The Sizewell C Project

9.10.12 Statement of Common Ground - East Suffolk Council and Suffolk County Council Appendix 11C: Operational Noise Summary

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1 INTRODUCTION

1.1.1 There has been discussion and debate during the examination between SZC Co. and East Suffolk Council (ESC) on the matter of operational noise from the power station.

1.1.2 The respective positions of the parties have been set out in various submissions, but were most succinctly summarised orally during ISH8 and subsequently in writing:

- In section 1.7 of SZC Co.'s **Written Submissions Responding to Actions Arising from Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021)** [REP7-071, electronic page 15] and
- At Item 2(d) in ESC's **Post Hearing submissions including written submissions of oral case - ISH 8 Air Quality, Noise, and Vibration 25 August 2021** [REP7-112, electronic page 7].

1.1.3 In summary, the respective positions have been:

- SZC Co. did not consider a noise limit necessary to regulate the noise emissions from the operation of the power station. There is no prospect of materially reducing the noise levels from the power station, such that either the power station meets the limit, in which case the limit has no effect, or the power station exceeds the limit, but as it cannot be made materially quieter, the limit fails the tests of reasonableness and enforceability in paragraph 4.1.7 of NPS EN-1[1].
- Without prejudice to its position that a noise limit is not appropriate, if a limit were imposed on the scheme, then SZC Co's position was that it should be a façade noise limit of 45dB $L_{Aeq,8hrs}$.
- ESC considers that a fixed noise limit of 35 dB $L_{Ar,15mins}$ should be adopted for operational plant noise from the power station, which would appropriately consider tonality, and which would also be consistent with the limits adopted elsewhere on the main development site.
- If a fixed noise limit of 35 dB $L_{Ar,15mins}$ cannot be achieved for practical and/or engineering reasons, then ESC requests that adequate technical justification be provided.

[1] Overarching National Policy Statement (NPS) for Energy (NPS EN-1)

1.1.4 To seek to move matters forward, a meeting was held between SZC Co. and ESC, with a member of SZC Co.'s Engineering Team attending to provide a detailed insight into potential engineering constraints that prevent materially lower noise levels being achieved.

1.1.5 A summary of the meeting is set out in section 2 of this note, with a summary of the updated positions, as understood by SZC Co. in section 3. ESC's position is set out in the main body of the final Statement of Common Ground (Doc Ref 9.10.12(B)) to be submitted at Deadline 10.

2 SUMMARY OF MEETING

2.1.1 A meeting was held virtually on 30th September 2021, with the following attendees:

- Mike Brownstone (MB), Technical Lead on Noise, on behalf of SZC Co.
- Derek Harper (DH), Engineer & Delivery Lead (Conventional Island) on behalf of SZC Co.
- Mark Kemp (MK), Environmental Health Officer, on behalf of ESC
- Joe Bear (JB), Adrian James Associates, on behalf of SZC Co.

2.1.2 DH outlined how systems are categorised at Sizewell C, and across all nuclear projects, with nuclear safety systems and non-nuclear safety systems, depending on their function. In essence, if a system serves a function directly-related to the nuclear elements of the power station, it will be classed as nuclear safety system; where a system's function is not directly related to nuclear elements of the power station, it will be classed as a non-nuclear safety system.

2.1.3 An example of the difference was provided in terms of the source listed as 'HLA Safeguard Building Refrigeration Group' in Table 4.1 in the Sharps Acoustics noise report in Appendix C of SZC Co.'s **Written Submissions Responding to Actions Arising from Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021)** [REP7-071, electronic page 53].

2.1.4 Any building with 'safeguard' in its title serves a function directly-related to nuclear safety. A heating, ventilation and air conditioning (HVAC) system on the 'HLA Safeguard Building' will have plenums and filters on its intakes, and HEPA filters on its exhausts, all of which are specified to design tolerances and standards that are much more tightly controlled than non-

nuclear safety systems, and there is no possibility of altering any element of the approved design.

2.1.5 By way of comparison, the turbine hall is a non-nuclear safety system, since it serves a function not directly-related to the nuclear elements of the power station. The turbine hall vents are collectively the most prominent noise source associated with the operational power station, as shown in Table 4.1 in the Sharps Acoustics noise report in Appendix C of SZC Co.'s **Written Submissions Responding to Actions Arising from Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021)** [REP7-071, electronic page 53].

2.1.6 While the design tolerances and standards for non-nuclear safety systems in theory offer some possibility of alteration to accommodate noise control measures, in practical terms, the size of the building and the number of sources that would require alteration mean that the loading of the structure of the building would be altered beyond the design tolerances. There are also considerations of the safety of staff required to inspect and maintain any noise mitigation on the turbine hall, where the equipment would be on the roof, some 31m above ground level.

2.1.7 Notwithstanding these constraints, it is possible to apply some noise mitigation by exception. An example was set out in paragraph 1.7.13 in SZC Co.'s **Written Submissions Responding to Actions Arising from Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021)** [REP7-071, electronic page 17], whereby acoustic attenuators were specified for nine exhaust fan vents on the sides of the turbine building at Hinkley Point C.

2.1.8 DH reiterated the point made in paragraph 1.7.14 that the attenuators were specified to achieve the 45dB L_{Aeq} noise limit that applies at Hinkley Point C, not to achieve lower levels.

2.1.9 DH summarised the certification process for the power station proposed for Sizewell C. The design has been approved by both the Office of Nuclear Regulation (ONR) and the Environment Agency (EA), under their own processes.

2.1.10 The ONR process is known as Design Acceptance Confirmation (DAC), and this was granted in December 2012.

2.1.11 The EA process is known as Statement of Design Acceptability (SoDA), and this was granted in December 2012 as well.

2.1.12 Given the certified and regulated nature of the design, as confirmed by the granting of DAC and SoDA in December 2012, the scope to alter the design to accommodate significant noise mitigation is exceptionally limited. Any such mitigation is likely to result in the redesign of associated systems to accommodate both the physical loading changes, and the operational loading changes.

2.1.13 It is considered likely that a redesign of this nature will place the design of impacted safety related systems, structures and components (SSC) of the modified SZC design outside certified and approved parameters and as a result, will require redesign and resubmission of the affected SSC's for internal and external regulatory approval.

2.1.14 DH agreed to provide a list of all of the acronyms used in the Sharps Acoustics noise report in Appendix C of SZC Co.'s **Written Submissions Responding to Actions Arising from Issue Specific Hearing 8: Air Quality, Noise and Vibration (25 August 2021)** [REP7-071, electronic page 50]. The list is appended to this note in Appendix A.

3 POST-MEETING NOTES

3.1.1 Following the meeting, further discussions have been held between SZC Co. and ESC.

3.1.2 ESC noted that one of their primary intentions in seeking a noise limit for the operational power station is to control future development at the site, for example, to cater for the situation where the power station is modified in a way that alters, and potentially increases, the noise emission levels.

3.1.3 Since the power station is an approved and certified design, SZC Co. does not consider it likely that any modifications will be likely or permissible, however, it is accepted that controlling future emissions from the power station is a reasonable aim.

3.1.4 Wording for a potential requirement has been agreed, and given ESC's concerns in respect of future changes in noise level, SZC Co. will include the requirement in the final DCO to be submitted at Deadline 10.

3.1.5 The proposed wording is:

"Operational Noise

When measured at the façade of any dwelling, legally in existence at the date on which this Order is made, between 23:00 and 07:00 hours,

operational noise from the proposed power station shall not exceed 45dB $L_{Aeq,1hr}$."

3.1.6 To align with the Sizewell C project replication strategy, it is SZC Co.'s intention that all noise attenuation measures incorporated into the HPC Turbine Building HVAC system designs to achieve the 45dB target at the HPC site boundary, will replicated at Sizewell in order to meet the noise limit.

APPENDIX A: ACRONYMS USED IN OPERATIONAL NOISE ASSESSMENT

- **HLA**: Safeguard Electrical Buildings HLA, HLB, HLC, HLD – four separate buildings providing 400% redundancy of safety-related electrical equipment. Similar arrangement for safety related mechanical equipment buildings (HLF, HLG, HGH and HGI).
- **HTTP:** Main Transformer Platform/Area (location of 27kV/400kV transformers that export power to the UK grid)
- **HHK:** Interim Spent Fuel Store for housing spent reactor fuel in shielded canisters, to be built after station completion
- **HK:** Fuel Building for receipt and handling of new fuel
- **HN:** Nuclear Auxiliary Building housing auxiliary systems that support reactor operation
- **HQB:** Radioactive Waste Process Building housing Low Level Waste and waste processing systems
- **HTS:** Unit Transformer Platform/Area (location of 400kV/10kV unit transformers that supply the station from the UK grid)
- **HF:** Conventional Island Electrical Building housing switchgear and control equipment supporting the Turbine Island