

Note of SAFESPUR Meeting

Review of RSA Exemption Orders – participate in the Defra consultation Royal Statistical Society, London, 5 December 2007

This meeting was held to give consultants and contractors the opportunity to learn more about the current review of the Exemption Orders (EOs) made under the Radioactive Substances Act (RSA) and to express their views on the EOs. The meeting was chaired by Mark Hannan of N-ovation Ltd and attended by about thirty-five people. The first half of the meeting consisted of three presentations, with short question and answer sessions; the second half was a facilitated discussion.

Defra EO Review Programme

The first presentation was by Chris Wilson of Defra's Radioactive Substances Division, who outlined the background to and status of the EO review programme. There are currently eighteen EOs, of which seven are for naturally radioactive materials, five are for various types of products containing artificial radionuclides (eg smoke detectors), five are for particular types of premises and activities, and one is the Substances of Low Activity EO (SoLA). Widespread use is made of SoLA, which, inter alia, allows solid wastes that contain low levels of artificial radionuclides to be disposed of as if they are not radioactive. The EOs fulfil a very useful purpose in avoiding over-regulation. However, almost all of them are over twenty years old and some are over forty years old. As a consequence, many of the EOs are out of date in terms of language and technical content, and are difficult to interpret. There have been several unsuccessful attempts to update the EOs in the past. The current review programme is part of the government-wide 'better regulation' initiative and Defra thinks that it is likely to be successful.

The programme began in late 2006 and is due to end in late 2009. Defra are approaching it in a way that keeps all options for revision of the EOs open. The aim is to produce legislation that is proportionate, risk-informed, robust and easy to use. There is stakeholder involvement throughout the programme. To date this has been via expert groups, workshops for interested parties, and seeking views via the Defra website. Over the next two years there will be two public consultations. The first, in summer 2008, will be about the 'architecture' of the EOs (ie their format and grouping). The second, in early 2009, will be on draft legislation, including numerical values.

Options for the EO architecture will be assessed in early 2008, to provide the basis for public consultation. The options being considered are:

- i) do nothing (ie leave all the EOs as they are)
- ii) do minor updates (eg modernise language and units)
- iii) update all the EOs fully, including reappraising all the numerical values
- iv) 'rebrigade' the EOs (ie replace them with a new set of EOs, each of which deals with a different category of materials, products or premises)
- v) replace all the existing EOs with one or two top-level EOs, each of which has a set of schedules containing the numerical values and other details of what is being exempted
- vi) repeal all the EOs and move to a dose-based approach, in which the dose criteria for exemption are given in legislation, and the environment agencies assess materials, products or premises against the criteria and maintain a register of what is exempt from RSA and under what conditions.

In all six cases guidance would be produced to explain the EOs or their replacements. Options (iii) to (vi) could also involve reappraisal of SoLA (especially to make it suitable for high volume, low activity wastes from nuclear decommissioning) and of Schedule 1 to RSA (which currently excludes some naturally radioactive materials from all the provisions of

RSA). Further information about the EO review is given on the Defra website (see www.defra.gov.uk/environment/radioactivity/government/legislation/exemption_orders_review.htm). Comments can be sent to the Defra programme officer, Bini Shah, via the dedicated email address: eo-review@defra.gsi.gov.uk.

A Regulator's Perspective

Bob Russ, who is a policy manager for radioactive substances regulation at the Environment Agency, gave the second presentation. The Environment Agency is contributing to the EO review in the same way as other stakeholders. Its view is that exemption from RSA is appropriate when the practice or product entails very low risk, is widespread and is justified or unavoidable. Exemption allows regulatory effort to be directed to higher risk areas and saves money and time for those regulated. The Environment Agency thinks that, in general, if something is exempt now it should remain so, and ideally the EO review should reduce the burdens on both the regulators and those they regulate. The Agency wishes to put less effort into advice on the interpretation and application of EOs. This would enable it to put more effort into regulating the highest risk practices that require bespoke permits (registrations and authorisations) under RSA, and into standardising simple permits. It is also considering whether more use should be made of 'exclusion', ie changing RSA itself so that more types of substances are not considered 'radioactive' under the Act.

The Environment Agency sees the revision of SoLA as particularly important. SoLA is inconsistent with the international (EU and IAEA) approach to exemption and clearance levels for bulk materials. It is also inappropriate as a means of regulating the recycling of materials such as metals. The Environment Agency wishes to see SoLA replaced by exemption on the basis of radionuclide-specific concentration levels that are consistent with various routes for managing wastes, including recycling as well as disposal as waste. Bob's personal view is that the current programme is an excellent opportunity to modernise the UK exemption regime, so that it is brought on to an up-to-date scientific and risk-informed basis. It is essential not to waste this opportunity because of attachment to existing practices.

Potential Practical Implications of Changes to EOs

The last presentation was by Alan Fisher of UKAEA, Harwell. He was representing the Clearance and Exemption Working Group (CEWG), which is an advisory group established under the UK nuclear industry's Safety Directors' Forum. In 2005 the CEWG produced the Nuclear Industry Code of Practice on Clearance and Exemption, Principles, Processes and Practices (the NICO-P). This is widely used in the UK nuclear industry. It provides assistance in the interpretation of legislation, especially SoLA, RSA Schedule 1 and the Phosphatic Substances, Rare Earths etc EO (PSRE). It contains practical advice on demonstrating compliance with legal limits and guidance on best practice arrangements in the absence of legal obligations. The NICO-P establishes a common framework for managing low activity materials and wastes, and so helps the industry to identify and implement the most appropriate management methods. The CEWG continuously gathers views on the NICO-P and aims to improve it in the light of experience in its use. Although the NICO-P will have to be revised to be consistent with the outcome of the EO review programme, it is anticipated that much of the text will be able to be left in place. In particular, the text on principles and that on management systems can probably remain unchanged.

The CEWG welcomes the EO review programme. It has a number of concerns with SoLA and the PSRE that it hopes that the programme will address. These include difficulties in interpreting the limits in the two EOs, the lack of any obvious basis for the limits, the unclear nature of the solubility requirement, the lack of any guidance on averaging volumes and conflicts with limits in transport regulations. The CEWG supports the option of replacing SoLA by exemption on the basis of radionuclide-specific concentration levels, such as those

given in the IAEA guidance document RS-G-1.7¹. Alan gave several examples of the practical effect that adoption of the IAEA levels would have. In some situations the IAEA levels would be considerably more restrictive than SoLA, for instance for radionuclides such as cobalt-60, but they would not pose practical measurement difficulties. In other situations the IAEA levels would be much less restrictive than SoLA; for example, the IAEA level applicable to tritium in concrete would be 100 Bq/g. Such increases in exemption levels could give rise to presentational difficulties and there might be a temptation to reduce calculated levels arbitrarily. The CEWG is of the view that the EO review process should not seek to impose levels lower than those derived by methods similar to those used for the IAEA guidance unless there are sound scientific reasons for doing so.

Key Questions

From the presentations ten key questions were identified for possible discussion in the second half of the meeting. These questions were as follows.

- Q1 How much are the various EOs used?
- Q2 What sorts of changes should be made to SoLA?
- Q3 What sorts of changes should be made to PSRE?
- Q4 What sorts of changes should be made to Schedule 1 and related text of RSA?
- Q5 How can we make sure the (new) EOs cover current and foreseen processes/materials with specific criteria (eg soil, steel, groundwater)?
- Q6 Should the exemption regime move to a dose/risk based approach, without specific EOs?
- Q7 What are the impacts for waste characterisation (eg inferred values v limits)?
- Q8 Is the EO review timely or should we wait for IAEA/EU?
- Q9 Is there sufficient non-nuclear-industry buy-in to the EO review (eg organisations that manage non-radioactive wastes)?
- Q10 What relationship should the EOs have to other legislation (especially that on the management of non-radioactive wastes)?

In the time available it was only possible to discuss half of these questions. The main points made during these discussions are shown below. Representatives from Defra indicated that they have work in hand on all except Q9 and that they would start work on this topic in 2008.

Changes to PSRE (Q3)

- should be put in plain English
- change to modern units
- make capable of consistent application by environment agencies
- change to radionuclide specific limits
- consider whether an EO of this form is needed or whether a replacement for SoLA could fulfil the functions of PSRE
- clarify the descriptions of materials covered in PSRE

¹ International Atomic Energy Agency, Application of the Concepts of Exclusion, Exemption and Clearance, IAEA Safety Series No. RS-G-1.7 (2004).

- the guidance to accompany new EOs should explain how they relate to other legislation (see also Q10)
- remember that PSRE is widely used for applications for which it was not originally designed (eg dealing with wastes from the oil and gas industry and from remediation of contaminated land) and that these applications merit exemption in some way.

Changes to Schedule 1 and text of RSA (Q4)

- it would be better to omit Schedule 1 and put clear qualitative definitions of excluded substances in the text of RSA (eg substances containing only background levels of natural and artificial radionuclides)
- numerical levels for excluded materials should be in guidance, not in RSA itself
- levels should be for radionuclides, not radioelements, and there should be a distinction between those of natural and those of artificial origin
- guidance could contain typical background 'fingerprints' for regions of the UK
- there would need to be mechanisms for agreeing background levels with the regulators and for changing agreed levels when required
- the existing qualitative definitions of excluded substances in RSA should be retained
- environment agencies need the flexibility to regulate materials contaminated by past discharges and disposals when they consider it necessary to do so, but in general double-regulation must be avoided.

Move to a dose-based approach (Q6)

- such an approach would be burdensome to small users and to the environment agencies
- nuclear and non-nuclear industries prefer a prescriptive approach, with radionuclide-specific exemption levels (which are dose/risk based)
- a hybrid approach, with some prescription and some assessment against dose criteria, could emerge and this would be difficult to enforce
- in the current prescriptive system there is already the flexibility to deal with specific cases on a dose basis (via requests for authorisations with few conditions)
- the complexity of dose/risk calculations would make such an approach much less transparent
- there could be more disputes between the environment agencies and those they regulate, and a need for an appeals process
- there could be presentational problems in extensive use of a dose criterion for exemption such as 10 microsievert per year, because doses from discharges from many nuclear sites are below this level.

Timing of the EO review (Q8)

- the new ICRP recommendations will be published early in 2008
- work on revision of the EU basic safety standards (BSS) Directive will start in 2008; it is expected that negotiations on a draft text produced by the Commission will begin in 2009 and that the new BSS Directive will be in place by 2011 or 2012
- it is expected that a draft of the revised IAEA basic safety standards will be sent to member states for comment in early 2009
- the EO review is timely because it will be a valuable input to the UK position in EU and IAEA negotiations
- waiting might put the UK in the situation of having to accept EU or IAEA exemption levels that are later found to be inappropriate for our circumstances.

Relationship between the EOs and other legislation (Q10)

- there is already consistency between RSA and its EOs and the Hazardous Waste Regulations

- ideally, there should be consistency between EOs and the transport regulations, such that exempt material does not have to be labelled as 'radioactive' for transport
- the 'duty of care' should apply to radioactive waste that is exempt from authorisation under RSA
- ideally, there should be consistency between EOs and the Landfill Directive
- in general, guidance to accompany EOs should make it clear what other legislation applies to exempt materials and wastes
- the waste management industry as a whole should be involved in the review of EOs (eg via its trade bodies)
- there should be clear guidance on suitable disposal routes for hazardous and non-hazardous exempt radioactive waste
- more attention should be paid to recycling when revising the EOs.

Conclusions

In his concluding remarks Mark Hannan thanked Defra and CIRIA for the opportunity to provide input to the EO review. He said that it was clear that the review was timely and that there is a need for exemption in some form for various products, practices and wastes. Exclusion from regulation under RSA is also needed but is inherently less flexible than exemption so requires careful consideration. Defra's plans for future stakeholder involvement in the EO review are good but need to be extended to include the waste management industry as a whole. As well as guidance to accompany the new exemption regime, there would be a need for education of everyone affected by it.

Marion Hill
12 January 2008