

## Comments on the 3<sup>rd</sup> draft of the guidance

### Consultation: Phase 3 (April/May 2005)

#### Content specific comments

Participants were asked to consider the following questions:

- Is the report content technically correct? – where you suspect an incorrect assumption, error of fact etc, please highlight and where possible provide clarification.
- Does the report cover the subject comprehensively?
- Are the users (target audience) of the report adequately identified in the preliminaries?
- Do you feel the report is beneficial to the users identified in the preliminaries?
- Are there areas, e.g. safety, on which you would wish to seek reassurance that specialist guidance has been sought – from regulators and other stakeholders?
- Are there areas that have not been given sufficient coverage?
- Does the report need to provide further reference to other existing guidance?
- Is the written style appropriate?

Chapter	Reference	Comment
<b>Summary</b>		
Summary	Page i	The list of 19 sustainability indicators that appears in the Summary and Recommendations makes no mention of Intergenerational Equity nor timeliness of decommissioning
Summary	Page i	The references to the conventional waste regime in the summary & recommendations section are obscure to the point of being invisible. For instance, reference is made to 'exempt' wastes but this is apparently exemption from radiological controls rather than under Waste Management Licensing arrangements. A good example is para 3 where you state 'The radiologically clean, RSA exempt and excluded wastes potentially can be recycled and reused...without further regulatory control.': does 'excluded' mean excluded under the Waste Management regs (if so, say so) - or should you caveat this with 'provided conventional waste management licensing criteria or appropriate exemptions are met'?
Summary	Para.2, line 3, page i	as it's the first use, expand RSA in full
Summary	Para.3, line 7, page i	to make sense of the sentence, add a comma between 'sites' and 'provided', also remove comma between 'environmental' and 'and'
Summary	Para.4, last line, page i	spurious comma between 'feasibility' and 'and cost'
Summary	Para.7, line 5, page i	unnecessary 'the' between 'that' and 'certain'
Summary	Para.12, line 7, page ii	sentence should start with 'It' not 'Is'
Summary	Para.12, line 9, page ii	Environmental Council usually has 'The' with a capital (see its use of own acronym – TEC) – also found in Chapter 2, 2.5, para.8, line 5, page 23
Summary	Para.13, line 5, page ii	should the word 'decommissioning' be moved to between 'radioactive' and 'wastes'?
Summary	Para.15, page iii	did you investigate whether there is a market abroad for these recycled materials – is the cost of movement prohibitive?
<b>Abbreviations</b>		
Abbreviations	Page vi	Add SAFEGROUNDS expansion.

Abbreviations	Page vi	Having looked through the text, I suggest you add: BAT = best available technology; BNFL = British Nuclear Fuels (PLC); DEFRA = Department for Environment, Food and Rural Affairs; DETR = Department for Environment, Transport and the Regions; DFR = Dounreay fast reactor; DRWI = Dounreay radioactive waste inventory; DSRP = Dounreay site remediation plan; GDP = gross domestic product; HMSO = Her Majesty's Stationery Office; JASM = jointly agreed sampling and monitoring (working group); JET = joint European Torus; MADA = multi attribute decision assessment/analysis; MOD = Ministry of Defence; RCEP = Royal Commission on Environmental Protection; RMC = Ready Mixed Concrete; RWI = radioactive waste inventory; SAFEGROUNDS = safety and environmental guidance for the remediation of UK nuclear and defence sites; WRAP = waste and resources action programme
Abbreviations	Page vi	By the way, you say that CIRIA = Construction Industry Research and Information Agency, but the CIRIA website says the A = Association
Abbreviations	Page vi	Also, 'NDA' should be before 'NIA' and 'RWMAC' should be after 'RSA'
<b>Chapter 1</b>		
1	1.1, p1, para 2	SITF will become SDF 'Decommissioning Steering Group'
1	1.2.1, p3, para 3	please note, that part of Cm2919 which relates to decommissioning policy was superseded in Sept 2004 (see 'www.DTI.gov.uk/nuclearcleanup' website under 'Archive')
1	Section 1.1.2 paragraph 3 page 2	makes no mention of the possibility of managing material under the IRRs. Comments here also don't apply to liquid effluents and aerial discharges that are sentenced to an approved disposal route.
1	Section 1.1.2 and Section 1.2.1	Neither Section 1.1.2 nor Section 1.2.1 contain any reference to the legal responsibility of the Site License holder to make and implement adequate arrangements for the decommissioning of plant under the terms of Licence Condition 35 – this is generally interpreted to include plans and programmes.
1	Section 1.1.2 and Section 1.2.1	Neither Section 1.1.2 nor 1.2.1 make any reference to the Quinquennial Review (QQR) process as required under Cm2919 and carried out to date by HSE.
1	Section 1.2.2 paragraph 4 page 3	it may be worthwhile inserting asbestos and oils, given the strategic significance associated with these two streams
1	Section 1.2.3 bulleted list beneath paragraph 3, page 4	suggested addition "extent of auditable knowledge of material type, quality, history, extent of contamination and impurities"
1	Section 1.2.3	with regard to the WRAP protocol, this document is fundamental to the successful re use of C and D on nuclear sites as it removes the requirement for waste management exemptions. SEPA have as yet not signed up fully to the protocol but are willing to approve material produced in line with the protocol. It is therefore vitally important that the importance of this document in delivering sustainable solutions is emphasised more in this document. //The document is hardly mentioned, this document was produced by the government body with responsibility for encouraging recycling and re use and therefore should play a significant role in this guidance. Without this document the majority of the desired outcomes for material re use can not simply be achieved. //The most important factor influencing re use or recycling on nuclear sites is the cost of landfill disposal, if the cost of landfill disposal is more than re use or recycling then re use or recycling will take place. Even with an integrated waste strategy in place cost will be main determinant in the disposal route of construction and demolition wastes. Unfortunately commercial concerns are far greater in the non radioactive aspects of decommissioning with many of the proposed options simply a luxury.

1	Section 1.1	<i>'Levels of radioactivity that are so low they may be treated in ways similar to that of conventional wastes'</i> - why 'similar' rather than 'solely as'? - does not conventional waste regulation apply in its fullest sense? This is key and it would appear that you run a risk of provoking a misapprehension right from the beginning that conventional waste regulation does not have a significant role once a certain threshold of activity is passed. <b>My previous comments on Chapter 1 during Consultation 2 on this apparent lack of balance and the dangers involved continue to apply and, with much else, do not appear to have been taken on board.</b> Indeed, you appear to have reframed the report into the more restricted radiological arena, potentially rendering the application of conventional waste management procedures even more obscure to the industry reader with no prior exposure to that wider area of statutory requirements. At the least you need to make specific cross-reference to your subsequent section B2.4 wherever such possible misapprehension might occur. Better still, you would include advice on how to scope and deal with issues in the more conventional arena so as to achieve a balanced and trustworthy and least risk interaction with the <b>various</b> competent authorities involved.
1	1.1, para.2, line 4, page 1	again, you've used the A of CIRIA as Agency, but should it be Association?
1	1.1, para.2, line 8, page 1	I assume that RMC is Ready Mixed Concrete?
1	1.1.1, para.3, last sentence, page 2	the use of slightly radioactive steel would, I assume, have to be added into the radiological sum when disposing to final repository (or interim storage) in order that the repository kept within its authorised limits? The same would go for any recycling of other slightly radioactive materials
1	1.1.1, para.4, line 3, page 2	change 'defining' to 'definition'
<b>Chapter 2</b>		
2	Table 2.1, p14	needs reformatting in column 1; typo column 3 row 3 ('off 'instead of' of') Table 2.3 - don't split last row Table 2.4 - workers should have 'AT LEAST' the same level of protection as today in future - standards are actually likely to increase in future!
2	Table 2.5, p20	but row 12, column 2, is NOT A FINAL SOLUTION and constrains 'site end point' scenarios!!
2	Table 2.5, p20	but row 14, column 2 may have an 'ADVERSE' impact (visual impact), column 3 & 4 may have 'ADVERSE' impact (economic) Table 2.5 - but row 15, column 2, 3 & 4, are also likely to be 'BENEFICIAL'! (visual impact where close to population centres)!
2	Table 2.5, p20	but row 16, column 3 & 4, is also likely to be 'BENEFICIAL' (no further industrial activity, noise, etc where close to population centres)!
2	Table 2.5, p20	but row 17, column 3 & 4 could also lend themselves to improved NEW forms of investment e.g tourism etc Table 2.5 - but row 18 columns 2, 3 & 4 should definitely also comment on relative difference in costs AVOIDED e.g waste disposal at Drigg Table 2.5 - but row 19, columns 3 & 4 could also lend themselves to sale of land (highly significant on southern sites and likely to be more valuable than recycled products) Page 22 - need to comment on not 'foreclosing options' e.g. landscaping/utilising waste on licenced sites may preclude eventual delicensing resulting in never ending stewardship cost Page 28 - there already is a (closed) LLW disposal facility at Dounreay!
2	Section 2.1, bulleted list beneath paragraph 1, page 5	suggested additional point of "timely, progressive and systematic reduction in hazard"
2	Section 2.1, paragraph 3, page 5	the need to address issues of sustainability was repeatedly mentioned in QQRs
2	Section 2.2, paragraph 2, page 5	the most recent thoughts of BNFL on Multi-Attribute Decision Analysis (MADA) can be found in the paper by Hebditch et al "Development and optimistaion of generic decommissioning strategies for civil reactors".
2	Section 2.2.1, paragraph 2, page 6	any use of existing buildings for storage of wastes would need to be to the appropriate standards – there are potentially conflicting drivers here.

2	Section 2.2.1, bulleted list beneath paragraph 5, page 7	arguably the most important stage of all is "6. Weighting Factors" – which usually determines the end result, yet is missing from the list of key stages.
2	Section 2.3, paragraph 3, page 7	efforts to identify options should not necessarily be proportionate to the likely hazard posed to people and the environment. In some cases a particular option may very clearly be the "best", even in a situation that involves management of high hazard material. In such a situation it would be inefficient to insist upon development of a wide range of alternatives that would be unlikely to survive a full-blown MADA. Ultimately this is a strategic decision-making mechanism, not engineering development, so the level of subtlety needed should be dependent upon the closeness of the potentially viable options, not the likely hazard. If the hazard is higher, it is the levels of engineered safety that should rightly be higher – the two issues can be separated in many instances.
2	Section 2.3.1, paragraph 2, page 8	suggested addition "existing wastes on a site.... <b>or fleet of sites</b> ...."
2	Section 2.3.1, paragraph 2, page 8	some principles of sustainability (such as extensive segregation and processing of materials for re-use) will result in slower and more expensive restoration. The paper makes no suggestions on how these potentially significant detriments could be effectively mitigated.
2	Section 2.3.1, bulleted list beneath paragraph 3, page 8	the list doesn't mention the need to make best use of enabling experience, staff knowledge and the pre-existing capabilities/infrastructure – all things that can erode once a plant shuts down. The importance of these factors has already been recognised by the Nuclear Regulatory Forum's working group on Prioritisation.
2	Section 2.3.1, paragraph 4, page 9	suggested addition "This clearly has social, <b>safety, environmental</b> and political implications".
2	Figure 2.3, page 11	"planned deconstruction" will hardly ever be cost effective when compared against "routine demolition". If we wish the strategy selection to be driven by more than the potential fiscal value of the high utility recycled materials, the other drivers need to be factored in.
2	Table 2.4, page 17, point 9	Resource use should include human resources, such as expertise and supporting infrastructure.
2	Section 2.7, bulleted list beneath paragraph 2, page 24	suggested additions "hospitals" and "universities"
2	Section 2.7, bulleted list beneath paragraph 3, page 24	suggested additions "fabrication of shielding bricks and shielding walls", "road construction".
2	Section 2.1	what about the proximity principal, this a fundamental concept of waste management?
2	Section 2.3	the level of detailed thought proposed for decision making is considered unrealistic, the NDA is pushing for rapid decommissioning and clean and exempt wastes are being dealt with in the most cost effective manner, decisions are being made on available waste routes and short term contracts because there is no over arching policy in place. This is in line with waste management activities outside the waste industry where the market drives the best option with regulatory compliance restricting many viable disposal routes. The guidance should emphasise that rapid commercial decisions need to be made in changing market conditions, this is completely different from radioactive waste disposal, which mostly operates outside the market place.

2	Section 2.6	Waste Characterisation. The document does not mention testing that would be required for waste acceptance testing at any licensed landfill site, this will be very important for soil materials and potentially chemically contaminated materials. The new definition of inert waste means that only truly inert materials can be disposed of to inert waste sites. This means that material previously considered as inert may now have to go to a non hazardous waste site at considerably higher costs. With regard to non hazardous waste, the majority of waste will now need waste acceptance testing prior to disposal in a licensed site; this is an additional cost and will limit the disposal route available for materials which contain leachable substances in excess of certain thresholds.
2	General	My previous comment offered during Phase 2 consultation, on the need to present a balance of radwaste and conventional waste management controls and the allied needs for interaction with the various competent authorities, still applies and does not appear to have been taken aboard. Chapters 1 and 2 are overly blinkered in this regard and this will not give a balanced perspective to readers. You should make strong cross-reference to B2.4, which although good as far as it goes is now more deeply buried than before.
2	Section 2.7, para 1	'slightly radioactive wastes.....must always remain under regulatory control' - my point is that <b>all</b> wastes should be presumed to be under regulatory control, whether radioactive or not. Again you provoke a misapprehension that, if its not radioactive, there is not a regulatory interest. In legal terms this is termed 'mischief' as a constructive interpretation can be taken of your advice that is fundamentally flawed. You are no doubt talking about a specific radioactive waste regulation interest rather than speaking from within the wider domain of UK law on environmental protection - if so, at least, please say so and be consistent in similar references elsewhere. Again, you should make strong cross-reference to B2.4.
2	2.2, para.2, line 2, page 5	insert acronym MADA after 'assessment'?
2	2.3.1, point 3, line 1, page 8	add 'be' between 'then' and 'assessed'
2	2.3.2, para.3, first sentence, page 9	this is exactly the point that Nirex are making; should you make some reference to them?
2	2.3.2, para.4, line 2, page 10	in order for the sentence to make sense, there needs to be a comma between 'developed' and 'range'
2	2.3.2, para.6, line 6, page 10	add 'be' between 'may' and 'because'
2	2.3.2, para.6, last sentence, page 10	Ian Roxburgh (NDA CEO) said that site end-points should be the choice of the local community, subject to cost and feasibility; there should also be the proviso that the view of different generations may change because, for example, another, better option arises – so what I'm trying to say is that end-points are not fixed!
2	2.3.2, para.9, line 3, page 11	add 'or' to read 'deconstruction and/or demolition'
2	2.3.2, <i>Building refurbishment for reuse</i> , para.4, line 3, page 12	the buildings on nuclear sites could in fact be older than 50 years as some have used previous ordnance factories/stores or RAF stations
2	2.3.2, <i>Planned deconstruction</i> , para.3, last line, page 12	or greenfield?
2	2.3.2, <i>Planned deconstruction</i> , para.5, line 3, page 12	comment on age of buildings, as above
2	2.3.2, <i>Planned deconstruction</i> , para.7, line 6, page 13	mis-spelling of 'metre'

2	2.3.3, table 2.1, page 14	in the first column, you need to reset the allowable width of the text in order to stop it wrapping round part way through words; in fact all the columns could have their text area enlarged – that way the table would be shorter and table 2.2 may fit onto the page in its entirety, which would read better
2	2.3.3, table 2.2, page 14	under 'potential applications' of 'plastics', should that be 'slates' or 'stakes' made from remoulded plastic?
2	2.3.3, table 2.2, page 14	under 'potential applications' of 'glass', add an 's' onto 'use', to read 'Alternative uses for recycled glass'
2	2.4, table 2.4, page 16	under 'sustainability indicator', 'ref 3', should you add '3.3 – other pollutant discharges' to correspond with 'all pollutants' in 'comment' column?
2	2.4, table 2.4, page 16	under 'comment', 'ref 3', should you expand BAT and BPM?
2	2.4, table 2.4, page 16	under 'comment', 'ref 5', should you add 'in the air'? - you do talk about discharges to the atmosphere
2	2.4, table 2.4, page 17	under 'comment', 'ref 13', add 'that' between 'employment' and 'will'
2	2.4, table 2.4, page 17	under 'comment', 'ref 13', I'm not sure about use of 'community spirit', it sounds like something from the Blitz; however, I don't have an alternative phrase!
2	2.4, table 2.4, page 17	under 'comment', 'ref 16', as per my previous point
2	2.4, table 2.4, page 17	under 'sustainability indicator', 'ref 17', would GVA (gross value added) be a better indicator? – this would show the difference between salary costs and actual profits per person
2	2.4.1, para.2, line 3, page 18	change 'reflecting' to 'reflected'
2	2.4.1, para.6, line 3, page 18	change 'themselves' to 'itself'
2	2.4.1, para.6, line 6, page 19	maybe add '(hundreds of years)' between 'periods' and 'considered'
2	2.4.1, table 2.5, page 20	under 'routine demolition', 'ref 1', add 'from' between 'or' and 'either'
2	2.4.1, table 2.5, page 20	under 'building refurbishment' and 'planned deconstruction', 'ref 3' and 'ref 4', there could be a significant impact if there were unknown, maybe buried, pipework containing contaminants, that were broken during operations?
2	2.4.1, table 2.5, page 20	under 'routine demolition' and 'planned deconstruction', 'ref 5', what if, for example, red kites were nesting on the building?
2	2.4.1, table 2.5, page 20	under 'routine demolition', 'ref 8', would you include transport to landfill/disposal site?
2	2.4.1, table 2.5, page 20	under 'building refurbishment' + 'planned deconstruction', 'ref 15', what about, for example, the first ever reactor saved as part of a future site use of, maybe, an industrial heritage centre?
2	2.4.1, last para, last line, page 22	change second 'the' to 'that'
2	2.5, para.5, line 3, page 22	all the NDA sites will have a Site Stakeholder Group, that will feed up into the National Stakeholder Group
2	2.5, para.5, page 22	why not get the NDA to buy-in to the recycling – it could save them money or make them revenue, and they could act as the overseeing body
2	2.5, para.9, point 1, page 23	would this include serious hazards such as asbestos?
2	2.6.1, para.2, line 1, page 23	when is RWI'04 due to be published?
2	2.6.2, para.5, line 3, page 24	change 'that' to 'than'
2	2.7, para.1, page 24	there would have to be documentation on the reuse of materials, so that future site reuse and future generations would know exactly what was there. Also, who would keep these records?

Chapter 3		
3	3.3.2, p29, last para	should be Table 3.2 not Table 2 .5 Appendix Page 16 top - numbering!
3	General	The 8 pages could be written in 4 or 5. There is duplication. The difference between "planned deconstruction" and "routine demolition" is not made clear but referred to as the main options throughout.
3	General	The report could possibly make passing reference to the potential for recycling scrap lead waste into new shielding products for the nuclear industry as an example of what could be done. The Dounreay site has (reportedly) an inventory of about 6,000 tonnes of lead waste, which could usefully be recycled rather than discarded as waste.
3	Section 3.1, Page 27, third paragraph.	It states that the DFR building is a listed building. I have been involved in negotiations with Historic Scotland and this is not the case. I suggest the following text: '... with the exception of the sphere that housed the Dounreay Fast Reactor (DFR), which in the fullness of time may become a listed building, ...'.
3	Section 3: Table 3.1	I do not believe the volumes presented, they are a significant under estimates of all waste types. I would also disagree with the terms used for the majority of wastes as they do not reflect the actual waste categories being generated. The main waste stream is called 'poorly characterised building rubble and soil' Effort are being made to segregate, minimise and reduce this waste types so as to maximise the potential for re use either under a Waste Management Licence Exemption or within a WRAP protocol. I would hope that we do not have any poorly characterised material as a result of overarching quality systems. //The case study is based on the assumption that the majority of inert waste is being stored with the intention to re use this material for landscaping. In the first instance, the storage of waste requires a waste management licence or PPC permit and after three years of storage the operation is considered a disposal. This means that any site storing large quantities of material for future use will become by default a PPC landfill and be subject to the requirements of the PPC permitting regime.
3	Background	Background to Dounreay's current situation > Dounreay has started to actively decommission and demolish buildings, this is being carried out in advance of a IWS and site end point. This means that waste management decisions are being made with the following drivers: • Available disposal routes; • Disposal costs; • Timeliness of disposal; • Regulatory requirements
3	Table 3.2	<b>Discharge to water bodies:</b> there will be no impact to water bodies associated with the use of materials as landscaping as the material will need to be demonstrably inert and non leachable. It is illegal to have an impact from a waste management exemption, this is sending the wrong message to the regulator.
3	Table 3.2	<b>Material Transport:</b> this attribute does not consider the positive material transport impact associated with the use of secondary aggregates rather than primary aggregates, this saving will result in a far greater transport saving than that required to remove recycled products off site. In addition, a far greater proportion of routine demolition
3	Table 3.2	<b>Resource Use:</b> the use of re used material as replacement for primary materials will significantly reduce the resource use, I totally disagree with this attribute assessment
3	Table 3.2	<b>Finality of option:</b> I disagree with this assessment. Planned demolition will produce a product which is much more likely to be considered suitable for use in landscaping, thus achieving legal site restoration. Planned demolition is capable of producing a green/brown field end use which will be in line with planners requirements. Unplanned demolition is highly likely to result in a material which is only suitable for off site landfill. The removal of recyclables from the waste stream is relatively minor to the cost impact of not being able to re use the material for restoration purposes
3	Table 3.2	<b>Costs:</b> the majority of wastes derived from routine demolition would need to go to landfill, therefore the costs would be considerably higher.

3	General	I disagree totally with your attribute scoring and think that it paints a misleading picture of the benefits of planned demolition. I think the main problem is that the assessment does not take place within an integrated waste management infrastructure, which would separate, process, store and re use suitable materials in an appropriate manner. In its current format it is seen in complete isolation to the other infrastructure requirements. In addition the assumption regarding the use of material is flawed, therefore scores made on this basis will be incorrect,
3	General	I would question the legality of the use of SOLA exempt material in the new ILW facility unless the materials attain a suitable engineering quality or can be deposited within a valid waste disposal permit or exemption. It is either deposited as a waste or not, there is no other option
3	Section 3.5	There are two vital factors which need to be sorted in order for any strategy. > 1. the regulatory regime for re use and re deposit of materials needs to be clarified and if necessary changed to take account of the unique needs of the Nuclear Industry (this is unlikely because of the requirements of the European Waste Framework Directive); 2. In order to restore a site it is essential that a clear and achievable end point be established as soon as possible. As stated above, the Dounreay case study is not in anyway final, as the sites end point has not been agreed.
3	3.1, para.3, line 4, page 27	the 'listed building' at Dounreay is an example of an industrial heritage building that could be part of a future 'attraction' for reuse of the site
3	3.1, para.6, second sentence, page 27	May 2005, the Scottish Ministers announced that they opposed SEPA's authorisation to transport LLW to the Drigg facility
3	3.2, para.2, page 28	will the uncertainty be overcome? – any idea when?
3	3.2, table 3.1, title, point 2, page 28	who is B.Barton? I assume 'pers.comm.' = personal comment?
3	3.2, table 3.1, title, point 3, page 28	who undertook the 'Demolition quantity exercise'?
3	3.3.2, <i>Identification and screening...</i> , para.2, page 29	what do local stakeholders want?
3	3.3.2, <i>Identification and screening...</i> , para.4, page 29	or if Government go for new nuclear build
3	3.3.2, <i>Identification and screening...</i> , para.5, last sentence, page 29	only if the public get over their fear of all things nuclear
3	3.3.2, table 3.2, page 30	under 'commentary', 'ref 1', suggest you replace 'which' at beginning of line 2, with 'that'
3	3.3.2, table 3.2, page 30	under 'commentary', 'ref 1', change 'recycled' in line 4, to 'recycling'
3	3.3.2, table 3.2, page 31	under 'commentary', 'ref 12', at the end of the first sentence, could you add in factors such as lack of confidence in the 'cleanliness' of the waste, the cost of transport, etc.?
3	3.3.2, table 3.2, page 31	under 'commentary', 'ref 13', change 'that' to 'than'
3	3.3.2, <i>Assessing options for Dounreay...</i> , para.5, line 4,	add 'that' between 'Given' and 'the UKAEA'

	page 32	
3	3.3.2, <i>Assessing options for Dounreay...</i> , table 3.4, page 32	move the title for this table onto the next page, to be next to the table
3	3.4, title, page 33	move the title for this section onto the next page, to be with its text
3	3.4, para.5, line 3, page 34	change 'that' to 'than'
3	3.4, para.6, line 2, page 34	add 'at' between 'decommissioning' and 'a later date'
3	3.4, para.6, line 3, page 34	could 'Inter-site reuse' be an NDA process?
3	3.5, para.1, line 1, page 34	change 'enhanced' to 'enhance'
3	3.5, para.3, line 1, page 34	change 'radiological' to 'radiologically'
3	3.6, para.1, line 2, page 35	change 'refurbishing' to 'refurbish'
3	3.6, last para, last sentence, page 35	yes, I agree!
<b>Appendices - Abbreviations</b>		
Abbreviations	Page ii	Having looked through the appendices, I suggest you add: ALARA = as low as reasonably achievable; BAT = best available technology; BPEESO = best possible ethical, environmental and social option; CATNIP = cheapest available technology not involving prosecution; CoRWM = committee on radioactive waste management; DCF = discounted.....?; DETR = Department for the Environment, Transport and the Regions; DTI = Department for Trade and Industry; ECRR = ?; EIA = environmental impact assessment; GBq = giga becquerels; GDP = gross domestic product; HMSO = Her Majesty's Stationery Office; IAG = ?; ICIA = ?; ICRP = international commission on radiological protection; ICRU = ?; ISO = ?; NRPB = national radiological protection board; OSPAR = Oslo-Paris convention; RWI = radioactive waste inventory; SAFEGROUNDS = safety and environmental guidance for the remediation of UK nuclear and defence sites; SNIFFER = Scotland and Northern Ireland forum for environmental research; WHO = world health organisation; WML = waste management licensing (regulations); WRAP = waste and resources action programme
Abbreviations	Page ii	Again, you say that CIRIA = Construction Industry Research and Information Agency, but the CIRIA website says the A = Association
Abbreviations	Page ii	Also, 'NDA' should be before 'NIA' and 'RWMAC' should be after 'RSA' in the list
<b>Appendix A</b>		
A	Paragraph 3	whilst British Energy (BE) is most often thought of as a licensee 'outwith' the remit of NDA, the terms of BE's restructuring in fact gave NDA a range of powers over BE in the field of liabilities management. This includes a requirement on BE to produce equivalent documents to LCBLs and NTWPs for their sites.
A	Paragraph 4	would be strengthened by inclusion of a reference to the nuclear regulatory forum (NRF)
A	9 <sup>th</sup> line, Page1.	Change 'convention' to 'conventional'.
A	Para.2, line 1, page 1 (appendices)	suggest you add 'current' before 'Government', in the light of the CoRWM and DEFRA policy reviews
<b>Appendix B</b>		

B	B2.1	Licence Condition 36 would also be relevant
B	B2.3, last paragraph	IRR99 requires that the HSE be notified of work, not the NII
B	General	In the UK, who categorises radwaste types in this manner (and in particular, VLLW and VLRM), and under what authority?
B	B2.4	B2.4 is good as far as it goes but it does omit the statutory interest of the planning authorities and the nature conservation authorities. Where is Planning law and the understanding of what is and what is not a permitted development? What of the Groundwater Regulations? What if part of the site is a SSSI and certain Potentially Damaging Operations apply? One might also make references to both Habitats and Water Framework Directive.
B	B2.4	Perhaps more crucially there appears to be no attempt elsewhere in the text to pick up on the implications of the requirements implicit in B2.4 and balance these against the (apparently more familiar) radwaste management need and understandings of good practice arising from that domain. Whilst much is said that is laudable on BPEO development and consultations with the regulators they will only be as good as the knowledge base of the participants involved - and if conventional waste management is a blind spot within the process then the results will be equally flawed.
B	B2.4	In my previous comment I strongly advised the use of a formal scoping procedure, similar to that now required on all major infrastructure projects in the US and becoming more common in certain sectors here. Formal scoping, prior to the perhaps more tightly focussed BPEO, would greatly reduce project risk and cost and do so by establishing a wide technical and regulatory perspective from the start. Again, one would ensure a balance of radiological and non-radiological interests.
B	B1, para.2, line 5, page 3 (appendices)	suggest you add 'of' after 'disposed'
B	B1, para.2, last sentence, page 3 (appendices)	RWMAC are now in abeyance (at least until CoRWM report), so who will follow this up?
B	B1, para.3, line 3, page 3 (appendices)	change 'has' to 'have'
B	B2, para.1, line 2, page 3 (appendices)	change the comma after 'requirements' to a full stop
B	B2, para.1, line 4, page 3 (appendices)	add '1993' after RS Act
B	B2, para.1, line 4 and 5, page 3 (appendices)	add commas before and after the phrase 'for non-radioactive decommissioning wastes'
B	B2, para.1, line 5, page 3 (appendices)	add '1990' after EP Act
B	B2.1, para.1, line 6, page 4 (appendices)	add 'and' between 'handling' and 'treatment'
B	B2.1, para.5, Licence Condition 6, line 1, page 4 (appendices)	should 'authorities' be 'authorisations'?
B	B2.1, para.6, Licence Condition 14, line 4, page 4 (appendices)	no need for final comma
B	B2.1, para.7, Licence	no need for comma after 'inspection', but do need comma after 'plant'

	Condition 25, line 2, page 4 (appendices)	
B	B2.1, para.9, <i>Licence</i> Condition 33 line 1, page 4 (appendices)	change 'conditions' to 'condition'
B	B2.1, para.9, <i>Licence</i> Condition 33 line 4, page 4 (appendices)	add 'be' between 'to' and 'in'
B	B2.2, para.3, line 3, page 5 (appendices)	if this is a straight lift from a document, then the original was wrong! Change 'course if' to 'course of'
B	B2.2, para.6, point 1, line 3, page 6 (appendices)	add 'of' after 'dispose'?
B	B2.2, para.6, point 1, line 4, page 6 (appendices)	in order to make sense of the sentence, suggest you add a comma after 'water'
B	B2.2, para.7, line 4, page 6 (appendices)	in order to make sense of the sentence, suggest you add a comma after 'radionuclides'
B	B2.3, para.3, line 5 and 6, page 7 (appendices)	add comma after 'RSA'93' and delete the following 'and'
B	B2.4, para.2, line 3, page 7 (appendices)	no need for comma after 'environment'
B	B2.4, para.2, first bullet, line 1, page 7 (appendices)	no need for hyphen in 'sets out'
<b>Appendix C</b>		
C	4 <sup>th</sup> paragraph, Page 10.	Volume of radiologically clean waste is quoted as 1,50,000 m <sup>3</sup> instead of 1,500,000 m <sup>3</sup> .
C	Para.8, page 11 (appendices)	isn't this information that would be of use to the NDA when compiling NTWPs and LCBLs?
<b>Appendix D</b>		
D	D.1, title, page 12 (appendices)	title number not consistent with B1, D2, etc.
D	D.1, para.2, line 5, page 12 (appendices)	change 'particular' to 'particularly'
D	D.1, para.7, line 2, page 12 (appendices)	change first 'and' to 'or'
D	D.1, table D2, page 13 (appendices)	see comments for table 2.1 in chapter 2
D	D.1, table D3, page 13 (appendices)	see comments for table 2.2 in chapter 2
D	D2, para.3, <i>Added value</i> <i>processing</i> , line	change 'catchments' to 'catchment'

	5, page 14 (appendices)	
D	D2, para.7, <i>Costs and availability...</i> , line 1, page 14 (appendices)	change 'markets' to 'market'
D	D2, para.8, <i>Legal constraints...</i> , line 1, page 14 (appendices)	change 'control' to 'controlled'
D	D2, para.8, <i>Legal constraints...</i> , line 3, page 14 (appendices)	change 'its' to 'it'
<b>Appendix E</b>		
E	Para.1, numbered points, page 16 (appendices)	why are the points numbered 5 – 8 and not 1 – 4?
E	E1, para.3, line 2, page 16 (appendices)	change 'follow' to 'followed'
E	E1, table E.2, page 17 and 18 (appendices)	do the 'indicators' have a value assigned or a target?
E	E1, table E.2, page 18 (appendices)	under 'objective', ref 'K8', no need for final comma
E	E1, table E.2, page 18 (appendices)	under 'indicator', ref 'P1/P2', there should be a horizontal line between P1 and P2 text
E	E1, table E.2, page 18 (appendices)	under 'objective', ref 'R1', the use of 'most concern' seems rather subjective – who to? how measured?
E	E1, table E.3, page 18 and 19 (appendices)	there is no table E.3 between E.2 and E.4, it appears after E.5; should there be some renumbering?
E	E1, table E.4, page 19 (appendices)	see comments for table 2.4 in chapter 2
E	E1, table E.5, page 20 (appendices)	move part-table to next page for ease of reading
E	E1, table E.3, page 22 (appendices)	under 'comment', ref 'H&S/1.3', what is the 'nbg' for?
E	E1, table E.3, page 22 (appendices)	under 'comment', ref 'H&S/3.4', there are a lot of unexplained acronyms here
E	E1, table E.3, page 27 (appendices)	under 'comment', ref 'ENV/3.9', what does the acronym 'IAG' stand for?

### Structure specific comments

Participants were asked to consider the following questions:

- Does the document require user guidance on how to navigate through the document?
- Does the contents list provide an appropriate level of detail?

Reference	Comment
General	You have introduced a few schematics but no route map as such - you might derive one similar to that used in summarising the SAFEGROUNDS guidance, but only once you have corrected the apparent gap on considering conventional waste management requirements that I reiterate elsewhere in this comment.
B2.4	You should make strong cross-reference to B2.4 on any route map. From the comment offered above you will already understand that I believe this particular section to be too deeply buried within the document - and indeed you offer no obvious advice on its implementation.
General	Does the document require user guidance on how to navigate through the document? - <b>No</b>
General	Does the contents list provide an appropriate level of detail? - <b>Yes</b>
General	When quoting capacity, none of the m <sup>3</sup> throughout the report (text + tables) have the 3 as a superscript
General	When stating substances, in the text or in the tables, none have the number as a subscript, e.g. CO <sub>2</sub>
General	The use of end-point/end-state is variable – perhaps you should refer back to the explanation in the SAFEGROUNDS paper?
General	Pages 32 to 37 of the main paper are not numbered
General	I know it may be tedious to search for every occurrence, but the community of Drigg would like the LLW repository to be known as 'the repository at Drigg', 'the Drigg facility', 'the site at Drigg', etc., rather than just 'Drigg'

## General comments

- Do you think this guidance duplicates other existing or emerging work?
- Has the form of stakeholder engagement and consultation adopted been appropriate for the task of developing this guidance? What other processes would you like to see used in future consultations?
- If implemented, do you think the guidance is going to be helpful in the decommissioning process?

Comment
Can we identify and lay out at the start the agreed 'Key Principles', implied in the guidance document, as per SAFEGROUNDS? e.g waste hierarchy, stakeholder engagement etc ?
Are there any advocacy issues arising which we should take to government?
Finally - key message of SD-SPUR guidance should be "seek innovative solutions and stakeholder engagement" (in tune with NDA mantra)
Are there areas that have not been given sufficient coverage? <b>The opposite, there are too many areas and too much detail</b>
Do you think this guidance duplicates other existing or emerging work? <b>Yes. There is a big overlap with environmental statements (not just BPEO) and also overlap with OGC (Gateway Review) Procurement Guide (11) on Sustainability</b>
With regard to sustainability, nuclear sites will be regulated primarily through the planning process, and local authorities will use Environmental Agencies, NII, etc. as statutory consultees. The emphasis should be on meeting the needs of the customer, i.e. the local authorities, but this document does not do that and is of more interest to the academic. Councillors at a planning meeting will not read documents of this length. The Govt. and all public bodies seek succinct documents and wish to cut bureaucracy. 85 pages is too long.
I believe this document is a very useful exposition of the issues surrounding reuse and recycling of waste materials from the nuclear industry.
In order to be sustainable a decommissioned nuclear site needs to be robustly and passively safe with risks that are as low as reasonably practicable and, wherever possible, broadly acceptable. Achievement of a sustainable position firstly requires achievement of an inherently safe position. The paper would benefit from a clear and overt statement to stress this fact.
Section 2, paragraph 1, page 5; as the guidance has no legal basis and is not prescriptive it stands very little chance of being sincerely acted upon. As NDA will continue to strive for Best Value through competitive tendering for Tier 1 contracts, any sustainable development initiatives that involve a fiscal penalty and are not required by law are likely to be subservient to the pressure to minimise short-term costs. This is demonstrable by the fact that many of the current proposals within BNFL's Innovations project are contrary to the principles within the paper.
If the NDA's stated aim of securing 50% of all Tier 1 contracts through competitive tender by 2008 is to be achieved the resulting contracterisation will introduce a number of drivers that are contrary to the principles of sustainability. These strategic drivers will need to be proactively countered if sustainability is to be adopted on-the-ground in a sincere manner. Most obviously, a way needs to be found to combat the commercial pressures that will predicate against any expensive segregation and processing of materials for reuse. Fragmentation of the power station fleet amongst different commercial licence holders may also prevent development of an inclusive cross-fleet approach to recycling, with implications for the economic viability of funding process equipment and supporting research and development work if sites are forced to act as autonomous units.
The document should include a reference to EIADR99 (which applies to decommissioning of reactors only). Whilst this should not cloud the RSA issues & the BPEO / BPM discussions, there are important implications in terms of EIA requirements and stakeholder engagement issues (& apply to radioactive & non-radioactive wastes). The authors might wish to check that Table 2.3 includes the necessary considerations from schedule 1 of EIADR99.
I am supportive of the approach put forward for managing site decommissioning wastes at the very low end of radioactive waste / radiological clean / RSA 93 exempt. The use of sustainability indicators for these wastes seems reasonable in establishing optimum waste management options as part of an overall integrated radioactive waste management strategy. I agree that waste management options for decommissioning wastes should be considered at the design stage for new facilities. I also agree that decommissioning wastes should be well characterised and segregated prior to deconstruction of facilities. I think further issues may surface when site operators start to apply the guidance.
Having read through doc H, I believe it to be a well written document addressing all the right issues in some detail, I have only one comment which stems from a past experience when I was the Decommissioning manager. Ref 2.5 I note the comment about mistrust in the inability to get re-users for crushed waste. When I dismantled there was plenty off site takers, it was managements reluctance to let it go.

<p>The proposals set out in this section reflect the current state of thinking on the mechanisms used for the restoration of the site. These proposals have not been subject to rigorous assessment and as a consequence are likely to undergo significant change as a result of internal and stakeholder consultation. In many aspects the case study is already out of date and does not reflect the legislative framework that the majority of decommissioning sites is working within. It is therefore important that the report clearly points out that this is an example only prior to the development of appropriate strategies and the designation of an agreed site end point.</p>
<p>The main concern about the presented case study is that it is based on an old interpretation of the waste management licensing law. Since the DSRP was published (in 1999) the law relating to the use of wastes for restoration has changed to restrict the use of material defined as waste under the European law for landscaping purposes. This effectively means the principal means of disposal of inert construction and demolition waste can not be relied upon or reported as the chosen restoration strategy.</p>
<p>It is therefore of vital importance that the whole of the document and the Dounreay case study in particular are presented on the assumption that any material used for landscaping or infill is either subject to an appropriate waste management licence exemption or is no longer considered a waste material by the EA and SEPA.</p>
<p>It also needs to be clearly stated that the majority of licensed landfills will not accept any clean wastes derived from a nuclear site, this combined with the much reduced landfill capacity across the whole site for all waste types. The assumption that large quantities of inert and un-recyclable materials can easily be disposed of to private external landfill can not be relied upon.</p>
<p>It must be remembered that many of the nuclear decommissioning sites are located in geographically isolated locations without the benefit of local landfill capacity, for example Dounreay is entirely dependant on a single local landfill for all of its inert and non hazardous waste disposal needs. This makes the potential strategic impact of reduced future landfill capacity very significant in terms of cost and environmental impact. This will influence strategic decision to a far greater extent than the majority of attributes considered in this guidance.</p>
<p>In conclusion, I feel the guidance is too theoretical and does not reflect the rapid decision making required in order to decommission and dispose of clean and exempt waste in a timely and cost effective manner. The BPEO framework does not necessarily add anything to the decision making process because cost is the main decision making factor. Until the guidance is changed to reflect the current status of non-radioactive waste law, much of the guidance will be of little use in decision making and development of IWS's.</p>
<p>I have only one comment on a very good document that covers the subject very clearly and details a transparent process. One area is the lack of clarity and integration with respect to the varying definitions of waste and the conflicting requirements this generates. In brief there are two definitions of waste. There is the definition of waste as per the Waste Framework Directive as any substance or object that the holder discards, intends to discard or is required to discard does not facilitate recycling or reuse. Secondly there is the definition applied to the trans-frontier shipment of radioactive wastes where if there is a use foreseen there for the material it is not waste. In between there is the application under the trans-frontier shipment of waste (i.e. non-radioactive) where if the material is being reused then it is not waste but if processing is required to recycle the material it is waste, and also the RSA definitions which are not crisp. The various definitions which may be justified as giving flexibility do not actually lead to confidence by stakeholders or transparency. In addition, the more extreme definitions discourage recycling and in themselves have no added environmental or safety value.</p>
<p>Is the written style appropriate? <b>Yes</b></p>
<p>I agree with the strategy of moving the technical background to the appendices and believes it makes the main document flow and therefore facilitate assimilation and understanding</p>
<p>This document does not offer a route map or guidance that we currently feel we could use. Indeed apart from a few suggestive graphics a route map is not immediately obvious. If one is to be inferred from the text its main strain would appear to be evolve a strategy, presumably through active consultation with the (various?) competent authorities, and use BPEO as the primary tool. The BPEO methodology is of course well known to us but it is one that also has well known risks. The most obvious is that decisions arising from such a process will only be as good as the technical knowledge and perception of sensitivities brought to it, and omissions in key areas will lead to blind spots and flawed output.</p>
<p>The procedural countermeasure to an over-dependence on BPEO is to establish a formal scoping process and associated consultations at an early stage, and associated risk logs and review cycles. Such a formal scoping exercise at the heart of the project would touch base with a wide range of topic area expertise - indeed US infrastructure projects insist on a role for a 'general environmentalist' or some such. Key elements are a subsequent review cycle and the maintenance of an environmental risk log. // If you were to do this you might then borrow the approach developed under SAFEGROUNDS that led to a flowcharting of the guidance in that area.</p>

<p>If there is a flaw in the coverage of technical topic areas or sensitivities in the current document it is most clearly the gap where very little or nothing is said on the necessary interaction with non-radwaste regulation and planning controls. In most if not all instances in the main text the assumption is of radwaste management alone being pertinent and no obvious caveats are given. Casual usage in the current text, such as 'exempt', thus means only in relation to that particular and narrow radwaste regulatory domain. As a result the reader might believe that this is all that is relevant - whilst an equally fair need is to understand precisely what might be exempt, or not exempt, under (conventional) Waste Management Licence regulations. You do include a single brief section on this area of law in B2.4 but it is not just slim, it is deeply buried and not referred to from elsewhere. Planning law and the matter of what is permitted development and what is not, is not apparently raised at all, nor are statutory nature conservation interests. As an example of current experience, not one of our sites does not have a SSSI nearby, if not actually extending within the site fence, and each one will cite waste management activities and groundwater pollution as Potentially Damaging Operations. If a Habitats site were involved, the need would be even greater and development options seriously constrained.</p>
<p>So the impression given is that only the radwaste regime really counts. Arguing such a point might be an interesting area of philosophical debate, and some might even agree with that particular conclusion, but this is not what this document is for. We look for balanced guidance under a series of overlapping nuclear safety, environmental protection and planning regimes that currently exist under UK law. In providing comment during the phase 2 consultation we were able to point to some text that was reasonably balanced but unfortunately these particular sections would now seem to have gone. It seems a little unfortunate that whilst apparently disregarding much of our previous comment, you also seem to have removed those few preliminary sections addressing and balancing the non-rad interest that we reckoned sound.</p>
<p>This is a vast improvement on the previous report, in structure and in pointing out areas of concern, eg. the necessity for actively addressing stakeholder concerns in the disposition of non-radioactive wastes. Perhaps this could be emphasized more, as this will be a big issue. As a local group, is pleased with the breadth of enquiry. However we would have liked the use of the word "proximity" to have been used as a sustainability indicator.</p>
<p>With decommissioning methods and radwaste disposal still at the conceptual stage, awaiting decisions from the NDA and CoRWM, is there an intent to review this report in the light of what they might come up with? Will there be any form of monitoring?</p>
<p>Does the report cover the subject comprehensively? - <b>I think so</b></p>
<p>Are the users (target audience) of the report adequately identified in the preliminaries? - <b>Yes</b></p>
<p>Do you feel the report is beneficial to the users identified in the preliminaries? - <b>Yes</b></p>
<p>Are there areas, e.g. safety, on which you would wish to seek reassurance that specialist guidance has been sought – from regulators and other stakeholders? - <b>Not for myself, but I can see that this information would be useful – rather than within the text, making it difficult to keep with the flow, perhaps as a reference which is then situated in an appendix</b></p>
<p>Are there areas that have not been given sufficient coverage? - <b>Maybe more could be included on the NDA and CoRWM's work, now that time has passed and both are further forward</b></p>
<p>Does the report need to provide further reference to other existing guidance? - <b>This is always useful, especially as a web-link or reference to a website</b></p>
<p>Is the written style appropriate? - <b>I think so</b></p>
<p>Do you think this guidance duplicates other existing or emerging work? - <b>No</b></p>
<p>Has the form of stakeholder engagement and consultation adopted been appropriate for the task of developing this guidance? What other processes would you like to see used in future consultations? - <b>As far as I can tell – I know there was a workshop and online consultation, was there anything else? Who did you consult with? Did you talk to nuclear facility Local Liaison Groups?</b></p>
<p>If implemented, do you think the guidance is going to be helpful in the decommissioning process? - <b>Yes</b></p>