



Committee on Radioactive Waste Management

Euratom and the dimensions of interest to Scotland upon the UK's withdrawal from the EU.

September 2018

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Executive Summary

Scotland's radioactive waste landscape is both complex and challenging, given its long history of nuclear research and electricity generation. It is well served by the current regulatory and policy environment framed by Scottish Government's own commitments, UK collaborations and facilities and our Euratom, EU and IAEA memberships. Withdrawal from the EU and Euratom Treaties presents issues for government, operators, regulators and partners around sources and accessibility of advice, expertise, workforce, assurance, research and regulatory oversight. Continued involvement and compliance with the arrangements of the Euratom and IAEA Treaties, and appropriate parallels of the provisions of the environment protection, health and safety, chemicals, transport and other interconnected arrangements necessary to maintain standards of protection appear essential. At this point, much still depends upon both the transition arrangements and the final settlement reached between the UK Government and the EU as well as the settlement reached between the UK and Scottish Governments, not least in terms of the devolved versus retained powers and bodies. We would urge at least continuation of the status quo to ensure continued proper management of radioactive wastes and the complex support structure in place.

1. Introduction and Scope

1.1. The Cabinet Secretary for ECCLR, Ms Roseanna Cunningham set out a request for input from CoRWM in a letter to the acting chair on 19 April.

1.2. Noting CoRWM's April 2018 Report (Doc No 3381) ¹ "Impact on Radioactive Waste Management from the UK's Withdrawal from the EU and the Euratom Treaty", the Cabinet Secretary invited CoRWM to:

"produce a short, supplementary report on the Euratom withdrawal issue, tailored to Scotland. It would be helpful if this report provide(d) advice on:

- options for maintaining Scotland's access to Euratom radioactive waste management knowledge sharing networks and research programmes
- assessing the impact on radioactive waste management in Scotland of the potential loss of free movement of nuclear workers;
- maintaining European standards in Scotland in relation to transparency and the provision of public information on radioactive waste; and
- any other measures Scotland could take to maintain Euratom standards."

1.3. We were also asked to give context for these points by providing "an overview of the scale of the radioactive waste challenge in Scotland."

1.4. Context

1.4.1. Scotland's radioactive waste legacy is varied and complex and spans a wide range of materials and much of the length of the use of nuclear energy and related defence and research effort in the UK. The arisings of particular interest to CoRWM are addressed in the December 2016 Report "Implementation strategy for Scotland's policy on higher activity radioactive waste" (HAW IS) produced by Scottish Government. ² This suggests there is a packaged volume of relevant wastes at present of 13-19k m³ rising at the end of decommissioning of current units to 41.4k m³

¹ <https://www.gov.uk/government/publications/radioactive-waste-implications-of-uk-withdrawal-from-euratom-and-the-eu>

² <http://www.gov.scot/Publications/2016/12/9017>

by c 2120. The figure for all wastes arising in Scotland in 2010 was given as 46.6k m³.

- 1.4.2. CoRWM is in discussion with BEIS, NDA and Scottish Government to clarify the whole inventory to provide greater clarity and accuracy on the categories, volumes, masses and activities of radioactive wastes. Materials currently in use, fuels etc., are not currently seen as waste but clearly become wastes requiring waste management and appropriate storage and disposal incrementally over time. All ultimately require appropriate disposal even if this is a century from now.
- 1.4.3. Materials from the power plants at Hunterston B and Torness as well as material from Chapelcross and Hunterston A require relatively conventional management and the latter two are already on the decommissioning trajectory. Dounreay is also being decommissioned although different waste management requirements apply, with in situ and Sellafield related elements and some outstanding issues relating to potential material repatriations overseas. All require appropriate packaging, storage, and final transport and disposal, with some elements being dealt with under Scottish Government Policy and others under UK Government Policy.
- 1.4.4. The management requirements for these various waste streams are issues for the site operators and the NDA and regulators to deal with. It is likely that significant amounts of the inventories arising will require safe, secure, appropriate disposal for the very long term in due course. CoRWM's view, aligned with the global consensus, has been, and remains that, whilst respecting Scottish Government's different policy, the best management option for higher activity waste in the long term is geological disposal.
- 1.4.5. CoRWM also acknowledges that there are elements of the Report to the Cabinet Secretary from the SCE Round Table on Environment and Climate Change Sub-Group,³ "Environmental Governance in Scotland on the UK's withdrawal from the EU" which are relevant to this work. See also Annex 1.
- 1.4.6. It is important to note too that this is a fluid and often rapidly changing space given the ongoing negotiations and discussions between the UK government and the institutions of the EU as well as the dynamics between the Scottish and UK Governments and some aspects of any

³ <http://www.gov.scot/Publications/2018/06/2221>

analysis and conclusions drawn from this may require further consideration as the picture develops.

1.4.7. We note too, the commitment in the Scottish Government's 2018 Programme for Government (PfG) to continue to "look outwards" and "to prepare for all exit possibilities in order to protect the Scottish economy", being "prepared to act quickly and be flexible". We also note that Scottish Government is "committed to maintaining and enhancing environmental standards in Scotland and carrying forward EU principles." The PfG goes on, "It is also vital to ensure effective governance arrangements are in place to monitor and enforce these standards."⁴

1.5. Process

1.5.1. This report is assembled based upon consideration of CoRWM's previous UK overview work, a separate report by an expert group chaired by the former Interim Chair of CoRWM on Scottish environmental governance issues on withdrawal from the EU, dedicated consideration by two subgroups of CoRWM on the Scottish perspective on Euratom issues and discussions with colleagues from regulatory agencies, Scottish Government and academia in Scotland.

2. Issues

2.1. In framing our consideration here, it is worthwhile revisiting the findings of the earlier CoRWM Report, 3381 (see Footnote 1):

- 10 "In respect of radioactive waste and spent fuel management, CoRWM has not identified any major significant gaps between the current arrangements within the UK and those that will continue to be in place post Brexit.
- 11 CoRWM believes that in the context of the safe management of spent fuel and the safe management of radioactive waste, withdrawal from the European Union and the Euratom Treaty should have no major impact. The current arrangements that are in place within the UK are robust and provide a comprehensive legal framework for the protection of workers, the public and the Environment and are in compliance with the requirements of the IAEA Joint Convention.
- 12 CoRWM identified some areas requiring consideration by the UK Government, but none which appear to require fundamental change to primary or secondary legislation to ensure the delivery of an equivalent regime to that currently in operation in the UK. These are specifically in the areas of ongoing co-operation, such as research, notification, information-sharing, and transboundary movement of radioactive waste and spent fuel.

⁴ Sept 4 2018 <https://beta.gov.scot/publications/delivering-today-investing-tomorrow-governments-programme-scotland-2018-19/>

- 13 To address these issues, the UK Government, the Governments of Scotland and Wales, and the Northern Ireland Executive may wish to consider the following suggestions: a-p” (see Annex 2)
- 2.2. It was our opinion in the UK context that, provided the UK remained in the IAEA and adhered to existing best practice, much of the relevant scope for advice and control was “in hand”. In paragraphs 5 and 6 of the report, CoRWM advised that there were three further key dimensions. First, that,
- “It should be noted that there are cognate areas of EU law which may have an effect on radioactive waste management, for example environmental impact assessment, strategic environmental assessment, habitats and protected species, and the water framework directive.”

Secondly, that,

“it should be noted that there will be other issues for the nuclear industry generally arising from Brexit, such as research, ownership of nuclear materials, supplies of fuel, safeguards, movement of persons, goods and capital, and wider international relations and agreements, which raise important issues of a more general nature.”

And thirdly that,

“CoRWM was encouraged by the recent statement of the [UK] Minister recognising the importance of achieving continuity in the nuclear sector and, to that end, its intention to seek a close ongoing relationship with Euratom.

- 2.3. On the basis of these latter points, we consider that Scottish Government may wish to assess how best to address these other dimensions as well as how to ensure, in concert with UK Government, an ongoing relationship with Euratom and the systems to which it connects. Recent experience in relation to Art 35/37 visits as well as IAEA Joint Conventions visits at UK and Scottish level may offer a guide.
- 2.4. In terms of further aspects of interest as regards the dimensions of radioactive waste management issues, including the various environmental law components and issues such as health and safety, fisheries impacts from coastal releases, community confidence, reassurance to government, reassurance to and by regulators and to the public, knowledge exchange (KE) and keeping up with best practice, research and technology exchanges and programme involvement, and peer review and so on, these are all relatively easy to perceive as issues conceptually but rather difficult to assess in detail at this point and without knowing the arrangements likely to be in place in the next 6 months as exit approaches.

- 2.5. It might be possible simply to consider what the respective positions might be like if positive existing arrangements continue or are improved upon in terms of access to and participation in EU and other international initiatives and support mechanisms for good waste management practice versus what the situation might be like if the arrangements fail and Scotland were to be unable to achieve this position, potentially, largely, because the UK does not retain this position.
- 2.6. We might then give consideration to what may be lost and what gaps could emerge and what might be done to handle these if the loss is considered important to address.
- 2.7. However, to focus on the mission set, taking the questions posed, in turn:

2.7.1. “options for maintaining Scotland’s access to Euratom radioactive waste management knowledge sharing networks and research programmes”

2.7.1.1. Neither Scotland nor the rest of the UK will have access to such Euratom networks or programmes unless specific arrangements allowing for this are put in place. CoRWM’s view is that given the importance of international collaboration and knowledge and best practice sharing, developing such arrangements is highly desirable. Scotland has its own policy on radioactive waste management and to that extent the issues on which collaboration is desirable may continue to be different in Scotland. However, the conclusion of such arrangements as a matter of international relations is at present reserved under the Scotland Act and is therefore in the hands of the UK Government, not Scotland. If the UK Government does not conclude suitable arrangements, any future involvement by Scottish regulators or other bodies would have to be at an informal level, and it would be sensible for Scotland to explore what opportunities there may be for this.

Further detail is provided in Annex 2.

2.7.1.2. Generally, we would suggest that there is clear advantage, in terms of scale, funding and other market factors as well as operational issues, including the nature and history of the inventory of materials, in continued collaboration. This, we would suggest, should continue to include SG, SEPA and Scottish research and student/staff providers with BEIS, NDA, RWM, ONR, EA, NRW, English, Welsh and NI Academic Institutions and nuclear operators. This would help ensure that a) Scotland is not “going it alone” and b) that specific issues for Scotland are

represented and tackled.

2.7.2. “assessing the impact on radioactive waste management in Scotland of the potential loss of free movement of nuclear workers”

2.7.2.1. Leaving Euratom would end the single market in movement of workers, resulting in a loss of flexibility. How serious that would be depends on (a) the strategic role which EU workers may have in future (which is difficult to calculate) and (b) the arrangements ultimately agreed by the UK and EU (or failing agreement, imposed by the UK) on immigration. If there is a serious skill shortage then it will be for the UK to respond to address this by changes in such rules as necessary, unless there are changes to responsibilities for immigration matters in the context of devolved arrangements.

2.7.2.2. Whilst the same points as made in 3.7.1 above likely apply here, we do not have details on the number and nature of EU nuclear workers in Scotland and whether this is significant. This renders an assessment of impact very hard to make. Even in the case of Torness, for example, operated by EdF, it is understood to employ largely UK workers. It may be worth the Scottish Government assessing this in detail, including the operations of URENCO/NRL, DSRL and other decommissioning teams, to assess the risks embedded there, but such an inventory might be hard to undertake.

2.7.2.3. For the most specialised operations, including those dealing with special nuclear materials (SNM), continued cooperation with Sellafield Ltd. should address that. And overall, both Dounreay, the Magnox sites and Sellafield are all ‘owned’ currently by NDA.

2.7.2.4. There may be similar points to consider in relation to goods and services, again subject to the details of the “deal” reached between the UK and the EU.

2.7.3. “maintaining European standards in Scotland in relation to transparency and the provision of public information on radioactive waste”

2.7.3.1. Existing EU law on freedom of access to environmental information and on public participation in EIA and permitting procedures will continue to have effect after leaving Euratom and the EU. Scotland can and should continue to apply those standards, as it is entitled to do so under the Scotland Act (subject of course to any legislative changes to the existing devolution regime made as part of the exit legislative programme or resulting from or consequent upon decisions of the Supreme Court).

2.7.3.2. Again, in addition to the BEIS advice and the point that NDA and EdF are already committed to open and transparent communication with the public, Scotland effectively has ongoing UK-framed obligations to maintain IAEA Standards in this matter.

2.7.4. “any other measures Scotland could take to maintain Euratom standards.”

2.7.4.1. With regard to legislation, as per the previous question, Scotland can continue to apply existing EU and Euratom law, unless changes are made to the existing devolution regime. With regard to new Euratom standards, so long as these fall within Scottish devolved functions they can be reflected in Scots law as a matter of political choice. As with current policy, while operational issues fall to operators and the NDA and ONR in a UK context, both environmental regulatory and overall governance issues could be addressed therefore at the Scotland level.

2.7.4.2. With regard to enforcement and implementation, the loss of oversight of the European Commission and the enforcement role of the European Court in matters such as safeguards, the BSS Directive and radioactive waste and spent fuel management will leave a gap, which in CoRWM’s view will need to be addressed.

2.7.4.3. In principle this could be addressed by either or both of:

(1) Arrangements with Euratom or the IAEA to provide independent oversight (for example by carrying out independent audits or inspections). Whilst noting existing relationships and dialogue, this would probably involve creating new formal international relations and as such would likely have to be at UK level.

(2) Setting up national arrangements, for example with some overseeing environmental body. This could in principle be a UK wide body or a Scottish body. The observation and performance of existing international obligations (either at IAEA level, or those Euratom obligations continuing in force after exit) are not presently reserved matters and accordingly it would be for Scotland to put in place its own arrangements, except in relation to nuclear safeguards and security, which are reserved. Therefore, Scotland could address radioactive waste management issues through SEPA, and could if it saw fit put in place a higher environmental body to oversee standards: it could not however put in place such a body to deal with security and safeguards, or to oversee the role of the ONR on nuclear site licensing, which are reserved matters. This is of course a much bigger issue than simply radioactive waste, as the same point will arise in many other areas of

law and policy formerly the province of EU law – for example, EIA, SEA, industrial emissions, water quality, air quality, habitats and protected species, etc.

2.7.4.4. We are therefore unable to offer a view on the detail until the settlement between the EU and the UK and the UK and Scotland becomes clearer. In any event, a UK oversight body as proposed by Defra and currently under consultation, might well be active and critical in this suite of issues.

2.7.4.5. It is unclear how a UK oversight body would work. Were it to be operating under a quasi-federated model – a framework of 4 national bodies and a UK body above these and with centralised powers, it is still possible to envisage flexibility of operation with little change to existing bodies and working from the status quo. It is also possible to envisage decisions currently made at the Scottish level removed to the UK level.

2.7.4.6. In addition to the elements mentioned above, inspection, monitoring and reporting oversight could be supplemented at the Scotland level to provide further assurance. This would of course require potentially significant resource allocation.

2.7.5. Finally, in relation to “an overview of the scale of the radioactive waste challenge in Scotland.”

2.7.5.1. We will not comment further here on Scotland’s HAW policy and therefore in relation to the challenge in Scotland, much relates to the longer-term stages where materials are classified as waste and require best practice long term management. For now, the exception relates to Dounreay. Here much of the most challenging materials has been or is being repatriated or is destined for treatment at Sellafield as it was generated as part of historic UK policy and initiatives. As we know, if spent fuel and/or nuclear material is brought to England before it is designated a waste it ‘arises’ in England and falls to the NDA under UK/BEIS policy to manage.

2.8. The full range of issues raised in the SG Environmental Governance Report appears to apply to the nuclear and radioactive waste context. Particular focus should be given to the aspects of cross-compliance and general policy fit between food, health and safety, environment and general radioactivity and how these will be managed in future. The challenge of enforcing current or equivalent arrangements, ensuring appropriate scrutiny, public information provision and ultimate holding of agencies and government itself to account

apply.

2.9. Without revisiting all of the issues addressed in the Governance Report, we would highlight the possibility that each of the following areas could become more difficult:

- Access to skills and peer inputs, including assurance, standards, policy, technology, innovation and regulation
- Recruitment and retention of EU and other overseas citizens in relevant posts
- Access to/participation in international research programmes
- Access to shared EU framework activity both directly and, if access via IAEA arrangements, this may be dominated by UK issues rather than allow scope for specific Scottish ones
- Ensuring the scale of activity and expertise does not fall below a critical mass or service capability and quality to meet operational, policy and oversight needs

2.10. In addition, it may become more important to establish clear terms for participation in shared UK framework activity. It may also be that post-Euratom, the weaknesses in the IAEA model/service offering become more apparent. This would include costs of obtaining expert input, the experts available, the frequency of possible visits, the nature of reciprocal arrangements and so on. Obtaining a detailed and meaningful read-out of the 2018 Joint Convention visit may be a case in point. What information was input about Scotland and what feedback was received? Can this be seen as valuable and a potential substitute for the value of the Euratom inspections? And what does this reveal in terms of the absence of oversight and sanction that Euratom visits contain ultimately via the powers of the Commission and the Court of Justice of the EU.

2.11. As a minimum step it might be recommended that Scottish Government (SG) map existing international networking activity (with the assistance of Scottish Development International, SDI) and retain and extend current relationships during this period of continuing uncertainty so as to continue to benefit from existing international connections (noting too, current Scottish Government and SEPA connections and recent visits with Australia, Austria, Belgium, Finland, France, Germany, Sweden, etc.)

- 2.12. Additionally, there may be merit in SG making arrangements to establish more frequent, high(er) level engagement with the IAEA and its member states that complement existing routes accessed by officials in SG and its agencies, especially if there might be reduced access to EU/Euratom decommissioning networks. This could complement the actions proposed at 3.11 and, for example, trade and learning missions and knowledge exchanges already supported by SDI and the overseas hubs established by SG. We would remind SG of the previous discussions with Ministers and the former Chair and Deputy Chair about a joint visit to Sweden and Finland to learn from surface and deep storage arrangements there, given existing good relations with these Scandinavian neighbours. A focus on Switzerland might also be appropriate. CoRWM remains happy to help in that regard.
- 2.13. Finally, it would be important to ensure that arrangements are clear to provide adequate handling of remaining overseas origin wastes and the terms under which this is addressed by the UK. Some reassurance at the Scotland level in terms of human rights, regulatory standards and economic consequences may be required or desirable.

3. Possible Solutions and their Challenges

- 3.1. The main issues have been identified above.

3.1.1. Involvement in International Collaboration.

3.1.1.1. These are formally led by the UK although agency and company-level activity might be expected to continue. Nonetheless this emphasises the value of and need for some kind of continuity of the status quo or either “no deterioration” or “improvement”. Subject to how well this is currently understood, it may be beneficial to undertake mapping of needs and areas open or closed to meaningful participation. Engagement and networking via informal contacts as well as– conferences, themed seminars and workshops etc. would be encouraged along with appropriate collaboration consolidation, retention and partnering, within the arrangements possible. If IAEA arrangements are clarified and perhaps extended this could be very helpful. Ultimately if Special or Associate Status in Euratom is negotiable this would likely be the best solution.

3.1.1.2. We assume IAEA engagement would continue or UK might even seek strengthened involvement. However, will the UK participate in or be invited to former Euratom type events? Will this include Scottish

representation? Will Scottish interests be taken onboard, represented or briefed on? Free movement of expert personnel may be restricted, (also goods and services issues may exacerbate this constraint) but security and legal issues could be new barriers in future to recruiting staff, participating in networking events, and inclusion in peer review projects, joint research or investigation work.

3.1.2. International Monitoring

3.1.2.1. IAEA obligations would be expected to continue. As above, these may require further discussion to assess their adequacy; again, especially if they only operate at the UK level. If more robust arrangements are agreed as being required, there will be resource as well as potentially jurisdictional implications.

3.1.3. Regulatory Oversight

3.1.3.1. Recent developments and proposals emerging from Defra suggest a regulatory centralisation for some powers and for some period at the UK level. Arrangements are as yet unclear. However, from a Scottish Government perspective it provokes the question, will the ONR role and performance, as well as the connected roles and inputs of SEPA, FSA, HSE, etc. be adequate to meet SG, Scottish Parliament and public expectations in relation to policy sensitivity, assurance, oversight and any necessary accountability, sanction or redress. It would at least be useful to seek clarification from these agencies – and from Defra and BEIS - as to whether or not they consider they have the powers, resources and arrangements necessary to manage the needs of Scottish policy, regulation and advice under anticipated and foreseeable scenarios post-Brexit. If there is less direct oversight available and any centralising of resources at the UK level, a particular focus on regulatory needs and reassurance would be advisable. This might include direct consideration of structures and capability to ensure both credibility and capacity for advice and reassurance in Scotland.

3.1.4. Investigations and Sanctions

3.1.4.1. This could similarly be seen as operating satisfactorily at the agency and Government and Parliamentary level in Scotland under the current arrangements. The gap relates to what is lost from the European Commission and the CJEU. If additional assurance or separated and independent powers are required, to address the gap left between

Scotland/UK and the EU, above the Scottish Parliament, or at least above the Minister or government of the day, then a new body or powers would logically follow as it is hard to see how the existing bodies could provide additional (real or perceived) independence.

3.1.5. Fit with UK/rUK

3.1.5.1. If Euratom membership were to be extended or a new parallel status achieved, several areas of concern would fall away. If, however, this were not to be the case, a number of hypotheticals would need to be considered. This is compounded if the UK and Scotland do not reach an agreement on continued collaborations akin to current arrangements. Nonetheless, we are assuming that ONR would continue to deal with relevant matters in and for Scotland.

3.1.6. Given the current dependence upon the UK for both facilities, processing and management as well as some aspects of policy, regulatory, transport and international obligations/services, if there is a material change in these arrangements following the EU/Euratom withdrawal process, a number of issues become important.

3.1.7. An obvious example is where materials leave Scotland under UK arrangements agreed with overseas governments from the EU or beyond.

3.1.8. Should there be no detailed or functioning agreement to continued UK/Scotland or EU/UK collaborations, a number of consequences may need to be explored. If environmental regulatory services are centralised to (retained at) the UK level for more than a few months, the need for dedicated Scottish reassurance arrangement may be required. It is conceivable that direct Scotland-EU contact with policy, research, operational and regulatory bodies may also be necessary. In any case, if UK inputs cannot be relied upon to address specific Scotland issues, it could be necessary to focus on operating company knowledge, e.g. at Dounreay. This could have interesting and unclear impacts on RWM and NDA as well as the GB ONR at this point.

3.1.9. The approach taken to defence sector materials may also require clarification and different dedicated arrangements for Vulcan, Faslane, Coulport, Rosyth etc..

3.1.10. Resources

3.1.10.1. Finally, it may be worth observing that, given the pared down nature of existing resources, any further pressures on Scottish Government's own staffing in this area, through additional oversight, outreach, or international networking duties, or greater policy and practice specialism need if UK or EU expertise becomes less accessible, or increase in general workload, may necessitate further consideration of the quantum and skills of staff in the SG radioactive waste policy team.

4. Recommendations

- 4.1. We would urge a watching brief as well as active engagement, where appropriate and possible, to ensure adequate:
 - a. Networking with EU and IAEA experts
 - b. Policy development capability
 - c. Continued reporting on performance and compliance issues
 - d. Sharing data, experience and expertise with EU and IAEA administrations
 - e. Research collaborations in relevant areas
 - f. Regulatory activity, alignment and collaboration, including peer review, inspection and investigation and some kind of sanctions model for regulatory compliance or other systemic failures.
 - g. Overall resource levels (in SG and relevant agencies).
- 4.2. The Cabinet Secretary has already acknowledged in her letter that SG "will pursue suitable alternative arrangements to replace reporting requirements as set out in Arts 35, 36 and 37 of the Euratom Treaty".
- 4.3. Other actions in addition to those committed to under reporting above, might address each of the areas in 5.1, many of which might be managed by continued UK collaborations and information sharing.

5. Conclusions

- 5.1. There is a high degree of uncertainty around the issues under consideration for this report. Much may be seen as similar between the UK and Scotland issues on EU/Euratom withdrawal. The geography, nuclear energy and research history and scale both of wastes as well as available expertise in Scotland may be more critical in shaping and accentuating the challenges faced upon withdrawal from the EU. Whilst there may be no insurmountable problems in the shorter term, it will be important to ensure that regulatory and policy as well as technical capacity is retained in sufficient number and quality to service the needs for effective advice on and oversight of, as well as packaging, management and storage of, wastes prior to ultimate management options and outcomes being achieved.

Annex 1

Abstract from Environmental Governance Report (see Footnote 3) pp5

3.5. Nuclear and radioactivity issues

- 3.5.1. In 1956, under the UN treaty, a Statute was established creating the International Atomic Energy Agency. It came into force in July 1957. The UK was one of 56 founding signatory nations. Based in Vienna the IAEA provides a range of services and has in essence membership/signatory requirements on the issues relating to safe non-military use of nuclear technology and related aspects of health, safety, security and environment as well as on safeguards and verification.
- 3.5.2. Since 1957 the EURATOM Treaty has also provided a strongly connected framework for consideration of radioactivity and nuclear issues within the member states (MS) which are the same states over time as the EC/EU ones. A range of Directives has been developed giving legal force and policy shape to operational requirements for safe use of radioactivity and handling of materials, and for the long-term management of spent fuel and radioactive waste. The operational aspects of the Treaty are delivered by DG Energy of the European Commission working directly and in partnership with staff in EU Member States to provide advice, assessment and oversight, including inspections, which, together, connect to enforcement mechanisms under the ECJ.
- 3.5.3. Many of the high hazard areas of potential environmental impact relating to radioactivity in Scotland are not under devolved control in important areas. The two generating nuclear energy stations are part of EDF Energy. The three civil Decommissioning Sites are under the control of the GB Nuclear Decommissioning Authority, that reports primarily to UK Ministers, with parallel responsibility to Scottish Ministers for aspects of their functions in Scotland. The safety regulation of nuclear installations is reserved to the UK Authorities, and is carried out by the Office for Nuclear Regulation (ONR), a UK Government body. SEPA regulates radioactive wastes from nuclear installations, including in liquid and gaseous forms. Ministry of Defence sites are exempt from both statutory safety and environmental controls. Safety regulation is carried out by the Defence Nuclear Safety Regulator, which is answerable to the Secretary of State for Defence. A parallel non-statutory system of environmental regulation is carried out under an agreement between the MoD and SEPA. The Scottish Government has a stated policy intention to bring MoD sites into the framework of statutory environmental

regulation arrangements. Other radioactivity issues concern principally the medical, food, geophysical and oil and gas sectors and the use and/or collection of particular radioactive sources and materials under controlled conditions. These have all been considered preliminarily.

- 3.5.4. Currently, operational control is overseen for nuclear power plants and hospitals, waste facilities and other users identified, using existing licensing arrangements by the UK Office for Nuclear Regulation, by local government and health bodies, by SEPA and by BEIS Offshore for the various sectors. Relevant aspects concerning worker safety also connect to ONR and at the most general level to the HSE. The key EU directives as established in UK and Scots law currently governing basic safety standards and irradiation, use and keeping of radioactive materials as well as the storage of wastes are generally highly effectively governed within the UK and Scotland.
- 3.5.5. In addition, independent/oversight inspections of and advice on facilities in Scotland are undertaken under the provisions of both IAEA and EURATOM, with the latter more frequent and visible.
- 3.5.6. Whilst we understand that it is the UK government's intention to remain a compliant IAEA member, the main issues arising under Brexit scenarios relate to the extent to which the UK, and therefore, Scotland remains adherent to the IAEA conventions, processes and requirements, and also whether this is a suitable and sufficient oversight and advisory mechanism for what is lost through leaving EURATOM.
- 3.5.7. In particular and additionally, it appears that access to and networking with relevant international expertise, as well as the ability to attract and retain staffing in key roles and support services in specialist areas could be restricted, thus potentially compounding the already limited and increasingly stretched resources left to attend to monitoring, expert independent scrutiny and oversight and, ultimately, enforcement. This could affect both our ability to identify failures and to ensure the adequate management and mitigation of hazards and provide sufficient public reassurance.
- 3.5.8. Some kind of Associate EURATOM membership and access to services were this possible might have compensating advantages. But the question remains as to what powers and efficacy of enforcement would exist if the UK chose to see this as optional.

3.5.9. In relation to Naturally Occurring Radioactive Material (NORM)¹⁵ and sources in oil and gas in particular, there are several issues around coastal, national and international waters and how the various components of current law would evolve and fit. This requires clarification.

3.5.10. In almost all facets of the radioactivity space, strengthening of existing (UK and Scottish) regulators and/or establishment of dedicated UK and especially Scottish oversight entities may need to be considered.

¹⁵ NORM, which includes some scale, muds and solid deposits from drilling pipe and from drilling and pipework handling processes in the oil and gas industry, including decommissioning, is usually mildly radioactive but may be highly radioactive, and requires dedicated waste management.
<http://www.gov.scot/Topics/Environment/waste-and-pollution/Waste-1/16293/NORM>

Annex 2

Excerpt from CoRWM Report 3381, pages 4-6

12. To address these issues, the UK Government, the Governments of Scotland and Wales, and the Northern Ireland Executive may wish to consider the following suggestions:

a) *Euratom Treaty*, Articles 4-7 – It needs to be identified the extent to which UK research projects are dependent on ongoing data from research in Euratom Member States, and how important such data is. It should be explored how the UK can continue to access such data and research under ongoing mutual arrangements with Euratom. The UK may have contributed financially or in kind to such programmes. It also needs to be identified whether there are UK based research programmes to which Euratom contributes funding, and if so whether and on what terms such funding will continue or if not, how it will be replaced.

b) *Euratom Treaty*, Article 12 &13 - For radioactive waste management in the future, it may be important for the UK to secure ongoing access to information from research programmes. The Government may wish to be satisfied about use of information to which UK has contributed and the status of existing patents and licences granted by Commission in relation to radioactive waste management that could impact on future UK activities.

c) *Euratom Treaty*, Article 24 – BEIS may wish to check if there is any information within this category affecting UK security interests which might continue to need protection.

d) *Euratom Treaty*, Articles 35 and 36 - Presumably the Commission will no longer have access for verification purposes in respect of environmental monitoring and there will be no reporting obligation to the Commission. Accordingly, there will be no oversight from a body outside the UK. The UK may wish to consider whether such oversight is desirable to provide confidence to the international community. If so it may be that voluntary arrangements could be made with the IAEA to provide this. The Government will need to consider to what extent it will continue to adhere to the Commission's recommendations on monitoring as representing international good practice, or whether there are other objective standards it will follow.

e) *Euratom Treaty*, Article 37 – The UK may wish to ensure that the UK national report to the Joint Convention Review Meetings cover these particular issues on notification of plans to dispose of radioactive waste.

- f) *Euratom Treaty*, Article 37 – In the interests of good international relations, the Government may also wish to consider a new mechanism through which the UK can inform neighbouring countries of UK discharges and can continue to show that the UK complies with international best practice and expectations.
- g) *Euratom Treaty*, Article 38 – The UK may wish to consider making sure that the environmental protection regulators have the necessary powers to define and enforce permissible levels of radioactivity in the air, water and soil.
- h) *Council Directive 2013/59/EURATOM – laying down safety standards for protection against the dangers arising from exposure to ionizing radiation*, Article 76 - Government may wish to ensure that there are appropriate bilateral arrangements regarding points of contact between the UK regulators and their counterparts in the most appropriate neighbouring states.
- i) *Council Directive 2013/59/EURATOM – laying down safety standards for protection against the dangers arising from exposure to ionizing radiation*, Article 99 – Government may wish to check that there is clarity in relation to which Department has responsibility for implementing the requirements of the IAEA Conventions on early notification and the Convention on assistance.
- j) *Council Directive 2013/59/EURATOM – laying down safety standards for protection against the dangers arising from exposure to ionizing radiation*, Article 99 – Government may also wish to satisfy itself that the principal regulators, ONR and EA/NRW/SEPA understand their roles and responsibilities in this area.
- k) *Council Directive 2011/70/EURATOM Community Framework for the responsible and safe management of spent fuel and radioactive waste*, Article 8 – Government may wish to reinforce CoRWM's responsibility to advise on R&D programmes.
- l) *Council Directive 2011/70/EURATOM Community Framework for the responsible and safe management of spent fuel and radioactive waste* Article 13 – The importance of future notification on National Programmes will depend on what future arrangements come into place between the UK and Euratom in terms of collaboration. The National Programme in any event constitutes a useful summary for the public and for other countries of the UK's policies and their implementation, and the Government is recommended to publish future updates to the National Programme.
- m) *Council Directive 2011/70/EURATOM Community Framework for the responsible and safe management of spent fuel and radioactive waste*, Article

14 - BEIS may wish to put international reviews on a more formal footing to ensure that the IAEA is invited to undertake a review of its nuclear safety and radioactive waste management regulatory framework.

n) *Council Decision 87/600/Euratom on early exchange of information in the event of a radiological emergency, Article 2* - BEIS may wish to consider if the current bilateral information exchange arrangements are sufficient and whether reporting to the IAEA will be sufficient to ensure all EU states are informed of an accident in the UK which could have consequences.

o) *Regulation 93/1493/Euratom on shipments of radioactive substances between Member States* – Consideration will need to be given, in the context of ongoing arrangements between the UK and EU as to how shipments of radioactive substances will be regulated, in order to ensure as little disruption as possible to existing arrangements.

p) *Directive 2006/117/Euratom on supervision and control of shipments of radioactive waste and spent fuel* – Consideration will need to be given, in the context of ongoing arrangements between the UK and EU, as to how shipments of radioactive waste and spent fuel will be regulated, in order to ensure as little disruption as possible to existing arrangements for shipments of waste to or through Euratom States.