



**June 2005**

**Response to the Committee on Radioactive Waste Management report  
'How should the UK manage radioactive waste?  
2<sup>nd</sup> consultation document'**

Greenpeace welcomes the opportunity to comment on CoRWM's document on how the UK should manage radioactive waste.

Greenpeace made its views on management options of nuclear waste (including spent fuel and plutonium stockpiles) very clear in its submission to PSE1 (summary attached<sup>1</sup>).

There are, however, issues linked to the CoRWM discussion we wish to raise in this submission. There are issues which believe CoRWM must involve itself with as it proceeds on the current discussion on radioactive waste management. These are the:

- possibility of a new nuclear reactor programme in the UK;
- possible 'burning' of plutonium and/or uranium stockpiles in reactors as a waste management option;
- possibility of plant life extension (PLEX) for existing nuclear reactors; and
- role of NIREX in heavily weighting the waste management option in favour of deep disposal.

CoRWM may argue the first three issues are outside its remit. However, it does have the capacity to significantly influence the debate on new build, plutonium burning (and perhaps PLEX) through its recommendations to Government. It cannot stand back from these issues.

That new build might not happen for some time should not influence whether CoRWM discusses this issue either. For example, the Royal Commission on Nuclear Power and the Environment comments on radioactive waste and new reactors (published in 1976) are still frequently referred to. In the same way, CoRWM's recommendations will have a lasting impact.

We note that CoRWM's strap-line' is '*learning from the past, listening for the future*'. If CoRWM is listening for the future then it should clearly hear the message that the nuclear industry should be allowed to go on creating waste unchallenged. CoRWM should recommend activities that will exacerbate the very problem CoRWM was set up to deal with – which means including future waste-creating activities in its deliberations now.

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<sup>1</sup> Greenpeace response to the Committee on Radioactive Waste Management report  
'The Options for Long-Term Management of Higher Active Solid Radioactive Wastes in the United Kingdom.'  
January 2005

## Activities which lead to more waste – for consideration

- CoRWM's PSE2 document does not discuss the issue of new nuclear power reactor programme in the UK and the impact this would have on the radioactive waste inventory. The lay reader would gain the impression from the document that there is, by and large, a known limit to the amount of radioactive waste the UK will have to deal with- and also possibly that a deadline for dealing with the waste. That is not the case.
- The actual amounts of *radioactivity* in the spent fuel from new build goes ahead is not provided. CoRWM's existing inventory does note that '*the quantity of spent fuel requiring management could increase significantly by approximately double, if say 10 new nuclear power stations were to be build and assuming this fuel were not reprocessed.*
- This would amount to approximately 14,000m<sup>3</sup> of spent fuel or high level waste (depending on whether the spent fuel is reprocessed or not. Given that some 95% of the radioactivity of the UK's waste inventory is contained in spent fuel or HLW then it can be seen that doubling the amount would add significantly to the amount of radioactivity in the waste if new build went ahead.
- The document also fails to provide an overview of the implications, for the waste inventory, of what it might mean if the UK's plutonium stockpile is burnt in reactors – either as a waste management strategy and/or for power generation.
- The possibility of applications for PLEX for existing reactors - leading to the continued creation of spent fuel - is not discussed. In addition, although no final decision has been made on what will happen to the spent fuel from Sizewell B (it is currently stored) this should have been included on the radioactive waste map of the UK as a spent fuel store at Sizewell. This is because there is every likelihood it will not be reprocessed - in fact a question mark also hangs over other spent fuel from other British Energy reactors in terms of reprocessing due to the major technical problems at the THORP plant at Sellafield. Information on what might happen if this spent fuel is not reprocessed – and how it might affect the map of HLW holdings in the UK, should be provided for consideration in the future.<sup>2</sup>

All of the above will have implications not only for the waste inventory and siting issues in terms of waste storage/disposal. At present CoRWM is asking the public to give its opinion on nuclear waste management in isolation from future waste scenarios. Any person responding on the options proposed in PSE 2 and based on the information provided in it would do so out of context.

**Will the contradictory policies of CoRWM's industry stakeholders derail the process?** One of the main problems with the CoRWM process is that some of the stakeholders are not only creating more radioactive waste as the process is taking place, but have avowed aims of creating more of it for decades to come with new facilities.

CoRWM has asked the public to engage in the issue of how to manage nuclear waste because of the major societal, security, ethical, financial and environmental problems that surround it. It has urged all stakeholders to engage in finding a 'solution' (which might only be achieved through significant

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<sup>2</sup> Under international classification spent fuel not destined for reprocessing (material for which no further use is foreseen) is classed as High Level Waste.

compromise on the part of some stakeholders) and yet it is not challenging activities that are creating waste, or might exacerbate the problem further in the future. This is plainly wrong.

The inventory should include a comprehensive overview of the amount of spent fuel – by volume *and* radioactive content – of a programme of ten new reactors. This way people would be able to understand that although new build might not add significantly to the overall waste inventory by volume, it would add significantly in terms of radioactivity.

The possibility of new build presents very real problems for beginning to start to achieve a ‘resolution to the issue of nuclear waste because:

- a) the public is being asked to agree to a management option (solution?) without there being any clear end-point in terms of how much waste there will be to deal with;
- b) no sensible discussion can take place on an without there being some sort of known limit to what society is expected to have to deal with;
- c) costs cannot be determined if there is no ‘end point’ in terms of waste; and
- d) a timetable for moving forward with options proposed by CoRWM (e.g. storage) and closure cannot be addressed if the UK continues to create waste.

For example, at present one of the options suggested in the CoRWM document is for 300 years above ground dry storage followed by disposal. While we might have a good idea now of how much waste we have to deal with now, new build means we don’t actually know what we will have. It means the public doesn’t have an idea of where the end point to all of this might be.

If a program of new build goes ahead it would significantly delay the ‘beginning of the end’ of what we do with nuclear wastes.

### **More information needed in the inventory:**

In its response to the CoRWM’s Phase 1 document Greenpeace raised the issue of lack of detailed information in certain parts of the inventory<sup>3</sup>:

The inventory should reflect the amount of *radioactivity* which will result from various options, as well as the volume of waste. For example, it is crucial people understand how much more radioactivity would be created through burning plutonium and uranium in reactors than if this material is treated directly as a waste. We understand that CoRWM is due to upgrade its current inventory to take this into account. It is unfortunate this was not available during this stage of the process.

The main radioisotopes – and the half-lives – contained in the different types of wastes should be provided. Such information is essential if the public is to have an overview of the volume, levels of radioactivity and ‘longevity’ of the different waste streams.

### **Criteria for options.**

Not recommending against new build conflicts with CoRWM’s criteria of not leaving a legacy for future generations to deal with. Criteria 4, which CoRWM is using to guide its work on options is that an option should not be short-listed if

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<sup>3</sup> see CoRWM website, Preliminary Report on the Inventory, CoRWM document No 542

‘it places an unacceptable burden (in terms of costs, effort of environmental damage) on future generations’.

This is laudable, but must also be extended to any activities which would contribute more waste for future generations to deal with. For example, if (as some feel) storage of the wastes we have now is considered to be unacceptable due to intergenerational concerns – then surely allowing the creation of more waste for following generations to manage is also unacceptable.

Similarly, Criteria 5 is that (an option should not be short listed if) ‘it involves a risk to future generations greater than that to the present generations that has enjoyed (sic) the benefits’.

This would most certainly apply to the use of relatively low-level radioactive materials such as plutonium and uranium as fuel in reactors where it would be transformed into high level waste e.g. MOX spent fuel.

Greenpeace believes CoRWM should consider all of its criteria against the possibility of burning plutonium and uranium stockpiles in reactors. Also it should consider its criteria against new build – we believe it would find a number of them are breached by a new build programme - in terms of radioactive waste management concerns.

The acceptability of options (at existing licensed sites) may be limited by a) the building of new reactors b) public acceptance of waste disposal (whether that means storage or deep disposal) if there is no limit – set now - on how much waste has to be got dealt with.

If existing sites are earmarked for new reactors people living near sites may be asked to have:

- a closed/partly decommissioned reactor;
- a decommissioning wastes store;
- an operating reactor (possibly an ageing reactor with plant life extension licence);
- a new (untried, untested) reactor; and
- a spent fuel store.

Indeed, it could well be argued that new build will force society to take a different route, in the relatively near future, from whatever CoRWM recommends, because it will create problems on sites which lead to an increase of on-site hazards - perhaps to the extent the waste has to be removed.

There is no indication CoRWM has or is considering these issues in its discussions on the range of ‘options’ for the future (in addition to its published range of ‘options’ for waste management/disposal).

### **Disposal: not guaranteed**

As Greenpeace noted in its submission on the first round of public consultation, ultimate disposal is not a foregone conclusion. Because of this ‘interim’ storage could become indefinite by default. If CoRWM proposes a multi-staged process of storage followed by disposal and this does not eventuate then the wastes will have to be stored. With this in mind society should be geared up for storage and repackaging if necessary

If CoRWM foreshortens storage research by giving the assuming there will be disposal it could be creating problems for the future. In fact we could once again see hundreds of millions poured into

‘proving’ a disposal concept with no guarantee at the end of it (as per the history of NIREX’s research and activities).

### **NIREX’s influence in the options discussion**

We acknowledge that CoRWM has made efforts to keep itself distant from NIREX. However, this ignores the real influence that NIREX is having on this debate. It is an inescapable fact that the push for on disposal is receiving unfair support due to the past and present research effort by NIREX and the nuclear industry.

It fact a number of industry people has stated that disposal is considered a pre-requisite in gaining political and public acceptance for new reactors. It is clear also that the perception there *will* be disposal – no matter how far off into the future - will also be used as a green light for some to press even harder for new build. CoRWM has to be alert to not making recommendations based on what might, possibly happen - that play into the push for new build.

CoRWM documents do a disservice in giving the impression that NIREX is not still actively involved in heavily researching deep disposal. NIREX has not its abandoned research on deep disposal in 1997 as CoRWM’s PSE2 document implies, but is continuing this work. NIREX *was* forced to abandon pushing for disposal at a specific site, Sellafield (only recently claimed it thinks this is still an excellent candidate site for disposal), but it did not stop researching the option of disposal itself.

In fact NIREX has devoted little or no resources to long term, above ground storage. As NIREX’s annual accounts note: *"The majority of the Company's expenditure is attributable to research and development activities with a view to developing commercial facilities for the disposal of radioactive waste"*

NIREX’s continued obsession with disposal (based on justifying all its past activities) leads the nuclear industry (and CoRWM?) to point to deep repositories as the most suitable option. This is based primarily on the amount of research done on it!

In fact CoRWM is in danger of repeating the very same mistake NIREX made: which is that there *is* a disposal route which *will* appear. Yet this comes with many, many caveats regarding timing, sites, costs, environmental, social and scientific issues. The unlimited storage option (in terms of time) proposed by Greenpeace does not carry as many qualifications.

Siting issues: Greenpeace supported the proposal by the Nuclear Free Local Authorities that CoRWM extend its timeline for consultation on PSE 2 to allow for more discussion of the options with those communities on the NIREX list of 537 sites originally noted as potential nuclear waste dump sites.

NIREX has made it known that it will now not discount any of the sites it originally ‘struck out’ when deciding on its short-list of 12 sites. NIREX has publicly stated that its change in understanding of geology means that a number of sites which previously did not make it onto the short-list could now be reconsidered.

Given NIREX’s views on this, CoRWM should ask it to indicate what sites it would favour under its current criteria due to its latest understanding of the geology of relevant areas. This exercise would be viewed as being different from the process CoRWM is undertaking. It would however be

important for the public to see where the two organisations views align (or not) in terms of the applicability of options e.g. if both organisations believe heavily populated areas to be unacceptable for a nuclear waste repository.

**Recommendations:**

- CoRWM should recommend against new build (including the ‘burning’ of plutonium stockpiles in reactors as a waste management option) as these will only increase the holdings of highly radioactive materials/wastes in the UK
- Failure to recommend against new build – which would exacerbate a problem for which we do not have a ‘solution’ or agreed management option, will undermine public confidence in CoRWM’s process and recommendations.
- A new build programme or plutonium burning directly contradicts or undermines many of the criteria which CORWM is applying in the current debate on nuclear waste.
- Whatever option is chosen would be massively complicated by new build or plutonium burning.

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## SUMMARY

Greenpeace welcomes the opportunity to respond to the above report (Options report). Greenpeace also notes the 'Preliminary Report on in the Inventory' (the Inventory) which CoRWM has also published and provides some brief comments on this. In brief Greenpeace's views are:

- The options listed as suitable for the proposed preliminary short list (published since the Options document was released) are: interim storage; deep disposal and phased deep disposal. This listing does nothing to assuage concerns that the Committee is leaning heavily towards disposal *before* other options, such as indefinite storage, as given full consideration.
- Greenpeace notes that interim storage is inevitable as some of the wastes currently held are in no condition to be assigned to disposal – and also a nuclear dump site is not expected to be operational for at least 30-40 years. Given this might become a main option recommended by the Committee; it should define what is meant by 'interim' storage.
- The issue of interim storage notwithstanding, deep disposal appears to be favoured as the main option - primarily because of the amount of research already done in this area. The large amount of research on disposal is due mainly to the fact that the nuclear industry had a preconceived idea in the 80s that this was *the* solution. The subsequent 1997 inquiry on NIREX's repository proposal revealed that the science did not meet the expectations of the industry. Concerns raised in 1997 over NIREX's proposal remain today. The continued lack of certainty over the deep disposal option means then that indefinite storage might result through default rather than by design. To prevent indefinite storage happening by default - with the risk, for example, that wastes stored are not conditioned to the best standard for indefinite storage - CoRWM should include indefinite storage on the preliminary short list for further investigation to ensure it receives as much research as the disposal option.
- The Committee should also recommend that plutonium, uranium and spent fuel be designated as wastes and should also recommend against any new nuclear build program. Burning plutonium or uranium stocks in reactors, creating more spent fuel through operating new reactors and continued reprocessing of spent fuel will only serve to continue or exacerbate the problem of nuclear waste (in terms of volume and/or radioactive content of the wastes which have to be dealt with) for which it, the Committee, has no 'solution.' All of the above also breach the criteria set by CoRWM but also the environmental principles Greenpeace has submitted to the Committee (see appendix 1).
- It should improve the inventory to fully explain the different types of waste and the implications (for future generations) of wastes created from a new build programme e.g. a proposed programme of 10 reactors would mean doubling the amount of spent fuel the UK would have to deal with.