

Bulk Quantities consultation workshop

24 October 2011

Redgrave Court, Bootle, Liverpool.

Attendees:

Office for Nuclear Regulation (ONR)	Frans Boydon Mick Bacon Claire Lyons
Ray Kemp Consulting Ltd (RKCL)	Ray Kemp (Facilitator)
Health and Safety Executive (HSE) Dounreay Stakeholder Group Dounreay Stakeholder Group Nuclear Decommissioning Authority (NDA) Nuclear Decommissioning Authority (NDA) Low level Waste Repository (LLWR) Cumbria County Council Advansci Ltd Studsvik UK Ltd Studsvik UK Ltd Magnox South Magnox Ltd Nuclear institute	Michael Nettleton June Love David Flear Steve Fisher Matthew Clark David Rossiter Peter Allen Trevor Jones Joe Robinson Sam Usher Adam Meehan Virginia Newman Ian Currie

Apologies:

Amec	Stuart Cripps
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1. Introduction

Frans Boydon welcomed everyone to the workshop on behalf of ONR. Ray Kemp explained that the workshop had been arranged in the middle of the formal public consultation period to allow consultees the opportunity to ask ONR any questions of clarification before responding formally. A note of the meeting would be prepared but only formal responses to the consultation would be taken into account by ONR. Attendees were then invited to introduce themselves.

2. Background

Mick Bacon gave a PowerPoint presentation. He explained that the nuclear site-licensing regime currently applies to a set of defined activities which include the **storage** of bulk quantities of radioactive matter. However, there is no clear definition of what constitutes 'bulk quantities' of radioactive matter, storage of which would need to be licensed.

Separately, Government (Department of Energy and Climate Change, DECC) has started work on the implementation of the 2004 protocol to the Paris Convention. This will address bringing **disposal** of radioactive material into the nuclear site liability regime.

Until DECC is in a position to give clarification on the implementation of the Paris Convention, ONR will interpret 'bulk quantities', with respect to storage as a quantity of radioactive material exceeding one hundred times the levels set out in Schedule 2 of Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPiR).

Ray Kemp invited questions following the presentation. These questions and the responses are briefly summarised in the following table.

Will the outcome of the consultation lead to a change in law?	No. ONR's intention is to issue an interim statement of how it proposes to interpret the term 'Bulk Quantities' of radioactive material. Regarding any legislation, this depends on work being done by DECC.
What does the interim statement say on disposal?	The interim statement deals only with storage. Under current legislation, sites dealing with disposal do not need a license but this is being addressed separately by DECC.
How will low risk facilities be dealt with?	Disposal of high-risk matter will be licensed but we will need to agree what the level will be.
What is the situation on exempted nuclear activity as in the 1978 regulations?	They are exempt in certain parts, i.e. some types of transport.
Will this apply to any material on site?	Material is not exempt from all requirements of the Act. There are some exemptions in the NIA relating to third party liability issues and transport of material.
Is a 'bulk quantity' installation a plant or site?	The exact circumstances have to be considered. Licences are granted for sites, hence two or more similar facilities on one site would generally be considered together as an installation. Where plant are on separate but nearby sites or where they are operated by different licensees then they may be considered as separate installations. Artificially creating separate sites to create several installations with just below 'bulk quantities' levels would not be looked upon favorably.

Is it possible to reduce the amount of bulk quantity held so as not to require a site licence?	The bulk quantity is the total amount the facility is designed or intended to hold – not the actual amount held there at any one time.

3. Further clarifications

Following lunch, Ray Kemp invited questions from the floor on the draft interim statement. These questions and responses are briefly summarised in the following table:

Are you looking at future requirements, i.e. radioactive contaminated land etc?	Not at present.
How is it logical to have separate criteria for licensing? Shouldn't this be the same as for de-licensing? Why do we need different criteria?	In short, it is because different words are used in legislation. 'No danger' and 'bulk quantities' cannot in any reasonable way be considered to mean the same in law. Different levels for exclusion and clearance are common in other areas.
Would it be sensible to look at bulk quantities and 'no danger' definitions at the same time?	See above. The Paris Convention may result in some changes that could affect this but not on the timescales that we are looking at to set out ONR's position.
Should we redefine 'no danger'?	This has already been done and is available on the website. See above – there is no plan to look at this again in the near future.
Is it possible to have two operators carrying out the same process with different levels of activity one licensed and one not?	Yes.
Should the level be lower than 100x REPIR	That is where ONR wishes to hear the views of consultees.
If you are licensed for storage and reduce the rate of material stored, do you have to prove 'no danger' to	If you no longer carry out activity relating to bulk quantities you do not need a licence. No danger refers to the third party liability requirements which will still operate even after licensable

hand your licence back?	activity has ceased. Even when a licence is 'handed back', ONR can still regulate by Direction under NIA.
When does storage become disposal?	If you have material and intend to use or move it, this is storage. If you have no intention of retrieving it, it is disposal.
Is irradiated fuel the same as waste?	In England and Wales, this depends on what the owner calls it. Scotland has taken the position that spent fuel is not waste – however, whatever it is called ONR expects similar standards to be applied.
Is there a forum for considering issues in the Paris Convention? Can we clarify that DECC are dealing with areas we raise during this consultation process?	ONR has regular meetings with DECC and will continue to feed any comments through to them.
What is the driver for the interim statement?	ONR want to be transparent on its position relating to bulk quantities. The interim statement is driven by ONR's desire for the process to be clear.
Are there plans to take the interim position to a final position?	We will need to await the outcome of the work by DECC on the Paris Convention and any subsequent modifications to NIA although this is unlikely to be finally resolved for at least two years.

The attendees were then invited to make comments on the specific consultation questions.

Question
1. Is “activity” the correct criterion for HSE to use when determining whether bulk quantities of radioactive material are being stored?
2. If you do not agree with HSE’s proposed criterion, what alternative criterion should be used and why?
3. Do you agree with the proposal to disregard “sealed sources” for the purposes of determining whether a bulk quantity of material is being stored?
4. Do you agree with HSE’s view that a bulk quantity will be a quantity of radioactive materials that has an activity level of [at or above] 100 times REPPIR values?
5. if you do not agree with the proposal in Q4, what value should HSE use to determine whether a bulk quantity of materials is being stored?
6. Do you agree with our assessment of the impact of proposed interpretation of “bulk quantities”?
7. Do you have any other comments?

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Question 1.

There was general agreement that this criterion as correct. One potential issue could be that it does not refer to the concentration of material.

Q. Should we be using activity rather than risk? What is the reasoning for this? Is there a way to define activity by risk basis?

A. ONR appreciates that there are different positions and possible approaches to reconcile. By referring to REPPIR, ONR is seeking to establish a reasonable approach, which is based in established regulations and is risk-based.

Question 2

Q. What would the Environment Agency (EA) consider as a risk – is this at the same level?

A. The EA refer to becquerels. The limits in an EA permit are based on the level of becquerels or measureable amounts.

Question 3

There was general agreement that it was appropriate to deal with 'sealed sources' in this way.

Question 4, 5, 6 and 7.

Q. Has there been any worse case scenario work at 100x REPPiR level? Can it stand up to testing?

A. ONR has not carried out any rigorous analysis but a broad-brush analysis with a conservative assumption of 10% release then you are just entering the scale of consequences where intrusive countermeasures such as evacuation may be required.

Q. In some situations 100x REPPiR may not be an exceptional risk. Would this be open to challenge?

A. ONR would use the interim position as an argument to explain how it came to a decision. Proportionality would be taken into account in how we apply the licensing regime.

Q. If we adopt 100x REPPiR and then obtain a license. If when the law changes it states the level is 100x REPPiR can we simply hand the licence back or do you need to go through the whole de-licensing process and demonstrate 'no danger'?

A. If this situation were to arise we would expect the law to address this situation.

4. Summary and close

Mick Bacon thanked all the participants for their engagement with the issues and for their comments. He stressed that ONR has not finalized its position and awaits the formal consultation responses for consideration. All attendees were encouraged to submit formal responses to the consultation.

Interpretation of Bulk Quantities

Open Forum 24 October 2011

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Introductions

- Welcome – Frans Boydon
- Today's Agenda – Ray Kemp
- Introduction - the process so far - RayKemp
- ONR's Interim Position – Mick Bacon

Interpretation of Bulk Quantities

Mick Bacon

HM Principal Inspector

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Nuclear Installations Act 1965

(1)..... no person . . . shall use any site for the purpose of installing or operating—

....(b)....any ... installation designed or adapted for—

... (iii)the storage, processing or disposal of ... **bulk quantities of** other radioactive matter.....

unless a licence so to do ... has been granted in respect of that site by the HSE and is for the time being in force.

What is “Bulk”?

Dictionary:

- Large quantity
- Great size
- Large mass



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Problem with Dictionary Definition

Consider

- A large heap of material with trace levels of radioactivity
- A thimble full of high activity waste



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What did the Act mean to achieve?

Back to 1959

- “Bulk Quantities” inserted to exclude activities that did not present an exceptional risk to the public.

What Quantity?

- Exceptional risk
 - Risk is not a quantity
- Need a quantity related to risk
 - Best available is activity (Becquerels)

Com
m

- Pr

Regu

- Trans

- Risk ba

- Enforcea



Office

Help from other legislation(1)

REPPIR Schedule 2

- If a site had an inventory equal to Schedule 2 then:
- If ALL the activity were released in a single event; then
- The most exposed individual may get a dose equivalent to about twice natural background dose for a year.

Help from other legislation(2)

REPPIR Schedule 2

- An inventory equivalent to REPPIR Schedule 2 does not represent an exceptional risk;
- Given the conservatism – even 10 x REPPIR Schedule 2 should not be regarded as an exceptional risk.

Help from other legislation(2)

NIA 83

- Boundary between low and high levels of liability required under NIA65
- Clear intent for licensing below this level.
- NIA83 boundary is ~2000 x REPPIR Schedule 2.

How much is Bulk?

- “Bulk” $> 10 \times$ REPPIR Schedule 2
- “Bulk” $< 2000 \times$ REPPIR Schedule 2.
- $100 \times$ REPPIR Schedule 2 fits this equation well.

Consequences of Choosing 100x

- No installations currently not licensed would require licensing
- No installations currently subject to licensing would not be caught
- With one significant exception

Sealed Sources

- Some large sealed sources would be caught by this definition
 - Medical teletherapy units
 - Irradiation facilities

Exclusion of Sealed Sources

- Highly Active Sealed Sources already covered by their own specific legislation (HASS Regs)
- By definition they do not form dispersible material
- They are excluded from the Paris Convention and hence should not have been covered by NIA in the first place.

Any Questions for Clarification?

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Discussion Session

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Annex A Table 3

Examples of calculations using the suggested bulk quantities value to decide where a nuclear site licence is required

The examples below are fictitious and designed to illustrate as many situations as possible.

Facility	Source	Activity (TBq)	Quotient
Store	Cm 244	1.00E-03	2.50E-03
	H3	2.00E+03	2.86E-01
	I 125	3.00E-02	3.00E-03
	I 131	3.00E+00	3.33E-01
	Ir 192	2.00E+01	1.67E-01
	Kr 85	1.00E-02	1.00E-07
	Np 237	1.00E-02	2.00E-01
	Ra 226	1.00E-04	Exempt 1
	TOTAL		1.16
			Nuclear Site Licence required
Sterilisation Irradiator	Co 60	1E+18	Exempt 2
			Nuclear Site Licence not required
University	Cr 51	5.01E-03	1.67E-06
	C14	8.34E-02	2.78E-04
	I 125	4.00E-03	4.00E-04
	P 32	6.00E-03	6.00E-04
	P 33	2.00E-03	6.67E-06
	S 35	6.00E-02	6.00E-04
	TOTAL		<0.01
			Nuclear Site Licence not required
Hospital	C 11	3.70E-01	Exempt 3
	F 18	4.00E-01	Exempt 3
	I 124	1.00E-02	Exempt 3
	N 13	4.00E-02	Exempt 3
	O 15	1.50E+11	Exempt 3
	Zn 62	7.40E-03	Exempt 3
	TOTAL		All Exempt
			Nuclear Site Licence not required

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Close and Thank You

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