From: [redacted]
To: ThanetExtension@pins.gsi.gov.uk
Subject: LPC Deadline 5 Submission Thanet Windfarm Extension
Date: 29 April 2019 13:18:48
Attachments: Deadline 5 Submission.docx

Dear Sirs

Please find attached the Deadline 5 submission for the Thanet Windfarm Extension

Best regards

A.J. Sime

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Hearing Action Points

London Pilots Council (LPC)

Deadline 5 Submission

29th April 2019

1. Revised red line boundary

1.1 The LPC were asked to provide clarification of a sketch in their Deadline 4 submissions which showed a preferred red line boundary in order to maximise sea room at the NESP for manoeuvring large vessels, as shown in Fig.1

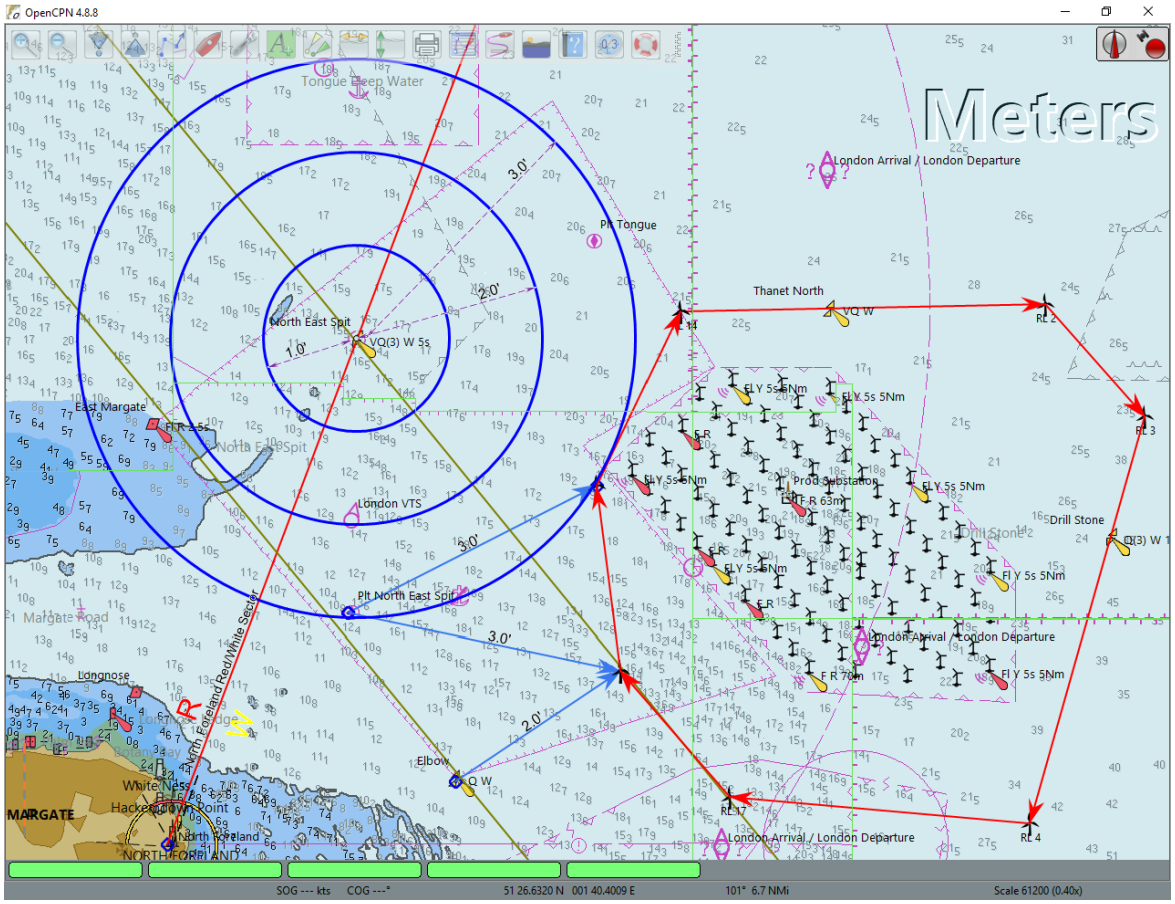


Fig. A. TWF (190428) LPC Amendment Red Line Boundary

1.2 Coordinates

51 28.2531 N 001 35.4912 E
51 28.3316 N 001 41.7848 E
51 27.1225 N 001 43.5079 E
51 22.7387 N 001 41.5144 E
51 23.0220 N 001 36.3389 E
51 24.3495 N 001 34.4208 E
51 26.3659 N 001 33.9621 E

2.0 Available Sea Room and SEZ

2.1 The LPC are concerned that the Applicants proposed red line boundary does not allow sufficient sea room for manoeuvring large vessels at the NESP particularly in the contentious area or choke point, to the SE of the NESP Racon.

2.2 The Port of London business is constantly expanding with new berths coming on line at Oikos, tanker berth upgrades to accommodate deeper, bigger ships at Grays and Vopak are complete, the Tilbury 2 development is well underway and a further 3 berths are planned at the London Gateway. As a result the PLA business is over 1 million tons above budget for the 2019 first quarter, £0.6 million above budget. This has resulted in a 11% increase in Pilot acts in the last 12 months running at 98% efficiency for serving vessels without delay.

2.3. The increase in business and vessel numbers has in turn increased the demand for landing and boarding more vessels and bigger and deeper vessels at the NESP. One future development plan to cope with the requirement is to reopen the deep water route in the North Edinburgh Channel, 6 mile NW of the NESP Racon Buoy.

2.4 The channel entrance will require dredging and navigation buoyage to be installed but the growth in traffic and overall vessel sizes as shown above together with the pressures of multiple large vessel boardings at the Sunk pilot station, has created an immediate demand for deep draft Class1 and Ultra large (ULCS) vessels to transit the North Edinburgh Channel to and from the NESP at drafts up to13.5 meters, having boarded or landed a Pilot at the NESP. This is a major factor in the future growth of business in the Port of London.

2.5 Serving larger and deeper vessels with greater manoeuvring characteristics such as turn radius, smaller rates of turn and greater time required steaming on an embarkation heading to get the Pilot onboard all require greater amounts of sea room and a requirement for greater margins for vessel speed and position, traffic density, weather conditions and the proximity of fishing vessels and leisure craft.

2.6 Combining all of these factors then it is not in the best practice of seamanship or vessel safety to initiate and complete a manoeuvre requiring a large change of heading of a ULCS for a Pilot in less than 2 miles sea room. The time and distance factor for margin of error is very small and as such the LPC require a minimum 1 mile SEZ in addition to the two miles sea room as shown in Fig.B.

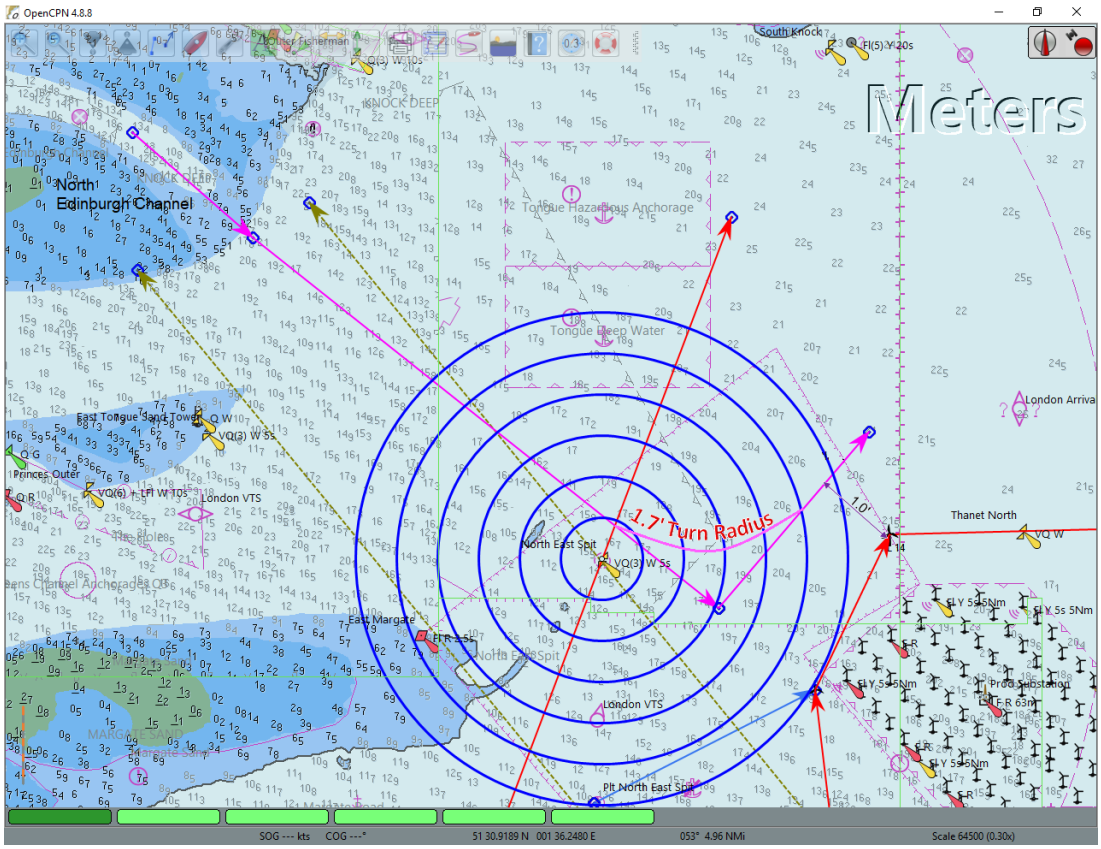
2.7 It is not possible tonserve Ultra Large vessels transiting the North Edinburgh Channel in a position directly to the North of the NESP Racon Buoy as this area comprises the busiest East/West Traffic route

2.8 Fig.C shows how critical speed and position is for boarding and landing Pilots in this area and why a 1 mile SEZ is critical to the safe operation of vessels. It can be seen that using the same turn radius and the vessel requiring approximately 6 minutes to board a Pilot then the vessel has only to overrun its turn position abeam of the NESP Racon Buoy by 1 mile or at Dead Slow Ahead on a Cap San of 7.5 knots, 8 minutes, then the vessel would be in close proximity to the Windfarm.

2.9 Traffic management is required to maintain two miles of sea room and a practical amount of buffer zone between the operational sea room and the existing Windfarm to ensure a safe operation. The LPC require a minimum of 2 miles of sea room and a 1 mile of safety buffer zone to safely operate vessels of this type at the NESP.

Fig.B
Large and ULCS vessels departing the North Edinburgh Channel for Pilot disembarkation at a position ESE x 0.5 miles from the NESP Racon Buoy. Headings available for Pilot transfer from SE, Easterly and NE at 6 mins slow speed requires approximate turn radius between 1.0 mile and 1.7 miles for ULCS vessels. Rate of turn between 5 and 10 degrees. (ROT = V/Radius) (Info from vessel bridge manoeuvring data IMO Res.A601(15)) Change of heading shown is 90 degrees, from 130 degrees inward to Pilot disembarkation turning to 040 degrees outward to the VTS reporting point.

Fig. B



3.0 Manoeuvring Large vessels and ULCS

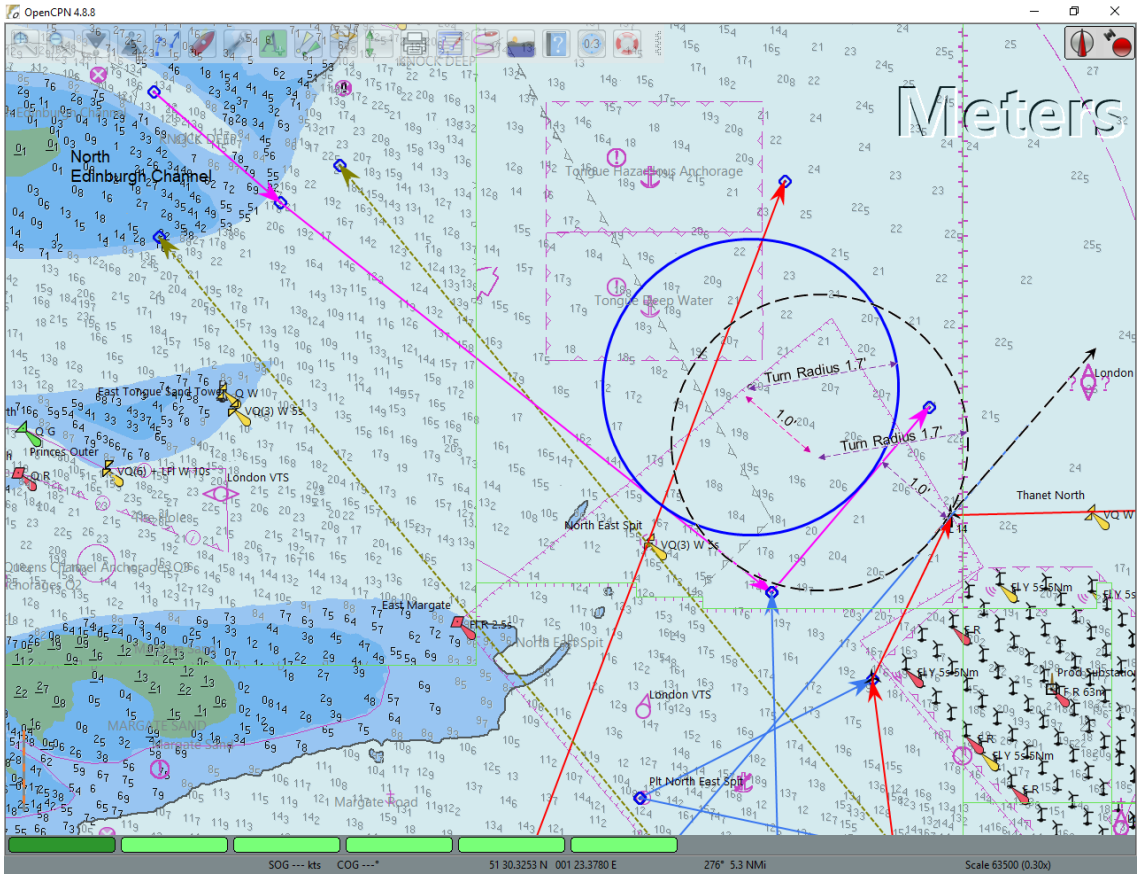
3.1 The requirement for accurate speed and position when manoeuvring large vessels is paramount. Port of London Pilots use portable pilot units, PPUs to maintain accurate rate of turns (ROT) , turn radius and position prediction to maintain a correct course, speed and vessel position when Piloting large deep draft and ULCS vessels.

3.2 It is simply not possible to maintain the required level of accuracy whilst manoeuvring large vessels in a sea area such as the NESP and in close proximity to a windfarm by simply looking out of the window as Captain Moore suggested in his evidence.

3.3 Fig.C clearly shows that by overrunning the turn position by 1.0mile or 8 minutes in time or losing the rate of turn and increasing the turn radius then the vessel will be in close proximity to the Windfarm within a very short space of time

3.4 The red line boundary proposed by the applicant removes any margin the Pilot may have had for speed and position, traffic density or heading allowance for weather.

Fig.C gives a clear picture of the requirement for a 1 mile SEZ in addition to the required 2 miles of sea room.



4.0 Captain Simon Moore's comments on the LPC DL4 submission

4.1 In the interest of saving time at the last hearing the LPC offered to include any reply to Captain Moore's opinion with regard to radar plots and safety of navigation around the proposed Windfarm until the Deadline 5 submission

4.2 It is the opinion of the LPC that Captain Moore is greatly lacking in actual experience of manoeuvring large vessels in close proximity to windfarms and that the quality and relevance of his 'expert' opinion on the challenges to the safety of navigation that mariners face around windfarms can add little or no value to the process.

4.3 Captain Moore's Pilotage experience of the NESP area is that of a Port of London Class 4 Pilot on small vessels (120 x 6m) for less than 6 months, some 13 years ago. Captain Moore left the employ of the Port of London in December 2006 which was before the existing Thanet Windfarm was built.

4.4 Captain Moore is a Master of a Cross Channel ferry. The vessels mentioned, 'Pride of Kent' and 'Spirit of France' have drafts of 5.9m and 6.5m respectively, in other words lighter draft vessels with a draft similar to a Class 4 and Class 3 vessel respectively. Captain Moore's vessel would by his own admission at the last hearing safely transit the inshore route, past the Elbow Buoy and over the NESP bank. Captain Moore's vessel therefore can not be considered a large, deep draft vessel of the type which would typically manoeuvre to the East of the NESP Racon which is the area in contention for the proposed red line boundary.

4.5 Captain Moore's job as a ferry Master takes him from The Port of Dover across the English Channel to Calais. Neither port has an offshore windfarm development and Captain Moore does not pass a Windfarm on passage between either port. Not only does he not have any experience of the challenges of manouvering large vessels around windfarms in the Port of London district, he does not possess any current experience of navigating around windfarms anywhere outside of the area.

4.6 By contrast all London Pilots will transit in close proximity to two or more of the estuaries four windfarms during every Pilotage act with a frequency of approximately 150 to 200 times per year. These windfarms are the Kentish Flats whilst transiting the Oaze precautionary area, the Gunfleet Sands whilst transiting the Barrows Channel, the London Array whilst transiting the Black Deep, the Long Sand Head and the Fisherman's Gat and of course, the existing Thanet Windfarm whilst in transit or boarding and landing in the NESP sea area.

5.0 Radar usage

5.1 During the last hearing Captain Moore criticised the radar range scale in use, the pulse setting and the sensitivity settings of the radar picture in the LPC Submission 4, Fig.7. Captain Moore claimed that the range scale was in his opinion unsafe and should be set at 1.5 miles for anti collision.

The following examples show just how incorrect Captain Moore's testimony was.

5.2 Captain Moore's Radar scale of 1.5 miles.
Target appears on radar screen at 1.5 miles. If his vessel speed is 15 knots then the time available to determine if risk of collision exists is 6 minutes, but only if the target is stationary (1.5 ml / 15 kn = 0.1 x 60 min = 6 mins)

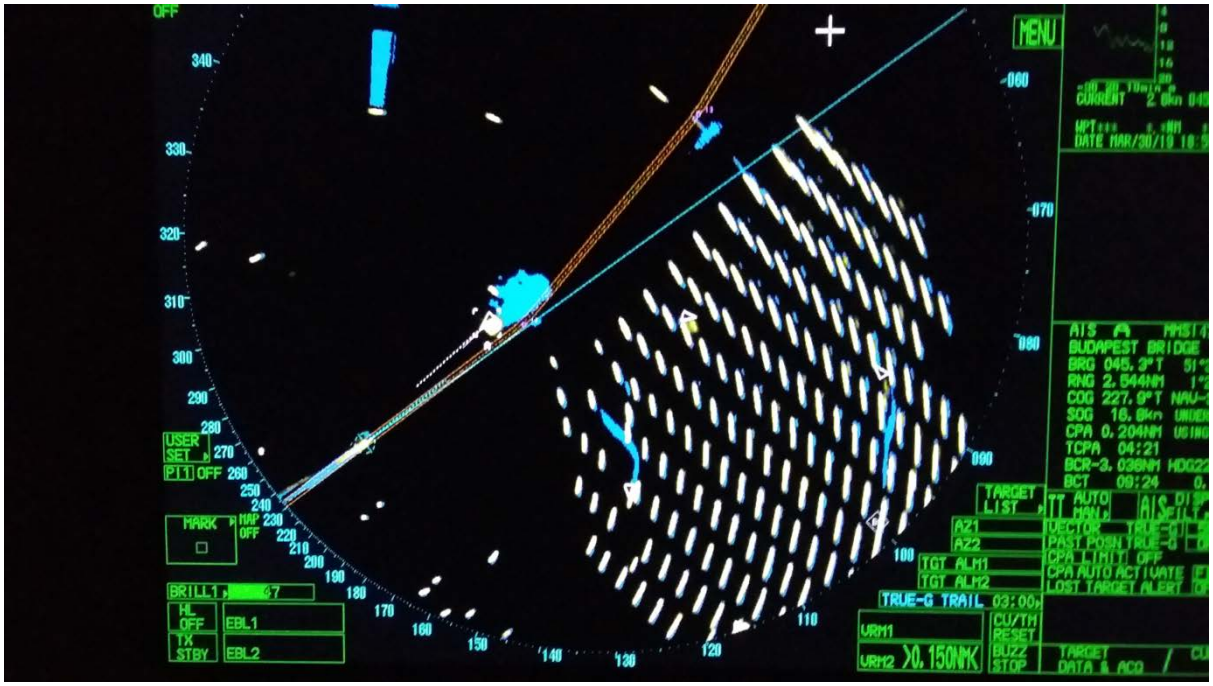
5.3 If the target is a vessel moving at 15 knots then the closing speed on a reciprocal course is 30 knots, Captain Moore's Radar screen gives him only 3 minutes to determine if risk of collision exists.

5.4 LPC Pilots Radar scale 3 miles offset = 4.5 miles. Target appears on screen with 18 minutes to determine if risk of collision exists and for a target on a reciprocal course and speed, a full 9 minutes to appraise the situation and take avoiding action.

5.5. Fig.1 London Array Windfarm

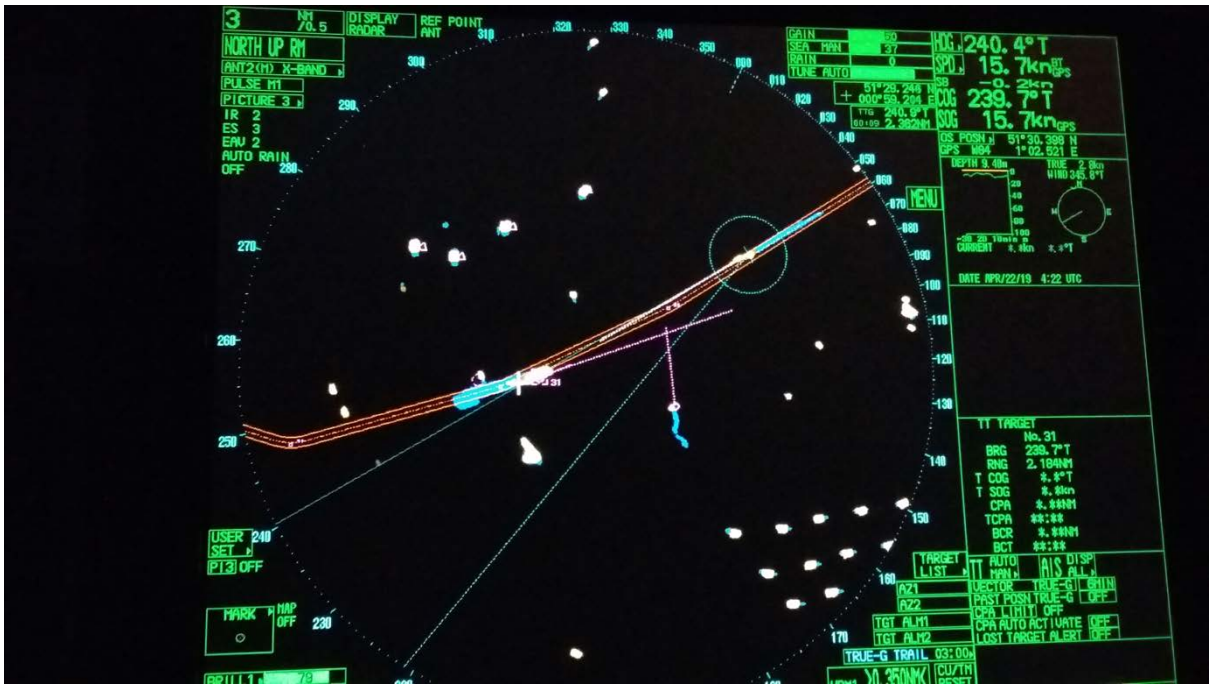
Radar range 6 miles offset. Vector length 6 minutes. Medium pulse.
Target Vessel plotted at 9 miles, 19 minutes on closing speeds to determine if risk of collision exists.
This snap shot shows Target vessel, speed 16.8 knots on reciprocal course at 2.5 miles distant. Time to closest possible approach 4 minutes. Own vessel takes avoiding action by altering course to Starboard in accordance with the COLREGS.

Target vessel would not have even appeared on Captain Moore's screen for another 1 min 15 seconds !!



5.6 Note in Fig.1 The London Array Windfarm is at 1.0 mile. A small alteration of course of only 10 degrees for collision avoidance brings the Pilots vessel into conflict with the Windfarm in less than 12 minutes. This again demonstrates very clearly why the LPC require a 1.0 mile exclusion zone in addition to the 2 miles sea room to the North and West of the proposed Windfarm extension

5.7. Fig 2 Kentish Flats Windfarm



Radar range 3 nautical miles off set to give 4.5 miles look ahead. Pulse setting M1, medium pulse, 6 minute vectors.

5.8 Pilot's vessel is a deep draft ULCS Container vessel and constrained by its draft. Vessel is inbound to the London Gateway and is approaching the Oaze precautionary area. Outbound Target vessel on reciprocal course and in accordance with the COLREGS is required to make a broad alteration of course to starboard to avoid a fishing vessel on her own starboard side.

5.9 This snap shot (Fig.2) was taken when the target vessel was 2 miles ahead, 4 minutes before closest possible approach (CPA)

5.10. Fig.2 clearly shows that the outbound target vessel has a large alteration of course to Starboard to avoid a collision course with the fishing vessel. The vectors are 6 minute length and it can be seen that it would be just a little over 6 minutes before the target vessel came into conflict with the Windfarm once the alteration is made.

5.11. This whole scenario would not yet have been visible on Captain Moore's Radar with his 1.5m radar range scale, which in his opinion is the scale being most appropriate for collision avoidance.

6.0 Radar Pulse Settings

6.1 The LPC suggest that the expert opinion given by Captain Moore on the ‘Pulse Settings’ on marine radar to be incorrect and misleading

6.2 Captain Moore described the M1 and M2 ‘pulse settings’ shown on the 3mile radar plots in the LPC submissions to be incorrect and described them as “long pulses”.

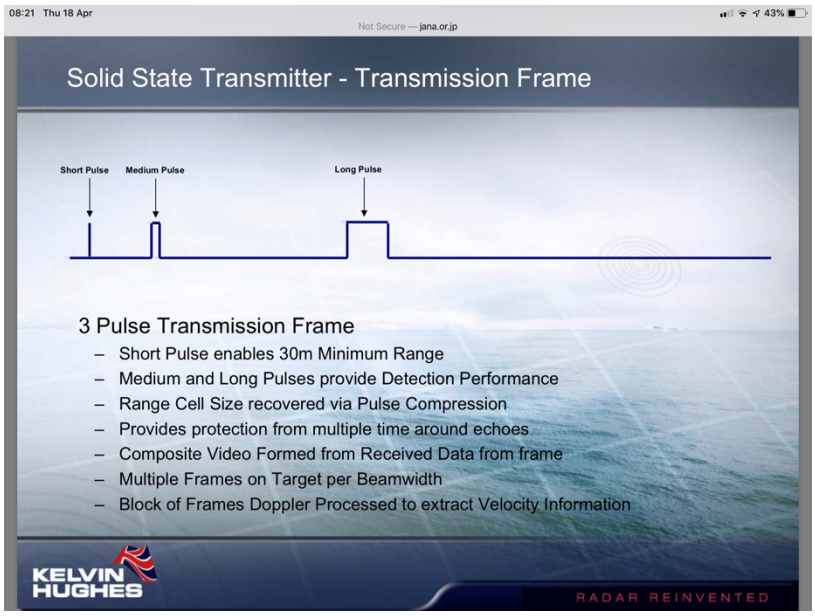
6.3 Without going into the science of pulse length, short pulse (SP) energy gives clear sharp definition of fixed targets at very close range typically buoys, berths, anchorages and channel edges. Medium pulse (MP) energy gives adequate definition of targets for plotting, such as target vessels, racon buoys and use in passage monitoring. Long Pulse (LP) energy is used typically in making landfall at long range. See Fig.3

6.4 On most marine radars the pulse settings are automatically selected as the range scale is changed. The Kelvin Hughes operation manual shows Short Pulse (SP) for ranges 0.25, 0.5, 0.75 and some 1.5 mile ranges. Medium Pulse (MP) is an auto setting for ranges 3 and 6 miles and finally Long Pulse settings (LP) for 12 and 24 and radars with a 48 mile ranges.

6.5 The radar plots shown in Figs.1 & 2 above and in the LPC Submission 4 all show a common Kelvin Hughes Marine radar set on a medium range scale 3 miles with an auto select medium pulse, M1 or M2 setting, in accordance with manufacturers guidelines.

6.6 Clearly Captain Moore’s expert opinion on the radar range in use to determine if risk of collision exists and the use of pulse settings was incorrect and misleading.

Fig.3 Kelvin Hughes Radar Pulse Settings



6.7. Captain Moore's opinions on radar range scale, pulse length and use of radar as a means to determine if risk of collision exists, effects of windfarms on radar clutter, false echoes, loss of line of sight, loss of AIS targets, small vessel movements, the stopping ability of large vessels and navigation in reduced visibility around windfarms are not in keeping with best practice of good seamanship

6.8 To summarise Captain Moore's expert evidence then clearly he has no relevant experience of manoeuvring large deep draft vessels in the proximity of Windfarms and consequently his lack of experience of the challenges to the safety of navigation to Mariners in the proximity of any Windfarm whatsoever suggests that, in the opinion of the LPC, he is in this particular application unfit to challenge any of the data or evidence provided by the LPC.

6.9 The collision regulations (COLREGS) relevant to the LPC comments and opinion are as follows:

- Rule 5 Lookout
- Rule 7 Risk of Collision, in particular reference to long range scanning and systematic plotting for early warning of risk of collision
- Rule 8 Action to avoid collision. Special reference to positive, ample time and due regard to good seamanship
- Rule 14 Head on situation
- Rule 15 Crossing situation
- Rule 19 Conduct of vessels in restricted visibility, special reference to d) Ample time

Captain Andrew Sime MM MNI
Class1 Unrestricted Pilot
Havens Pilot for ULCS
Port of London Authority