

Sizewell C Acoustic Fish Deterrent (AFD) Response to EDF Acoustic Fish Deterrent Report (EN010012-006229)

FGS Reference – 1688R0403

Overall Conclusions –

- **An independent ROV manufacturer has reviewed the latest AFD report and concluded the project is “very doable”, and there is equipment currently available to meet the requirements for ROV maintenance of an AFD system at Sizewell C.**
- EDF says it is committed to installing an AFD and following Environment Agency Best Practice guidance, but claims in its latest report it can't be done due to safety concerns. It is now clear that these concerns can be overcome and EDF can meet its environmental protection aspirations.
- **While EDF states it has made a business decision not to install an AFD, we urge the Planning Inspectorate not to ignore UK Best Practice, when it is evidently possible to safely install, operate and maintain an AFD system to protect the marine environment for the next 60 years.**
- An AFD should be included in the mitigation measures under the DCO, and EDF should conduct a site-specific Optioneering phase to develop the most suitable deployment system for an AFD system at Sizewell C.

With regard to the EDF SZC Co. latest report –

- The vast majority relates to Hinkley Point C.
- It is incorrect to simply copy an optioneering deployment design for an AFD system at Hinkley Point C onto Sizewell C, as the intake conditions are significantly different.
- Likewise, an AFD at Sizewell C cannot be simply dismissed by EDF just because EDF considers an AFD should not be installed at Hinkley Point C.
- **Separate detailed design is required at Sizewell C. This has not been completed.**
- The reduced water depths and small variation in tides at Sizewell make engineering options previously discounted at Hinkley potentially viable at Sizewell C.
- **The use of ROVs discount the vast majority of the safety concerns EDF raise, as divers can be eliminated from the routine work associated with the AFD.**
- The report again underestimates the value of AFD across the whole fish community, with ~60% overall deflection expected on the basis of previous studies.
- EDF's assessment of the impact of the intakes on fish stocks discounts the impact on local fish populations, which potentially will be significant.

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1. Site Conditions

The table below shows the difference between Hinkley Point C and Sizewell C intakes

Variable	Hinkley Point C	Sizewell C
Max Water Depth	20.28 m	12 m
Tidal Range	14.24 m	2.2 m
Mean turbidity	“very high”	452 mg/l and 513 mg/l
Max turbidity	“very high”	>2000 mg/l
Max tidal flow - flood	1.25 m/s	1.15 m/s
Max tidal flow - ebb	1.5 m/s	1.10 m/s

Table of Environmental Conditions at Sizewell C vs. Hinkley Point C

These differences are significant when designing a deployment system, **one system doesn't fit all.**

1.1. Tidal Flows

- Maximum tidal flows are significantly less at Sizewell than Hinkley.
- Separate documents indicate the maximum flow may be lower than quoted by EDF, peaking at 1.0 m/s mid water, not 1.15 m/s.
- Hinkley Point C flows are up to 50% higher, at 1.5 m/s.
- Lower water velocities at Sizewell C mean the maintenance of the system can be carried out by ROVs.

1.2. ROVs

- FGS has reached out to an ROV manufacturer, who has reviewed EDF's latest report, and the conditions quoted for the site, and FGS has been advised –
 - **“None of the specifications are show stoppers, its all very doable”**
 - “ROVs are currently being used elsewhere in significantly higher flows, and are used in the North Sea for work in the Oil and Gas industry in very similar conditions.”
 - **“ROVs are available now to meet the requirements of the project”**
 - Snagging of the ROV tether is very rare due to the ROV pilots' expertise, in addition systems are available to reduce the risk of snagging, and if snagging does occur the pilot is trained to free the ROV.
 - The intake and deployment systems will need to be designed for maintenance by an ROV, but that simply requires ROV expertise input during the design phase.
- The ROV manufacturer did also ask, with the intake being so close to the surface, “how does EDF intend to keep the Intake Heads free from biofouling if it doesn't intend to use divers, or an ROV to carry out cleaning?”
- EDF has stated *“FGS Ltd. in its submission at Procedural deadline B [PDB-061] (Ref.5) acknowledges that further work is required to develop an ROV that would be suitable for the required task and assumes that SZC Co. can develop one or that FGS Ltd could develop one at the behest of SZC Co. There is no confidence that such a design can be*

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achieved and it would not be a responsible approach to safety to install a system known to present serious maintenance hazards to divers in the hope that a solution based on ROVs would be developed at some indeterminate time in future”.

What FGS actually stated was

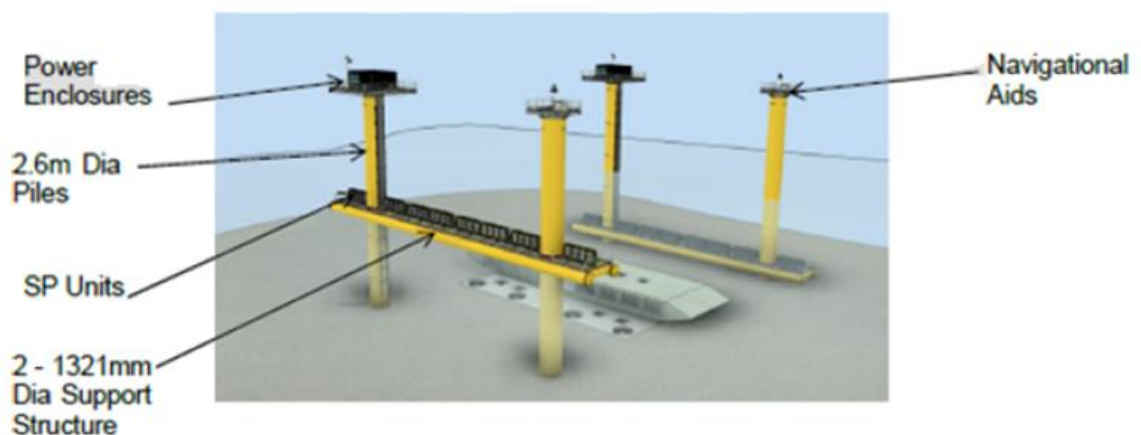
“It has been stated by EDF that the system will need to be maintained by divers however, following personal conversations with an ROV company we understand that ROVs should be able to carry out the required work, and even if there is not one available at this moment in time, we assume if it wishes EDF can engage with ROV suppliers to develop a suitable unit. We also understand that EDF declined to start this process as part of the AFD ‘Optioneering’ phase it conducted in 2017 for HPC. If EDF does not wish to develop the required ROV then FGS would be willing to do so as part of the detailed design contract for an AFD for both SZC and HPC”.

- As stated above, **following a simple phone call to an ROV manufacturer, ROV units are currently available to work in the conditions specified for Sizewell C**, so all the safety comments raised by EDF are simply spurious.

2. Optioneering

- The optioneering process for Hinkley concluded that the Sound Projectors should be deployed in frames that would be accessed by divers or an ROV.
- This was based upon the water depth and tidal variation at the site.
- Sizewell has significantly lower overall water depth, and significantly smaller tidal range.
- EDF states “the Sizewell C intakes locations are in a deeper depth (over the whole tidal cycle)”, however the mean depth is only 10m, so EDF’s statement is misleading.
- The conditions at Sizewell C open up other engineering options, such as deployment rails, which were discounted at Hinkley due to the large variations in tide at Hinkley.

Figure 5.17 Depiction of SPs mounted on non-subsea piled beam structure



One of the alternative deployment options considered at Hinkley Point C

- The optioneering process at Hinkley also concluded the proposed AFD posed no concern regarding Nuclear Safety, so it is misleading to imply it may be a concern at Sizewell C.
- Any concerns can be considered during the Sizewell C design / optioneering phase.

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3. Location of Intake Heads

- The report raises the issue of the intakes being located 3km from shore and the issues of powering and accessing the AFD. FGS has previously pointed out that EDF has windfarms located far further out to sea, and spread over a much wider area, so these issues are simply spurious.

4. Glossary & List of Abbreviations

The following are taken from Environment Agency guidance, along with other additions as required to provide a complete list of acronyms in this document.

AFD: Acoustic Fish Deterrent: propagation of underwater sounds to deflect fish from water intakes.

EA: Environment Agency

EDF: EDF Energy

FGS: Fish Guidance Systems Ltd.

HPC: Hinkley Point C.

ROV: Remote Operated Vehicle

SP: Sound Projectors

SZC Co.: NNB GenCo (SZC) Ltd

Dated: 6th August, 2021