



Together Against Sizewell C

APPLICATION BY NNB GENERATION COMPANY (SZC) LIMITED
FOR A DCO GRANTING CONSENT FOR THE SIZEWELL C PROJECT

TOGETHER AGAINST SIZEWELL C (TASC) IP NO. 20026424

DEADLINE 6 SUBMISSION

COMMENTS RELATING TO EXA Q1 QUESTIONS AS AT DEADLINE 5

W.1.2 Response:

1. Despite many requests for a response from the Applicant regarding a central and critical issue concerning their proposed development – viz how it proposes to secure a huge, regular and clean supply of potable water to its site during and post-construction – none has been forthcoming, even at this late stage in proceedings.
2. We now learn that Northumbria Water Ltd cannot provide the volumes required without compromising supplies to its own customers. We then hear that the Environment Agency has proposed a solution which is equally disconcerting to those witnessing the farce of EdF attempting to justify the building of SZC: the EA have mooted the extraction of water from the River Waveney, identified by the charity Buglife as heavily contaminated with neonicotinoids and recognised, as most other rivers in the UK, as polluted with sewage, pesticides, nitrates and other farm run-off.
3. EdF's preposterous, last-ditch response is to propose a desalination plant for which they have granted stakeholders only a three week period in which to make their views known while apparently maintaining their confidence in being able to present their latest addition to the DCO by the 27th August. Yet again, hard pressed opponents of EdF's plans are being asked to rush to respond to another twist in this ever-more bizarre attempt to build a huge nuclear plant which by its own acknowledgement it cannot afford to build, in a location affording insufficient space, crippling inaccessibility, too much opposition, too precious an environment and too many disadvantages to come close to any sort of justification for its electricity which is becoming increasingly expensive and redundant to needs.
4. If the ExA required more confirmation that the Applicant was incapable of making a timely, realistic, responsible and coherent application to build a £20+bn

plant, then the on-going absence of a water strategy after a decade of supposed 'preparation' is surely the evidence it needs. It is nothing short of scandalous that at the eleventh hour, EdF can still not point to a means by which it will meet its potable water needs beyond the fanciful notion that it will have to resort to a process known for its gaseous emissions from desalination stacks which include carbon monoxide (CO), nitric oxide (NO), nitrogen dioxide (NO₂), and sulphur dioxide (SO₂). These air pollutants can have a harmful impact on public health. There is also concern regarding the large amounts of chemicals stored at desalination plants. Waste in the form of highly concentrated brine may seep underground and damage existing aquifers. Desalinated water itself can be harmful to human health as chemical by-products of the process can contaminate ground water sources and, being acidic, can endanger those who rely on it for consumption.

5. TASC urges the ExA to accept the inevitable: in addition to the raft of other issues raised since the start of the DCO examination which indicate this project proposes the wrong development, in the wrong place at the wrong time, without a secure, environmentally safe and sustainable supply of potable water to the site for the 12+ years of construction and then for the 60+ years for which the plant is expected to be operational, the SZC proposal cannot go ahead.

AQ.1.66 Tritium Gas

6. In their Deadline 2 response, SZC Co claim that the Environmental Permitting Regulations 2016 'ensure that the radiological impact to members of the public and environment remain well below the internationally agreed limits to protect both human health and the environment.'

7. In respect of the same issue, the ONR acknowledge that the aqueous form of tritium is considered preferable as they have a lower dose per unit than the gaseous form, thereby confirming that tritium is a substance which is harmful to the point where its less harmful form is preferred in order to reduce the radiological impact. Thus, exposure to tritium in whatever form is de facto harmful to a greater or lesser degree: it is universally accepted that any form of radiological exposure is harmful. It therefore follows that the SZC Co's statement that the Environmental Permitting Regulations ensure protection to human health and the environment are in error. The relevant issue is, 'to what degree does such exposure harm human health and the environment?' and the answer to that is that we do not know.

8. The response from Public Health England is revealing in the use of conditional language: 'evidence suggests' that discharges from nuclear power stations do not cause 'serious' illnesses and present a 'very low' health risk to people residing in the vicinity. It is reasonable to ask of PHE if they could quantify the risk of such exposure by explaining to people living in the vicinity what evidence there is to support this claim, what 'non-serious' illnesses may be caused by exposure and what the nature of the health risk actually is. That would allow people to determine whether they believe the health risks they run are justified by

the putative benefits they receive from living in the vicinity of a nuclear power station.

9. PHE goes on to make further placatory statements about the possible radiological impact of routine radiological discharges from proposed nuclear power stations in England and Wales, indicating that the expected increase in cancer incidence rates and fatalities will be negligible compared to the natural cancer incidence rate and number of fatalities. This begs the question, what is the cause of the 'natural cancer incidence rate'? Cancer is now at epidemic proportions: one in two humans will experience the disease in their lifetime. Twenty years ago, the rate was one in four.

10. The UN report to be found at http://www.unscear.org/docs/publications/2000/UNSCEAR_2000_Annex-C-CORR.pdf shows that in 1997, Sizewell B discharged 44 200 Gbq (gigabequerels) of tritium in liquid form. A bequerel is a measure of radioactive decay equivalent to one disintegration a second. There are 1,000,000,000 bequerels in a gigabequerel.

11. What is not accounted for in respect of radiological impact is that of alpha emitting substances such as plutonium or uranium or their daughter products. Inhalation or ingestion of these routinely discharged materials, even in the tiniest quantities known as 'hot particles', is a poorly understood and highly controversial subject. While these important issues remain unresolved, no new nuclear plant should be contemplated. TASC considers it a dereliction of duty for PHE, the industry, the government and regulatory bodies to avoid meaningful engagement with critics of the International Commission on Radiological Protection's recommended level of exposure to examine the vitally important issues of internal alpha emitting radionuclides and their health impact in the light of a growing body of evidence which points to an underestimation of effect. See TASC's WR 'Health and Low Level Radiation'.

R.1.24

12. The use of the definitive article in ONR's reassurances about the duration of storage requirement being dependent upon the access 'to the geological disposal facility' is designed to give the impression that a GDF exists or at least the site for one exists. Nothing it further from the truth. The Nuclear Decommissioning Authority (NDA) has existed since 2005. In 16 years, its attempts to secure the co-operation of Cumbria County Council in using a site close to the Sellafield complex collapsed and progress towards finding a 'volunteer host community' for the GDF has suffered setbacks to join the history of public opposition to the burial of nuclear waste which litter the nuclear industry's and government attempts to impose such a development on communities in Billingham, Elstow and at Longlands Farm where an underground laboratory was proposed in the 80s. At present, the Radioactive Waste Management arm of the NDA has established only three 'working groups' to examine the proposals for a GDF 'in more detail'. No volunteer community exists and a viable GDF is as far away today as it was in

2005. All dates suggested by the ONR in its response are guesses and assumptions. The fact remains that new nuclear build will create a new waste stream of hotter and more radioactive spent nuclear fuel for which there is no acceptable disposal route. Even the ONR are unsure about the disposability of this lethal material.

13. SZC's response to this question is revealing and worrying. SZC Co are no doubt aware that HMG's policy on nuclear waste management is disposal, not long-term or indefinite interim storage. The ISFS design lifetime of 100 years is a blink of biological time to spent nuclear fuel: some of the radionuclides in spent nuclear fuel have half-lives of tens of thousands of years. SZC Co argue that the safe management of spent fuel and radioactive waste is not dependent on the availability of the GDF, but given their understanding of the UK's policy for its management and the longevity and lethal nature of the material its operations generate, surely it must take greater responsibility in its plans for the re-encapsulation of spent fuel after the 100 years ISFS design lifetime rather than simply conveniently assume that within that period of time, a GDF will be available, something that looks increasingly unlikely given the slow progress towards identifying the correct geology, a compliant community and, moreover, the resolution of the many outstanding uncertainties and moral, ethical issues which dog the safety of long term disposal.

AI.1.7 Reactor Design

14. Following TASC's submission in relation to the Applicant's reactor design at deadline 3, a number of relevant issues have come to our attention:-

15. An article in July 2021 in the French media by Blast highlights a serious vibration problem in the primary water circuit. The article states *"As the design of the primary water circuit is the same on the Flamanville EPR, as well as in China (Taishan) or Great Britain (Hinkley Point), this problem therefore affects all EPRs built or under construction."*

16. <https://www.blast-info.fr/articles/2021/nucleaire-epr2-le-feu-rouge-de-linstitut-de-surete-a-edf-y4TmgjhVQmts-E5HAKKKA>

17. On 30th July 2021 The Daily Telegraph reported that one of the EPR reactors at Taishan, China has had to shut down to investigate cracked fuel rods stating *"Taishan plant that has been closed for 'maintenance' uses same reactor technology set to be installed at new UK plants"*

18. <https://www.telegraph.co.uk/business/2021/07/30/chinese-nuclear-power-plant-shut-cracked-fuel-rods/>

19. On 2nd August 2021 French 'le Journal de l'Energie' carried a further story about deteriorating cladding on the nuclear fuel stating that the problem affects all of EDF's EPR reactors.

20. <https://journaldelenergie.com/nucleaire/combustible-nucleaire-empoisonne-edf/>

21. TASC consider that the well-documented problems with EPR reactors worldwide, demonstrate the inherent safety risk associated with this flawed reactor

design. This risk, coupled with the damage that Sizewell C will inflict on the environment and the local community should, in TASC's opinion, weigh heavily in the ExA's decision to recommend refusal of this project.

G.1.1 & G.1.10 Plans

22. We thank the Applicant for advising where the map can be located.
23. Figs 2.1 & 2.2 The developer has marginally improved the plans but has not consistently included Ordnance Survey Grid lines. The plans do not include the blue and green planning lines agreed for Sizewell A and B designed to limit development east of the site's boundary.
24. The plans do not include the Dry Fuel store and other buildings which are to be sited on the western boundary. This is unhelpful and does not allow full understanding of the final development.
25. While reviewing REP2-101 we also note Figure 2.5 provides details regarding the depth of excavations. There appears to be far too much allowance for varying the depth of the foundations within the cut off wall. For each 1 metre depth change of excavation, TASC estimate there could be over 300,000 cu metres of additional material to be moved and deposited. In view of the developer's past failures to assess site conditions at the SZB Dry Store and at HPC, it is fundamental that this question of site soil conditions and excavation depths are properly resolved and appropriate disposal methods identified.
26. With regard to the Applicant's responses at deadline 5, TASC wish to draw the ExA's attention to TASC's deadline 5 response REP5-296, in particular paragraphs 15 and 16 which deal with the relevance of EN6 and paragraphs 17-20 which cover, amongst other things, alternative design.

A1.1.5

27. TASC's deadline 6 comments in relation to questions G.1.1 & G.1.10 are also relevant to A1.1.5, as they highlight major changes to the development area between site nomination and the DCO application. See TASC's deadline 5 response REP5-296, in particular paragraphs 15 and 16 which deal with the relevance of EN6 and paragraphs 17-20 which cover, amongst other things, alternative design.

G.1.4

28. In reply to SZC Co's deadline 5 response, TASC consider that our comments at deadline 3 REP3-139 still stand. Referring to page 55 of the Energy White Paper, we note it states, "*The UK should harness more of the economic benefit from the accelerated deployment of renewable technologies. This will help position the whole of the UK to reap economic benefits*" with which TASC totally agree.

CC.1.13

29. TASC note that SZC Co's deadline 5 response refers the ExA to the ONR's response at deadline 2 where the ONR state in para (ii) "*...currently there are no matters of concern that undermine our view that we should be in a position to grant a licence for Sizewell C by mid-2022, provided NNB GenCo (SZC) Ltd can provide the necessary reassurances in relation to its corporate competences and the acceptability of the SZC site.*" TASC consider that the well-documented problems with EPR reactors worldwide, including recent developments mentioned in the 3 articles below, demonstrate the inherent safety risk associated with this flawed reactor design to the extent that TASC believe it would be prudent for the ExA to request the ONR's opinion of the implications of these recent developments on the Applicant's Sizewell C project. Recent developments are:-

30. An article in July 2021 in the French media by Blast highlights a serious vibration problem in the primary water circuits of the EPR reactors. The article states "*As the design of the primary water circuit is the same on the Flamanville EPR, as well as in China (Taishan) or Great Britain (Hinkley Point), this problem therefore affects all EPRs built or under construction.*"

31. <https://www.blast-info.fr/articles/2021/nucleaire-epr2-le-feu-rouge-de-linstitut-de-surete-a-edf-y4TmgjhVQtmts-E5HAKKKA>

32. On 30th July 2021 The Daily Telegraph reported that one of the EPR reactors at Taishan, China has had to shut down to investigate cracked fuel rods stating "*Taishan plant that has been closed for 'maintenance' uses same reactor technology set to be installed at new UK plants*"

33. <https://www.telegraph.co.uk/business/2021/07/30/chinese-nuclear-power-plant-shut-cracked-fuel-rods/>

34. On 2nd August 2021 French 'le Journal de l'Energie' carried a further story about deteriorating cladding on the nuclear fuel stating that the problem affects all of EDF's EPR reactors.

35. <https://journaldelenergie.com/nucleaire/combustible-nucleaire-empoisonne-edf/>

36. The risks of using the EPR technology, coupled with the damage that Sizewell C will inflict on the environment and the local community should, in TASC's opinion, weigh heavily in the ExA's decision to recommend refusal of this project.