

Devon and Severn IFCA Response to the Consultation on the Siting Criteria and Process for a New National Policy Statement for Nuclear Power with Single Reactor Capacity Over 1 Gigawatt Beyond 2025, Submitted March 2018



Who is Devon and Severn IFCA?

Devon and Severn Inshore Fisheries and Conservation Authority (D&S IFCA) is the statutory manager of sea fisheries from baselines out to six nautical miles. The powers and duties of D&SIFCA are provided by the Marine and Coastal Access Act (2009). The ten regional Inshore Fisheries and Conservation Authorities (IFCAs) were set up as a new type of regulator to work with stakeholder groups to achieve the long term goal and vision of healthy seas providing “ecosystem services” for the future in English Inshore waters. The ten IFCAs have a shared vision:

“Inshore Fisheries and Conservation Authorities will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry.”

The IFCA approach is to ensure delivery of our statutory duties and to be guided by the governments Marine Policy Statement and adherence to the High Level Marine Objectives which can be summarised as:

- Achieving a sustainable marine economy
- Ensuring a strong, healthy and just society
- Living within environmental limits
- Promoting good governance
- Using sound science responsibility

Devon and Severn IFCA has two sea boundaries. The southern boundary with the English Channel stretches from Lyme Regis to the border between Devon and Cornwall. The northern boundary with the Severn Estuary stretches from Countisbury Cove as far as Maisemore Weir to Chepstow and includes Lundy Island. It also includes the River Avon through Bristol and all other rivers entering the sea within the district. The district extends to sea from baselines to 6 nautical miles or the boundary with Welsh Territorial Waters in the north of the area.

Why is D&S IFCA responding to this consultation?

Devon and Severn IFCA has no statutory role in the licensing or permitting process for nuclear power stations. However there is an existing nuclear power station in our District (Hinkley Point) and D&S IFCA officers sit on the Marine Technical Forum for the new build at Hinkley Point C.

D&S IFCA has major concerns about the potential local impacts and in-combination regional-national impacts of entrainment, impingement and direct and indirect mortality of fish caused by direct cooled nuclear power stations. In addition, D&S IFCA has concerns regarding the evidence base for local decisions regarding new nuclear builds and believes a more strategic approach is required to address these. Essentially, D&S IFCA does not believe that direct cooling of new nuclear power stations should be considered Best Available Technique in any coastal or estuarine areas.

Fisheries management is moving toward a more holistic approach, as showcased in the Government’s recent 25 Year Environment Plan which indicates a move towards Ecosystem Based

Fisheries Management. There is a growing appreciation of (and evidence base for) the importance of early life-history stages of fish and the protection of their habitat. D&S IFCA therefore believes that there should be a move away from direct cooled new nuclear power stations in coastal and estuarine locations towards closed circuit cooling by low profile cooling towers or air cooling.

D&S IFCA also has concerns that the current process for identifying new nuclear sites, coupled with the process of consenting, permitting and licensing is flawed: Consents, permits and licenses are often given based on estimates of fish impingement, entrainment and mortality prior to important technical decisions which fundamentally affect these estimates. This means that fish and fisheries are often currently poorly protected by the current system.

Specific answers to the consultation are provided in the table below for consultation questions 1 and 2. Responses to questions 3 and 4 are provided in the text below the table, along with closing remarks which do not specifically relate to the consultation questions, but D&S IFCA believes are important to consider in the wider context of this consultation.

Criteria	Section	Page(s)	Consultation question 1: Do you agree that the proposed exclusionary and discretionary criteria are appropriate	Consultation question 2: If not, how should the criteria be changed to achieve this objective and, specifically, are there any additional criteria that should also be used?
General – (not related to a criteria) need to avoid, minimise or mitigate	Environmental protection, 2.60	31	Section 2.60 defines the expectation on developers to avoid, minimise or mitigate any impacts of new nuclear stations. All three of these actions require robust evidence in order to have any meaningful impact on the level of fish mortality. D&S IFCA does not believe a sound evidence base exists for most of these issues at a site level.	A more strategic approach is required. Either co-ordinated long-term scientific studies on mitigation methods, long-term studies of fish communities & the wider ecology (at proposed sites) or a strategic move away from direct cooling, as has been seen in the United States.
General (not related to a criteria) – identification of high level impacts of new nuclear power stations	Environmental protection, 2.61	31	Do not agree that the criteria relate only to designated sites. The largest impacts from new nuclear sites are often from water abstractions from direct cooling power stations on fish through impingement and entrainment. The high-level environmental effects identified in Section 2.61 should specifically identify ‘fish and fisheries’.	Although these are arguably covered by the estuarine and marine ecology effects, fish and fisheries impacts are of interest to additional specific stakeholders and interest groups and are managed separately to the broader marine ecology and habitats. Therefore they should be highlighted separately in Section 2.61. Bass Nursery Areas in particular should be highlighted, and attention given to the recent review conducted by Cefas and Defra.
General (all environmental protection criteria) – criteria only relate to designated sites	Environmental protection, 2.61 & 2.62	19, 31-39	Disagree that the criteria for the location of new nuclear sites relate only to designated conservation areas. These sites are rarely designated with fish or fisheries specifically in mind. Not consistent with the Government’s 25 Year Environment Plan and the signalled move towards Ecosystem Based Fisheries Management.	Need to include fish habitat in discretionary criteria, especially for most susceptible life-history stages e.g. spawning and nursery areas. This is highlighted in the Environment Agencies 2010 guidance document (Turnpenny et al. 2010). Whilst formally designated sites (e.g. bass nursery areas) or those highlighted in National reviews (e.g. Ellis et al. 2012, MMO 2016) are a starting points, much higher resolution local data collection is required including validation of local anecdotal information, such as reports of herring spawning areas in the Severn Estuary (e.g. Turnpenny 2010).

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2.64	Environmental protection, 2.64	32	Unsure – need clarity on what relationship a strategic level HRA would have with the more detailed HRA undertaken during permitting & licensing processes? Very difficult to predict impacts or effectiveness of mitigation without detailed scientific assessment, especially for fish. Would this undermine future site-level work? But, support for more strategic approach in general, as outlined elsewhere.	Also needs to include a strategic in-combination assessment with other nuclear power stations and industry which impacts the same features or could impact on site integrity. Need better inclusion of impacts on fish and the relationship with site integrity.
2.69	Environmental protection, 2.69	33	Yes with additions.	Sub-features should also be identified, as these are often crucial & the most appropriate level for assessment and management. E.g. fish assemblage sub-feature of estuary feature of the Severn Estuary SAC.
2.72	Environmental protection, 2.72	34	Yes but requires additions.	Should also include areas of important fish habitat – especially habitats utilised by those life-history stages which are most vulnerable to impingement and entrainment e.g. spawning and nursery grounds for species of commercial, conservation or ecosystem importance. Additionally should include areas of habitat used by later life-history stages of species most prone to entrainment and impingement e.g. whiting, herring, sprat, bass and any others identified.
2.68, 2.74	Environmental protection, 2.68, 2.74	33	No.	Should include wider consultation especially focused on fish/ fisheries interests, as these are often one of the greatest impacts of nuclear power stations with direct cooling.

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2.94	Access to suitable cooling, 2.94	39	No.	D&S IFCA believes that direct cooling should not be considered appropriate for estuarine and marine sites. This is due to; a lack of robust local data on fish spawning and nursery areas and essential fish habitat, a lack of robust scientific advice linking adult life-history stages to juvenile life-history stages or potential impacts of nuclear power stations, a poorly developed body of evidence on compensation options for fish and a limited number of suitable sites for compensatory habitat works; a lack of detailed information on in-combination activities and ecosystem effects of fish impingement and entrainment; the aim of the governments 25 Year Environment Plan of move towards Ecosystem Based Fisheries Management and a lack of integration between marine planning and licensing and fisheries management and stock assessment.
2.95	Access to suitable cooling, 2.95		Agree that the environmental impacts will depend on lots of local variables. However, any intake of water for a nuclear power station with direct cooling in estuarine or coastal areas is likely to have an impact on the fish population.	D&S IFCA believes that direct cooling should not be considered a suitable method.
2.95	Access to suitable cooling, 2.95	39	Seems to be some contradiction between 2.95 and 2.64. How can a strategic HRA take place if environmental impacts depend upon detailed design of the cooling system?	Requires clarity on scope and purpose of strategic HRA.
2.96	Access to suitable cooling, 2.96	39	Yes, but with additions	Must include strategic review of the evidence base for decision making e.g. what is the evidence base for mitigation measures. Can we be sure they work and what the are the limits of our knowledge e.g. types of environment they have & haven't been trialed in.

Consultation question 3: Do you have any comments on the process to designate potentially suitable sites in the new NPS for nuclear set out in paragraphs 3.1-3.14?

D&S IFCA has no comments on the content of paragraphs 3.1-3.14, but would like to raise a concern related to the wider issue of siting and permitting/ licensing/ consenting new nuclear power stations. In section 2.62 of the consultation paper, it is stated that:

‘At the strategic level, it is inappropriate to provide siting criteria for many of these issues as they are more appropriately addressed at the development consent stage, when environmental impact assessments are undertaken.’

However, as described in the EA’s 2010 evidence paper on cooling water options, often the key mitigation measures are only finalised after the EIA stage, during the construction phase:

‘The timing of the various design process stages is linked to the phases of the development of the power station. For example, the design concept and environmental impact need to be established for inclusion in the Environmental Statement. On the other hand, the structural design of individual system components may not be finalised until the construction phase.’

This allows a system which will consent the building of a nuclear power station based on an estimation of its potential to impact fish and fisheries, using what D&S IFCA believes to be a very narrow evidence base for the effectiveness of fish protection/ mitigation measures. If those estimates prove to be an underestimation and a post-hoc analysis of monitoring data shows that the assumptions of the EIA/ HRA were incorrect, or planning decisions affect the estimations made in the original HRA/EIA the new station may already be in the construction phase.

Consultation question 4: Do you have any comments on the process for future site nominations set out in paragraphs 4.1-4.14?

D&S IFCA has no specific comments on consultation questions 4.

D&S IFCA position summary

In summary D&S IFCA believes that there must be a more strategic approach to the design of new nuclear sites, which includes a move away from direct cooling technology towards closed circuit cooling or air cooling. This decision should be made in light of the significant evidence gaps regarding fisheries ecology and the dynamic and complex nature of estuarine and marine fisheries ecology to reflect the move towards an Ecosystem Approach to marine and fisheries management.

References

Ellis, J.R., Milligan, S.P., Readdy, L., Taylor, N. and Brown, M.J. (2012) Spawning and nursery grounds of selected fish species in UK waters. Sci. Ser. Tech. Rep., Cefas Lowestoft, 147: 56pp.

MMO (2016) Follow on to the Development of Spatial Models of Essential Fish Habitat for the South Inshore and Offshore Marine Plan Areas. A report produced for the Marine Management Organisation, pp 142. MMO Project No: 1096. ISBN: 978-1-909452-40-4.

Turnpenny, A.W.H., Coughlan, J., Ng, B., Crews, P., Bamber, R.N., Rowles, P. (2010) Cooling Water Options for the New Generation of Nuclear Power Stations in the UK, Evidence Report C070015/SR3, Environment Agency, Bristol, UK.