

# Legal and policy framework for low level waste treatment and disposal

## 1 Drivers for change

- 1.1 Over the past decade UK policy and strategy for management of low level nuclear waste has changed significantly. This has been driven by a range of factors, including the urgent need to make best possible use of limited disposal capacity at the UK's Low Level Waste Repository near Drigg in Cumbria and increasing focus on the waste hierarchy.
- 1.2 Establishment of the UK Nuclear Decommissioning Authority (a creation of the Energy Act 2004) has provided an environment in which initiatives for delivery of low level waste services on a consistent industry wide basis can be developed, providing additional access routes to treatment and disposal services and facilitating the development of new markets. The Nuclear Decommissioning Authority is responsible for overseeing the operation, decommissioning and clean-up of the UK's 17 legacy civil nuclear sites, including the Low Level Waste Repository. It also has specific responsibility for UK-wide low level waste strategy and plans.
- 1.3 Even allowing for further planned vaults, the remaining capacity of the Low Level Waste Repository falls a long way short of estimated volumes of low level waste that will arise from decommissioning of existing facilities and associated site restoration. The UK's most recent Radioactive Waste Inventory<sup>1</sup> estimates that 4.5 million cubic metres (4.9 million tonnes) of radioactive waste exists in the UK or will arise from existing facilities. Of this, just 4% has yet to be produced. This is in addition to waste that has already been disposed of at the Low Level Waste Repository. About 94% (4.2 million cubic metres) of radioactive waste included in the inventory is low level waste and much of this is likely to fall into the sub-category of very low level waste. Most of this waste is from dismantling of nuclear facilities and clearance of contaminated ground.
- 1.4 The Radioactive Waste Inventory does not include radioactively contaminated ground that has yet to be characterised. Neither does it include naturally occurring radioactive materials (NORM), which will place competing demands on treatment and disposal facilities. In particular, decommissioning of North Sea oil and gas installations over the coming years has the potential to create significant quantities of metallic waste contaminated with NORM.
- 1.5 The latest issue of the Environment Agency's Nuclear Sector Plan was published in 2012. Objectives in the plan include promotion of the use of the waste management hierarchy. Site operators are required to report the percentage of low level waste sent for reuse or recycling, disposal to routes other than the Low Level Waste Repository (such as incineration and disposal as very low level waste to landfill) and disposal to the Repository. The 2012 environmental performance report published by the Environment Agency indicates that in 2012 the industry avoided sending 87% of low level waste to the Low Level Waste Repository (based on figures reported by operators), with 3067 cubic metres of waste disposed of at the Repository. This is a reduction to less than half the volume disposed of in the Repository in 2010.

---

<sup>1</sup> Published jointly by the Nuclear Decommissioning Authority and the Department of Energy & Climate Change in February 2014

## Breakdown of low level waste diverted

Disposal to landfill	42%
Metal waste recycled	24%
Disposal on site*	14%
Disposal to LLWR	13%
Combustible waste treated	7%

\*Calder landfill segregated area, Sellafield

## 2 UK Low Level Waste policy and the waste hierarchy

2.1 In March 2007 the UK Government and devolved administrations published a “*Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom*”. At the time of publication of the 2007 Policy, application of the waste hierarchy to radioactive waste was a relatively new concept in the UK, although well established in UK policy for other waste streams.

2.2 The 2007 Policy responds to the shortfall in low level waste disposal capacity with a series of principles underlying the UK approach to management of low level waste. Central to this approach is a more effective application of the waste hierarchy, with improved segregation of waste and a move away from past focus on disposal. The policy sets out a clear hierarchy for reducing the environmental impact of low level waste, moving from prevention as the preferred option through re-use, decontamination and recycling to disposal as the last resort. This includes:

- (a) greater diversion of metals for recycling and combustible materials for incineration; and
- (b) ensuring that best use is made of available disposal capacity, with effective use of alternative disposal options for very low level waste (predominantly rubble and soil from nuclear plant decommissioning).

The policy also provides the current UK definitions of low level waste and the sub-categories of high and low volume very low level waste, allowing disposal of those sub-categories to permitted landfill sites.

2.3 “*LLW managers should plan to manage their waste in accordance with the waste management hierarchy principles set out in UK waste strategy documents ... For LLW this means:*

- *not creating waste where practicable (“avoidance”);*
- *reducing waste arisings (both by activity and by mass) to the minimum through the appropriate design and operation of processes and equipment and making effective use of techniques such as waste characterisation, sorting and segregation, volume reduction and surface contamination removal;*
- *otherwise minimising quantities of LLW requiring disposal through decay storage, re-use and/or recycling, and incineration (under appropriately regulated circumstances);*

- *disposal (which may, for some waste forms, include incineration).<sup>2</sup>*

### **3 Role of the Nuclear Decommissioning Authority and LLW Repository Ltd**

3.1 The 2007 Policy confirmed UK Government expectations as to the role of the Nuclear Decommissioning Authority in development and implementation of low level waste strategy.

*“Government expects the NDA to:*

- *develop, and publish, a plan for the optimal use of the LLWR near Drigg. ...;*
- *... assess the extent to which other LLW disposal options might be employed to manage the waste arising from [NDA sites]; and*
- *... assess if, and at what point in the future, a replacement, or replacements, for the LLWR near Drigg might be required and planned for ...*

*The NDA will also support Government in developing and maintaining a UK-wide strategy for waste arising from the non-nuclear industry ... to help ensure that the strategies for the nuclear and non-nuclear sectors are suitably integrated.<sup>3</sup>*

3.2 Working with LLW Repository Ltd (the licensed operator of the Low Level Waste Repository), the Nuclear Decommissioning Authority has developed the “*UK Strategy for the Management of Solid Low Level Waste from the Nuclear Industry*”, which was approved by the UK Government and devolved administrations in August 2010. The strategy covers application of the waste hierarchy and development of new treatment and disposal routes. It is intended to ensure that only waste requiring engineered multi-barrier containment is consigned to the Low Level Waste Repository.

3.3 LLW Repository Ltd leads the UK LLW National Waste Programme on behalf of the Nuclear Decommissioning Authority. The National Waste Programme identifies projects and activities for implementation of the LLW Strategy. LLW Repository Ltd has also worked with other site licence companies within the NDA estate to create a series of Joint Waste Management Plans intended to improve integration and compliance with the UK Low Level Waste Strategy and support delivery of the National Waste Programme. LLW Repository Ltd provides a range of services to customers both within and beyond the NDA estate. Operating as a contractual hub, the company interfaces customer requirements with its own disposal services and with transportation, treatment and disposal services provided by its supply chain.

### **4 Relevant EU Directives and developments in UK legislation**

4.1 Despite clear policy statements requiring application of the waste hierarchy, with limited exceptions EU directives and related UK regulations imposing the waste hierarchy do not apply to radioactive waste. Application of the waste hierarchy is however required via regulatory policy in context of environmental permitting. The hierarchy is not a fixed inflexible requirement and must be applied in context of other relevant considerations. exploring

---

<sup>2</sup> Paragraph 17

<sup>3</sup> Paragraph 33

## **Revised Waste Framework Directive (2008/98/EC)**

- 4.2 The revised Waste Framework Directive includes significant changes to the waste hierarchy. Under Article 4(1) “*The following waste hierarchy shall apply as a priority order in waste prevention and management legislation and policy:*
- (a) *prevention;*
  - (b) *preparing for re-use;*
  - (c) *recycling;*
  - (d) *other recovery, e.g. energy recovery; and*
  - (e) *disposal.”*
- 4.3 This hierarchical priority order replaces the more general provisions of the 2006 directive, which required Member States to “*take appropriate measures to encourage ... first, the prevention or reduction of waste production and its harmfulness [and] second ... the recovery of waste by means of recycling, re-use or reclamation ... or ... the use of waste as a source of energy.*” This means that, when dealing with waste within the scope of the Waste Framework Directive, the hierarchy must now be taken into account, whereas previous provision merely required encouragement by appropriate measures.
- 4.4 The 2007 Policy on management of low level waste has not changed following the revised Waste Framework Directive. Notably, Article 2 expressly excludes “*radioactive waste*” from the scope of the directive (although the Directive does not include any definition of “*radioactive waste*”<sup>4</sup>). In any event, the requirements and objectives of the 2007 Policy are to a great extent already aligned with the waste hierarchy as set out in the Directive.
- 4.5 The revised Waste Framework Directive is implemented in UK law by the Waste (England and Wales) Regulations 2011, including amendments and additions to the Environmental Permitting Regulations 2010. Consistent with exclusion of radioactive waste from the scope of the Directive, the 2011 Regulations and application of the Waste Framework Directive waste hierarchy under Schedule 9 of the (amended) Environmental Permitting Regulations 2010 apply only to certain specified categories of radioactive wastes where those wastes are exempt from the requirement for an environmental permit. Those specified categories include NORM waste, which will therefore be caught by the regulations where exempt from permitting requirements.

## **Spent Fuel and Radioactive Waste Directive (2011/70/EURATOM)**

- 4.6 The purpose of the Spent Fuel and Radioactive Waste Directive was to establish an EU wide framework for the responsible and safe management of spent fuel and radioactive waste, reinforcing internationally accepted principles of safety, transparency and avoidance of undue burdens on future generations. The directive seeks to ensure that the national law and policy

---

<sup>4</sup> (The Waste Framework Directive does not include any definition of “radioactive waste”. Directive 2011/70/EURATOM defines “radioactive waste” as “radioactive material in gaseous, liquid or solid form for which no further use is foreseen or considered by the Member State or by a legal or natural person whose decision is accepted by the Member State, and which is regulated as radioactive waste by a competent regulatory authority under the legislative and regulatory framework of the Member State).

framework of EU members states is consistent with those principles and is implemented effectively by independent regulatory bodies.

- 4.7 The Spent Fuel and Radioactive Waste Directive does not refer specifically to the waste hierarchy but does emphasise the importance of recycling and reuse. Under Article 3(a) *“the generation of radioactive waste shall be kept to the minimum which is reasonably practicable, both in terms of activity and volume, by means of appropriate design measures and of operating and decommissioning practices, including the recycling and reuse of materials ...”*
- 4.8 Member States must establish and implement programmes for management of spent fuel and radioactive waste from generation to disposal. Those programmes must be notified to the Commission by August 2015. Member States must also:
- (a) invite periodic international peer reviews at least once every 10 years of their national framework, regulatory authority and national programme with the aim of ensuring high safety standards. The outcomes of peer reviews must be reported to the Commission and the other Member States; and
  - (b) regularly review and update their national programmes, taking into account technical and scientific progress as well as recommendations, lessons learned and good practices from peer reviews.
- 4.9 The Spent Fuel and Radioactive Waste Directive entered into force on 23 August 2011, with an implementation deadline of 23 August 2013. The UK Government does not consider that any change in UK legislation is required.

*“The provisions and requirements of the European Union’s 2011 Directive on radioactive waste and spent fuel management (Council Directive 2011/70/Euratom) will be implemented in the UK by the deadline of 23 August 2013 using our existing legislative regime. This is primarily the Nuclear Installations Act 1965 and the existing suite of 36 standard nuclear site licence conditions under it, and the relevant provisions of the Environmental Permitting Regulations (England and Wales) 2010 and the Radioactive Substances Act 1993 (in respect of Scotland and Northern Ireland). The Directive, which came into force in August 2011, requires responsible and safe management of spent fuel and radioactive waste from generation to disposal. The programme of work to establish a geological disposal facility in the UK will therefore help to show compliance with the overarching aims of the Directive.”<sup>5</sup>*

### **Nuclear site licence conditions**

- 4.10 The standard licence conditions applicable to UK civil nuclear licensed sites cover all activities, including the accumulation and storage of wastes. Equivalent standards apply to Ministry of Defence sites. The UK Office of Nuclear Regulation has identified the following licence conditions as being of particular relevance to management of radioactive waste:
- *“Licence Condition 4: Restrictions on nuclear matter on the site – covers the introduction and storage of nuclear matter on a licensed site. Nuclear matter includes nuclear fuel, radioactive material and radioactive waste.*

---

<sup>5</sup> Managing Radioactive Waste Safely: Implementing Geological Annual Report April 2012– March 2013

- *Licence Condition 14: Safety documentation - While there is general guidance on safety cases, this guidance emphasises specific aspects related to the management of radioactive materials and radioactive waste.*
- *Licence Condition 32: Accumulation of radioactive waste – covers the minimisation of the production rate and accumulation of radioactive waste on the site, suitable storage arrangements and adequate records.*
- *Licence Condition 34: Leakage and escape of radioactive material and radioactive waste*
- *Licence Condition 35: Decommissioning”<sup>6</sup>*

4.11 The Safety Assessment Principles applied by Office of Nuclear Regulation inspectors to guide regulatory decision making include provisions that reinforce application of the waste hierarchy, although reference to other “*relevant factors*” in Paragraph 655 (as quoted below) emphasises the significance of other safety and environmental factors.

**“Waste minimisation**

652 ... *Avoiding the creation of radioactive waste in the first instance and, secondly, minimising the generation of unavoidable waste is one of the foremost principles of good waste management. This is embodied in international standards and Government policy and should be considered and applied during the planning, design, construction, manufacture, commissioning, operational and decommissioning stages of a facility...*

653 *Licence Condition 32 ... requires the rate of production of radioactive waste to be minimised. The safety case should describe specific design provisions for waste minimisation and include a demonstration that the rate of production of radioactive waste has been minimised.*

654 *Process and materials selection, construction methods, and commissioning, operational and decommissioning arrangements should be such so as to avoid the creation of radioactive waste or reduce to the minimum radioactive waste generated throughout the facility lifetime.*

655 *Factors to be considered in assessment against this principle include:*

- the facility layout and service infrastructure;*
- secondary waste generation;*
- recycling and re-use of materials;*
- decontamination of materials.*

---

<sup>6</sup> ONR Guide: Management of Radioactive Materials and Radioactive Waste on Nuclear Licences Sites, issued May 2013

*Note: The choice between re-use, decontamination, and direct disposal of waste should take account of relevant factors, including the form and disposability of the resultant waste, dose to operators, and other waste arisings and resultant discharges.*

656 *Trends in radioactive waste generation should be monitored and the effectiveness of applied waste minimisation measures demonstrated. There should be reviews of the opportunity for radioactive waste reduction.*<sup>7</sup>

## **5 Selection of treatment and disposal options from available techniques**

- 5.1 Disposal of radioactive wastes on and from nuclear and non-nuclear sites in England and Wales is regulated under the Environmental Permitting Regulations 2010 by the Environment Agency and Natural Resources Wales. This brings radioactive waste together with other categories of waste under a single regime, albeit subject to the specific provisions applicable to radioactive substances activities (set out in Schedule 23 of the regulations). In Scotland and Northern Ireland the Radioactive Substances Act 1993 continues to apply, with disposal regulated by the Scottish Environment Protection Agency and the Northern Ireland Environment Agency. The effect of the legislation is broadly consistent.
- 5.2 The process for obtaining a permit under the Environmental Permitting Regulations requires demonstration that the best available technique (BAT) will be applied. In England and Wales this replaces the requirement to use the best practicable environmental option (BPEO) and best practicable means (BPM), which continue to apply in Scotland and Northern Ireland. The Environment Agency has confirmed that the requirements of the two regimes are essentially the same.
- 5.3 Operators must put in place waste management arrangements to ensure that:
- (a) exposures to ionising radiation are kept “*as low as reasonably achievable, taking into account social and economic factors*” and that the sum of doses resulting from exposure of any member of the public do not exceed dose limits set in the Basic Safety Standards Directive;<sup>8</sup> and
  - (b) the environment is protected.

Environment Agency guidance confirms that those arrangement should demonstrate the use of the best available technique in reducing the impact of disposals, including “*selecting optimal treatment and disposal routes (taking account of the waste hierarchy and the proximity principle) for those wastes.*”<sup>9</sup>

## **6 Best Available Technique and the proximity principle**

- 6.1 Annex A to the Environment Agency Regulatory Guidance Series RSR2 sets out the following definition of best available technique.

*“The term ‘best available techniques’ means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set*

---

<sup>7</sup> HSE Safety Assessment Principles for Nuclear Facilities 2006 Edition, Revision 1

<sup>8</sup> Environmental Permitting Regulations 2010 Schedule 23 Part 3 Paragraph 1

<sup>9</sup> Environment Agency Regulatory Guidance Series, No RSR 2, The regulation of radioactive substances activities on nuclear licensed sites, Paragraph 83

*of processes, facilities and methods of operation constitute the best available techniques in general or individual cases, special consideration shall be given to:*

- (a) comparable processes, facilities or methods of operation which have recently been successfully tried out;*
- (b) technological advances and changes in scientific knowledge and understanding;*
- (c) the economic feasibility of such techniques;*
- (d) time limits for installation in both new and existing plants;*
- (e) the nature and volume of the discharges and emissions concerned.*

*It therefore follows that what is "best available techniques" for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.*

*If the reduction of discharges and emissions resulting from the use of best available techniques does not lead to environmentally acceptable results, additional measures have to be applied.*

*'Techniques' include both the technology used and the way in which the installation is designed, built, maintained, operated and dismantled."*

6.2 The requirement that a technique be "available" requires consideration of whether the technique has been developed on a scale that will allow effective application; and whether that technique is economically and technically viable, taking into account both benefits and detriments. The "best" technique will be that which is most effective in achieving protection of the public from exposure to ionising radiation, although flexibility may be necessary to safeguard other objectives, such as avoidance of harm that may be greater than that exposure.

6.3 Affordability cannot generally be used to justify reduced levels of protection, but the economic burden may become so great that other activities become uneconomic with consequent social and economic impacts that may outweigh the environmental benefit sought. Generally, practicable measures can only be ruled out if the cost involved would be grossly disproportionate to the risk. Environment Agency guidance confirms that this must be judged on a case by case basis.

*"[I]n all cases the overall assessment process can be described very simply as*

- asking if there is anything further that can be done to reduce doses to people; and*
- then implementing that unless the associated detriments are grossly disproportionate to the benefits gained.*

*In other words, BAT is the point at which the detriments from implementing further techniques become grossly disproportionate to the benefits gained."*<sup>10</sup>

---

<sup>10</sup> Environment Agency RSR Principles of Optimisation V2, April 2010



- 6.4 The 2007 Policy specifically includes a requirement to take into account proximity and transport when considering options for management and disposal of low level waste. Low level waste management plans are to give “*appropriate consideration to the proximity principle and waste transport issues ...*”<sup>11</sup> The significance of proximity will be influenced by the volume and activity of the waste as well as distance and the impact of available modes of transport. Transportation is an important consideration but must be balanced with other relevant factors. “[*T*he proximity principle requires a broad overview of options and cannot be applied as a simple hierarchy based on distance.”<sup>12</sup>
- 6.5 Best available technique and proximity are two separate elements governed by different considerations. Proximity and transport will be directly relevant to assessment of best available technique if transport over a greater distance is significant in assessing exposure to ionising radiation. Notably, the 2007 Policy confirms the UK Government's view that existing regulations “*provide a safe environment for the transport of LLW ...*”<sup>13</sup>

## **7 Influence of International Nuclear Liabilities Conventions**

- 7.1 Treatment and disposal of low level waste may not generally be regarded as a high risk area for nuclear liabilities. Nevertheless, issues affecting disposal of radioactive waste on non-nuclear licensed sites, coupled with the statutory obligation imposed on licensed nuclear site operators to ensure compliance with nuclear liabilities regimes, have had a significant influence the development of treatment and disposal routes for low level waste.
- 7.2 With the exception of the Low Level Waste Repository, facilities in the UK that are permitted to accept very low level waste are not nuclear licensed sites. Similarly, low level waste disposal facilities in other Paris Convention jurisdictions will not necessarily be caught within the Convention definition of “nuclear installation” and so may fall outside nuclear liabilities regimes in those jurisdictions.
- 7.3 Under current UK law, statutory nuclear liabilities do not attach to the operators of unlicensed disposal sites. Instead, nuclear liabilities for injury or damage resulting from an occurrence involving waste consigned from a licensed nuclear site to an unlicensed disposal site remain with the operator of the consigning site. Liability will only move from the licensed operator of one nuclear site to the licensed operator of another nuclear site if that waste is:
- (a) placed on another nuclear licensed site, or on the site of a nuclear installation in the jurisdiction of another state that is party to the Paris Convention;
  - (b) carried on behalf of a licensee in its capacity as the licensee of another licensed site; or
  - (c) within the territorial limits of a state that is not a party to the Paris Convention.
- 7.4 If waste from several licensed nuclear sites has been placed in the same disposal site and there is an occurrence involving that matter, it may be difficult or impossible to identify the origin of the nuclear matter involved and hence which site licensee should carry the liability for any resulting injury or damage. Similar considerations apply to secondary waste arising from

---

<sup>11</sup> Paragraph 12

<sup>12</sup> Best Available Techniques (BAT) for the Management of the Generation and Disposal of Radioactive wastes, A Nuclear Industry Code of Practice, Paragraph 4.4

<sup>13</sup> Paragraph 24

treatment of metallic wastes and incineration where those secondary wastes are disposed of as very low level waste but originate from multiple nuclear licensed sites.

- 7.5 Risks associated with co-mingled waste are not new, but previously have existed in the UK on a relatively small scale. Nuclear liability insurers are however concerned that co-mingling of very low level waste from different licensed sites within an un-licensed disposal site may lead to an aggregation of liabilities, as an incident involving that nuclear matter may trigger liabilities for multiple site licensees. In practice those site licensees are likely to be covered by a common nuclear liabilities insurer. That insurer may (at least in theory) be required to meet claims several times the usual policy limit applicable to any one licensee's liability for a single incident. This risk is unacceptable to NDA's nuclear liabilities insurers and so presented a significant impediment to the development of and access to suitable low level waste disposal facilities. This in turn risked impeding both the decommissioning effort and delivery of the UK's low level waste policy and strategy.

#### **Relevant carriage and consequent transfer of nuclear liabilities**

- 7.6 To facilitate availability of non-licensed sites for disposal of very low level waste, LLW Repository Ltd has put in place a solution that entails transfer of nuclear liability risks to itself. If very low level waste consignments have been in the course of "*relevant carriage*" by LLW Repository Ltd prior to disposal in an unlicensed site, statutory liabilities for occurrences involving that waste pass to LLW Repository Ltd. This reduces uncertainty as to the identity of the site license company that is subject to the statutory liability and also reduces concerns over aggregation of liability risks following an occurrence on an unlicensed disposal site (where liabilities could otherwise attach to multiple site licence companies).
- 7.7 To qualify as "*relevant carriage*", carriage must be "*on behalf of [LLWR] as licensee of a particular licensed site*" (in this case the Low Level Waste Repository). The Nuclear Installations Act does not require that the carriage be to or from the licensee's own licensed site, only that carriage must be "*on behalf of the licensee as licensee of that site*" (Section 7(2)(b)(i)).
- 7.8 It is interesting to consider the Nuclear Installations Act provisions for transferring liability between site licence companies alongside that terms of the Paris Convention. Attempting to reconcile the Nuclear Installations Act with the Paris Convention is not always a straightforward task. Article 4(1) of the Paris Convention requires transfer of liability in relation to nuclear substances in the course of carriage where a nuclear operator takes charge of those nuclear substances pursuant to a written contract that includes an express assumption of liability. The UK Nuclear Installations Act makes no reference to either taking "*charge*" of nuclear substances or any contractual assumption of liability. Nevertheless, an interpretation of the Act that does not allow transfer of statutory liability where one nuclear site licensee agrees to remove and carry nuclear matter (in this case very low level waste) from the site of another nuclear site licensee appears inconsistent with the requirements of the Paris Convention.

#### **2004 Protocols**

- 7.9 The position will change when the 2004 Protocols to the Paris and Brussels Conventions are implemented. Ratification of the Protocols has been delayed by the need to resolve insurance related issues, particularly in relation to cover for personal injury beyond 10 years from the date of an occurrence. As ratification by EU member states is to be co-ordinated, significant uncertainty as to the timing of ratification remains. The UK Government's current expectation is that ratification is not likely before the end of 2014.

- 7.10 Under the 2004 Protocols the range of nuclear installations brought within the Paris Convention and Brussels Supplementary Convention is extended to include "*installations for the disposal of nuclear substances*". This will cover unlicensed sites used for disposal of very low level waste, although the lower liability limit of €70m is likely to apply due to limited hazard those sites present when compare to other nuclear sites.
- 7.11 On one level, passing nuclear liabilities risks to disposal site operators removes uncertainty and eliminates the possibility of claims against multiple site licence companies following an occurrence involving nuclear matter on a disposal site. Inclusion of disposal sites would however also places disposal site operators under an obligation to maintain nuclear liabilities insurances. The cost of this insurance is difficult to predict. Even in circumstances where a disposal site stops accepting radioactive waste, this obligation would continue. If current draft amendments to the Nuclear Installations Act are enacted, a UK disposal site operator will remain subject to the statutory duty and related insurance obligations until either:
- (a) the Environment Agency gives notice that in its opinion there has ceased to be any danger from ionising radiations from anything on the site; or
  - (b) another person becomes the operator and uses the site for the purpose of disposal of nuclear matter.

Run-off cover will still be required for liabilities relating to an occurrence prior to that date until expiry of the 30 year limitation period.

#### **Possible exclusion of disposal sites**

- 7.12 The UK Government's view is that "*the liability regime should not apply to LLW disposal facilities, on the basis that they do not present a sufficient level of hazard or risk to require inclusion within the requirements of the Paris regime.*"<sup>14</sup> The UK Government has therefore applied to the Nuclear Energy Agency seeking Steering Committee approval for exclusion of low level waste disposal sites and the waste placed on those sites from the scope of the revised Paris Convention regime. If approved, this exclusion would be available in all contracting states. Despite a generally favourable response, objections have been raised by the French delegation on the basis that exclusion of disposal sites is a new concept and there should be no new exceptions.
- 7.13 The UK Government is now exploring whether it can rely on an existing Steering Committee decision to justify exclusion of very low level waste disposal sites and the waste placed on those sites. If a disposal site contains only material that is excluded from the Paris Convention definition of "*nuclear substances*", that site will not qualify as a "*nuclear installation*" and no liability will attach to the site operator under the Convention. Neither will the operator of any other site be liable under the Convention for a nuclear incident involving that material.
- 7.14 The Steering Committee Decision of 27 October 1977 [NE/M(77)2] extends the exclusions of natural uranium and depleted uranium that are written into the Paris Convention definition of "*nuclear substance*". A substance will fall within the 1977 Exclusion if that substance consists "*substantially of uranium*" and complies with both of the following:

---

<sup>14</sup> Implementation of changes to the Paris and Brussels Conventions on nuclear third party liability, A Public Consultation, January 2011, Paragraph 11.14

(a) the "*total activity content per gramme ... of all radioactive isotopes, other than any uranium isotopes which are normally present in natural uranium or any daughter products of such uranium isotopes*" falls within defined limits;

and

(b) "*the mass of the isotope uranium 235 does not exceed 1 per cent of the total mass of all the uranium isotopes present.*"

7.15 Early indications are that the NEA's Nuclear Law Committee and expert group on exclusions may regard the 1977 Exclusion is relevant. The 1977 Exclusion does not however provide any further explanation of the phrase "*consisting substantially of uranium*". This test may prove problematic in seeking to apply the exclusion to low level waste. It may in certain circumstances be possible to disregard the mass of material that could be separated as clean material, although not any material that falls within the Convention definition of "*radioactive products or waste*". This may also create challenges for waste characterisation. As yet the outcome of discussions within the Nuclear Energy Agency on the point is not known.

**Jonathan Leech**  
**Partner, Dentons UKMEA LLP**  
**April 2014**