INFRASTRUCTURE PLANNING

THE INFRASTRUCTURE PLANNING (EXAMINATIONS PROCEDURE) RULES 2010

THE THANET EXTENSION OFFSHORE WIND FARM ORDER

Response to Secretary of State's Request for Information and Comments on the Application (21 November 2019) submitted on behalf of the Port of London Authority and Estuary Services Limited

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Response to BEIS Letter of 21 November 2019: Request For Information and Comments on the Application – EN010084

The PLA and ESL previously commented on Appendix 42 to the Applicant's Deadline 6 Submission: Thanet Offshore Wind Farm Collision Assessment of Proposed Extension (the "Collision Assessment") in their Deadline 7 submission (PLA 30 / ESL 30). These further comments should be taken in addition to those submitted in June.

The PLA and ESL's concerns about the effects of the Proposed Extension remain largely unaddressed by the Applicant. The extension would encroach into the existing shipping lanes, lengthening journey times into the Port for commercial services that would have to re-route around the extended wind farm. The National Policy Statement for Ports (January 2012) recognises that shipping will continue to provide the only effective way to move the vast majority of freight in and out of the UK, and the provision of sufficient sea port capacity remains an essential element in ensuring sustainable growth in the UK economy. In particular, the Ports NPS:

a) Defines a need for unimpeded access to ports with water deep enough for the largest ships in order to meet the forecast demand for additional port capacity (as defined in Paragraph 1.1.2);

b) Confirms that ports play a vital role in support of the national and regional economy, trade and growth;

c) Identifies that "currently, the largest container and ro-ro terminals are in the South East" and that "much of the tonnage handled is concentrated in a small number of ports, with the top 15 ports accounting for almost 80% of the UK's total trade"; and

d) Identifies a need for ports to be efficient and competitive to enable them to contribute to long term economic growth and prosperity.

Two of the top ten largest ports in the UK are located on the banks of the Thames Estuary and the most recent available figures (from 2018) show that the ports of London and Medway handled over 63 million tonnes or 13.4% of the total UK throughput of goods (in tonnes – www.Gov.uk, Port Freight Statistics). The need to support increased energy production from sustainable low carbon sources should therefore be balanced against the need to support shipping and port activities.

The existing windfarm already presents challenges to ESL and PLA Pilots, especially during busy times and particularly during periods of strong winds, causing delays to vessel arrivals within the Port of London; these challenges would be exacerbated by the proposed extension. The PLA and ESL consider that any extension to the south and west of the existing wind farm will increase significantly the risks to navigation for all types of vessels, especially those using the North East Spit Boarding and Landing Area to enter or depart the Thames Estuary. The proposals would push the Pilot boarding station further from the shore, adding additional cost to the service by lengthening the pilotage act, necessitating additional vessels, fuel and crew. This would also make the Port of London less resilient in bad weather, as pilots would be less able to board in heavy seas.

It is acknowledged that the Applicant submitted a material change to the proposed extension to include an SEZ (or Structure Exclusion Zone) during the examination process of the DCO. However, this has not adequately addressed the PLA's concerns regarding the reduction in sea room to the west and south of the wind farm, which will affect the shipping corridor running north west/south east between it and the shore. Even with the modifications, the proposal would push vessels further west towards shallower waters and reduce the width of the sea room. Because of the impact on pilotage, this will lead to an increase in the number of shipping delays for both London and Medway.

The PLA has expressed concerns regarding the Navigational Risk Assessment throughout the examination, including data used and the viability of specific studies, identification of relevant hazards and impacts and the validity of the NRA methodology. This is also the case with regard to the data collected as part of the Hazard Workshops, which took place mid-way through the examination process.

Notwithstanding the decision made by the Examining Panel not to request the Applicant undertake further pilot simulation studies, as "it will be for the SoS to determine whether to accept any such work in due course", the PLA and ESL are aware that Vattenfall have sought to engage Interested Parties in undertaking a further Simulation Study. As explained below, due to lack of pilot availability, the PLA and ESL were not able to be involved in the further simulation. Furthermore, the PLA and ESL have invested significant time and resources into the Thanet Windfarm extension process with very limited concessions or adjustments made by the Applicant. The results of the further simulation do not, from the PLA or ESL's point of view, alter the acceptability of the proposed extension to the wind farm, and as with the previous Study, the PLA considers that an extension to the west and south would cause significant adverse impact.

With the above in mind, and in consideration of the PLA's and ESL's formal submissions made throughout the examining process, the PLA and ESL respectively request that the proposal to extend the existing off shore windfarm at Thanet is refused.

Response to Appendix 42 to the Applicant's Deadline 6 Submission:
Thanet Offshore Wind Farm Collision Assessment of Proposed Extension

Reference	Response summary/extract	PLA/ESL comments
	MAIB Definitions and Data Set.	In their introductory comments on the Collision Assessment at Deadline 7 (PLA 30 / ESL 30, page 19), the PLA and ESL raised concerns over the reduction in the number of years of MAIB data compared to the original Collision Risk Model ("CRM")., The Applicant did not address these concerns in its Deadline 8 Response (Appendix 5 to Deadline 8 Submission: Applicant's Response to Interested Parties Deadline 7 Submissions – Shipping and Navigation) and so these concerns remain. The CollRisk modelling calibrates its vessel to vessel collision function using historical incidents that led to "material damage" as defined by the MAIB (section 4.2/page 10). The definition included at footnote 4 of the Collision Assessment appears to be drawn from Annex B to the MAIB 2018 Annual Report. However, the term "material damage" as used by MAIB appears to be only one element of the MAIB's defining criteria of a marine casualty and not the definition of a collision itself. The MAIB definition of "damage to marine infrastructure external of a vessel that could seriously endanger the safety of the vessel, another vessel or any individual" (as quoted by Anatec in the footnote) therefore refers to one element, and does not define a collision itself. Using that definition for the CollRisk modelling means that a collision that doesn't result in 'material damage' would not have

Reference	Response summary/extract	PLA/ESL comments
		been included when benchmarking historical collisions. The Collision Assessment therefore provides only a partial assessment of collision risk. In section 6.1 of the Collision Assessment only one of the four collisions that have occurred within the NRA study area specifically references “material damage” as a result of a collision. It would appear that potentially two, possibly three, previous collisions are not used for CollRisk calibration purposes. It would appear that there are collisions within the MAIB’s historical data set that do not result in ‘material damage’. They could therefore have been removed from the vessel to vessel collision modelling calibration process, but it is not clear whether or not they have been removed. The PLA and ESL also note the conclusion in section 6.3 that “the timeframe within which data has been assessed is insufficient to draw firm conclusions”. The PLA and ESL assume that this is referring to the MAIB data set 2005 to 2014 and would agree that firm conclusions cannot be drawn from this. As previously expressed, a more appropriate assessment would have encompassed a larger study area (as requested at the Hazard Workshop) and a longer data set; 20 years, for example, would have included data from before the windfarm was built in 2009. The NRA study area is an area of complex traffic behaviour with a highly diverse vessel mix and the PLA and ESL are concerned that this complexity and the

Reference	Response summary/extract	PLA/ESL comments
		subsequent management of this has not been fully addressed in the Collision Assessment. The Anatec Assessment does not give the PLA and ESL confidence that the assessment has fully considered the impact of the Thanet Windfarm Extension on the surrounding traffic.
4.1.2.1	Commercial (Regular Routed) Deviations.	As raised at Deadline 7, the PLA and ESL disagreed with the Applicant's suggestion that recreational traffic is unlikely to deviate from its pre-extension routes. It is reasonable to expect that the extension of the Wind Farm will, as explained during the Examination, have an impact on vessel routes. In addition to their previous submissions, the PLA and ESL would suggest that the recreational traffic tracks from the NRA on-site survey demonstrate the vast majority of recreational craft already deviate around the existing windfarm (NRA/Section 5.3.4/page 48/49 and, therefore, with the extension in place they are likely to deviate further.
4.2	CollRisk Overview	When assessing vessel encounters the Collision Assessment has assigned domains (250m squares) to the charted study area. The PLA and ESL's understanding is that the length of time a vessel inhabits any part of a domain is recorded, generating a total number of minutes/hours occupancy per square across the study period (30 days). The CollRisk modelling then

Reference	Response summary/extract	PLA/ESL comments
		accounts for the type of vessel, its speed, the nature of the encounter and the metocean conditions finally producing a collision likelihood result. It is unclear if under-keel clearance was considered when accounting for vessel size. When a vessel is required to deviate from its preferred course, the under-keel clearance is a significant factor in determining collision risk, which the PLA and ESL would have expected to be clearly accounted for in the collision likelihood result. Similarly, it is unclear if deadweight is accounted for i.e. whether a vessel is under full cargo load. A vessel's deadweight can have a significant effect on its manoeuvrability and therefore on its ability to react to a collision situation. Again, this is something the PLA and ESL would have expected to be clearly accounted for in the collision likelihood result. Finally, the Collision Assessment does not make it clear how the type of vessel encounter (head on, crossing, overtaking) impacts on collision modelling results, so the effects of the wind farm extension on collision risk remain unacceptably uncertain. There are transit deviation assumptions made for vessels with the SEZ in place, excluding fishing, wind farm support and recreational craft. It is unclear how deviation assumptions are being made for vessels engaged in the act of pilot transfer. This is significant because ships engaged in pilot transfer will often make large course alterations to create a safe lee. Vessels engaged in

Reference	Response summary/extract	PLA/ESL comments
		personnel transfer are given the status of RIAM (restricted in their ability to manoeuvre) under rule 3 of the Collision Regulations. A vessel not engaged in pilot transfer will generally be expected to deviate, if possible, in order to allow the transfer vessel to maintain its course. However, in the experience of ESL and the PLA, the decision on how and where to transfer a pilot can be heavily impacted by transiting traffic. The PLA and ESL strongly believe that deviating vessels transits, as described in section 4.1 (shown in figure 4.1 and figure 4.2), would have had an impact on the conduct and position on a significant number of the 619 transfers that took place within the September data set, and these impacts have not been reflected in the Collison Assessment. The PLA and ESL are concerned that vessel behaviour in the area has been 'averaged out' through deviated course assumptions and vessel speeds being assessed as a whole track average (see the response to paragraph 4.3 below), producing a lower risk result than would be experienced in real-life scenarios. It is noted that the Thanet North cardinal buoy has not been repositioned, even though it could not be left in its current position with the wind farm extension in place. Vessels would transit further to the north of the windfarm than those shown in figure 4.2 in section 4.1.2.1. The overview concludes that "[a]ny assessment of consequence is outside of the scope of this work". The PLA and ESL are unsure how this can be the case when

Reference	Response summary/extract	PLA/ESL comments
		the vessel to vessel collision modelling process uses material damage, a consequence, to inform an opinion on likelihood.
4.3	Durations	In section 4.3 simulated tracks have been assigned an average passage speed which would suggest that traffic engaged in pilotage, particularly in the vicinity of the pilot boarding area, could be transiting at a greater speed than in reality, thus inhabiting each 250m domain for less time. This could have the effect of reducing a vessel's occupancy of a square and as such reducing its exposure to collision risk. There is also uncertainty surrounding the implications of averaged speed for the consequence of the collision. The CollRisk software benchmarks risk likelihood based on the consequence of historical incidents, but it is problematic that the CollRisk modelling is calibrated using the material damage definition as described in the initial comments in relation to the MAIB definitions and data set, set out on page 3 above. It is unclear how the study can support the conclusion of ALARP if it hasn't given full consideration to what the consequence of a collision would be. As the PLA and ESL have previously stated it is unclear how long an individual square will need to be inhabited by a certain type of vessel to impact upon the likelihood of a collision.

Reference	Response summary/extract	PLA/ESL comments
5	Collision Assessment	The PLA and ESL are concerned that although both Anatec and the Applicant have recognised that the latest Collision Assessment is not comparable to previous work within the Thanet Extension NRA and other windfarm NRAs, they then appear to make quite detailed comparisons with other Wind Farm Projects such as those in Table 5.2. The Assessment does note that the results of Table 5.2 are not directly comparable (in the sense that the risk estimated for the TEOWF would increase in an equivalent study area). It then goes on to make such a comparison concluding – despite saying that the comparison is only 'illustrative' – that the lower risk is reflective of the associated deviations being minor in comparison to the other projects, noting that re-routeing has already been established around the TEOWF. It should be noted that the four other windfarms referenced in section 5.4 (table 5.2) are 'new' windfarms and therefore deviations would be larger for those windfarms as no previous obstruction existed. To our knowledge none of the developments in table 5.2 have a busy pilot boarding position in close proximity to their boundaries, unlike the proposed TEOWF extension.

Response to Thanet Extension Offshore Wind Farm: HR Wallingford Bridge Simulation Report

PLA / ESL response to the draft report (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	The Applicant's response (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	Further comments from PLA/ESL
P.I4 Availability to Attend: The intension to undertake a second simulator study was announced on the 12th of August 2019. The Port of London Authority (PLA) and Estuary Services Ltd (ESL) were unable to offer the appropriate level of attendance for this or the revised date of the 2nd of September. ESL did not refuse to participate in the study. ESL is a small company with a limited number of staff qualified to assist with the applicant's request. In order for ESL to be fully represented throughout the simulator study they would have had to send two of their eight senior coxswains. The two coxswains would have been required to be present at HR Wallingford, in Oxfordshire, for a total of 8 working days (effectively removed from the active roster for a minimum of 12 days). ESL considered this level of attendance to be essential in order to form a full response to any conclusions	**P.I4 Availability to Attend:** The Applicant is grateful for the involvement of both PLA and ESL throughout the examination and on the specification for the 2019 PTBS. The Applicant further appreciates an acknowledgement of simulation commencement date being delayed to accommodate the initial requests of PLA and ESL. Nonetheless, the presentation of the communication with PLA and ESL with respect to attendance at the 2019 PTBS is considered accurate and reflects email records received from both parties, summarised at Annex B; The Applicant can confirm that following informal discussions and requests for confirmation regarding dates, the formal invitation to the September 2019 navigation simulation was issued to all IPs on 2nd August, 2019. This followed the previous formal invitation which was issued to all IPs	**Availability to Attend:** ESL operates a 24 hour, 365 day a year service. Each day is divided into two, 12 hour shifts and each shift requires one full launch crew (two coxswains and one seaman). To fulfil a 24 hour roster ESL requires 8 coxswains to be 'on roster' which allows the remaining 2 staff to take leave. Each member of staff is assigned leave 12 months in advance and leave periods are divided into a summer (longer leave periods) and winter (shorter leave periods) roster. Attendance by ESL at the navigational simulation would have required two additional coxswains to be 'off-roster' for a period of 8 days, which would have had an unacceptable impact on ESL's operational service levels. Furthermore, the transition between the winter and summer rosters occurs in late September; the invitation issued in August to the September

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drawn from the study. It is noted that Vattenfall offered to pay for the cost of the coxswains; however, the issue was the loss of manpower, rather than the consequential costs, which would have resulted in ESL not being able to provide the required level of service to their customers. Although the PLA initially welcomed the change of date and had hoped to be able to provide pilots, it subsequently became apparent that this would cause unacceptable strain on the pilotage roster, and may have resulted in delays to vessels as a result. Once again, this was not an issue of the cost of providing pilots, but the resulting impact to shipping as a result of taking pilots out of the roster at such a busy time. ESL and PLA had hoped that working rosters and availability of pilots and coxswains could have been given greater consideration, and would have welcomed the opportunity to participate at a later date in the year. The PLA and ESL have fully engaged with the examination process for	on the 15th July, 2019. ESL's attendance was confirmed in the report as being due to lack of personnel availability. PLA's attendance was however not communicated to the Applicant in these terms, being based on the cost of providing a PLA Pilot. On 26th July, PLA had advised positively of their attendance, at least in part, and pilot availability. The Applicant has provided a full summary of all correspondence with regards the revised navigation simulation, at Annex B of the simulation report.	navigation simulation did not give ESL or its crew sufficient time to arrange for the 'off-roster' crew to attend the navigation simulation. ESL contacted the Applicant by both email and telephone to explain the difficulty caused by this short notice and to request accommodation by the Applicant of their coxswains' availability so that they could attend the simulation. As for the PLA, it has relied on the detailed knowledge of ESL's coxswains throughout the Examination and was therefore supportive of ESL's requests to accommodate their coxswains' availability for the simulation. Both the PLA and ESL are confident that with more notice a suitable date could have been found that would have enabled the coxswains to attend while also leaving sufficient time for the Applicant to prepare the revised Simulation Report to assist the Secretary of State in his decision about making the Order.

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the last 6 months and with the applicant since 2017. We therefore do not believe the timetabled IP correspondence summary in paragraphs 3.1/3.2 is a fair representation of why the PLA and ESL were not in attendance.		
P.I5 Response to Inception Report **Number of Runs** • The PLA and ESL note a number of concerns raised in response to the inception report, submitted to the applicant on the 31st of July as requested. However, a significant number of these were either rejected or do not appear to have been addressed in the study. • The number of runs should be greatly increased from 25. The study references 36 runs with the extension in place, 6 of which were repeated marginal runs. For context, ESL conducts approximately 3000 runs per year.	**P.I5 Number of Runs:** • The Applicant consulted HR Wallingford (HRW), as the leading simulator provider in the UK, and their opinion was that "15 – 40 runs would be sufficient from which to draw meaningful conclusions;" • Similarly, HRW concluded that "in the case of the work carried out for TEOW, the 41 runs and 159 pilot transfers over seven days of simulation, was considered adequate to meet the study objectives;" • The comparison of the number of simulator runs versus ESL runs per year is not relevant as every	**Number of Runs:** The number of runs, 15 – 40, may be suitable to draw meaningful conclusions on the feasibility of boarding and landing specific vessels in certain specific conditions with the available sea-room. However, it is not representative of the range of conditions and the relevant sea room. The PLA and ESL wrote to the Applicant on 31 July 2019 stating that they would expect at least 100 runs to provide a representative assessment of an acceptable range of weather and tidal conditions, vessels, day/night passing traffic, human factors and scenarios. As a result, the number of runs carried out is not sufficient to draw meaningful conclusions on the acceptability of the risk and therefore not sufficient to conclude that

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	simulation study will seek to answer a question through analysis of a representative sample, not a numerical 'like for like' comparison. Insistence on exact duplication of run numbers would render any simulation unfeasible;	this simulation supports the conclusions of the NRA and NRAA that the risks have been reduced to ALARP.
P.I5 Tongue and Elbow • The Tongue and Elbow areas should be given greater consideration. Six runs were carried out in these areas, three at each. This is nowhere near enough to draw the conclusion that these areas will be unaffected by the extension.	**P.I5 Tongue and Elbow** • **Tongue:** As explained in the report, available sea room for pilot transfer is significantly abundant in this location. Runs at the Tongue were found to be so straightforward and uncontroversial and the results so conclusive that the independent mariners, the simulator provider and the attending IPs concluded it was unnecessary to expend valuable simulator time on further runs; • **Elbow:** As explained in the report and as shown in the heat map (Figure 6.5), the boundary between NE Spit and Elbow as discrete	**Tongue Boarding Area:** The Tongue boarding position has not been adequately assessed. In total only three unique runs and one re-run were conducted at this position. The Applicant's report considers the Tongue simulations to be entirely unremarkable and *Section 6.3 (Summary of Simulation Results)* states that 11 transfers took place with no marginal runs. However in *Annex F – Marginal Runs and HRW Track Plots*, it clearly states that run 14, a Tongue boarding run, had a marginal result. When reviewing the track plots for runs 13/14/14R/15 it would appear only 8 vessels are served around the Tongue boarding area. If the wind farm is extended under the proposed DCO, the

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	transfer areas is not firm and in truth, many runs classed as 'NE Spit runs' also included transfers at the Elbow. The independent mariners, the simulator provider and the attending IPs all considered that the transfers at or in the vicinity of the Elbow were adequately explored during the 2019 PTBS;	Tongue boarding position will be approximately 0.7nm from the windfarm which is not a safe distance to engage with a vessel for pilot transfer. The Tongue boarding/landing area would be required if the service was displaced from the NE Spit, but this would have significant implications for the pilot service efficiency and resilience to poor weather conditions. This scenario has not been sufficiently tested with only three runs being carried out. The report implies a solution is to simply work further out to sea. This is not a workable solution, as it would increase the distances travelled by the ESL pilot services, thereby reducing cost and time efficiency and resilience to levels which adversely affect the future viability of the pilotage services. **Elbow:** The Elbow is a significant working area for ESL in difficult metocean conditions. The proposed wind farm extension will reduce the operational sea room at the Elbow.

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		There was a marginal run when assessing the Elbow (run 16) which is not referenced in section *6.3 – Summary of Simulation Results.* As the use of the Elbow forms a key part of ESL's service resilience, ESL do not consider three simulated runs, all in daylight conditions, to be a robust analysis of the possible impacts on the pilotage service in this area.
P.I5 Night runs and reduced visibility • Greater review of runs at night and in reduced visibility. The report registers 'dusk' on the run summary which we assume is used to represent 'night'. Concerns were raised over realistic representation of night conditions after the 2017 simulator. We also note that 1nm is the lowest visibility recorded in the run summary and would have hoped to see a more realistic <0.5nm range used for reduced visibility.	**P.I5 Night runs and reduced visibility** • **Night Runs:** The 2019 PTBS used arguably the best simulation facility in the UK. The independent mariners, the simulator provider and the attending IPs considered that real world conditions were simulated as closely as possible; • **Reduced Visibility:** 6 of the 41 runs simulated conditions of poor visibility (using the Met-office definition). The independent mariners responded appropriately to low visibility	**Night Runs and Reduced Visibility:** The PLA and ESL has been unable on the basis of the information provided to assess the accuracy of the simulator when replicating night/poor visibility conditions. Simulators can struggle to replicate night conditions and will display 'dusk' instead, which means there is more light and better visibility than there would be in reality. The PLA and ESL were unable to attend the set-up day as it was arranged for a day on which the Applicant was aware that neither the PLA nor ESL pilots could be available. The PLA and ESL were therefore unable to

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	conditions (by slowing down, use of bridge navigation aids and sound signals, etc.). Ultimately, conditions of reduced visibility did not affect the ability of the mariners to safely undertake the runs, and there is no reason why further reductions in visibility would alter this finding;	deal with concerns regarding the simulation of night/poor visibility conditions on the set-up day. Nor did the Applicant provide any pictures of these conditions in the Collision Assessment, meaning that the reader cannot determine whether these conditions were appropriately assessed. It is clear, however, that night conditions are underrepresented in the study in terms of the proportion of day/night. In reality, fifty percent of pilot transfers happen at night. Only 10 runs out of 41 were carried out in the simulator under dusk conditions, and in ESL's extensive experience, it is not accurate to say that reduced visibility does not affect the ability of mariners to safely undertake runs; in practice, ESL coxswains have found that night runs have a significantly higher risk factor than day runs due to the increased reliance on technology for example radar and vessel light characteristics. In response to the PLA and ESL's comments regarding representation of different metocean conditions the Applicant suggests the dominance of using south west

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		winds in simulations is an important reflection of the prevailing winds in reality. In reality, 50 percent of pilot runs happen at night so, following the same logic, 50 percent of the simulations should have been undertaken under night time conditions. To have undertaken less than a quarter of simulated runs under night time conditions is therefore misleading.
• The study should include emergency situations. These have been considered, which is an improvement on the 2017 study. However, given the summary in the report it is unclear how they impacted on the overall operational runs, as there is little feedback. Where runs were aborted before the boarding or landing they are not measured. • Operational difficulties to be taken into account. These are of a more day to day nature and not necessarily considered 'emergencies'. These would include	**Emergency Runs:** The independent mariners, the simulator provider and the attending IPs agreed that the emergency scenarios represented a realistic set of circumstances. A detailed study of the run plots will show that the emergency scenarios delayed, slowed down or cancelled the pilot transfers but ultimately did not have any effect on the outcome of the simulations or the safe conduct of transfer operations at the NE Spit with TEOW in place. This conclusion is supported by the lack of any comments by the independent mariners or the attending IPs;	The run plots in Annex F (Marginal Runs and HRW Track Plots) do not clearly indicate the implications of emergency runs. They are only a brief snap shot of work conducted with no chronological context.

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VHF communication issues, rule violations, difficulties with surrounding non- pilotage traffic, ladder non-compliance. Whilst these may have been considered during some runs it is unclear how these issues impacted on the study apart from a broader 'carried out safely and efficiently' summary.	**Operational Difficulties**: Some unplanned operational difficulties occurred in simulation just as in real life. Similarly, as is noted in the run report and as the independent mariners, the simulator provider and the attending IPs witnessed, every day occurrences such as; VHF communication issues, rule violations, various propulsion/steering control failures, difficulties with surrounding non- pilotage traffic, and ladder non-compliance, were all simulated. As would be expected from professional seafarers, these incidences were accommodated during simulations. As is evidenced from the lack of commentary by the participants they did not affect the successful conclusion of any of the runs;	
P.I7 Met Ocean Conditions: The wave height appears to be capped at 2 metres. In practice, significantly larger wave heights are experienced from the North West, via North East to South East wind directions. West/South West/Southerly winds do not tend to generate the same size swells as North West via North East to	**P.I7 Met Ocean Conditions:** • During examination and consultation on the navigation simulation specification, it was accepted by all IPs including PLA and ESL, that the simulator at HRW was considered appropriate for this study;	**Met Ocean Conditions:** The PLA and ESL's in principle agreement concerning the use of the HRW simulator for the purpose of the study did not constitute an acceptance of that simulator and the processing of its results by the Applicant being able to accurately represent the runs

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South East. Wave height and direction are highly significant and a primary consideration for ESL when deciding how each run should be conducted. The number of runs using a south westerly wind direction is disproportionate. This is important to note because the number of runs with south westerly wind used in the study is significantly higher than all other directions. ESL has previously stated that this wind direction has the least operational impact due to its relation to the boarding positions' geographical locations. ESL and PLA are concerned about how feasible it is for a simulated environment to accurately replicate met ocean conditions at an open water boarding position.	• During the simulation, all the independent professional mariners and the attending IPs agreed that the simulation represented a realistic simulation of the metocean conditions. Whilst it was recognised by participants that wave height and direction did have a very important bearing on boarding operations at the NE Spit, they planned and successfully delivered their own solutions to pilot transfers (in each location); • As stated in the specification report, the spread of wind directions and wind strengths was derived from real world data from the NE Spit and all compass directions were simulated with wind speeds at the upper end of conditions for pilot transfer. Importantly, they were simulated in the relative predominance of each direction, reflecting the real case; • A detailed run plan describing the proposed wind speed / direction and	being assessed. It would require extensive local experience to agree met ocean conditions were accurately represented and the Applicant has not demonstrated that the required level of local experience was present at the simulation. Not all participants and IPs were present for all met ocean conditions simulated. It is not clear which participant took part in which simulation and therefore what level of experience formed part of the overall assessment. The study gives a broad summary of participant experience which is not sufficient to enable the PLA and ESL to be satisfied as to participant suitability. The PLA and ESL would usually be able to discuss simulations with other participants, in order to obtain reassurance about methods and participant experience. By contrast, with this simulation, it is understood that the Applicant required participants to enter into Non-Disclosure Agreements and therefore discussion of the simulation with participants has not been

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	swell heights for each run was specifically sent to the PLA and ESL for discussion and comment 6 weeks before simulation. Specific requests were made for assessment of north easterly and westerly winds which was duly included; • In the PLA and ESL's requests for a further simulation (e.g. R17Q 4.12.1, REP7-043), no concerns were raised in respect of the ability to replicate metocean conditions. Neither has any concern been raised through the feedback of the 15 independent mariners.	possible. The participants have not been named in the simulation report. Whilst the PLA and ESL acknowledge that south-westerly is the prevailing wind direction at the NE Spit they would like to point out that the North easterly wind is the second most common as suggested in the NRA (Section 3.3 - Metocean conditions). With a proportional approach in mind, north east wind should have been the second most frequently examined direction; however, this was not the case. In the simulator, runs have been carried out to complete transfers in conditions that ESL know from experience would have been extremely dangerous in reality. The PLA and ESL disagreed with 94 of the lees used in the study. In the PLA and ESL's opinion, with an error of 20 degrees or more, trying to maintain physical vessel to vessel contact, particularly in poor met ocean conditions, would be unsafe. For example:

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		Run NEC4 – In ESL's experience this transfer would have been physically impossible. ESL would expect a much larger wave height than 2 metres at high water in these conditions (closer to 3 metres). The simulator and coxswain appear to have accomplished something effortlessly that we would argue is at best extremely dangerous and bordering on impossible. In these conditions the extreme amount of movement, for both the ship and the pilot launch, would be so dangerous as to be a manoeuvre that ESL pilots would not be willing to undertake and so in practice it would not happen. The simulation is therefore not reliable as it is based on manoeuvres taking place that would not happen in practice.
P. I8 Vessel Lees: The executive summary of the new simulator study report states that of the 159 vessels 'simulated' 100% were carried out safely. In Table 1/Simulator run summary 150 vessels are recorded, 2 vessels have no lee entered for boarding/landing and 3	**P.I8 Vessel Lees:** • The Applicant intentionally employed experienced practising independent Class 1 unrestricted pilots and fully qualified coxswains from 3 UK pilotage districts to conduct the simulations. Experience included	**Vessel Lees:** • The PLA and ESL are unable to comment on the relevance of participants' experience because it is not listed within the Report and they understand that participants are subject to Non-Disclosure

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vessel did not engage with the pilot launch. After reviewing the lees of the remaining 145 vessels recorded, the PLA and ESL would strongly disagree with 94 of the lee courses by 20 degrees or more. (In ESL's practical experience, particularly in more challenging weather conditions, a 20 degree margin of error for a lee would be too great; however due to the limitations of a simulator in presenting a realistic working environment, deviations from the correct lee of up to 20 degrees would be accepted.)	vessels up to and including 400m length. Simulator set-up involved an ex PLA authorised pilot, also Class 1 unrestricted, who also conducted test runs involving transfer. The pool of experience was thus significant. All attendees agreed these professionals were competent to decide on the creation of safe, efficient lees for a pilot transfer; • Similarly, it was agreed that the NE Spit did not offer conditions that were significantly more or less challenging than any other comparable pilot stations and in particular did not present circumstances that would require lees or transfer courses different from those required at other pilot stations around the country; • The intention of the 2019 PTBS was not to replicate ESLs operations but to establish if independent professional mariners could safely conduct transfer operations at the	Agreements that prohibit the disclosure of such information. Nevertheless, it should be clear that holding PLA authorisation is not the same as extensive day-to-day experience of this offshore area in particular, and a pilot who is no longer authorised by the PLA does not represent the views of the PLA or current PLA pilots. • However, it is likely that a lack of local knowledge is why there is such a strong disagreement with the lees given to the ships. ESL and the PLA do not intend to suggest that the NE Spit is any more difficult to operate within than other boarding areas. However, each area has a unique set of issues that need full consideration. • It is not accurate to make like for like comparisons between boarding areas in the way the Applicant is suggesting.

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	NE Spit with TEOW in place; • The lees that were created in the simulation were strictly in accordance with accepted global practice; • As is the case in real life, pilots/coxns were responsible for their own decision- making with respect to the angle of lee requested; • On analysing the track plots in sufficient detail, it is clear that there is sufficient sea room for any appropriate variation in lees created, including those proposed by ESL / PLA, such that this does not have any bearing on the safety of transfers and the ultimate successful outcome of the 2019 PTBS. • The ability of the simulator to present a realistic working environment was confirmed by all attending mariners.	• ESL considers that is inappropriate for the Applicant to disregard the current working practices of the only local operator in this area. ESL has been operating in this area for 30 years, serving an average of 7000 vessels per year. Its working practices are founded on everyday experiences of how to offer a safe and efficient service. The pilotage service currently operates in an area that affords ESL a wide range of safe lees. We strongly disagree with a high percentage of the lees used within the study and believe that with the extension in place there would be greater pressure on the remaining available sea room to accommodate safe lees. In practice, if the wind farm is extended, it will be left to the ESL pilotage service to physically serve vessels further out to sea in combination with a more detailed traffic management approach. This will have significant adverse implications for the current operation and its viability due to

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		increasing run times, reducing service resilience due to operating further out at sea in poor weather and placing strain on the existing launch capacity and traffic management setup. • There is no detail within the report describing how run orders were decided and what operational considerations were made. In reality these factors are a key part of the service provided by ESL. Given the lack of detail regarding the chronogical impacts of each simulator run ESL cannot see how any conclusions regarding service efficiency can be made. On the basis of the information provided by the Applicant, it is ESL's view that the effects of the wind farm on its business would be considerable and would require the pilotage service to change the way it operates, including increasing its launch capacity.

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		How ESL conducts its operation will have a significant impact on the navigational safety in the surrounding area. To not represent this in the simulator study, particularly with regard to making a safe lee, limits the relevance and conclusions of this study. • Suggesting that every vessel within the study could have, theoretically, made any lee required of them ignores the fact that the entire structure of each run, as organised by the coxswain, would be influenced by the lees required, as it is in reality.
P.I9 Ladder Assignment: There are numerous examples of ladder assignments that ESL would not request in reality, either due to the lees required or vessel schedule efficiency. For example an outward bound vessel in NW wind being assigned a port ladder would be impractical, over complicated and potentially increase	**P.I9 Ladder Assignment:** • The Applicant intentionally employed practising independent Class 1 unrestricted pilots and fully qualified coxswains from 3 UK pilotage districts, to conduct the simulations. It was concluded by all attending that these professionals were suitably qualified, experienced and	**Ladder Assignment:** The Applicant has commented that the ladder assignments had no bearing on the safe conduct of transfer operations during the study. However, the PLA and ESL would like to emphasise the relationship between ladder assignment and the subsequent lee. The choice of ladder assignment will have a major impact on the lee requested. The

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the navigational risk.	competent to decide on the safe and efficient assignment of pilot boarding ladders; • The intention was not to replicate ESLs operations but to establish if independent mariners could safely conduct transfer operations at the NE Spit with TEOW in place; • All those attending, including independent professional mariners, the simulator provider and IPs present agreed that the ladder assignment was appropriate, safe and realistic for each run; • None of the ladder assignments, whether 'correct, efficient or over complicated' had any bearing on the safe conduct of transfer operations at the NE Spit with TEOW in place, or the successful outcome of the 2019 PTBS.	Applicant's comment that ladder assignments did not impact the safe conduct of transfers suggests that the Study has underestimated the importance of two factors which the PLA and ESL consider as key safety factors in pilot operations: ladder assignment and subsequent decision on lees. The study does not state which ladders were used for which runs. However, since in the opinion of the PLA and ESL there are numerous runs which demonstrate lees which would not happen in reality, the PLA and ESL infer that some of these unusual runs could have occurred due to incorrect or unusual ladder assignment. If the information on ladder assignment had been included in the Study, the PLA and ESL would have been able to provide further information on this and on their usual working practices in this regard.

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P.I10 Run Times: There are references throughout the report that operations were conducted efficiently. The PLA and ESL do not agree that this can be concluded from this study, as a significant amount of the overall, current pilotage operation is not represented. The PLA and ESL maintain that, as stated in the response to the simulator specification report, one to two minutes should be treated as a minimum boarding time duration in optimum conditions, rather than sixty or ninety seconds. This time should have been increased in proportion to the deteriorating weather conditions. Also, five minutes for the pilot to reach the bridge and complete a satisfactory handover with the Master is more appropriate than the two to three minutes used in the study. It appears that some of the boarding/landing times were increased for some vessels; however, it is not clear from the report when this occurred, the reasons why and what the overall run impacts were.	**P.I10 Run Times:** • The length of time taken for each pilot transfer in the 2019 PTBS, as in real life, varied considerably according to the met ocean conditions and the type of vessel. The minimum time that the pilot cutter would spend alongside the target vessel in simulation was discussed at all stages during consultation and was eventually agreed at 90 seconds for embarkation and up to 3 minutes for disembarkations. • It should be noted that this was the minimum time specified to be alongside. In simulation this was frequently exceeded, as coxswains stabilised the cutter alongside – exactly as occurs in real life. It is also important to note that this timescale **only** represented the time needed to conduct the pilot transfer; it did not include an additional 5 minutes added in simulation, representative of the time taken for a	**Run Times:** • These parameters were agreed by the participants and not local operators. • The detail of run specific transfer times are not recorded in the report. This concern was expressed in our initial comments to the draft report. The PLA and ESL have explained that more time needed to be allowed for the cutter to be alongside each vessel, reach the bridge and establish situational awareness; the times proposed by the Applicant might be an acceptable minimum but are not realistic on average. It is not clear to what extent these comments have been taken into account.

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	pilot to transit from the top of the ladder to the bridge. Further, it did not include the time necessary for the pilot cutter to maneuver into position for transfer. • Lastly it should also be noted that the timings alongside for the 2017 PTBS, as mandated by PLA pilots and ESL coxswains, were considerably less than those used for the 2019 PTBS. This was not raised as one of the issues to be addressed in the PLA / ESL's final examination submission on the simulation scope (see **Annex B** and REP7-043).	
P.I11 Emergencies/Operational Difficulties: In paragraph 6.3 (Figure 6.2) a participant references the lack of VHF communication, but it is unclear between whom and what impact this had on the run. This is then regarded, in retrospect, as an emergency scenario. The details of this are unclear and it appears to be in isolation (communication	**P.I11 Emergencies/Operational Difficulties:** **Emergency Runs:** The independent mariners, the simulator provider and the attending IPs agreed that the emergency scenarios were a realistic representation. A detailed study of the run plots will show that the emergency scenarios delayed, slowed down or cancelled the pilot transfers but	The Applicants response does not address the PLA's and ESL's concerns and the issues raised by both parties in their original response in relation to emergencies and operational difficulties remain.

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emergency). In Run 12 a 93m tanker approaches from the north east and suffers engine failure and then appears to drift south west toward the windfarm. It is unclear how close this vessel is to the windfarm when it anchors, as those runs that were aborted before the pilot transfer takes place did not have their closet point of approach recorded and were not graded as /successful/marginal/fail. However, a 93m vessel broken down and anchored in 22m of water close to a windfarm with poor met ocean conditions, potentially setting it toward the windfarm, would be of significant concern and would prompt an emergency response. Whilst it is understood that ladder deficiencies i.e. ladders being improperly rigged and non-compliant were reviewed in the study, it is not fully documented how this impacted on the runs. There is not enough information in the report to confidently agree that emergency and operational difficulties were fully reviewed.	ultimately did not have any effect on the outcome of the simulations or the safe conduct of transfer operations at the NE Spit with TEOW in place. No concerns in relation to this were raised by the independent mariners or the attending IPs; **Operational Difficulties:** As the IPs attending witnessed, some unplanned operational difficulties occurred in simulation as in real life. Similarly, as is noted in the run report and by the independent mariners, the simulator provider and the attending IPs, everyday occurrences such as "VHF communication issues, rule violations, difficulties with surrounding non- pilotage traffic, and ladder non-compliance were all simulated. As would be expected from professional seafarers, these incidences were successfully accommodated during simulations and as is evidenced from the lack of commentary by the participants they did not affect the successful conclusion of any of the runs. In summary, the limited commentary of Emergency / Operational difficulties in the report should not be interpreted as inference	

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	that consideration of this was insufficient. In fact, because emergencies and operational difficulties were dealt with, without exception, it was not necessary for the report to raise these, because dealing with emergencies had no bearing on the successful outcome of the 2019 PTBS or the safe conduct of transfer operations at the NE Spit with TEOW in place. This conclusion was reached by the attending IPs, the independent mariners and the simulator provider. The simulation report can only reflect their findings.	
P.I12 Launch Operation: Although ESL and PLA's concerns over an appropriate vessel to simulate a pilot launch, which were raised in 2017, have been partially addressed, the report does not demonstrate 'accurate' launch representation. In Annex D – Independent mariner feedback we note the comment 'NE 25 knots would slow the progress of the pilot launch. Pilot boat still able to make way at full speed'. For context, in NE winds of 25 knots ESL would expect the 13m Orc to be	**P.I12 Launch Operation:** • During examination and consultation, it was agreed by IPs, that the simulator at HRW is an appropriately advanced facility and, as stated in the report, is considered to be one of the best facilities in Europe; • During the simulation, all the independent mariners agreed that the simulation represented a realistic	**Launch Operation:** ESL and the PLA made it clear that for launch representation to be accurate, there would need to be participants with relevant experience of having worked in the area transferring pilots, along with the role of vessel masters being represented by participants unfamiliar with the area, as is typical in real-life scenarios. The PLA and ESL are concerned with the use of non-familiar participants in particular the fact that vessel masters were all played by

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reduced to a speed of 14- 15 knots, but it is unclear if this was addressed in the study and if it was, how this impacted on run times. The use of a 25 knots service speed is erring toward the optimum launch service. Whilst we appreciate that there needs to be a benchmark service speed the relationship between this speed, the met ocean conditions and the consequential impact on each run needs to be reviewed fully. We see no evidence of this. No consideration has been given to the implications to the pilotage service in terms of scheduling efficiency, shipping delays or service stress limits.	simulation of launch performance in the met ocean conditions; • The isolated comment referred to demonstrates that the mariner feedback was open and transparent. Written and verbal comments were encouraged and there was no restriction on subject matter. Commentary was provided about handling of vessels and where necessary, adjustments we made throughout the simulation. As a percentage, 99% of participant comments on accuracy of the simulation advised it was appropriate; • Whilst not an objective of the 2019 PTBS, given the results of the simulation and the fact that transfers took place over a similar area to current operations (Figure 6.3 and 6.4), there is no reason to suggest that there would be particular effects on scheduling or shipping delays.	professional pilots. The use of 5 coxswains who are unfamiliar with the local operation has been assessed as a positive step toward impartiality, which the PLA and ESL do not fully disagree with. However, when considering factors such as our strong disagreement with a high number the lees requested and the relative ease with which severe met ocean conditions were operated in the PLA and ESL believe that this is an unrealistic representation of pilot launch operations at the NE Spit. The lack of relevant representation being present at the study and the disregard for current best practices means it is totally unacceptable to make the assumption that the current operation's scheduling will be unaffected.

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P.I13 Repeated Runs: The PLA and ESL do not agree that marginal runs should have been repeated, as previously expressed in feedback to the simulator inception report. The study states that the repeated run participants were told to actively avoid the 1 mile 'marginal' boundary and this, in turn, resulted in a 100% success rate. In addition, it would appear that at least one of the marginal runs included an emergency scenario, but when the run was repeated there were no emergencies introduced, despite the report stating that exactly the same run was conducted in exactly the same circumstances Giving specific instructions to vessels could be considered as additional mitigation, in the form of traffic management.	**P.I13 Repeated Runs:** • Repeating runs that recorded anything other than a full success is a standard, accepted scientific best practice for all simulations and failure to have done so in the 2019 PTBS would have been rightly and robustly challenged by the attending IPs, independent mariners and the simulator provider alike; • The additional instruction in the repeated runs "to actively avoid the 1 mile 'marginal' boundary" represented a significant additional manoeuvring reduction of 1nm of the sea room that was available to the participating mariners. The fact that all of these runs were 100% successful indicates that there is enough sea room even with this additional restriction in place. Without the restriction there is, of course, even more sea room available. This further demonstrates the conclusion of the 2019 PTBS	**Repeated Runs:** If all runs apart from 'full success' runs were repeated it would have been prudent to repeat runs that marginally succeeded as well as those that marginally failed. Runs 5, 9, 10, 15, 16, L3P, NEA2 and NEA4 all have vessels that are within 0.1nm of the marginal criteria.

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	that there is enough sea room with the TEOW in place to safely undertake pilot transfers; • The instructions given were to investigate whether breaches of the 1nm criteria were simply due to mariners acting as per their own experience or if it was because there was insufficient sea room. In all cases it was demonstrated to be the former, with runs both within and outwith the 1nm criteria being conducted safely; • In the run in question (NEC6), the emergency scenario was a steering gear failure to one of four vessels in the simulation, but as explained in some detail in Annex F, this was not the vessel that breached the proximity criteria. The steering gear failure resulted in the vessel coming to a stop and safely going to anchor and was not connected to the proximity breach. Accordingly, it was not necessary to repeat this part of	

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	the exercise.	
P.I14 Margate Roads Anchorage: In the 2017 study the recorded marginal run was as a result of a vessel coming in close proximity to an anchored vessel in the Margate Roads anchorage. It would appear that this anchorage has been largely disregarded in the 2019 study. There is possibly a single vessel represented at anchor on a small number of runs, but the report is unclear on this.	**P.I14 Margate Roads Anchorage:** • The 2017 study recorded a marginal run of a vessel passing 0.5nm from an anchored vessel. 0.5nm was agreed by IPs to represent a prudent mariner's distance and so should not be considered to be in 'close proximity;' • The independent mariners conducted their transfers as dictated by the prevailing metocean circumstances and conditions. Margate Roads located 3 nm to the west of the NE Spit pilot diamond and 5 nm to the west of TEOW was not ignored during the 2019 PTBS, it just did not play a significant part as it was geographically too far away. Analysis of the heat maps (figure 6-4) will show that the majority of the pilot transfers at the NE Spit took place to the north of the diamond and over 2.5 nm away from Margate Roads;	**Margate Roads Anchorage:** • The eastern boundary of the Margate Roads anchorage is approximately 350m west of the inner boarding diamond, this is the no anchoring boundary, and it is not uncommon for vessels to anchor in close proximity to this boundary, as demonstrated in the NRA (section 3.6.6 – Anchorages Figure 13). We would suggest 3nm (5556m) would be closer to a centre point of the Margate Roads anchorage. The closest point of the TEOW boundary to the Margate Road no anchoring boundary is approximately 3.5nm (6482m) not the suggested 5nm (9260m). By using a centre point for the anchorage rather than its boundary the report gives the impression of more 'useable' sea space than exists in practice. It is common for vessels to anchor in close proximity to the no anchoring

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	• During 2019 PTBS vessels proceeded to and from the Margate Roads anchorage during the simulation as the track plots will reveal; • None of these vessels had any effect on the safe conduct of transfer operations at the NE Spit with TEOW in place.	boundary which can render the anchorage unfit for transfer purposes. The 2017 Simulator study consistently placed vessels close to this boundary which was a more robust representation of reality and consequently lead to a marginal run. By not fully including the Margate Roads anchorage and its boundaries the HRW study has overestimated available sea room. The presence of ships in the anchorage would impact on a Master's decision to take a particular route to take to or from the boarding and landing position.
P.I15 Tongue: Of the three dedicated runs to the Tongue boarding position two were to test 400m vessel capability. Whilst considered successful, after a marginal result was re-simulated, the caveats put in place were numerous and currently impractical. However, these successful runs aided the overall conclusion that the Tongue boarding position will be unaffected and will not	**P.I15 Tongue:** • As explained in the report, the runs at the Tongue were considered sufficiently straightforward such that they were allowed to be conducted with 400m ships which rarely, if ever, use the Tongue station. The results were considered so uncontroversial and undemanding by the independent mariners, given the relatively open sea to the north that it	**Tongue:** To clarify, in saying that "these successful runs aided the overall conclusion that the Tongue boarding position will be unaffected and will not require relocation", the PLA and ESL are not supporting the applicant's assertion that it has proved the Tongue boarding position is unaffected. Three runs, one of which is a repeated marginal run, is not sufficient to draw a meaningful conclusion. The fact that careful mitigations

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require relocation.	was considered more valuable to focus further runs on other locations; • There were no caveats placed on pilot transfer operations simulated at the Tongue; • There were caveats put in place for the proposal to conduct transfers of 400m ships at the NE Spit, which as the report clearly explains was the subject of a separate day's simulation, has never yet happened in reality and is not considered practical without careful mitigations; • The re-running marginal results is best practice for any simulation; • We welcome the conclusion by the PLA and ESL that "these successful runs aided the overall conclusion that the Tongue boarding position will be unaffected and will not require relocation."	would be required before considering 400m vessels means that these runs cannot support a conclusion that the Tongue will be unaffected.

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P.I16 Conclusion: During the examination process the PLA and ESL raised concerns regarding the 2017 simulator study. These were predominantly focused on its broad approach to detail, interpretation of the outcomes and the weight attributed to its conclusions within the NRA. The 2017 study was not sufficient to support the NRA and subsequent NRAA conclusions, which were not agreed by the PLA and ESL or the MCA at the end of the hearing process. The level and volume of data detail that any additional study would have to provide would need to be significantly improved and the overall study would need to take full consideration of current pilotage operations. It was also recommended by the MCA at deadline 6a that for any further simulation 'The participation, configuration and other details would need to be agreed by PLA, ESL and other local IPs to ensure it is representative of a real marine environment.'	**P.I16 Conclusion:** • Trinity House and the MCA attended the 2019 PTBS and have not raised any concerns as to the conduct, accuracy or realism of the 2019 PTBS; • The significant efforts made by the Applicant to consult with and facilitate the attendance of PLA and ESL are set out in the report; • The simulations were robustly and thoroughly undertaken with suitably qualified independent mariners at a simulator that had been recommended by IPs during examination; • Whilst PLA and ESL did not attend, the confirmation of the representativeness of the simulation is demonstrated clearly through the comments of the 15 independent mariners who attended;	**Conclusion:** The lack of local operator participation means that a highly precautionary approach should be taken when considering the conclusions of this study. The representation of boarding and landing practices at the NE Spit pilot station are very limited. The Applicant suggests that the pilot cutter service will not be impacted by the extension. Given ESL's and the PLA's experience in this area, and the deficiencies in the simulations as described above, they cannot share the Applicant's conclusions. The Applicant failed to incorporate ESL's working practices in this simulator study, as they did not believe it necessary. ESL has a considerable collective experience of the offshore area that was the subject of this study, because of its daily operations in the area. Unfortunately, that continual presence in the area – by a small but highly-trained staff – was precisely why ESL was unable within the notice period given to withdraw coxswains from the roster to send to the simulator study to represent both ESL and

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The 2019 simulator study, whilst an improvement on the 2017 study falls far short of this, therefore the PLA and ESL cannot agree with the applicant that the 2019 simulator study supports the NRA/NRAA conclusion that the risks are ALARP	• The configuration and undertaking of the simulation has been confirmed by the simulator provider as being appropriate; • The 2019 PTBS demonstrated that there is enough sea room to safely conduct pilot transfer operations at the NE Spit with TEOW in place; • The 2019 PTBS study supports the NRA/NRAA conclusion that the risks are ALARP.	the PLA. How ESL conducts its operation has a significant impact on navigational safety in the surrounding area. To not fully represent this in the simulator study, particularly in regard to making a safe lee, undermines the realistic presentation of vessel behaviour at the NE Spit pilot station. Therefore, the disconnect between the simulated practices and reality are a point of ongoing concern. As stated in the PLA and ESL Deadline 6a submission at page 4, there needed to be timetable flexibility when trying to organise a further simulation study. The applicant postponed their study by approximately 2 weeks which did not change the impact it would have had on ESL's operation. This was the main accommodation offered in terms of timetable, before the applicant felt it was necessary to continue without ESL/PLA involvement. Whilst we appreciate the simulator availability may have been a limiting factor it seemed to take priority over offering key participants reasonable opportunities to participate in the study.

PLA / ESL response to the draft report (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	The Applicant's response (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	Further comments from PLA/ESL
		Whilst simulator studies are common practice within the shipping industry their effectiveness is limited if the input is inadequate. The simulator output can only reflect the input of the operator and participants. In this case, the input was not reflective of the practices in question which has limited the accuracy and reliability of the output. The PLA and ESL fundamentally disagree that the outcomes of this simulation support the ALARP conclusions of the NRA/NRAA. At the end of the examination process the PLA and ESL agreed with the MCA's final position (as stated in the table appended to their Deadline 8 letter to the Planning Authority) that we are unable to accept that ALARP has been reached. Whilst the PLA and ESL acknowledge that the additional simulation results demonstrate that boarding and landing may be feasible with the extension in place, the inputs into the study fail to take into account relevant considerations, and it is nowhere near robust enough to demonstrate that boarding and landing can continue without

PLA / ESL response to the draft report (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	The Applicant's response (Annex I to HR Wallingford Bridge Simulation Report dated 7 October 2019)	Further comments from PLA/ESL
		unacceptably increased risks.

Comments on dDCO submitted by the Applicant at Deadline 8

DCO reference	PLA and/or ESL Comment
Art 16	The PLA remains of the view (as put forward by Trinity House in its D5A submissions [REP5A-006]) that it is neither necessary nor desirable to include a general power to suspend public rights of navigation in the dDCO. In the case of permanent structures, this suspension will last until that structure is decommissioned and permanently removed. The Applicant has given no compelling reason for the suspension of these public rights for such a long duration over an area which is a highly-used area by commercial, fishing and leisure traffic and which comprises key navigational routes into and from the Thames Estuary.
Art 16	At Deadline 6, the ExA requested that the Applicant provide proposed relevant changes or an explanation as to why a change in drafting was not warranted in relation to navigation safety measures for temporary construction works. The Applicant's commentary does not appear to include a response to this comment from the Applicant, and the PLA and ESL remain concerned about navigation safety measures for temporary construction works.
Sch 1 Parts 1 and 3	The PLA and ESL refer to their previous submissions on the dDCO. The Applicant states (Appendix 44 to Deadline 6 Submission: Applicant's response to commentary of dDCO from Interested Parties, p14) that the requirement to produce a construction programme and monitoring plan, as well as the requirement to submit a construction method statement to the Marine Management Organisation is more than sufficient to ensure complete clarity about the nature of the works and where they will be placed within the SEZ. There is, however, no clarity on the positioning of those works at this stage, and no party has had an opportunity to comment on the precise location of those works during

	the DCO process as the Applicant has not made that information available. There will be very limited oversight or approval of the nature of those works and where they will be, and the PLA and ESL will have no involvement in that process. The Applicant should be required to show the limits of the cabling works precisely on the works plans (through the DCO) – rather than the excessively large area covering the whole of the SEZ – in order to give Interested Parties and others certainty about the extent and location of those works.

Winckworth Sherwood LLP
Solicitors and Parliamentary Agents
On behalf of the Port of London Authority and Estuary Services Limited
13 December 2019