From:	[redacted]
To:	SizewellC
Subject:	Fwd: Response to BEIS request Ref: EN010012 18th March
Date:	21 March 2022 06:51:08
Attachments:	Response to BEIS Enquiry Ref EN010012 18th March 2022.pdf SzC Main nuclear platform flood resilience in the next century.pdf

For the attention of Gareth Leigh, Head of Infrastructure Planning BEIS

RE: Response to your ref: EN010012 18th March 2022

I would be grateful if you would consider my response to Section 5 'Coastal Considerations' of your letter reference above.

Kind regards
Nick Scarr IP 20025524

Response to BEIS Enquiry Ref: EN010012, 18th March 2022

Nick Scarr 20/3/2022

BEIS's enquiry, Ref: EN010012, 18th March 2022, contains a reference to '*Coastal Considerations'* and requests the Environment Agency to confirm that it is satisfied by TR544 REP10-124, as follows:

> *"5. Coastal Considerations*
>
> *5.1. The EA is asked to confirm if the Preliminary Design and Maintenance Requirements for the Sizewell C Soft Coastal Defence Feature ("SCDF") (Version 4)* ***TR544 [REP10-124] provided by the Applicant at Deadline 10 satisfies its remaining concerns in relation to modelling and further analysis for the SCDF, and consequently the Hard Coastal Defence Feature, including any implications for resilience and the cumulative impact assessment"***

My response

1. It is my understanding that the Environment Agency is a Statutory Consultee and, in this role, can make *comments* on the Applicant's Flood Risk Assessment. Despite the assertions of the Applicant to the contrary, the EA is not in a position to *validate* the Applicant's Flood Risk Assessment.

2. REP10-124 TR544, authored by Cefas as party to the Applicant, states as follows:
   "4.2.2 Beast from the East storm sequence
   To examine erosion from a more severe (erosive) storm throughout the decommissioning phase, the 2D modelling considered the full Beast from the East (BfE) storm sequence, which has a 1:107 year return interval in terms of cumulative wave power (see Appendix B of BEEMS Technical Report TR531 Rev 2). Statistically speaking, such a storm may be expected to occur once or twice within the whole project lifetime of Sizewell C. To reflect this, the BfE storm sequence is assumed to occur once within a 60-year period when determining recharge intervals throughout the lifetime of Sizewell C. ***This is an additional conservative measure, with the reduced return interval creating larger erosive rates and smaller recharge intervals. The modelled runs (at 2120 and 2140) used the future receded shorelines topography in line within the previous section.***

Important points relating to TR544 REP10-124:

1. A 1:107 storm sequence is claimed to *'…occur once or twice within the whole project lifetime of Sizewell C'*. This can be expressed in another way – over the project lifetime (2022-2190) a span of 168 years there is a 79.4 % chance of its occurrence.
   See https://www.weather.gov/epz/wxcalc_floodperiod

2. The 1:107-year return period claimed for the Beast from the East storm refers to **cumulative wave power only** and not storm surge. Should the '79.4% chance of a Beast from the East storm' coincide with a significant storm surge or significant climate change sea level rise the repercussions to the SCDF could be manifestly different.

3. The Applicant claims that it has '*conservatively modelled*' by using '*…the future receded shorelines topography in line within the previous section.' This is previously claimed as being*

the ***severely receded shorelines*** *(Sections 3.2.2 and 3.2.3, respectively.* See TR544 REP10-124 3.2.2 Page 44.

The *'severely receded shoreline'* claimed by TR544 is shown following (Page 49 TR544 REP10-124) and reproduced below:

TR544: PRELIMINARY SCDF DESIGN

NOT PROTECTIVELY MARKED

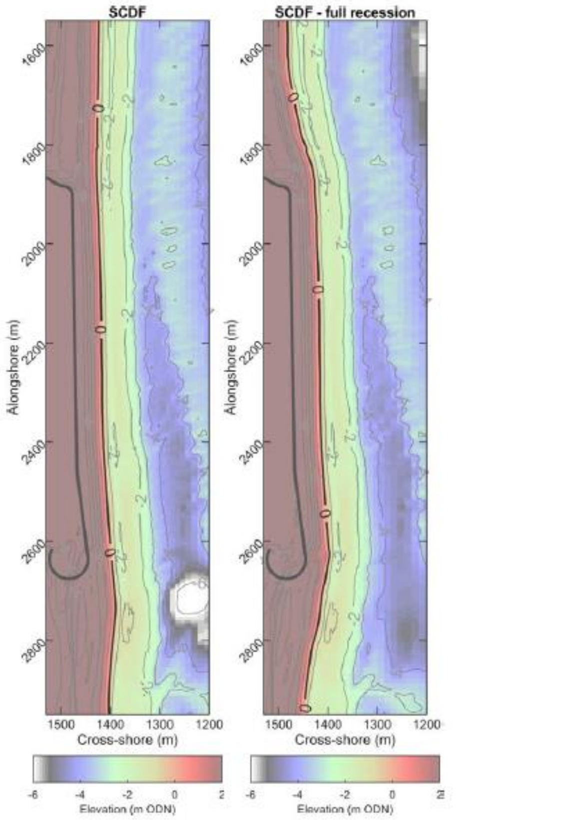

Figure 14: The Beast from the East storm, 2099 Sea Level – Post-storm bed elevation for the SCDF with present-day shoreline (left) and SCDF-future shoreline position (right) cases. (BEEMS Technical Report TR545 Version 2.0).

UNCONTROLLED WHEN PRINTED

NOT PROTECTIVELY MARKED

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In my view, this shoreline cannot be regarded as 'severely receded' and hence cannot be regarded as 'conservative modelling'.

4. TR544 has a reliance on the idea that sediment and shingle is *'…effectively confined to the system (and is also likely to increase once Dunwich Cliffs begin to erode)'* see Page 45 TR544. This statement is not supported by evidence in the Applicant's own BEEMS documentation as follows: "*The last 2 to 3 decades of strong erosion at Dunwich were not matched by ongoing accretion in the south*." BEEMS TR223 Table 12, shows net erosion of the Sizewell C foreshore since 1993.

Summary and brief history of communication.

I have coherently expressed in papers submitted to the Planning Inspectorate that the safety and security of the nuclear foreshore, and in particular Sizewell C, is reliant on the offshore Sizewell-Dunwich banks, a statement validated by the Applicant's own work in pre-DCO BEEMS documents.

The Applicant fully acknowledges in these pre-DCO BEEMS documents that the loss of the Dunwich bank could see a return to severe coastline stress at Sizewell. Extreme erosion at Sizewell has historical precedent before the banks were formed. See REP2-393

The SCDF and the HCDF of the proposed Sizewell C do not protect the landward side of the main nuclear platform, a side exposed to the low-lying, contiguous Sizewell and Minsmere marshland which is highly vulnerable to shoreline recession risk should there be loss of the Dunwich bank. See REP2-393.

There is no plausible mechanism that could justify the assumption for the maintenance and preservation of the unconsolidated mud and shingle of the Dunwich bank over the next two 100-year episodes of coastal processes, the uncertainties of which can only be increased by climate change sea-level rise and storm level change.

The Applicant, however, in its main DCO FRA and EGA both relies on, and assumes the permanence of, the Sizewell-Dunwich banks over the lifetime of the plant. I acknowledge that the Applicant has attempted to address this by submitting TR545 at a late stage in the DCO process, but TR545's claims to conservative (precautionary) modelling are, in my opinion, mainly misplaced as shown in my document REP7-220 and particularly so if such claims are contextualised to be representative of overall flood and erosion risk modelling of the proposed Sizewell C.

It should be noted that in TR544, REP10-124, there appears to be no mention of the Sizewell Dunwich banks, an omission that seems perplexing. Could we meaningfully discuss Dover port storm security without clear reference to the importance of Dover harbour wall?

- It is also the case that in the Applicant's twenty-two DCO main Flood Risk Assessment and fourteen FRA Addendum documents the Sizewell-Dunwich banks are also not explicitly named. ('Banks' are mentioned in the Addendum of an Addendum without reference to which banks are being referred to). See REP2-393.

In a meeting with the Environment Agency on 23rd January 2020 it was acknowledged that Sizewell C may become subject to severe shoreline recession resulting in 'islanding'. The consequences of this are not being considered, namely: **in the highly plausible event of significant shoreline recession by and during the next century, Sizewell C could become an established promontory or headland. Thus, sea defences such as the SCDF and HCDF need to fully surround the main nuclear platform.**

Please see my papers REP2-393, REP5-253 and Summary paper REP7-219 cover these areas in more detail. Paper REP8-248 and REP10-345 are responses to EDF's later stage Q&A assessments of the Sizewell-Dunwich banks.

Paper REP7-220 covers TR544/TR545 modelling limitations.

I have prepared a post-D10 paper *'Sizewell C Main nuclear platform flood resilience in the next century'* which is enclosed.

Sizewell C Main nuclear platform flood resilience in the next century.

Author: Nick Scarr IP 20025524—11/1/22 – 8:05

The next century will be a critical time for Sizewell C if it is approved and built as presented in the DCO hearing; security from flood risk will be of utmost importance as the spent fuel created by the reactors will be onsite in cooling ponds until its temperature lowers sufficiently to allow removal.

The Applicant has made a definitive statement on flood risk to Sizewell C's main nuclear platform for the period. The Applicant states that the 7.3m AOD (Above Ordnance Datum) main nuclear platform will be free from flood risk until 2140 under the RCP8.5 scenario. This is presented in its '*Table 2.1'*.

The Applicant has also made a second definitive statement, presumably informed by the first, that spent fuel will be removed from site by this 2140 date.

The following document reviews these crucial statements in the following two short papers.

Paper 1 analyses the limitations of the data presented in the Applicant's '*Table 2.1*' and concludes that it does not reflect reasonable worse-case conditions at the main nuclear site.

Paper 2 assesses whether spent fuel removal by 2140 is a plausible timescale and concludes that even if one is to accept the data presented in '*Table 2.1'* as worse-case flood data, safety of the site will still be compromised as spent fuel removal by this date does not appear to be feasible.

Overall, the papers posit that Sizewell C, as presented in the DCO Hearing, will not be able to offer the sufficient and necessary flood resilience in the next century.

Paper 1—Sizewell C and the wave data used in the Applicant's FRA to establish flood levels on the main nuclear platform in the next century.

Introduction and purpose.

The Applicant used its Flood Risk Assessment to establish that the main nuclear platform, at 7.3m AOD, is resilient to flood risk until 2140.

This paper critically reviews the data presented by the Applicants table 2.1 and splits it into its component parts—still water flood levels and wave induced (overtopping) flood levels.

The paper concludes that the wave data utilised by the Applicant does not represent worse-case conditions and that *Table 2.1* may therefore under-estimate flood levels to the main nuclear platform.

A) The Applicant's data for overall wave overtopping scenarios of the main nuclear platform as presented in its FRA Table 2.1:

The Applicant's 'Table 2.1':

"2.1.5 Table 2.1 [reproduced below] *presents a list of overtopping scenarios for the reasonably foreseeable (RCP8.5 95 percentile) and credible maximum (H++ or BECC Upper) climate change allowances and respective extreme still water levels, highlighting in red bold those scenarios with extreme sea level above platform height that were not undertaken in this assessment"* FRA ADDENDUM: op cit., Main Development Site Flood Risk Assessment Addendum Appendices A-F Part 10 of 10

"Table 2.1: Summary of wave overtopping scenarios"

Return period	2090 epoch		2140 epoch		2190 epoch	
	RCP8.5	H++	RCP8.5	BECC	RCP8.5	BECC
200-year	4.58	5.19	5.48	7.58	6.31	**8.48**
1,000-year	5.12	5.73	6.02	**8.12**	6.85	**9.02**
10,000-year	5.98	6.59	6.88	**8.98**	7.71	**9.88**

FRA ADDENDUM: op cit., Main Development Site Flood Risk Assessment Addendum Appendices A-F Part 10 of 10

Figures shown are in height of water at the main platform AOD. Any figure greater than 7.3m AOD (main nuclear platform height) represents a flood event which compromises the main nuclear platform and spent fuel storage safety. Figures in red are highlighted by the Applicant.

These analysis results show that the main nuclear platform at 7.3m AOD is not expected to flood before 2140 based on the RCP8.5 scenario and the maximum storm period return considered for nuclear installations.

These results are understood to be a composite figure of maximum still water levels (which incorporate climate and storm surge level effects) combined with the impact on those levels from waves overtopping and breaching Sizewell C's defences.

The following section breaks down these data into the two component parts presented in the Tables B1 and B2 following.

B) Breakdown of 'Table 2.1'.

B.1 Still water data used in the Applicant's 'Table 2.1'.

To examine the component that waves add to the Table 2.1 data it is necessary to abstract the still water level components. These values are shown in the table below by using the following data:

- Still water level data (AOD) for storm event return periods used:
  1:200 3.13m; 1:1000 3.55m; 1:10,000 4.21m

- Climate change sea level rise data used for RCP8.5 scenario:
  RCP8.5 2100 1.12m; RCP8.5 2140 1.8m; RCP8.5 2200 2.9m; BECC 2200 5.00m

For reference the 1953 flood level is approximately 1:1000. Figures in blue in Tables B1 and B2 are the Applicant's still water figures from its table 4.2 that are slightly different and shown where available. See FRA ADDENDUM: EN010012 Main Development Site Flood Risk Assessment Addendum. Table 4.2 '*Assessed flood depth on the main platform'* (Still water levels).

In developing the table B1 below, I have utilised the above figures combing the two sets of data. So, for example, for the scenario of a 1 in 200 year still water level and a 2140 climate change sea level rise gives a level of 4.93m (3.13 + 1.8m).

The table B1 thus excludes the wave action component from the Applicant's Table 2.1, considering only the still water levels of return period sea level rise and climate change sea level rise:

Return Period	2100 epoch		2140 Epoch		2200 Epoch	
	RCP8.5	H++	RCP8.5	BECC	RCP8.5	BECC
200-year	4.25	5.03	4.93	no data	6.03	8.13/8.00
1,000-year	4.67	5.45	5.35	7.94	6.45	8.55/8.84
10,000-year	5.33	6.11	6.01	8.85	7.11/7.58	9.21/9.75

Table B1 - Figures shown are in height of water AOD.

B.2 Flood level component from overtopping (breaching) waves in the Applicant's 'Table 2.1'.

Subtracting the data in the Table B1 above from the Applicant's Table 2.1 arrives at the following:

Return Period	2100 epoch		2140 Epoch		2200 Epoch	
	RCP8.5	H++	RCP8.5	BECC	RCP8.5	BECC
200-year	0.33	0.16	0.55	no data	0.28	0.35/0.48
1,000-year	0.45	0.28	0.67	0.18	0.4	0.47/0.18
10,000-year	0.65	0.48	0.87	0.13	0.6/0.13	0.67/0.13

Table B2 - Figures shown are in height of water AOD.

Table B2 then, shows the maximum contribution of overtopping waves to water levels on and around the platform that could have been allocated by the Applicant for each return period and epoch.

It appears that the Applicant has used '*inshore wave heights of 3.73m-4.48m'* to calculate these wave contributions. See: FRA Main development site Flood Risk Addendum Page 1,2: Table 4.1.

However, should the offshore Dunwich bank be lost or compromised by the next century—**a plausible scenario as it has no underlying hard geology**—then **moderate as well as high storm waves** (the significant 1:100 offshore wave heights are 7.3- 7.8m from the N –NNE sector) could breach, break over and erode the 'soft and erodible' inner and outer longshore bars and the South Minsmere levels, immediately to the North of Sizewell C. In flood conditions these waves would then add to the water volumes in the contiguous marshes of South Minsmere and Sizewell. Storm-wave access around the landward side of the main nuclear platform could then occur and there are no proposed defences against such scenarios. **In these scenarios wave action could present significantly greater contributions to flood levels on the main nuclear platform than suggested by Table B2 which, in turn, would then result in an understatement of flood risk in the Applicant's Table 2.1.**

The adequacy of the flood modelling on the main platform height of 7.3m AOD to 2140 is essentially then dependent upon the assumptions of:

- little or no change to the offshore geomorphology (primarily the Dunwich bank and the longshore, nearshore bars)
- the present shoreline surrounding Sizewell C remaining uneroded until the middle of the next century with no consideration given to the historical precedent of the Sizewell foreshore being the '*most eroded shoreline'* in records assembled by Pye and Blott until the development of the Dunwich bank (see REP2-393 Section 2) and
- no significant unrepaired breaches to sea defences north of the site.

In my view there is no plausible mechanism that could justify the assumption for the maintenance and preservation of the unconsolidated Dunwich bank over the next two 100-year episodes of coastal processes, the uncertainties of which can only be increased by climate change sea-level rise and storm level change. This loss could result in significant shoreline erosion around Sizewell C. See my papers REP2-393, REP7-219, REP10-345.

In a meeting with the Environment Agency on 23rd January 2020 it was acknowledged that Sizewell C may become subject to 'islanding'. I believe that the consequences of this are not being considered, namely: in the highly plausible event of significant shoreline recession by and during the next century, Sizewell C could become an established promontory or headland. Sea defences would then need to fully surround the main nuclear platform.

Paper 2—Sizewell C and the Applicant's claim for spent fuel removal by 2140. Is this a plausible timeframe?

Introduction and purpose.

The Applicant's flood risk assessment for Sizewell C is committed to 2140 as the 'decommissioned date' for spent fuel confirmed by the following:

- ***"The lifetime of the development includes for removal of all spent nuclear fuel by 2140…The Application and flood risk assessment are explicit about the timeframes being assessed in relation to 2140."***
- ***"The key dates relevant to flood risk for the operation of the station are; the end of operation of the station at 2085…end of interim spent fuel store 2140…*** 6.12 Rev: Reports Referenced in the Environmental Statement. Page 14
- ***"…on-site risks would only be considered*** [modelled] ***to 2140 as the end of Interim Spent Fuel Store."***
  Royal Haskoning, flood risk modelling, page 2 of 22 in 6.12 Revision: Reports Referenced in the Environmental Statement.

This timeframe of 2140 is then important as '*on-site risks would only be considered to this date*' according to the Applicant's own modelling presented by Royal Haskoning.

This paper is a response to this stated, 'decommissioned date of 2140' and posits the view that such a timeframe is imposed by the Applicant's flood risk assessment presented in its '*Table 2.1*'and its selected main nuclear platform level. This paper suggests this timescale for spent fuel removal is implausible and that the spent fuel store could remain in commission well beyond 2140 and consequently be untenable being exposed to unacceptable flood risk.

1. The critical nature of the 2140 date—EDF's assessment of still water and wave overtopping of the main nuclear platform beyond 2140.

Again, refer to the Applicant's 'Table 2.1':

> *"2.1.5 Table 2.1 [reproduced below] presents a list of overtopping scenarios for the reasonably foreseeable (RCP8.5 95 percentile) and credible maximum (H++ or BECC Upper) climate change allowances and respective extreme still water levels, highlighting in red bold those scenarios with extreme sea level above platform height that were not undertaken in this assessment"* FRA ADDENDUM: op cit., Main Development Site Flood Risk Assessment Addendum Appendices A-F Part 10 of 10

Table 2.1: Summary of wave overtopping scenarios

Return period	2090 epoch		2140 epoch		2190 epoch	
	RCP8.5	H++	RCP8.5	BECC	RCP8.5	BECC
200-year	4.58	5.19	5.48	7.58	6.31	**8.48**
1,000-year	5.12	5.73	6.02	**8.12**	6.85	**9.02**
10,000-year	5.98	6.59	6.88	**8.98**	7.71	**9.88**

FRA ADDENDUM: op cit., Main Development Site Flood Risk Assessment Addendum Appendices A-F Part 10 of 10

This table clearly shows that beyond 2140 the main nuclear platform is at risk of flooding in a 1:10,000 RCP8.5 scenario and that there is a consequent critical requirement for Sizewell C to be decommissioned (at least in terms of spent fuel removal) by this date for the safety of local populations, environment, and staff.

2. The profound difficulties in achieving a decommissioned date of 2140.

Government policy is that spent fuel is transported directly from site of creation to a geological disposal facility (GDF), **there is no 'intermediate' location for spent fuel proposed**. However:

2.1 Policy: Spent fuel is not waste and *is not currently destined for geological disposal*.

- *"...your understanding that spent fuel is 'not waste' and is not destined for geological disposal unless and until it is classified as waste, is correct."*

13th October 2021 email to me from Radioactive Waste Management Ltd.

2.2 Spent Fuel Cooling: High burnup spent fuel of the type produced by Sizewell C requires a longer cooling period (see my paper REP2-503) before geological disposal can be considered and that does not correlate with a decommissioned date of 2140.

- The Nuclear Decommissioning Authority (NDA) suggests the cooling requirements will result in a decommissioning date for Sizewell C between **2180 to 2230**:

  "Current RWMD generic disposal studies for spent fuel define a temperature criterion for the acceptable heat output from a disposal canister. In order to ensure that the performance of the bentonite buffer material to be placed around the canister in the disposal environment is not damaged by excessive temperatures, a temperature limit of 100°C is applied to the inner bentonite buffer surface. ***Based on a canister containing four EPR fuel assemblies, each with the maximum burn-up of 65 GWd/tU and adopting the canister spacing used in existing concept designs, it would require of order of 140 years for the activity, and hence heat output, of the EPR fuel to decay sufficiently to meet this temperature criterion****."*

  *"****It is acknowledged that the cooling period specified above is greater than would be required for existing PWR fuel to meet the same criterion*** **[due to its higher levels of radioactivity and high decay heat radioisotopes]** *and RWMD proposes to explore how this period can be reduced. This may be achieved for instance through refinement of the assessment inventory (for example by considering a more realistic distribution of burn-up), by reducing the fuel loading in a canister* **[which will increase the geological disposal footprint]** *or by consideration of alternative disposal concepts. The sensitivity of the cooling period to fuel burn-up has been investigated by consideration of an alternative fuel inventory based on an assembly irradiation of 50 GWd/tU. For this alternative scenario it is estimated that the cooling time required will reduce to the order of* ***90 years*** *to meet the same temperature criterion."*
  NDA 'Geological Disposal Generic Design Assessment: Summary of Disposability Assessment for Wastes and Spent Fuel arising from Operation of the UK EPR' Jan 2014 section 6, page 6.

'Together Against Sizewell C' raised the above points from the Nuclear Decommissioning Authority (NDA) with the Office for Nuclear Regulation (ONR) who responded as follows with reference to HINKLEY POINT C:

"As an example, for HPC (using indicative timescales and dates):
- *The assumed availability date for the GDF ~2130 for fuel from new reactors.*
- *Assumed start of generation of HPC: 2025*
- *Assumed end of generation of HPC: 2085*
- *The date from which fuel will be sufficiently cool to start to transfer to the GDF (from 55-60 after end of generation): 2140-2145*
- *The date by which all fuel will be transferred to the GDF: ~2150-2155 (assumed to take just over 9 years)*
- *The dry fuel store will not be needed until ~10 years start of operation of HPC: ~2035*
- *The dry fuel store will then be needed for 50 years remaining operation of HPC, 55-60 years for the fuel to cool and 10 years to allow transfer of fuel to the GDF, which is 115-120 years.*
- *Removal of all fuel from site and end of use of the dry fuel store is therefore: ~2150-2155.*
- *The initial design life for the dry fuel store is 120 years (noting the design is conceived to allow for refurbishment or replacement) which would take it to: ~ 2155*

- *"In summary, the number of years before the fuel can be taken off site to the GDF is approximately 55-60 years from end of generation, which is because of the temperature criterion associated with the GDF canister. Fuel could potentially be moved from site safely earlier (but not currently to the GDF), although this is not planned."* *ONR reference HPGE202006066, 'TASC Review of the Minutes of the ONR/Stop Hinkley Meeting in Bridgewater January 2020 Authors: Chris & Jen Wilson Date: 17 June 2020'.*

The basis of the ONR's 'downward revision' of the NDA's specified high burnup spent fuel cooling period, as stated in its response above, is that not all fuel will be burnt to 65 GWd/tU. I accept this although the ONR is unclear as to what the average burn rate will be and hence, in my view, there is a sense of the arbitrary about the revision which would benefit from more detailed validation. In my opinion, there is a need for a statement of common ground between the NDA and the ONR defining this cooling period within somewhat finer limits than 55-140 years, particularly the period in cooling ponds.

Even if the 'revised cooling period' from the ONR is correct and applied to Sizewell C's spent fuel, and we accept the GDF will be commissioned and run smoothly, and one assumes that Sizewell C is completed on time (2035) and will operate until 2095 without lifetime extensions, then spent fuel could, at the very earliest, be removed by 2160/2165 (2095 + 55-60 years cooling +10 years to remove).

Summary.

For spent fuel to be removed from site by 2160/2165 (20-25 years *after* the "*explicit timeframes"* committed to by the Applicant) requires the acceptance of ***major*** assumptions as follows:

1. Spent fuel will be classified as waste. This is currently not the case.

2. That there are no over-runs in construction time of Sizewell C.

3. That there are no lifetime extensions to Sizewell C.

4. That one accepts the validity of the ONR's downward revision of the required cooling period specified by the NDA from 140 years to 55-60 years.

5. That a GDF is available within 120 years, and it will take no more than 10 years to consign the Sizewell C spent fuel.

6. That the GDF can accept and consign Sizewell C's spent fuel at the same time as other nuclear waste if necessary. It is not at all clear that this will be the case.

7. That the timeframe (considered to be 100 years as far as I am aware) for the deposition of other committed nuclear waste to be consigned prior to Hinkley C and Sizewell C— that is, legacy nuclear waste, including spent fuel from power stations and the highly enriched submarine spent fuel— operates within the allocated timescale without over-run.

Therefore, in summary I suggest that the Applicant's 2140 date for decommissioning is implausible and that even the later dates of 2160/65 are dependent on major assumptions and unsupported by an agreed and conclusive analysis of fuel cooling requirements.

The insufficiency of flood resilience of the proposed Sizewell C's main nuclear platform beyond 2140, based on the Applicant's own data, will then expose the spent fuel stored onsite to unacceptable flood risk and consequently threaten the safety of the environment, local populations, and decommissioning staff.

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Overall summary of Papers 1 and 2.

Paper 1 shows there may be significant understatements of the flood risk to the main nuclear platform in the next century. The depletion of the Dunwich bank and the attendant possibility of Sizewell shoreline retreat and exposure of the main nuclear platform on the landward side do not appear to be considered when the wave component of the data in Table 2.1 is examined. In the highly plausible event of shoreline recession by and during the next century and Sizewell C becoming a promontory or headland prior to spent fuel removal, sea defences would need to fully surround the main nuclear platform.

Paper 2 shows that should we accept the Applicant's Table 2.1 data as valid for worse case scenarios and accept that there will be no shoreline retreat at Sizewell through the next two centuries, we are still left with the Applicant's seemingly implausible requirement and claim for spent fuel removal from site by 2140.

Overall, therefore, I suggest that the Sizewell C will not provide the necessary and required flood risk resilience until spent fuel removal.

Please see my papers REP2-393, REP7-219, REP10-345 and REP2-503 for Spent Fuel.