From:	Helen Croxson
To:	"HornseaProjectThree@pins.gsi.gov.uk"
Cc:	Peter Lowson; Nick Salter
Subject:	RE: Hornsea 3 Offshore Windfarm Project (EN010080-001331)
Date:	14 March 2019 12:31:23
Attachments:	image002.png Hornsea 3 Response to ExA3 deadline 7.pdf

Hornsea Three Project Team,

Please find attached responses from MCA for deadline 7.

Kind regards

Helen

Maritime & Coastguard Agency

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Please note I currently work Tuesdays, Wednesdays and Thursdays.

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The Hornsea Three OWF Team
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The Planning Inspectorate
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BS1 6PN

Your ref: 20010612
Our ref: Hornsea 3 Offshore Windfarm Project (EN010080-001331)

14 March 2019

Dear Sir/Madam

Application for an Order granting Development Consent for the proposed Hornsea Project Three Offshore Wind Farm

The Examining Authority's Deadline 7 – Responses to the Examining Authority's request for further information

Thank you for the opportunity to comment further on our advice regarding the layout for Hornsea 3. We would like to respond as follows to the Examining Authority questions and apologise that the MCA was not able to send the relevant Search and Rescue expert to the Issue Specific Hearing 8, on this occasion.

Question/request for further information from the Maritime and Coastguard Agency		
REF	**Question**	**MCA Response**
Helicopter Refuge Areas (Principle 5)		
F1.1	The Applicant has commented in response to Q2.5.5 [REP4-012] that fitting automatic identification transmitters on selected turbines would aid orientation for search and rescue (SAR) pilots. The Applicant suggests that that, in poor visibility (less than 1000m), a	It is agreed that AIS transmitters on selected turbines would aid identification of turbines for SAR pilots, but it is just another means of indicating where the turbines are, along with other mapping and sensing equipment on the aircraft (as highlighted by the Applicant's SAR expert). However, they do not justify the removal of the need for a suitably spaced SAR refuge area, particularly if there is only to be one line of orientation as the turbines would still require to be avoided and negotiated. AIS would certainly aid SAR crew's awareness of set lanes, particularly in poor visibility, but the requirement for sufficient spacing to operate, turn and exit the windfarm is not mitigated by AIS.

HM Coastguard

	refuge area would not assist with orientation because the spacing of turbines would be such that the refuge area would not be visible in any event. How do you respond?	In response to the applicant's additional points in their answer to Q2.5.5: The MCA and SAR helicopter contractor have made it quite clear throughout the process, and in their documentation, that SAR aircraft will not normally attempt to maneuver within SAR lanes or transiting between lanes and this is only if conditions allow, which would not be the case in poor visibility. As previously mentioned in MCA responses, the refuge area does not have to be near the scene of a SAR incident but offers better access into the windfarm than if it didn't exist. Regardless of whether AIS is fitted to turbines or if the spacing is greater than 1km, SAR helicopter crews will not be transiting through a windfarm in bad weather where there are not straight lines. The SAR lane offers more options for rescue, particularly if there is only one line of orientation. The SAR lanes proposed would likely allow an aircraft to winch, if the conditions were suitable, but not at all wind directions. A SAR lane may allow an aircraft to winch from a vessel from inside the windfarm, without a long sail to open water. A winch may be from an applicant's support vessel, but this is assuming they are in the area, and/or are able to assist. This will not always be the case and the helicopter may have to operate in an area when the applicant is not there, due to workload or weather conditions. The MCA also wishes to note that it is aware that ex-RAF crews got to the stage of refusing to enter windfarms due to the risks associated, and therefore the work being undertaken now to allow current SAR crews the ability to enter them is hugely important but shows the level of risk which still exists, albeit in areas which now have much greater spacing.
Width of development lanes (Principle 8)		
F1.2	The Applicant has suggested that your Deadline 3 comments on the Applicant's response to Q1.5.4 [REP3-084] imply that, in SAR operations, only a visual search is effective. How do you respond?	The MCA has not stated that only a visual search is effective. There are a multitude of search options available to the aircraft crew and each would have its own benefits depending on the object being searched for and the conditions. However, visual search is a key tool in a search planners' calculations and if this can be supplemented by electronic searches then this should improve the probability of detection. The MCA and the helicopter contractor also dispute the claims made by the applicant regarding the use of FLIR. The droplet size is a factor but as is the density of the droplets and effectively, FLIR struggles to see through 'a wall of water'. The MCA understands that there are no studies available to quantify the effectiveness of FLIR in moisture however experience by crews using the system constantly is that the image is degraded in moisture. The applicant states in their response that the MCA commented that the cameras are "generally only used when stationary". The MCA actually said that "cameras

		are generally only used when the aircraft is stationary, though not entirely" and thereby recognising that they are not always stationary. However, the MCA stands by this original comment in that normally, for effective search of an area using the camera, the aircraft would be stationary. If conducting full searches with the aircraft moving, then the rear crew may elect to supplement this with the use of the camera. At no time has the MCA said that the pilots would become disorientated by using the camera. The comment on disorientation, relating to the use of the camera, was reflecting the impact on the rear crew and this is a statement received by actual rear crew operators.
Lines of orientation (Principle 3)		
F1.3	You have acknowledged in response to Q2.5.1 [REP4-129] that previous offshore wind farms have been approved with a single line of orientation but you consider that those examples were undesirable. We understand that Hornsea Project 1 and Hornsea Project 2 were approved with a single line of orientation. Are there any site-specific considerations that might lead to a different conclusion for Hornsea Project 3?	The MCA were in discussion with the developers regarding the Hornsea 1 layout in late 2014 and early 2015, before MGN 543 was published and before we had formally established two lines of orientation as MCA's policy line. It was the first of the Round 3 wind farms located further offshore beyond the territorial seas, whose turbines were the largest sized turbines for which we had approved a layout. Since then the impacts on SAR has been further developed, and the time of the Hornsea 1 discussions, the implications of searching with helicopters below the turbine height hadn't been fully considered. The layout achieved was a vast improvement on what was originally proposed, and at the time we had to work hard to get just one line of orientation through via the consenting process. This then helped MCA improve and progress our policy lines going forward. Hornsea 2 was still in the planning process at the time and had not received development consent but its layout was dependent on Hornsea 1's layout design in that it was a continuation. Our experience, knowledge, understanding of the impact of renewables has evolved, and MGN 543 was rewritten in 2016 to require two lines of orientation unless there was a suitable safety reason why only one was considered acceptable. The MCA would be happy to consider the safety case, and if we feel it is justified, we may accept just one line of orientation. This process usually happens after consent as part of discharging the condition of consent. In addition, the MCA will be conducting exercises at Hornsea 1 now that the turbines are in place to further explore the Search and Rescue capabilities, and the difficulties experiences inside offshore windfarms.
F1.4	In relation to any comparison with Hornsea Project 1 and Hornsea Project 2, the Applicant	The MCA accepts that there are likely to be fewer small craft operating in the vicinity of Hornsea 3.

	states that the location of Hornsea Project 3 would be further offshore (thus likely to have fewer small craft), would have a lower traffic density and the spacing of the turbines would be greater – factors the Applicant considers make it more suitable for a single line of orientation [REP6-009]. How do you respond?	However, as our experience in this field has evolved, and as more applications for new developments are being received, there is a clear need to adapt to ensure that, as our seas become increasingly busy with sea space competition, particularly as we enter Round 4 of the Crown Estate's new leasing opportunities, the safety of navigation is preserved for shipping, recreation, and fishing. Ensuring multiple lines of orientation as we go forward will significantly contribute to safety and this approach has been discussed and supported by our key stakeholders at the UK's Safety of Navigation Committee (UKSON) comprising a wide range of experts in the marine environment. We would also like to point out that due to the size of the turbines, the larger spacings between them, and the cumulative effect of multiple windfarms in the area, could actually encourage vessels to transit through the site over time. We have also seen predictions for the Southern North Sea which show no obvious east to west straight-line transit options from the UK to the continent. There are also the SAR concerns which supports this position going forward.
F1.5	The Applicant has set out a safety case for a single line of orientation in answer to our WQ2.5.1 [REP4-012]. The points made include low numbers of vessels, consultation feedback, the minimum spacing of turbines being greater than other Round 3 offshore wind farms and the advice of its SAR specialist. What is your response to the Applicant's safety case?	The MCA has asked the applicant to provide a safety case which; 1) draws out the relevant aspects of the NRA to support one line with regards to risk; 2) incorporate the results of any Geotech/ground conditions/surveys and other constraints leading to just one line of orientation in the layout design; 3) any additional lines of orientation or area where you could or have achieved improvements in the layout, which may not be consistent across the whole area; and 4) Consideration of the impact on SAR with just one line of orientation. Once the MCA has considered this, we may well consider one line of orientation is acceptable on this occasion.
F1.6	Is it your view that a safety case for single line of orientation can only be persuasive where (amongst other factors) there is a proposed array layout for you to consider rather than a set of proposed layout principles?	The MCA's preference has always been to assess layout options rather than a set of design principles, which can be open to interpretation, and may offer a layout which MCA would not consider in line with MGN 543.

What if the Layout Development Principles are not agreed by the end of the examination?		
F1.7	In the event that the Layout Development Principles have not been agreed by the end of the examination would it be appropriate to refer to them in the conditions of the Deemed Marine Licences?	On the understanding that MCA and Trinity House have the opportunity to assess the layout in line with MGN 543 as part of the DML/DCO, we would be content.
F1.8	If the Deemed Marine Licences did not refer to the Layout Development Principles would the requirement for the array layout to be approved by the Marine Management Organisation (MMO) in consultation with MCA and Trinity House provide the Secretary of State with sufficient assurance in relation to effects on navigation safety and SAR operations?	Yes, on the understanding that MCA and Trinity House have the opportunity to assess the layout in line with MGN 543 as part of the DML/DCO, - and this is how the majority of previous windfarms have been consented.

We hope the Examining Authority finds this information useful as part of its considerations for the Hornsea 3 development.

Yours faithfully,

Helen Croxson
OREI Advisor
Maritime and Coastguard Agency