



Greenpeace UK welcomes the opportunity to respond to the consultation: *Review of the Siting Process for a Geological Disposal Facility September 2013*<sup>i</sup>, which covers aspects of the disposal of the UK's higher activity radioactive wastes (HARW), including spent nuclear fuel.

The proposals concern two linked nuclear projects; a national nuclear waste dump (or geological disposal facility – GDF) and the surface facilities. This is not clearly explained in the consultation document (CD), even though issues which relate to both facilities separately and combined are raised in the proposals.

### **Summary**

Greenpeace's response to the CD is not to be taken as support for nuclear waste disposal, which is considered an unproven option for nuclear waste management. Greenpeace does, however, make the following points on the proposals. These are that:

- the new proposal, to include all the UK's higher activity nuclear wastes – legacy, new reactor and defence wastes – in a single 'baseline inventory' for disposal in a GDF, is rejected; and
- there should not be a generic National Policy Statement on a GDF

The following points are also noted:

- The CD notes that the threat to remove community rights to volunteer for a GDF, as per the original Managing Radioactive Waste Safely White Paper (MRWS WP) remains unchanged. That threat should be removed.
- The 'Right of Withdrawal' - RoW - an essential element in the voluntarism approach, ends many years earlier under the proposals in the CD, quite possibly before there is full characterisation of the geology and thus the associated risks. The timing of the end of the RoW should stay the same as in earlier policy processes.
- There are significant and retrograde changes proposed in the powers and responsibilities of key elected bodies in any future GDF siting process. These changes are not acceptable.
- The proposals for a Steering Group to oversee future processes are weighted in such a way as to effectively give the NDA and the Government control over any future GDF siting processes. This is unacceptable.

The CD claims that the proposals contained in it revise only those elements of the 2008 MRWS WP that relate to siting.<sup>ii</sup> That is not strictly correct. In the MRWS WP the baseline inventory for disposal (i.e. the amount of waste destined for disposal in a GDF) was separate from the siting process. Under the CD the two issues are now combined. It is not clear from the CD precisely how the change on inventory, along with other proposals, impact across the rest of the WP policy. It is questionable whether changes to the broader MRWS policy can legitimately be undertaken in this way.

## **All legacy and new build waste now forced onto a single community**

In the CD it is stated: *This document seeks views on revisions and improvements to the siting process aspects of the White Paper, but not to other aspects of it* (Para 1.2). Yet, as noted in the summary, the CD proposes that the issue of the baseline inventory – the total amount of waste that might be disposed of in a single GDF – should effectively be incorporated into the siting process. This is a not-so-subtle, but significant, change to the 2008 MRWS WP and is done without due process.

The MRWS WP acknowledged that changes in the Baseline Inventory would occur but that: *'Any final agreement with a community on a preferred site for the geological disposal facility will need to address possible changes to the Inventory in future years.'*<sup>iii</sup> Further, the WP, in discussing inventory and the size of a repository, noted: *Nevertheless indicative geological disposal facility dimensions have been estimated for an inventory similar to the Committee on Radioactive Waste Management (CoRWM) Baseline Inventory discussed in Chapter 3 and therefore does not cover waste arising from any new nuclear power stations.*<sup>iv</sup> (emphasis added).

It was a 'legacy waste' inventory that was, in the main, used throughout the West Cumbria MRWS Partnership as the basis for discussion. It was not a given that all new reactor wastes and defence wastes would go into a GDF. In fact the West Cumbria MRWS Partnership developed a list of principles which would not only have given a community some say over the inventory (as per the MRWS WP), but which also asked for the relevant local authority to be given a right of 'veto' over how much waste might be disposed of in a single GDF.

The move to include the baseline inventory with the siting process has been designed to facilitate new nuclear reactors and to reassure councils in areas where new reactors are proposed that nuclear waste management plans exist (examples of concerns expressed by new build authorities and long term interim storage of wastes are referenced here<sup>v</sup>). That this change is being presented in the way it has is a worrying example of what could happen in the future with the Government's decision making on a GDF.<sup>vi</sup>

The consultation claims, however, that putting all legacy and new build wastes together in a single 'baseline' is so that certainty is provided over what wastes might be disposed of in a GDF.

The truth is that this review is an attempt by the Government to make a decision - within the next few months – to allow it to foist all wastes onto a single community. Why should any community in the future have less of a say over the inventory than that which the West Cumbria MRWS Partnership had under the existing MRWS White Paper?

If the Government simply wanted to inform on the issue of inventory, it should stick to the original WP wording and say what *might* be in an inventory, rather than what *should* be in an inventory.

How much waste? The CD suggests that the future 'baseline' inventory would include all relevant wastes from a possible 16 GW new reactor programme.

- The major problem with new reactor wastes will be the high-burn up spent fuel which is highly radioactive, intensely hot and very long lived. It is the radioactivity in such wastes which is at the core of concerns over nuclear waste.
- The levels of radioactivity in new reactor wastes are estimated at approximately four times that contained in the UK's legacy waste 'stockpile'<sup>vii</sup> - a stockpile that is

already one of the largest in the world in terms of the amount of radioactivity it contains.

- The relatively small volumes of new reactor wastes would require a lot of room for disposal in a GDF - primarily because of the spent fuel (due to its radioactivity and heat generation). To accommodate new reactor wastes a GDF would have to be double, or possibly triple, the size of a legacy-waste only repository.<sup>viii</sup> This, in turn, will create further problems in terms of the amount of spoil generated (it is estimated that a legacy-waste only GDF would be a construction project on a par with the Channel Tunnel, with a similar sized amount of spoil to be dealt with).<sup>ix</sup> There are questions about whether a big enough area of geologically suitable rock can be found to take the amount of waste now proposed for disposal in a single facility. It might be that two GDFs are needed (with shared surface facilities) or that two quite separate GDFs will be needed.
- Official timelines indicate 2120-2130 as the date by when all legacy wastes might be disposed of. By that same date however, over 20,000 tonnes of highly radioactive spent fuel - four times more radioactive than the legacy wastes – could have accumulated in above ground above stores; either at reactor sites or possibly in a central store (see below on NPS).<sup>x</sup>
- As a result of the problems with new reactor wastes a GDF closure date, currently assumed as 2130 for legacy wastes only, would have to be extended to 2200 or possibly beyond.<sup>xi</sup> It is understood that excavation of tunnels will take place as and when spent fuel is ready for disposal, which in turn depends on cooling times for spent fuel (currently put at 100 years after discharge from a reactor).<sup>xii</sup>
- The creation of new nuclear wastes which will be kept above ground for many decades into the future conflicts with the urgent need, expressed in some quarters, as to why a GDF should be built as quickly as possible: to relieve future generations of the burden of handling nuclear wastes created by this generation (Para 1.27).
- There is no compensation (benefit to communities) component built into new reactor waste disposal costs. The deals which cover the funding arrangements for new reactor waste disposal, which will be agreed with the overseas companies which will build and operate the new reactors, are currently being negotiated with the Government behind closed doors.<sup>xiii</sup>

The CD also proposes MOX – mixed plutonium-uranium - spent fuel would also go into a single GDF, along with an unspecified amount and type of Ministry of Defence wastes.<sup>xiv</sup>

The proposal under question 6 is rejected. The size of the inventory for disposal should remain subject to discussion and agreement by all relevant communities and local authorities (see discussion on representation for relevant local authorities). New build wastes and defence wastes cannot and must not automatically be included in a 'baseline inventory.'

### **National Policy Statement for GDF.**

The CD proposes that a GDF project should be made a Nationally Significant Infrastructure Project (NSIP) and that a draft National Policy Statement (NPS) would be developed soon after the revised siting process is issued (CD Para 3.44). The NPS would not be site-specific, but 'generic.'

Experience of the 2011 NPS for new nuclear power plants shows that generic NPS's can be used to cement 'in principle' decisions which foreclose debate on matters that local communities and their councils would, rightly, expect to have a say in during planning processes e.g. the new reactor NPS effectively shut down any discussion on radioactive waste management at reactor sites. Spent fuel storage at the proposed Hinkley Point C site by-passed the planning process and has been left to the nuclear regulators to decide on with local authorities having little say on the matter.

A generic NPS on a GDF could significantly reduce elements of 'voluntarism' by foreclosing on options which should be discussed by local communities and authorities. It is not entirely clear, from the CD, how the NPS would impact on relevant local authorities and matters now controlled under their planning processes (e.g. Cumbria County Council, as the waste planning authority, is statutorily charged with forward planning on this issue for the whole county). Without knowing how the planning powers of a local authority would be affected by a generic NPS how can anyone say now that they would agree to this proposal?

There are very good reasons for concern. A generic NPS could include an in-principle decision by the Government for a spent fuel packaging plant for the surface works at a GDF - as proposed in earlier MRWS discussions (and also proposed by EDF for Hinkley Point C's spent fuel).<sup>xv</sup> There are significant risks attached to this kind of plant.<sup>xvi</sup> There could also be 'in principle' sign-off on a central store for spent fuel from new reactors at the surface works of a GDF (an option the nuclear industry has consistently advocated and one not ruled out by the Government). Such a facility could result in spent fuel being stored for 90 years or more at a GDF's surface facilities. These are precisely the types of facility a county council, with responsibility for planning on such matters, would expect to have the right to examine in full; but a generic NPS could pre-empt it. It is likely that these types of facilities are included in the closed door negotiations the Government is engaged in with EDF over Hinkley Point C wastes.

However, because of the significant implications concerning spent fuel storage and transport we do believe that there should be a Strategic Environmental Assessment.

It appears from the CD that consultation on a generic NPS would take place during the proposed twelve month 'awareness and engagement' programme which would take place prior to DECC seeking to implement any revised siting process. Thus 'awareness and engagement' would take place *before* there was full knowledge of the totality of the Government's proposals, particularly for planning purposes under the NPS. This ordering seems designed to confuse.

Concerns over when and how the Right of Withdrawal (see below) might be made more formal, or how a compensation/benefits package might be more firmly established, should be dealt with via other mechanisms than a NPS.

The proposal as put in question 5 is rejected

### **Health Impacts**

Linked to the issues of the NPS are separate decision-making processes which have already foreclosed on legitimate debate around a GDF e.g. on the potential radiological health impacts of a GDF. These decisions, made some years ago, followed a process known as 'Justification.' Under that process the potential disadvantages of a nuclear activity like waste disposal (damage to health as a result of radioactive contamination from a nuclear dump many years in the future) are weighed against the possible benefits.

The Justification of the disposal of new reactor wastes was decided on by the Government in December 2010. Information provided by DECC show that any future processes would not allow for an examination of this issue.<sup>xvii</sup> A generic NPS would probably use the earlier decisions on Justification to curtail future discussion on this issue.

The earlier decisions on health and radioactive waste disposal are plainly unjust and unethical. It is unrealistic to expect a community which might consider a GDF to be aware of such decisions. A community could enter into any future discussions under the misunderstanding that 'health' will cover radiological as well as conventional health impacts. This matter must be reopened for public consultation and full participatory debate. As the proposed developer of the GDF, the NDA must not be the organisation which oversees any aspect of the health debate (CD Para 4.29).

It is noted that '*a GDF with spent fuel from more than 12 new reactors, as well as legacy waste, would exceed the risk targets set by the EA (Environment Agency).*'<sup>xviii</sup> This means that disposal of the new baseline inventory – including wastes from a 16GW nuclear programme - could exceed the risk levels set by a Government agency for a GDF.

### **Threat to voluntarism remains – Right of Withdrawal ends sooner**

In the MRWS WP great play was made of the Government's commitment to a GDF being sited under the principles of voluntarism and partnership. Various documents and Ministerial statements have reiterated this. The CD (page 7) also notes, in relation to the timelines for any future processes, that: *It is important to stress that the timescales indicated are purely illustrative; we envisage that, in practice, the phases will take as long as is necessary so that all involved are content.*' This implies a process under which no force or pressure would be used by the Government to press a GDF on a community.

Yet EDF, in the planning application documents for Hinkley Point C, appears to be working on the assumption that it will remove the two new reactors' spent fuel from the site C by 2136.<sup>xix</sup> This suggests that the phases of the siting process for a GDF will not '*take as long as is necessary.*' It implies a firm timetable which has to be met, regardless of what measures are needed to meet it. In relation to this the CD (Para 1.37) notes: '*The White Paper stated that, in the event that at some point in the future, voluntarism and partnership does not look likely to work, the UK Government reserves the right to explore other approaches. That remains the position. However, this consultation document does not address that, and does not explore alternatives to voluntarism.*' It also means, however, that the part of MRWS WP which threatens to remove voluntarism will remain unchanged.

What the CD says about voluntarism begs the questions of how long the Government will commit to allowing voluntarism to work - 5 years? 10 years? The Government has never actually said when it might move to use a non-voluntarist approach in order to implement its policy. Perhaps this information is in the Integrated Risk Register which the Government has developed on the MRWS process, but refuses to release.<sup>xx</sup>

It is clear that the Government is keen to bring forward the deadline by when a community can last use the 'Right of Withdrawal' (ROW) in the MRWS process.<sup>xxi</sup> On the RoW, the CD (Para 1.35) states: *In principle, an approach based on willingness to participate, with a 'Right of Withdrawal', should allow progress to be made only at a speed local communities are comfortable with. It should also force an implementing body to address issues of concern to local communities before any final decisions can be made.*' Presently the end-use date for the RoW comes just before GDF construction begins, but under the revised process (CD 2.42) it would come before the borehole investigation stage; thus bringing the final part of the voluntary process forward by some years.<sup>xxii</sup> This is a retrograde step and one designed to hurry a community into accepting a GDF. Why should any community, which in the future

might consider a GDF, have to forsake the use the RoW sooner than under the existing process?

Previously it has been said that the use of volunteering is unique, but necessary, to move away from the 'decide announce defend' approach of the past. Much has also been made of the need to increase trust within the MRWS process. Yet the Government's persistence in maintaining the threat to voluntarism shows that the opposite is true: it does not trust the process or the public it might engage with. The Government must remove this threat from its policy. It should not make the proposed changes to the timing of the RoW either.

The proposal of question 1 is rejected.

### **Geology before voluntarism**

The Government cannot continue to ignore the many calls for a more rigorous and in-depth geological screening programme across England and Wales before *any* further call is made for 'volunteer' communities to consider its MRWS proposals. It is noted that the CD (Para 2.50) proposes to commission some work on local geology during a 'learning' phase. Following that it seems that the next geological investigations, under the revised process, only come when boreholes are sunk: after the community 'right of withdrawal' will have ended.

It is noted that the CD was not accompanied by any analysis of the 'call for evidence' submissions put in prior to the CD's release. Precisely how many of these submissions called for more extensive and in-depth geological screening before voluntarism is applied is not known.<sup>xxiii</sup> It cannot be as read that the proposals contained in the CD accurately reflect the approach to geology which people expressed a preference for in their responses to the call for evidence.

### **Storage**

The CD reaffirms the belief that geological disposal is *the* appropriate means for dealing with the UK's most highly radioactive wastes.<sup>xxiv</sup> The scope of the CD is narrowly fixated on finding a GDF rather than considering nuclear waste management holistically.

Calls for the management of wastes in above-ground dry stores at the site of origin of wastes have been ignored by the Government for many years. Its push for disposal, which might only be achieved by forcing a GDF on a community, pays virtually no attention to the siting strategies and technologies needed for interim storage; which are the only workable and environmentally acceptable options, particularly given the many serious uncertainties over disposal.<sup>xxv</sup>

Storage has to be addressed properly in the event of a GDF not being found or if significant delays are encountered. It is the alternative method for management for these wastes as well as *the* fall back option should disposal fail.

The Government must revisit and implement, in full, the original recommendations of the first Committee on Radioactive Waste Management on storage and commit to a robust and durable storage programme for nuclear wastes at all major licensed nuclear sites. The current position ignores the reality that there is no operating GDF in the world. Reference has been made to disposal programmes overseas as a benchmark for what might happen in the UK; but such work tends to ignore the potential for further delays in these overseas programmes.

The current Government position assumes a single site will be found which can take all and any wastes from within the UK. It leaves no room for the need for two GDFs, possibly located in two different regions. The CD refers to the NDA learning from overseas programmes on nuclear waste disposal (Para 1.36). In relation to this, in September the NDA published a report on what is happening overseas, vis a vis processes for waste disposal.<sup>xxvi</sup> When asked if the NDA could provide information - on the volume of wastes and radioactive inventory - for the overseas waste disposal programmes it listed, the NDA admitted that it does not hold such information.<sup>xxvii</sup> Yet surely such information, along with that of the geology of overseas sites, is crucial for a valid comparison for any community that might consider for GDF in its locality?

### **Host communities, steering groups, consultative partnerships.**

The revised process fails on several counts. It fails to explain the GDF proposals as a whole: that two nuclear facilities are involved – the surface facilities which might include spent fuel stores and/or a packaging plant as well as the GDF itself (or two GDFs). It is estimated that the above and below ground facilities could be 10km-20km apart, possibly even in different local authorities. The removal and disposal of spoil could impact on local authorities other than the 'representative' authority which hosts the GDF. Radioactivity released from a GDF might be projected to arise in a neighbouring authority, even if the surface facilities and GDF are located within the boundaries of a single local authority.

The scale of the works mentioned above is particularly relevant because the CD suggests that a single district authority (or unitary authority) would make the decision to enter into any future GDF siting process (although of course some crucial decisions will probably already have been made by central government prior to then e.g. on inventory and the NPS).

The need for wider accountability than a single council was implicitly accepted by the Government through its support of the West Cumbrian MRWS Partnership, a process which took input from Town and Parish Councils, the Lake District National Park Authority, tourism boards, trade unions, farming organisations and faith-based groups. The plan now is to exclude any real say in the process by such organisations through a new process which will begin with a single 'representative authority' agreeing to take up consideration of a GDF, perhaps after a test of community support.<sup>xxviii</sup>

It is proposed that a Steering Group would then be established, after work on geology and socio-economics are undertaken, all of which could impact on decisions made later in the process. The sole local authority would be on a Steering Group with the NDA's Radioactive Waste Management Directorate (RWMD). The NDA, which is both 'advocate' and 'essential enabler' - and developer of a GDF - is answerable to Government and has to follow its policy objectives. The arm of Government which oversees the relevant policy is the Office of Nuclear Development in DECC, a unit set up specifically to facilitate new reactors. Thus any 'representative authority' will be in a steering group with two units of Government bound by the same policy, it will not be a three way discussion with critical analysis.

The Steering Group (Para 2.54) would 'appoint' organisations to a consultative partnership, a proposal which leaves room for bias and exclusion. The Steering Group would be separate from the Consultative Partnership, with an individual to liaise between the two bodies.

The notion of a consultative partnership, rather than a participative partnership with powers to make recommendations, is not acceptable. The consultation claims (Para 2.54) that: *In a two-tier local authority area, we would expect the County Council to play a prominent role.*<sup>xxix</sup> Yet, (CD Para 2.78) notes that a county council should be a member of the consultative

partnership, which seems to conflict with the Steering Group's role of 'appointing' organisations. The position of a county council is not mandatory for a consultative partnership, nor is representation by Parish councils and neighbouring authorities. Such bodies would only be 'consulted' through a Partnership - if they are appointed at all. NGOs, green groups and other organisations might be appointed to the Partnership. The CD, however, clearly prefers that discussion with NGOs – 'external stakeholders' - take place at a distance, through a separate process (Para 2.83) thus eliminating direct involvement by these organisations in any future MRWS process.

Moreover, at some parts of the proposed process decision-making moves from the Steering Group (local authority/NDA/Government Para 2.58) and then back to the Government (Para 5.9). Cumulatively, this shift in decision making, along with changes in the inventory, the NPS, the change in timing on the RoW and the NDA/Govt role in the Steering Group effectively reduce 'voluntarism' to a bare minimum. The proposals as presented appear to devolve more power to a lower level of local authority than at present. Yet the only clarity of roles and responsibilities proposed in the CD are those which put the NDA and Government firmly in the driving seat (in the previous MRWS process the NDA and Government were observers).

Given the scale of this project, and its national importance, it is nonsense to think this can or should be dealt with in the way the CD proposes. Instead of the proposed process, an independent commission which includes representation of all levels of local authority (including town and parish councils, neighbouring authorities and members of the NGO and academic community) should be established. This is essential in order for the proper oversight of whatever plans come forward. The NDA, the GDF developer, must not be on a steering group. The Government, as a facilitator of new nuclear reactors, should not be directly involved in this process either.

The CD claims that more information would be made available earlier in the process, but as this ill-informed consultation reveals, such information would be skewed towards minimising the public having full knowledge over what is intended.

The document fails to make clear the precise order of the proposed activities – from when initial interest is indicated by a local authority in a GDF through to final sign off in accepting a GDF.

The proposals under question 2 are rejected.

### **Compensation aka benefits package**

The CD proposes that some of the compensation (benefits package) would be paid prior to the stage at which the Right of Withdrawal finishes; with the rest being withheld until after a full go-ahead is agreed (Paras 4.15-4.16). Yet during the last MRWS process consideration was given to a mitigation package if the Partnership considered a GDF further, to offset any negative impacts of the proposals (the mitigation package would have been in addition to any benefits, and paid before sign off was given for a GDF).<sup>xxx</sup>

The revised policy makes it clear that should a community/local authority subsequently decide not to commit to a GDF the remainder of the benefits package would be taken back by the Government. In what other situation would such blatant enticement be considered suitable? In a time of austerity this proposal is nothing short of entrapment; financial bribery of the worst kind.



The CD proposals would also significantly reduce the timescale over which benefits might be paid, compared to the last round of MRWS discussions. The CD (Para 4.16) states: *The remainder of the available funds would be paid, including into the community fund, following the final decision to construct a GDF and during the early years of underground operations.* It seems from this that benefit payments would stop many decades before GDF closure, even of legacy waste. The timeline does not factor in how long a GDF would have to operate to allow for new build waste disposal. Finally, it is not clear if the benefits package would extend to neighbouring areas which might be severely impacted on by the construction and operation of both the surface and underground facilities.

We reject the proposals as under question 7

### Notes on this process

The presentation of the revised policy proposals, as set out in the in the CD, are poorly explained and confusing for the lay reader.

Stakeholder meetings on this issue have been arranged late in the process; with some planned to take place after the deadline for written submissions. It is understood that a limited number of people have been told that if they register for and attend the later stakeholder events they can submit their responses up to 19<sup>th</sup> December. Clearly DECC has not thought this through; the way in which the consultation and stakeholders events have been organised is not acceptable.

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[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/239237/Consultation\\_Review\\_of\\_the\\_siting\\_process\\_for\\_a\\_GDF\\_FINAL.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239237/Consultation_Review_of_the_siting_process_for_a_GDF_FINAL.pdf)

ii <http://www.official-documents.gov.uk/document/cm73/7386/7386.pdf>

iii Ibid Para 3.17 Full quote: The estimated quantity and the types of waste to be consigned to a disposal facility needs to be visible and regular UKRWI updates will ensure transparency and indicate the nature of these changes. Any final agreement with a community on a preferred site for the geological disposal facility will need to address possible changes to the Inventory in future years.

iv Ibid A.6, page 72

v February 2010 Somerset County Council response to the draft National Energy Policy Statements (19<sup>th</sup> February) raised concerns over spent fuel storage (page 8-9)

<http://www.somerset.gov.uk/irj/go/km/docs/CouncilDocuments/SCC/Documents/Environment/Hinkley%20Point%20C/Final%20SCC%20response%20to%20Draft%20National%20Energy%20Policy%20Statements.pdf>

In January 2011 the SCC expressed further concern at the idea of spent fuel on site at Hinkley for long periods.

<http://www.somerset.gov.uk/irj/public/council/initiatives/initiative?rid=/guid/a01b1593-5a87-2d10-e083-c987e1fa6776>

Sedgemoor and West Somerset District Councils raised concerns over spent fuel storage at Hinkley in September 2010 EDF ENERGY - PROPOSED NUCLEAR NEW BUILD STAGE 2 CONSULTATION REPORT September 2010 See under 5.7.4, page 125. <http://www.sedgemoor.gov.uk/CHttpHandler.ashx?id=7114&p=0> Local councils also raised concerns in a response to the Environment Agency's consultation on Generic Design Assessment in October 2010. ENVIRONMENT AGENCY – GENERIC DESIGN ASSESSMENT WEST SOMERSET COUNCIL & SEDGEMOOR DISTRICT COUNCIL CONSULTATION RESPONSE October 2010. <http://www.sedgemoor.gov.uk/CHttpHandler.ashx?id=7744&p=0>

vi A good example of how the NDA and Government make decisions separately was when, during the last MRWS process, it was decided – without any reference to the MRWS Partnership, to keep 4 tonnes of plutonium, reprocessed from German-origin spent fuel, in the UK for use or disposal.

vii CoRWM estimated the wastes from a 10GW new reactor programme would increase the radioactivity in the inventory by 265% (from 78 million Tbq to 207million TBq; the vast majority of which would be in the spent fuel).

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Using a per GW comparison the increase from a 16GW programme – in terms of radioactivity - would be 424%; or 331 million TBq

Committee on Radioactive Waste Management (CoRWM) inventory summary, January 2007

<http://webarchive.nationalarchives.gov.uk/20130503173700/http://corwm.decc.gov.uk/assets/corwm/pre-nov%202007%20doc%20archive/plenary%20papers/2006/25%20-%2026%20january%202006/1531%20-%20inventory%20summary%20information.pdf>

A baseline inventory of wastes for disposal was given in the Managing Radioactive Waste Safely White Paper, July 2008 - also used in a NDA presentation in July 2010.<sup>vii</sup> (see annex 1 for details) <http://www.nda.gov.uk/documents/upload/Geological-Disposal-Inventory-presentation-to-West-Cumbria-MRWS-Partnership-July-2010.pdf> See page 7 and 8 for relevant charts/slides. In the NDA papers the legacy Waste is estimated to contain 87.2 million TBq. Using this figure for comparison, new build would add a 379% increase to the radioactive over legacy wastes only.

It is not clear if the 16GW programme referred to also includes also a component of electricity generation from reactors which use plutonium. If not, the amount of radioactivity from new build wastes may even be higher if MOX spent fuel is an additional waste stream. MOD wastes would also add to this inventory. Changes to the baseline inventory, e.g by extending the life of existing reactors, will impact on the percentage increase contributed by new build. Note also that previous 'upper inventories' given by the NDA included only a contribution from the wastes expected by new build, not the full amount.

<sup>viii</sup> It is estimated that the types of wastes from a 10GW new build programme would add approx 8%-10% to the volume of existing legacy wastes. Using a per gigawatt comparison, a 16GW programme would add 13%-16% in terms of volume of wastes over legacy amounts.

The size of a GDF will depend on the amount of radioactive waste disposed of (by volume and radioactivity) and the rock type chosen e.g. page 77 Final Report WC MRWS Partnership 2012. [http://www.westcumbriamrws.org.uk/documents/306-The\\_Partnership%27s\\_Final\\_Report\\_August\\_2012.pdf](http://www.westcumbriamrws.org.uk/documents/306-The_Partnership%27s_Final_Report_August_2012.pdf)

Higher Level Radioactive Waste: Likely inventory range; the process for altering it; how the community might influence it and understanding the implications of new nuclear build. Presented to West Cumbria Managing Radioactive Waste Safely Partnership, Pete Roche, 5<sup>th</sup> August 2010. [http://www.nuclearwasteadvisory.co.uk/wp-content/uploads/2011/05/Inventory\\_presentation\\_to\\_WCMRWS\\_Aug2010.pdf](http://www.nuclearwasteadvisory.co.uk/wp-content/uploads/2011/05/Inventory_presentation_to_WCMRWS_Aug2010.pdf)

<sup>ix</sup> Para 11.18 The Final Report of the West Cumbria Managing Radioactive Waste Safely Partnership

<sup>x</sup> Assuming a per gigawatt equivalent, but depending on type of reactor, the amount of new build spent fuel could be between 20,800- 24,000 tonnes: a single EPR will produce 18,000 tonnes – see slide 3 [http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CD8QFjAD&url=http%3A%2F%2Fwww.nuleaf.org.uk%2Fnode%2Fdocuments%2FOptimisation\\_of\\_New\\_Build\\_Spent\\_Fuel\\_Management\\_%26\\_Disposal.ppt&ei=sStyUpuOJ9CO7QaptlDoCg&usq=AFQjCNHwG59Yrf\\_h4RRCPg3Q5fxyckjw&bvm=bv.55819444,d.ZGU](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0CD8QFjAD&url=http%3A%2F%2Fwww.nuleaf.org.uk%2Fnode%2Fdocuments%2FOptimisation_of_New_Build_Spent_Fuel_Management_%26_Disposal.ppt&ei=sStyUpuOJ9CO7QaptlDoCg&usq=AFQjCNHwG59Yrf_h4RRCPg3Q5fxyckjw&bvm=bv.55819444,d.ZGU)

<sup>xi</sup> NDA RWMD/013 2010 <http://www.nda.gov.uk/documents/upload/Geological-Disposal-Steps-Towards-Implementation-March-2010.pdf>. See Figure 7.1, page 37.

EDF/NNB in its Environmental Statement (Development Consent Order Application) gives 8.5 years for removal and disposal of spent fuel from two reactors at Hinkley Point C (Para 7.7.7). Based on this timing, the emplacement of spent fuel from a 16GW programme could take at least 90 years. Timing assumes all reactors are built by 2025-2030 and operate for 60 years. This would mean by around 2090-2100 all spent fuel will be discharged from new build reactors. The GDF will not take new build waste for disposal until legacy waste is disposed of.

EDF document:

<http://infrastructure.planningportal.gov.uk/wp-content/uploads/projects/EN010001/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site.pdf>

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<sup>xii</sup> The NDA has claimed that it might be able to dispose of some spent fuel after only 50 years, not 100 years – as is expected - after discharge from a reactor. There is no guarantee the 50 years time will be met.

<sup>xiii</sup> Earlier documents on new build waste disposal contracts indicated that a benefit component would be paid by new build operators, but in the final paper on the Waste Transfer Price, published in December 2011, there is no reference to community benefits.  
<http://www.decc.gov.uk/assets/decc/consultations/nuclear-waste-transfer-pricing/3798-waste-transfer-pricingmethodology.pdf>

For more on this see page 16:

[http://mrwsold.org.uk/wp-content/uploads/2011/11/McSorley\\_CONSULT\\_RESPONSE\\_23\\_MARCH\\_2012-FINAL1.pdf](http://mrwsold.org.uk/wp-content/uploads/2011/11/McSorley_CONSULT_RESPONSE_23_MARCH_2012-FINAL1.pdf)

<sup>xiv</sup> The disposal of MOX spent fuel has not been ‘Justified’ under Government legislative processes.

<sup>xv</sup> <http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010001/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site.pdf>

See plate 7.2 on possibility of central spent fuel store and Paras 7.7.12 re. encapsulation

<sup>xvi</sup> At present the base case is that spent fuel would be stored and packaged at reactor sites prior to transport to a GDF. Encapsulation - packaging – is the process which would put spent fuel in its safest form long term; the form it will be in when it is disposed of. Having a central encapsulation plant at the surface works of a GDF would mean transporting and storing spent fuel in a less safe form for many decades.

<sup>xvii</sup> See discussion on Justification in: [http://mrwsold.org.uk/wp-content/uploads/2011/11/McSorley\\_CONSULT\\_RESPONSE\\_23\\_MARCH\\_2012-FINAL1.pdf](http://mrwsold.org.uk/wp-content/uploads/2011/11/McSorley_CONSULT_RESPONSE_23_MARCH_2012-FINAL1.pdf)

<sup>xviii</sup> Higher Level Radioactive Waste: Likely inventory range; the process for altering it; how the community might influence it and understanding the implications of new nuclear build. Presented to West Cumbria Managing Radioactive Waste Safely Partnership, Pete Roche, 5<sup>th</sup> August 2010. [http://www.nuclearwasteadvisory.co.uk/wp-content/uploads/2011/05/Inventory\\_presentation\\_to\\_WCMRWS\\_Aug2010.pdf](http://www.nuclearwasteadvisory.co.uk/wp-content/uploads/2011/05/Inventory_presentation_to_WCMRWS_Aug2010.pdf)

<sup>xix</sup> See Para 7.7.7, Table 7.2

<http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010001/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site/4.3%20-%20Volume%202%20-%20Hinkley%20Point%20C%20Development%20Site.pdf>

<sup>xx</sup> FOI 13/0266 – reply to Jean McSorley from DECC 22<sup>nd</sup> march 2013

<sup>xxi</sup> Lack of clarity on the RoW. as an essential part of the voluntarist process, was a deciding factor in Cumbria County Council voting against progressing investigations on a GDF in January 2013.

<sup>xxii</sup> Boreholes and other intrusive investigations would be covered, in terms of planning, under the NPS process - CD Para 3.40

<sup>xxiii</sup> Prior to the ‘call for evidence’ DECC met with Copeland and Allerdale Borough Councils but it is understood that no other leading representative organisation from the West Cumbria MRWS Partnership met with the department.

<sup>xxiv</sup> Scotland has rejected disposal and Wales and Northern Ireland have reserved positions on the issue.

<sup>xxv</sup> <http://www.greenpeace.org/eu-unit/en/Publications/2010/rock-solid-a-scientific-review/>

<sup>xxvi</sup> <http://www.nda.gov.uk/documents/upload/Geological-Disposal-Overview-of-international-siting-processes-September-2013.pdf>

<sup>xxvii</sup> Reply to FOI request, NDA to Martin Forwood of CORE, 8<sup>TH</sup> October 2013

<sup>xxviii</sup> Suggestions on how community support might be shown before a representative authority enters into a revised siting process are unclear. What means would be used to gauge support for a community to take the

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process forward (referendum, telephone polling) and to what level (80% of the population) is not made clear; a simple majority would clearly be insufficient. Further, would the population be based only on those on the voting register or, for example, everyone over 16 years of age living in the area in question? The proposed revised process claims to make it easier and provide for a continuous process without artificial decision points. In doing so it serves only to muddy the waters in terms of local community input.

<sup>xxix</sup> It is questionable whether any county council would want to cede its powers of control through such a process.

<sup>xxx</sup> Page 171 <http://www.westcumbriamrws.org.uk/images/final-report.pdf>