuclear Safeguards Regulations will operate, has recently completed its passage through the UK Parliament and received Royal Assent on the 26 June 2018.

The UK Government states that it is committed to establish a new regime that will operate in a similar way to existing arrangements, but with changes made to the regulations to ensure they are appropriate for the domestic, legislative and operational landscape in which they operate.

If passed into law, these proposed Regulations are intended to allow the Office for Nuclear Regulation (ONR) to meet international obligations from 'day one' of exit, and to build, over time, a safeguards regime equivalent in coverage and effectiveness to that currently provided by Euratom.

The UK Government is seeking views on how the new safeguards regime will operate, and this NFLA Policy Briefing provides a model response to that consultation and puts it into its proper context.

## 2. Responding to the consultation

The consultation document is available at this weblink:

<https://www.gov.uk/government/consultations/nuclear-safeguards-regulations>

If members wish to respond to the consultation, then they should email responses to:

[nuclearsafeguardsconsultation@beis.gov.uk](mailto:nuclearsafeguardsconsultation@beis.gov.uk)

Or write to:

Nuclear Safeguards Consultation, Euratom Exit Team, Department for Business, Energy & Industrial Strategy, 3rd Floor, V327, 1 Victoria Street, London, SW1H 0ET

The closing date to receive consultation responses is the **14<sup>th</sup> September 2018**. NFLA will submit an adapted response of this Policy Briefing as its official submission to the consultation.

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WORKING FOR A RENEWABLE, SAFE & PEACEFUL FUTURE**

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C/o Nuclear Policy, Level 5, Town Hall Extension, Manchester, M60 3NY

Tel: 0161 234 3244 E-Mail: [s.morris4@manchester.gov.uk](mailto:s.morris4@manchester.gov.uk) Website: <http://www.nuclearpolicy.info>

### **3. There are five key questions associated with these proposals.**

Firstly how will the new safeguards regime will be paid for? Will adequate funding arrangements be in place by the end of March 2019?

Secondly, will the new safeguards arrangements effectively prevent the diversion of fissile nuclear materials into nuclear weapons?

Thirdly, will the new safeguards arrangements be seen to be effective by other countries given that the UK is basically proposing to police itself?

Fourthly, will IT systems be in place in time. According to a leaked ONR report (1) work on a new IT system, which should have started by the end of March 2018, is behind schedule and the deadline has already been “irretrievably lost”.

Fifthly, will ONR be able to recruit enough inspectors to replace the work of Euratom? According to the leaked ONR report recruiting enough safety inspectors, and a lack of detailed training for them was ranked as “red” on a ‘red, amber, green’ (RAG) project management ranking.

### **4. Adequate Funding**

One key issue which has been raised by the House of Lords Select Committee on the European Union- Energy and Environment Sub-Committee is how the new national domestic nuclear “safeguards” regime will be paid for. (2)

Dr Mina Golshan, Deputy Chief Inspector, Office for Nuclear Regulation, explains that funding is not addressed in the current consultation, but, as part of that consultation, the Government is seeking to get views from industry and other stakeholders on what the funding regime should look like. She says the cost of establishing the safeguards regime is already covered by BEIS. (The total estimated cost of establishing the regime is £10m) (3) It is the future costs—the running costs from the day that we take on the responsibility of safeguards—that is out for debate.

The House of Lords Select Committee expressed surprise that there is still uncertainty about funding. It notes that the consultation states that if it is decided to recover the costs from industry there would be further consultation. Lord Teverson asks for an assurance that this can all be sorted by 29<sup>th</sup> March 2019. (4)

The NFLA would argue that any other funding mechanism, other than cost recovery from the industry would amount to an unwarranted subsidy for nuclear power. Energy markets are distorted by subsidies, so these should only be offered to new clean technologies for a period of time whilst the technology is developed and made ready for market.

### **5. The Effectiveness of Safeguards**

Currently international inspections of UK nuclear plants and materials to ensure there is no diversion of materials to military misuse are carried out by EURATOM on behalf of the International Atomic Energy Agency (IAEA) under a treaty signed in September 1978 between the UK, Euratom and the IAEA. Critical to replacing the EURATOM regime will be a bilateral deal with the IAEA, which oversees global nuclear safety and security. EURATOM reports to the IAEA on behalf of its members and the UK would need to replicate this relationship. One option might have been for IAEA inspectors to replace those of EURATOM in the UK, but it’s unlikely the IAEA would have wanted its limited resources diverted from its core nuclear non-proliferation monitoring in places such as Iran.

The Government wants the new regime to be equivalent in effectiveness and coverage to that currently provided by Euratom, and which will exceed expected international standards. Worryingly the regulations will only “*allow the Office for Nuclear Regulation to deliver international standards from day one of exit, and to build, over time, to Euratom equivalence.*”

So standards will be downgraded from day one of Brexit. There is no indication of how long it will take ONR to build up to Euratom equivalence. (The consultation document says Euratom will continue to provide safeguarding arrangements for the UK until the end of 2020).

The UK's 1978 Voluntary Offer Agreement (VOA) – with the IAEA and Euratom specifies the UK's acceptance of the application of IAEA safeguards "*on all source or special fissionable material in facilities or parts thereof within the United Kingdom, subject to exclusions for national security reasons only.*"

The VOA also reflects the right of the UK to remove facilities from the Facilities List and/or withdraw material from the scope of the VOA for reasons of national security. (5) The Government claims that:

*"Such withdrawals from safeguards now involve only small quantities of material for use in instrument calibration or radiological detectors, or as analytical tracers or radiological shielding."* (6)

Chapter VIII of the consultation document on 'Civil Activities' discusses withdrawal of fissile materials from safeguards:

*"...with the prior written consent of the Office for Nuclear Regulation" albeit in "only limited circumstances."*

Chapter XIV on 'Notification to the Secretary of State' also includes the proposals that the responsible minister may authorize the withdrawal from the provisions of the domestic "safeguards" under certain circumstances. Either the material is no longer useable for any nuclear activity relevant for nuclear safeguards or it is irrecoverable for processing into such a form. But it could also be:

*"...the subject of a written confirmation from the Secretary of State to the person holding the particular item that regulation 47 no longer applies to the particular item, with effect from a specified date, following an agreement between the UK and the Party to the relevant international agreement."*

The consultation document says ONR "*publishes information on these withdrawals on its website, demonstrating the UK's policy commitment to make only very limited use of our right to such withdrawals is being met.*"

As proliferation expert Dr David Lowry points out this paragraph uses a very novel definition of the word "limited", as "*there have been an admitted over 600 withdrawals of nuclear materials from safeguards since the trilateral UK-Euratom-IAEA "safeguards" agreement that is being superseded by the new proposed 'mark-your-own-homework' domestic arrangements.*" (7)

It is hard to see how the new regime based on ONR inspections can meet the requirement for an 'independent' inspection system.

## **6. Safeguards seen to be effective**

A fundamental principle of international civil nuclear safeguards is that verification is independent of the country, and is performed by international inspectorates. Whether inspections being carried out by the UK Regulator will be seen to be sufficiently independent must be an open question.

Whether the UK's new regime will be seen by other countries to be sufficiently rigorous will depend on an awful lot of trust. Bearing in mind that in July 2017 122 countries signed the Treaty on the Prohibition of Nuclear Weapons which bans nuclear weapons, and all activities related to them, there is almost certain to be a growing suspicion that, as a nuclear weapons state, the UK cannot be trusted not to divert material from civil to military use.

Dr David Lowry says:

*“The ONR has been given unprecedented responsibility for policing a diplomatically contentious new arrangement, which will increase suspicion among member states of the 1968 nuclear non-proliferation treaty ( for which the UK , as a co-drafter of the treaty text, is one of three depositary states) – which ministers pray-in-aid whenever they discuss the rationale for a UK nuclear safeguards system. However, ministers routinely cherry-pick those parts of the NPT that suite their purposes: but the NPT is an integrated diplomatic agreement, with its articles all relevant and related. Cherry-picking is both diplomatically unwise, as it normalises abrogation for other signatory nations, and undermines the very treaty for which the UK is supposed to act as a protective depositary state! Nuclear safeguards in the UK are a complete misleading mirage.” (9)*

Without some sort of continuous verification by a trusted UN body like the IAEA, the UK could begin to be seen by other countries as a rogue nuclear state. (10)

Dr Lowry suggests that:

*“ONR could ensure this is avoided by removing any opt-out clause to ensure no legal diversion on nuclear materials or facilities can take place in the UK in future.” (11)*

## **7. IT Systems**

ONR must set up an internationally-required system to safeguard nuclear material, so that civil and military nuclear material is separated.

The leaked ONR document said that a key milestone to start building the new IT system was already "irretrievably lost". Testing of this mandatory system, currently carried out at European level, will only now begin in summer at the earliest. It must be up and running by the end of the year, to run in parallel with the European system before theoretically being ready to take over in March 2019.

A spokesperson for the ONR told Sky News: *"Good progress has been made on the procurement of the new IT system and on the recruitment and training of new safeguards inspectors. We are confident that these will be in place to ensure we meet international obligations for day one of exiting Euratom."* (12)

The House of Lords letter to Energy Minister Richard Harrington said it understood that there were no longer any “red risks” associated with the State System of Accountancy and Control of nuclear materials (SSAC), and that a contractor tasked with developing an IT system for safeguards information management and reporting has now been employed. The contractor has experience of developing SSACs and the ONR expects the software to be complete by the end of 2018 allowing three months for testing before Brexit. (13)

We have to hope that this system does not experience similar delays experienced by other government IT projects. Whether the ONR and Government has a contingency plan is unknown.

## **8. Recruitment of ONR Inspectors**

Euratom safeguards inspection frequencies currently range from very regular (every three out of four weeks) at sites like Sellafield, to monthly inspections at enrichment plants, less frequent inspections at power stations and inspections only once every several years at selected locations with smaller inventories of material. More than 100 UK facilities or other duty holders are subject to Euratom safeguards, with some 220 inspections (about 1,000 person days of Euratom effort) during 2014. (14)

A quarter of all time spent on nuclear inspections by EURATOM inspectors is spent in Britain, due to the scale of nuclear fuel fabrication and waste management facilities, such as Sellafield. Britain's plutonium stockpile is also currently overseen by EURATOM inspectors. Sellafield has enough plutonium to make about 20,000 nuclear bombs. It is the world's largest stockpile of civilian plutonium – one of the most toxic substances on the planet – accumulated from decades of

reprocessing nuclear fuel from power stations not only in the UK but also Germany, France, Sweden and other countries. EURATOM has a permanent presence at Sellafield and owns the cameras, seals and testing laboratory used to monitor Sellafield.

Without EURATOM the Office for Nuclear Regulation (ONR) will need to undertake many more inspections in order to meet IAEA requirements. There must be a question-mark over whether ONR will be able to hire and train the necessary new staff especially when ONR is already currently struggling to keep up with the assessment of several new reactors designs (EPR, AP1000, ABWR and Hualong One) under the Generic Design Assessment criteria. (15)

BEIS said in July that 13 safeguards officers are being trained by ONR with another due to join the organisation shortly. The ONR, which estimates that it needs a minimum of nine inspectors to deliver an internationally compliant domestic safeguards regime, says it is “confident” that it will have the “necessary number” to enable the UK to meet its international obligations. Training takes between 12 and 18 months, so it looks unlikely they will be ready by March 2019. (16)

Overall the House of Lords Committee notes that ONR’s preparations remain subject to challenging timescales. The Committee has asked for regular updates from the Minister.

## 9. Impact Assessment

As part of this consultation the Government are seeking detailed comments or evidence on its analysis set out in an impact assessment.

([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/723311/2018-07-09\\_Impact\\_Assessment\\_for\\_Consultation\\_FINAL.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/723311/2018-07-09_Impact_Assessment_for_Consultation_FINAL.pdf) )

It is basically seeking views on whether a new domestic safeguards arrangements should provide coverage and effectiveness equivalent to that provided by the existing Euratom regime or whether it should meet only IAEA obligations.

Whilst it is crucial that the UK meets international obligations, only meeting IAEA obligations would result in a lowering of safeguards arrangements within the UK once the Euratom regime no longer applies. The Government says this would not meet its stated intention of a new domestic civil nuclear safeguards regime which is equivalent to the existing Euratom regime. That means a level of inspections and other regulatory arrangements that goes beyond the normal international standards as applied by the International Atomic Energy Agency (IAEA), for example, additional assurance and verification activities at additional facilities.

The Government says the Euratom equivalent option will provide confidence to the public, industry and international partners that the UK is committed to demonstrating the highest non-proliferation standards.

The Impact Assessment (IA) says:

*“A key aspect of the international non-proliferation regime is providing mutual trust and reassurance to international partners.”*

But the Impact Assessment deals mainly with the costs to the ONR of setting up a new regime. It does not address the question of trust and reassurance to the international community.

The IA goes on to say:

*“...the UK is a Nuclear Weapons State, and therefore has a ‘security exclusion’ in its safeguards obligations, compliance with nuclear safeguards and non-proliferation measures allows us to demonstrate to the public, industry and our international partners that we are a responsible nuclear state and gives them assurance and confidence that civil nuclear material is not diverted into military or weapons programmes.”*

Whilst supporting the highest non-proliferation standards, the NFLA believes the best way to demonstrate this is to plan a phase-out of nuclear power and nuclear weapons.

Given the large number of countries that have signed the Treaty on the Prohibition of Nuclear Weapons, it is the view of the NFLA that there should be no further ‘security exclusions’ allowed in the UK. The UK should be prioritising meeting its obligations under Article VI of the NPT “*to pursue good-faith negotiations on effective measures relating to cessation of the nuclear arms race, to nuclear disarmament, and to general and complete disarmament.*”

Whilst we are not suggesting that a safeguards regime should not be implemented, we believe the facts do not support the IS’s assertions that it will support:

*“...the government’s objectives is providing secure, affordable and clean electricity for UK consumers”.*

Or that *“Nuclear generation is an important part of dealing with [decarbonisation] as it provides continuous, reliable and low carbon electricity that is not dependent on the weather.”*

The UK would be in a far stronger position to continue to take a leading role in negotiations such as the Iran nuclear deal if it were phasing out nuclear power and nuclear weapons. It may even be able to persuade some countries considering the construction of nuclear facilities which are of a proliferation concern to invest instead in renewable technologies. The world would be a safer place if, for instance, the Saudi’s and Iranians invested instead in solar energy. Instead of worrying about preserving trade in nuclear equipment and materials the UK could become a leading exporter of renewable technologies.

## **10. Cost Recovery**

The Government says it wants to understand the position of industry on the potential cost recovery of safeguards before any decisions are made. It is unlikely that the nuclear industry will request a further invoice from the ONR. The NFLA would argue that cost recovery from the industry is essential to avoid an unwarranted subsidy for nuclear power. Continuing with this subsidy to the nuclear industry would be unfair to non-nuclear energy industries. Energy markets are distorted by subsidies, so these should only be offered to new clean technologies for a period of time whilst the technology is developed and made ready for market.

## **11. Accountancy and Control, Records and Information Provision**

An operator will be required to produce an ‘Accountancy and Control Plan’ setting out their arrangements in respect of accountancy and control, record keeping and information provision for safeguarded nuclear material. The consultation document does not make clear whether this information will be made open to the public. Greater openness and transparency could help to make the UK system of self-regulation more trustworthy as far as the rest of the international community is concerned. Obviously this would have to be done in a way that didn’t compromise security by providing information to people with malicious intent.

## **12. Withdrawal from civil activities**

Regulation 33 prohibits an operator from withdrawing qualifying nuclear material from civil activities except with the prior written consent of the Office for Nuclear Regulation. This is a key obligation that the UK has undertaken through its current Voluntary Offer Agreement and will undertake in its future Voluntary Offer Agreement.

There are only limited circumstances in which operators may be allowed to withdraw qualified nuclear material from civil activities, in accordance with UK policy on this matter. The consultation document says the UK has a policy commitment to make only very limited use of its right to such withdrawals is being met. But *“the Regulations do not apply to anything done for defence purposes.”*

In the NFLA view material should only be withdrawn from safeguards if it has been declared a waste and is to be processed and packaged as such.

The key point for the NFLA here is how other countries might view withdrawals, and how much they might trust a UK agency to be open, truthful and transparent about such withdrawals, in comparison to an international agency such as Euratom or the IAEA.

### 13. Plutonium Stockpiles

By 2020 the UK will be home to around 140 tonnes of plutonium, of which around 23 tonnes is foreign owned. (17)

Regulation 40 places a duty on ONR to publish on its website. In the view of NFLA, ONR should also be given the power to encourage and eventually force civil plutonium to be immobilised and declared a waste.

### 14. Conclusions

Any funding mechanism, other than cost recovery from the industry, would amount to an unwarranted subsidy for nuclear power. Energy markets are distorted by subsidies, so these should only be offered to new clean technologies for a period of time whilst the technology is developed and made ready for market.

It is hard to see how the new regime based on ONR inspections can meet the requirement for an 'independent' inspection system.

Without some sort of continuous verification by a trusted UN body like the IAEA, the UK could begin to be seen by other countries as a rogue nuclear state. ONR could ensure this is avoided by removing any opt-out clause to ensure no legal diversion on nuclear materials or facilities can take place in the UK in future.

The timetable for introducing a new IT system is challenging. Whether ONR and the Government has a contingency plan is unknown.

Training for new safeguards officers takes between 12 and 18 months, so it looks unlikely they will be ready by March 2019.

NFLA believes the best way to ensure international trust in the UK's commitment to non-proliferation is to announce a plan to phase-out of nuclear power and nuclear weapons.

In the NFLA view material should only be withdrawn from safeguards if it has been declared a waste and is to be processed and packaged as such.

ONR should be given the power to encourage and eventually force civil plutonium to be immobilised and declared a waste.

### 15. References

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