Sizewell C Plan Project EN010012

NNB Generation Co (SZC) Ltd

Deadline 10 Written Representation

Concerns Relating to Change 19 (Proposed water supply strategy)

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1. **The project itself should not be built**, for reasons which I and many others have previously explained, some of the main ones being –

- huge amounts of nuclear waste (for which there is no long-term disposal plan)
- dangerous site on exposed eroding coastline, both for operation and decommissioning
- unacceptable and irreversible impacts on protected wildlife habitats and landscape
- damage to the local economy
- appalling impact on local people from construction traffic and works
- vast cost

2. On top of this, the **extreme lateness to propose a plan** for this key element of the proposed construction, plus the failure to give the recommended 28 days period for Consultation, shows the Applicant's incompetent approach to planning this huge infrastructure project. The issue of water supply has been pointed out as a problem for many years, yet the Applicant finally brings forward a half-formed plan with no detail available, a few weeks before the end of the plan inspection. The examining authority, government, financiers, contractors, electricity industry, and nation cannot have confidence in the Applicant to construct and operate a huge nuclear power station.
3. The Applicant has **attempted to deceive** local people into believing that there will be no additional HGV movements, by such phraseology as "This would not increase the overall number of HGVs predicted for the project during the early years of construction" which is in the community newsletter. This is an untrue statement (see 4 below) and devalues the consultation process.
4. **Water tanker lorries** - As a resident of Woodbridge, **I object to the additional HGV traffic** that would be generated by having to bring in water by tanker. The Applicant has not stated where this water would come from, and so I must assume that it would be from reservoirs in East Anglia or beyond, so that the HGVs would be routed around Ipswich and onto the A12 past Woodbridge. There would be up to 40 additional 44-ton HGVs in each direction each day (80 HGV movements per day) – and that might be exceeded if the desalination plant doesn't become operational on the timescale the Applicant hopes. This would add to the **congestion, noise, vibration and emissions**

affecting Woodbridge, which have already been mentioned in previous responses. These additional movements should not be allowed; in the undesirable event of the project going ahead, it should **wait** until it can be provided with potable water without the adverse impacts of additional HGVs.

5. **Discharges from desalination process** – there are problems associated with discharges from reverse osmosis desalination – not just of minerals which were already present in the sea-water, but of cleaning and maintenance chemicals. See Wikipedia description of Reverse Osmosis desalination and the references cited there. This says "*The reverse osmosis process is not maintenance free. Various factors interfere with efficiency: ionic contamination (calcium, magnesium etc.); dissolved organic carbon (DOC); bacteria; viruses; colloids and insoluble particulates; biofouling and scaling. In extreme cases, the RO membranes are destroyed. To mitigate damage, various pretreatment stages are introduced. Anti-scaling inhibitors include acids and other agents such as the organic polymers polyacrylamide and polymaleic acid, phosphonates and polyphosphates. Inhibitors for fouling are biocides (as oxidants against bacteria and viruses), such as chlorine, ozone, sodium or calcium hypochlorite. At regular intervals, depending on the membrane contamination; fluctuating seawater conditions; or when prompted by monitoring processes, the membranes need to be cleaned, known as emergency or shock-flushing. Flushing is done with inhibitors in a fresh water solution and the system must go offline. This procedure is environmentally risky, since contaminated water is diverted into the ocean without treatment. Sensitive marine habitats can be irreversibly damaged.*"
   The Applicant has made no mention of these discharges nor how they are to be avoided, minimised, mitigated or licensed. The consultation document mentions only phosphorus as an additional contaminant (2.4.16). **Full assessment** of the discharges is essential before desalination can be planned.
   Because it appears that discharges from desalination may pollute the sea locally to the station, it would be better to **postpone the construction** until potable water can be supplied by pipeline. Better still, cancel this ill-conceived and poorly planned project.
6. **Effect of desalination on local marine ecosystem**- though it seems the proposed filter system may prevent small fish fry from being taken into the desalination plant, it would not exclude microscopic organisms, which would then be left in super-concentrated brine for some time, before being discharged back into the sea and carried to the sea-bed in the dense effluent. Many of these organisms would not survive this experience and would be lost from the food-web, with complex knock-on effects and imbalances taking place to larger creatures. This is undesirable; it should be assessed properly, rather than dismissed as it has been in the consultation document.
7. **Energy requirement of desalination** – will be considerable, at 3 to 3.5 kWh per m^3 of water produced. The document mentions diesel generators at first; it doesn't say how long before these are replaced by a regular electricity supply. At the peak of water demand, many thousands of litres of diesel fuel would be required every day – the

consultation document makes no mention of the transport and storage for this fuel, nor of the associated risks of spills and leaks.

8. **Moving the desalination plant** – should this be necessary, the proposed site is alongside the haul road and much closer to the Minsmere SSSI. It appears to involve intake and outflow pipes of approximately 2.5km length alongside the haul road. So the proposal would be to pipe **seawater across the sensitive Sizewell Marshes SSSI** for this distance, then to take desalinated water and **super-concentrated brine/slurry back across the marshes** to the outfall and the construction platform. This raises a number of problems-

a. Risk of pollution to the Sizewell Marshes SSSI by accidental leaks from the pipes
b. Impact of diesel generators (noise, NOx and particulates) being much closer to Minsmere SSSI
c. Disruption to construction project caused by installing pipes alongside or under haul road
d. Temporary non-availability of desalinated water during plant movement
e. Energy requirement to pump liquids/slurry that distance.

Points c and d would appear to extend the construction period, and thus the misery for local people.

For these further reasons, it would be better to avoid desalination and wait for mains supply of potable water before commencing the build – or better yet, cancel the project.

9. **Storage of potable water** – the consultation document makes no mention of storing water. Yet presumably a prudent developer would want some reserve in case of desalination outage (planned or unplanned). How many days' storage is intended? Will it involve a water-tower? If so, there would be visual impact, and it should be mentioned.

For the above reasons, **I object to the outline plan proposed by the Applicant in the consultation document**. While it may have been possible to allay some of the smaller concerns if the Applicant had started work on its strategy for potable water some years ago, it is now too late to provide a satisfactory plan in time for the end of the planning inspection.

The benefits of the Sizewell C nuclear power station are already outweighed by the costs and disadvantages; by the time the problem of water supply could have a satisfactory solution, this will be even more the case.