

The Strategy for the Management of Naturally Occurring Radioactive Material (NORM) Waste in the UK - Key Implications for UK Offshore Oil/Gas Industry

In July 2014, the UK Government and devolved administrations (Government) jointly adopted the Strategy for the Management of Naturally Occurring Radioactive Material (NORM) Waste in the UK.

The policy is aimed at facilitating the sustainable and efficient management of Low Level Radioactive Waste in line with the 'Waste Management Hierarchy' principle, which encourages waste producers to avoid the production of unnecessary waste and to manage arisings in the most environmentally appropriate way against an established hierarchy. This paper aims to summarise the key aspects of the new policy and its implications for the UK off-shore oil/gas industry.

The UK Government mandated the Nuclear Decommissioning Authority (NDA) to develop a strategy for the UK nuclear industry and this was first published in 2010 (and is soon to be reviewed). The first part of the joint UK strategy for the non-nuclear industry (covering anthropogenic waste) was published by DECC in 2012, this new policy is the second part of the non-nuclear industry strategy.

INTRODUCTION

The new policy will have significant impacts not only on NORM wastes produced by operating installations oil/gas installations but also on the future North Sea oil/gas decommissioning and the future environmental permitting of new unconventional oil/gas developments. One of the key aims of the policy is to provide clarity to encourage the supply chain to invest in future radioactive waste management facilities to avoid a medium/long term capacity shortfall. The aim is to achieve this by:

- (i) reforming the regulatory framework to ensure it is clear, coherent and effective;
- (ii) removing policy barriers to the development of a robust and efficient market for NORM waste management; and

- (iii) supporting efforts by waste producers and the waste management supply chain to generate better data and information about current and future NORM waste arisings.

Overall the aim of the policy is to promote effective regulation that ensures the protection of the environment and human health, while enabling more efficient waste management practices. The new policy for radioactive wastes applies to all forms of NORM waste (solid, liquid and gaseous).

REGULATORY REGIMES

The policy states that the existing regulatory systems are effective in delivering protection of human health and the environment but it believes that regulatory and industry practices could be improved to manage waste more effectively. Within England and Wales, this is the Environmental Permitting (England & Wales) Regulations 2010 (as amended) and for Scotland and Northern Ireland, the Radioactive Substances Act 1993.

Underpinning this is the international obligations from the OSPAR Convention and the UK Strategy for Radioactive Discharges (2009).

Clearly the revised Euratom Basic Safety Standards Directive (BSSD) which was adopted in January 2014, will have an impact of certain aspects of the current regulatory approach, particularly around the exemption regime. There is also the potential impact of new requirements for NORM wastes under OSPAR such as the Offshore Oil and Gas Strategy and the Radioactive Substances Strategy.

The overall aims for LLW management in the UK are to embed



the 'Waste Management Hierarchy' into in order to minimise its environmental impact and ensure that infrastructure is used appropriately and efficiently. The objective of this strategy is to ensure that secure, sustainable and resilient NORM waste management options are available in the UK. There are no changes envisaged under the regime to safety related legislation such as the Ionising Radiation Regulations 1999 (regulated by HSE) or radioactive waste transport, in accordance with international agreements IMDG2012 (marine) and ADR2013 (road) (regulated by ONR).

OFFSHORE DISPOSAL OPTIONS

The new policy states that Offshore Operators have enquired whether or not it is acceptable to transfer NORM wastes between offshore installations for the purpose of treatment and subsequent disposal. Government believes that the current policy on what is often termed inter-field transfer of waste needs clarification as does the transfer between installations operating in the same field, often termed intra-field waste transfer, both of these clarifications are yet to be provided.

AVERAGING AND CHARACTERISATION OF NORM WASTES

The policy states that consignors of NORM waste will continue to be required to use best available techniques/practicable means to characterise, sort, and segregate their wastes to facilitate their disposal by optimised routes and in accordance with the waste management hierarchy. This includes ensuring they provide the consignee with sufficient information needed to allow them to consider the acceptance or otherwise of their wastes in accordance with individual facility Waste Acceptance Criteria (WAC) and/or Environmental Safety Case (ESC).

The policy restates the established UK position within the nuclear industry that 'mixing of wastes need not be precluded where this can be shown to provide net benefits in terms of health, safety and environment. Dilution solely for the purposes of re-categorisation to a lower category, however, should be avoided (e.g. deliberate mixing of ILW with inactive or lower activity waste to yield a larger volume of LLW)'.

CONDITIONING TO FACILITATE DISPOSAL

The policy recognises that some wastes must be conditioned to facilitate their future management; be this through burial or another waste management technique to meet facility WAC/ESC. Conditioning may involve the addition of non-waste materials, such as cement or grout, to facilitate the handling and safe transport of waste. In carrying out such

conditioning, the policy recognises that the concentration of NORM in the waste along with any other hazardous components may be diluted. Such dilution is acceptable providing that the Operator can demonstrate that the conditioning is necessary, this does not compromise future management and the waste producer has used best available techniques/best practicable means to minimise the amount of material used to condition the waste.

CONDITIONING TO FACILITATE RE-USE AND RECOVERY

The Government recognises that in accordance with the waste management hierarchy, whilst it is desirable and acceptable to treat all radioactive wastes to facilitate recovery or re-use. The Government believes that conditioning of NORM waste, including mixing with non-radioactive waste, to facilitate a further 'use' or 'recovery' can be an effective means of moving up the waste management hierarchy and reducing the amount of wastes going for disposal. There is a clear requirement to demonstrate to the environmental regulators that any such proposals against a stated criterion within the policy, to determine if re-use/recover is acceptable.

WASTE MANAGEMENT COMPANIES' ACCESS TO INFORMATION ABOUT EXEMPT RADIOACTIVE WASTE

One of the conditions of the radioactive substances exemption regime, in relation to disposals of exempt waste, is that waste producers, where practicable to do so, must remove labelling that indicates the waste is radioactive. There is no legal requirement to inform the next recipient that the waste contains radioactivity.

The policy states that some waste management companies have expressed concerns that they may not know when they are receiving exempt radioactive wastes, including NORM wastes. There are two main concerns, one relates to ability to comply with their permits and the other is worker safety. Government has created the exemption regime to minimise the regulatory burden in relation to radioactive waste where the risks are such that no special controls are required. This was underpinned by radiological impact assessments that take into account exposure to waste management workers including those on waste sorting lines. The environmental regulators already require operators to have arrangements in place to ensure compliance with their permits, which may include waste acceptance criteria. On this basis, government considers that the regulatory framework is robust and does address the provision of information relating to handling of

exempt NORM wastes.

If waste companies feel they need this information then they should specify this as a requirement of the WAC, if they need this information for operational purposes or to comply with regulatory limits.

COMPILATION OF DATA ON NORM WASTE ARISING

The data gathered by the Government for the Strategy is probably the most comprehensive picture of the NORM sector in the UK that has even been assembled. It is however recognised that there are vulnerabilities in the data provided from a number of areas and that the Government is considering a number of options for routine gathering data on both operational and decommissioning NORM waste arisings (this could include use of Environmental Emissions Monitoring System (EEMS) database, NDA Radioactive Waste Inventory (RWI) database, a combination of both or a new solution). This is needed to assess the availability and capacity of NORM waste management facilities. This will ensure that any potential constraints on NORM waste disposal are identified as soon as possible prior to a problem arising.

WASTE MANAGEMENT PLANS

The National Solid LLW Policy (2007) state that plans for the management of all radioactive waste, including LLW, must be developed by waste managers. These plans must be prepared in a form, and to a level of detail, suitable for consideration by the relevant environmental regulator

Although not specifically expressed in the 2007 Policy, LLW

includes NORM waste, thus the new policy requires that Waste Management Plans should be in place for NORM wastes.

The expectations is that waste managers should have plans to in place that demonstrate how they plan to manage their waste in accordance with the waste management hierarchy principles set out in UK waste strategy documents, this includes NORM waste and is to ensure that the requirements for NORM disposal are minimised. Also, the Government expects that the preparation of waste management plans for the NORM industry should take into account all current and anticipated future NORM arisings and set out plans for their management. Government reiterates the position in the 2007 policy statement that NORM waste managers should compile waste management plans in a form and to a level of detail suitable for consideration by the relevant regulatory bodies, as proportionate to the scale of their waste production and holdings and as agreed with the relevant environment agency.

As part of Waste Management Plans, the 2007 policy statement sets out the factors that should be considered within a waste management plan and says that an options assessment study should be conducted that explicitly considers the environmental impacts of 'transporting' radioactive waste over long distances.

The Waste Management Plans will also support waste producers in being to provide robust and reliable data on historical and future NORM waste arisings to support better market capacity assessments.





EXEMPT WASTES

In the policy the Government reviewed the practicalities of obtaining data on the volumes and activities of exempt NORM radioactive waste disposed of in the UK to landfill and concluded that this was not practicable. Therefore the expectation is that the environment agencies will take due account of exempt waste arisings and disposals as part of their normal regulatory duties.

The radioactive substances exemption regime places certain legal requirements on the waste producer to keep a record of the solid waste disposed of and allow regulators access to the records. This is on the basis that conditions regarding waste disposability are then needed at the disposal site. If the waste producer cannot meet the exemption order regime conditions, the NORM waste disposed is not exempt and needs to be permitted by the relevant environment agency. The policy states that such records can be included in the waste management plans.

THE FUTURE

There are a number of potential areas which could impact and alter the new policy in the future, due to their impact on medium/long term market waste management capacity issues, these include:

- **Unconventional Oil/Gas** – The scale of development of unconventional oil/gas recovery means it is currently unclear on the impact of this emerging sector on future NORM waste arisings;
- **Oil & Gas Decommissioning** – the timing and volume of NORM wastes is currently unknown and hence is likely to have medium term impact on the waste management supply chain capacity; and
- **End to Discharge of NORM wastes to Sea** - There is a potential for OSPAR to revisit the practice of disposal to sea of solid NORM waste that arises from the maintenance and cleaning of offshore equipment in the oil/gas sector. This would lead to significant additional volumes of solid NORM waste being brought ashore needing a disposal route.

