IMMINGHAM EASTERN RO-RO TERMINAL DCO APPLICATION

PINS REFERENCE TR030007

SUMMARY OF CASE MADE AT ISH3 BY DFDS

Day 1 of ISH3 (27 September 2023)

1 Introduction

1.1 This document is a summary of the case that DFDS Seaways plc (DFDS) made at Issue Specific Hearing 3 that took place on 27 and 28 September 2023.

2 Agenda Item 2: Policy, statutory and other legal considerations for the Proposed Development

2a The extent to which any unutilised capacity at the Port of Killingholme is capable of being considered as a potential alternative to the Proposed Development in policy terms

2.1 DFDS had no comment on this agenda item.

2b Whether the Proposed Development would or would not amount to sustainable development for the purposes of the National Policy Statement for Ports.

2.2 DFDS drew attention to paragraph 3.3.3 of the Ports NPS which identifies a number of criteria that new port infrastructure should satisfy to help meet the Government's policies on sustainable development. DFDS' particular concern is the matter identified in the 5th bullet point that '*new infrastructure should be well designed, functionally and environmentally*'. DFDS does not consider that the Applicant has demonstrated that the proposed infrastructure is 'functionally well designed' in light of the safety risks it poses and likely implications on the existing commercial operations at the Port of Immingham and the local road network and communities, for the reasons which DFDS have explained in written and oral representations.

2.3 If the proposal does not constitute sustainable port development, then it does not benefit from the policy support for such development set out in para 3.3.1 of the Ports NPS which is to encourage sustainable port development.

2c Compliance or otherwise with the UK Marine Policy Statement (2011) and the East Inshore and East Offshore Marine Plans 2014

2.4 DFDS noted that s.104(2)(aa) Planning Act 2008 provides that the Secretary of State must have regard to appropriate marine policy documents. These include the UK Marine Policy Statement (2011) (UK MPS) and the East Inshore and East Offshore Marine Plans (2014).

2.5 UK MPS is the framework for preparing Marine Plans and taking decisions affecting the marine environment and contributes to the achievement of sustainable development in the UK marine area.

2.6 DFDS does not consider that the Proposed Development complies with some key aspects of the marine policy documents.

2.7 Paragraph 3.4.7 of the UK MPS says (our emphasis):

'*Increased competition for marine resources may affect the sea space available for the safe navigation of ships. Marine plan authorities and decision makers should take into account and seek to minimise any negative impacts on shipping activity, freedom of navigation and navigational safety and ensure that their decisions are in compliance with international maritime law. Marine Plan development and individual decisions should also take account of environmental, social and economic effects and be in compliance with international maritime law. Marine plan authorities will also need to take account of the need to protect the efficiency and resilience of continuing port operations, as well as further port development.*'

2.8 DFDS noted:

2.8.1 the requirements to seek to minimise any negative impacts on shipping activity and navigational safety;

2.8.2 the fact that economic effects must be taken into account which must include commercial impacts on existing port operations; and

2.8.3 the need to protect the efficiency and resilience of continuing port operations.

2.9 DFDS also referred to the East Inshore and East Offshore Marine Plan which explains at paragraph 248 that:

'Decision-makers should take into account and seek to minimise any negative impacts on shipping activity, freedom of navigation, and navigational safety and ensure that their decisions are in compliance with international maritime law.'

2.10 Policy PS2 provides that:

'Proposals should:

a) be compatible with the need to maintain space for safe navigation, avoiding adverse economic impact

b) anticipate and provide for future safe navigational requirements where evidence and/or stakeholder input allows and

c) account for impacts upon navigation in-combination with other existing and proposed activities.'

2.11 Paragraph 358 states:

'The East marine plan areas are home to nationally significant levels of coastal, short-sea and international shipping. As other activities seek to capitalise on the resources of the area, these should be carried out in such a way as to afford protection of safe and competitive shipping.'

2.12 Paragraph 359:

'It should be demonstrated that the outcomes of consultation with harbour and other navigation authorities, public authorities and commercial shipping have informed the application proposed. This requires insight from navigation and shipping representatives to be gained that materially informs proposals where development that might impede navigation.'

2.13 Policy PS3: Proposals should demonstrate, in order of preference:

2.13.1 '*That they will not interfere with current activity and future opportunity for expansion of ports and harbours*

2.13.2 How, if the proposal may interfere with current activity and future opportunities for expansion, they will minimise this

2.13.3 How, if the interference cannot be minimised, it will be mitigated

2.13.4 *The case for proceeding if it is not possible to minimise or mitigate the interference.*'

2.14 Paragraph 367 discusses the need to '*minimise negative impacts on shipping activity, freedom of navigation and navigational safety, as well as protecting the efficiency and resilience of continuing port operations*.'

2.15 DFDS's concerns relate to safety and operational impacts on the basis of the mitigation currently proposed by the Applicant, and in light of those impacts, DFDS considers there is a conflict with the above parts of the plans.

2d Any national energy security considerations

2.16 DFDS had no comment on this agenda item other than that adverse impacts on IOT could affect national energy security.

3 Agenda Item 3: Navigation and shipping effects of the Proposed Development

3a The management of an allision or collision incident within the Port of Immingham by the Dock Master and the Harbour Master Humber

3.1 DFDS noted that ultimately the master is legally responsible for his/her vessel regardless of whether a pilot is embarked.

3.2 In response to the ExA's hypothetical incident, DFDS noted that in addition to the Port Authorities already mentioned, another element to consider is pursuant to schedule 3A to the Merchant Shipping Act 1995 allows for a representative of the Secretary of State to become involved: known colloquially as the 'SOSREP'.

3.3 Where there is an incident on a vessel that has created a risk to safety or a risk of pollution by a hazardous substance, the SOSREP can become involved can issue directions requiring any person to ensure that the ship is not moved; the cargo is not unloaded and that specific salvage measures are taken or not taken. In short, the directions could be far reaching and prevent Port activity and have significant effects on the operation of both DFDS and others using the Port of Immingham.

3.4 DFDS Captains provided an overview of the characteristics of Immingham Outer Harbour (IOH), including nearby infrastructure such as the Western Jetty and the nature of the tide in that area. DFDS then provided a more detailed explanation of how to manoeuvre a vessel into and out of the IOH, depending on tide and wind conditions and the considerations required to ensure safe clearance of the Western Jetty. DFDS noted it would provide a set of diagrams showing manoeuvres in and out of the IOH with various wind and tide conditions, these will be provided at Deadline 5.

3b Any examples of any port layouts in the United Kingdom where Ro-Ro berths and fuel import/export berths have siting relationships comparable to what is being proposed for the Port of Immingham

3.5 DFDS confirmed that they have undertaken analysis of all relevant and major UK ports and that information will be provided in response to the relevant written question (NS.2.07). DFDS do not consider that there is an example at another UK port where Ro-Ro berths are in such close proximity to fuel berths, as that in the Proposed Development. Noting it is understood the distance between the proposed new berths and IOT is 95 metres.

3.6 DFDS do not consider the arrangement at the IOH with the Western Jetty to be comparable to that at the Proposed Development. DFDS will provide detailed reasons for this in written submissions, a particular differential to note is that there is no tidal influence inside the IOH, it is slack water, so the tide can be used in the river to manoeuvre a vessel into the right position. If a manoeuvre is not working there is plenty of space within the river to readjust, abort and realign. It is a much less complex manoeuvre that it would be at the Proposed Development. DFDS finds it surprising and concerning that the Harbour Master was not able to express a view on this at the hearing.

3c Differences in approach taken by the Applicant, IOT Operators and DFDS in preparing their respective Navigational Risk Assessments (NRA) [APP-089], [REP2-064] and [REP2-043] and the consequent implications for the conclusions reached in those NRAs about risk controls and acceptability

3.7 DFDS' Principal Consultant at NASH Maritime specialising in projects related to risk assessments, mooring studies, navigational risk and shipping with a focus on energy and infrastructure projects, Brocque Preece, prepared the NRA submitted by DFDS at Deadline 2.

3.8 The Examining Authority posed four questions, DFDS's responses were are follows:

1. is it correct that ALARP and tolerability are inseparable concepts?

3.9 It is DFDS's view that in principle As Low As Reasonably Practicable (ALARP) and tolerability are inseparable concepts when applied to a Navigation Risk Assessment. The ALARP concept is applied within an NRA as a way to determine appropriate mitigation measures that achieve

the necessary reduction in risk that brings the risk to an acceptable level. Risks that are intolerable must be eliminated or reduced. If reduced, these risks must be reduced to ALARP in order to be considered acceptable. In an NRA, the ALARP principle is integral in defining acceptable/tolerable outcomes and, when applied correctly to an NRA, these are inseparable concepts.

2. Is ALARP ultimately a matter for the judgement of the Duty Holder?

3.10 DFDS accepts that usually ALARP is the responsibility of the Duty Holder. However, the difficulty in this instance is that the Duty Holder, the Dock Master, the Harbour Master, the Harbour Authority and Safety Board, the Designated Person, Head of Marine, Port Director, Group Head of Safety and Marine and the navigational risk assessment consultants all work for or are owned by the Applicant and many of the office holders are line managers to each other. It is particularly important in those circumstances that the Applicant engages transparently with stakeholders and seeks to obtain consensus.

3.11 DFDS does not consider that the Applicant has done that, and considers that it must do so (including stakeholders' views on ALARP and tolerability) before this application can be considered to have assessed and mitigated navigational risk properly.

3. Can a methodology be cited for determining tolerability/acceptability? Is there an objective standard?

3.12 It is DFDS's view that tolerability and methodology can be linked in the form of risk assessment scoring to provide a clear and objective assessment. This is clearly identified in the one of the Applicant's reference documents: MGN 654, by its Annex 1 Methodology for Assessing Marine Navigational Safety [**REP1-017**], in Appendix C5.

3.13 Tolerability/acceptability definitions can be built into the methodology in the form of scoring. This ensures tolerability thresholds are transparent to all stakeholders involved in the assessment of risk, and that identifying intolerable risks is a transparent and objective process. Risk is a product of likelihood multiplied by consequence and tolerability can be tailored to the specific risk assessment by appropriately defining the tiered levels of consequence. In this way, the tolerability threshold definition can remain consistent for all risk receptors (people, property, environment and port business) and the level at which tolerability is reached is clear and objective to all stakeholders.

4. Is a 50-year period suitable for assessing navigational risk of an individual terminal within a port (as opposed to the port as a whole)?

3.14 DFDS consider a probabilistic approach is more appropriate for defining the likelihood thresholds and provides greater objectivity to the risk assessment. Probabilities also inform the expected frequency of recurrence of a hazard. Importantly, DFDS believes that the likelihood categories need to be adequately defined to increase understanding and remove subjective interpretation wherever possible. This is essential when undertaking a PMSC-compliant qualitative NRA that has the objective of obtaining stakeholder consensus. Inadequate likelihood definitions can result in incorrectly assigned likelihood category which can have a significant influence on the perceived risk level, which can have a knock-on effect of inadequate mitigation measures or tolerability assessment.

3.15 Defining the likelihood on the basis of the lifetime of the terminal does not appropriately reflect the more severe, less frequent events that often dominate the high-risk incidents. Stakeholders considering if the risk would occur in a 50-year period could reach a different conclusion if they were to consider the possible occurrence over a 75 year or 100 year period.

3.16 Additionally, relating the likelihood of occurrence for a set period of 50 years across both operation and construction will have significant misalignment due to the far smaller duration of the construction phase. A probability-based approach is more appropriate means of defining the potential of the hazard's occurrence.

3.17 As mentioned below, appended to this document is a fuller analysis of the differences between the approach taken in DFDS' NRA and that of the Applicant.

3d Operating limits and harbour directions for the proposed IERRT berths and how they might change over time.

3.18 DFDS remains concerned that it is unclear to stakeholders what the operating limits and harbour directions are, there has been a lack of transparency as to what the Applicant has concluded are the operating limits and no clarity as to whether they will be imposed, or how these limits may affect other waterway users (such as movements to/from the Eastern Jetty or Immingham Oil Terminal finger pier).

Day 2 of ISH3 (28 September 2023)

3e The identification of risk controls and why potential controls identified by IPs either prior to the application's submission or during the Examination, such as the full or partial relocation of the IOT Finger Pier berths, have been discounted by the Applicant, including the consideration of cost and effectiveness.

3.19 DFDS declined to comment in detail on the agreement in principle between the Applicant and IOT at such short notice but noted that DFDS had already identified the need for impact protection in principle and would wish to see full details before commenting further. DFDS also wishes to be provided with more detail about the full extent of changes to application documents, including the dDCO, to accommodate this change. DFDS considers that the changes will require further simulations to enable them to be tested and assessed.

3.20 Once the indicative layout for the agreement was discussed on 28 September, DFDS highlighted differences in methodology as compared with the Applicant's, and different conclusions about the NRA. DFDS stands by its NRA which raised questions not just relating to this point but also about the Eastern Jetty and berth 3, so new information may require updates to DFDS' NRA as well as the Applicant's. DFDS suggested that it may not be a useful exercise to discuss differences between DFDS's and the Applicant's NRAs during the hearing, but could provide its assessment in writing. This assessment is now provided at Appendix 1. This assessment may need to be updated subject to further information being provided by the Applicant.

3.21 When the ExA solicited feedback on further simulations in light of the proposed Applicant/IOT agreement, DFDS noted the lack of simulation to Berth 3, which in DFDS's opinion fails to

acknowledge the dangers presented by the Eastern Jetty. DFDS has also had long standing concerns surrounding the tide north of IOT and new simulations would give the applicant the opportunity to address these concerns and correct the errors they themselves have acknowledged. It would also allow for modelling of the Eastern Jetty Tug Barge which was omitted from all simulations to date. Finally it would also give the applicant the ability to demonstrate operation of c240m vessels using much more realistic levels of main engine, bow thruster and tug power to clearly demonstrate 'the limits' to which the applicant repeatedly refers but which, to date, have not been shared.

3f Harbour Authority and Safety Board (HASB) consideration on 12th December 2022 of the Proposed Development risk acceptability (tolerability) and the cost effectiveness analysis of controls

3.22 DFDS noted it would assist understanding if the Applicant could confirm if all members of the HASB were also the members of the Commercial Board; and to receive an explanation of the chain of command between the various people involved, as this was not fully covered in the Applicant's 'governance' document [**REP1-014**]. DFDS understands that Captain McCartain is a director of the Applicant and so has responsibilities for this project; a member of the HASB and so has responsibilities for signing off on any safety concerns; and the Designated Person and so has purported independent scrutiny of navigational issues, thus in effect wearing three 'hats'.

3.23 DFDS noted that ExQ2 (NS.2.02) asked the Applicant to provide the reports and minutes of the HASB meeting and looks forwards to seeing these.

3.24 DFDS also requested copies of the Applicant's internal assessment presentations and minutes (detailed at item 11.1 of the Applicant's Governance review [**REP1-014**]) as supporting the decision-making process which resulted in the Applicant's HASB concluding that it was 'satisfied with the approach taken to marine navigational risks and that the risks identified were ALARP and tolerable' [**REP2-039**, p.22 (DFDS comments on D1 submissions)].

3.25 The Applicant themselves have said that '*Setting the threshold for acceptability of risk is clearly a critical factor*' [**REP3-009]**, paragraph 1.8 (Response to DFDS NRA). DFDS agrees, which is why it is so important to understand the factors that informed the Applicant's conclusions as to tolerability and for those factors to be set out clearly in the NRA.

3.26 Yet whenever DFDS has questioned the process or conclusion as to tolerability, the Applicant simply say that it is not for DFDS or other stakeholders to define the tolerability of risks because they are not the Statutory Harbour Authority or Duty Holder. It is not for stakeholders to conclude on tolerability – that is the role of the Duty Holder. This is to misunderstand the necessity for and extent of stakeholder involvement before navigational risk can be said to have been properly assessed.

3.27 Indeed, the Immingham Dock Master; Humber Harbour Master; Harbour Authority and Safety Board; Duty Holder; Designated Person, Head of Marine, Humber, Port Director, Group Head of Safety and Marine and the Applicant's navigational risk consultant, ABPmer, all ultimately work for or are owned by the same company and many of the officeholders are line managers of others. The Regional Director, Humber sponsors the IERRT project at ABP, and from him the line of management runs down through the Head of Marine, Humber (Paul Bristowe) to the

Harbour Master Humber (Andrew Firman) and the Immingham Dock Master (Mark Collier). It is understood that the Head of Marine, Humber, does not himself have statutory responsibilities, however, it was noted that he answered several of the questions directed by the ExA to the Dock Master, despite the Dock Master having a good understanding of the topic. DFDS is of the opinion that questions directed to an office holder should be answered by that person, to prevent any blurring of lines or independence between the Applicant as a commercial entity and the duty holders appointed by virtue of statute.

3.28 DFDS are also of the view that the independence of the 'Designated Person' has been further compromised by the temporary appointment of Captain Mike McCartain to the role. Captain McCartain is a director and a board member and thus part of ABP's duty holder. By being appointed as Designated Person as well there is now no independent oversight within the Applicant's marine management structure. This is inconsistent with the Port Marine Safety Code [**REP1-015**], which states at paragraph 1.1 '*A 'designated person' must be appointed to provide independent assurance about the operation of an organisation's MSMS.'* An appointment of an independent consultant on a temporary basis would have been a simple yet effective means of preserving the integrity of governance within the port network.

3.29 In this case the Designated Person did not even attend the HAZID workshops, simulations or any of the sessions involved in the production of the NRA so it is entirely unclear how he could have assured the Duty Holder of the rigour of the process or that concerns raised by stakeholders had properly been addressed.

3.30 The Applicant's submissions at ISH3 only served to make the governance of the Humber appear even more complex and lacking in independence. The Harbour Master reports to the Head of Marine, who has no statutory responsibilities and has his main, local reporting line to the Port Director, Simon Bird. Captain McCartain occupies the role of acting Designated Person while also being ABP's Group Director, Safety Engineering and Marine and a member of the HASB. Captain McCartain's responsibilities include ABP's dredging operation with UKD as well as day-to-day work with teams responsible for operational safety, engineering assurance and marine operations across 21 ABP ports. Paul Bristow is ABP's Head of Marine and reports to the Port Director. He does not have any statutory responsibilities, but DFDS noted that he answered questions during the hearing which were directed to the Dock Master and Harbour Master.

4 Agenda Item 4: Onshore transportation

4.1 DFDS explained a point that had not yet been raised with the ExA. While trying to understand differences in outcomes between DFDS's own calculations and the Traffic Assessment, DFDS discovered that each HGV was counted as a single Passenger Car Unit equivalent (PCU) in the latter. A conversion ratio should have been applied to each HGV, depending on its size, though on average this factor is around 2.3 (i.e. this would more than double the volume of Heavy Goods Vehicles modelled which will have a material impact on the modelling results.) DFDS pointed this out to the Applicant and, on 26 September, the Applicant responded accepting the error in the Transport Assessment and producing a note in response. As of the hearing date, DFDS has not completed a thorough review of the Applicant's note; but the headline is that traffic flows are higher than shown in the original Transport Assessment, some

junctions on the network will exceed their practical capacity earlier than previously expected and that junctions in the local area are sensitive to any additional demand being applied. This has an impact on junction capacity and gatehouse queues. Aside from the other issues it has raised, DFDS believes further modelling should be done as a result. An updated Transport Assessment should follow because the required correction makes a material difference to the baseline inputs and all of the Transport Assessment findings. It brings some junctions above the RFC 0.85 mark that is generally accepted as a junction's capacity.

4a. Ro-Ro unit dwell times, predictions for the split between accompanied and unaccompanied freight and the freight handling capacity for the Proposed Development.

4.2 The ExA proposed not to address agenda item 4(a) in detail because dwell times and capacity were well-aired in discussions around earlier agenda items.

4.3 Dwell rates are important as these aid in calculating the capacity of the terminal. DFDS has conducted a detailed examination of the terminal capacity using the dwell rates defined by the Applicant during ISH2, in combination with other operational parameters defined by the Applicant and identified that the terminal has capacity for just under 300,000 freight units per year for accompanied and unaccompanied modes (just under 50% of the dDCO declared volume of 660,000 units). The terminal was originally announced as being an 880,000 unit terminal, which further casts doubt as to whether any proper capacity modelling was ever undertaken.

4.4 The findings of DFDS assessment raises concern that the terminal is undersized for the identified annual throughput and will likely lead to vehicles queuing to enter the terminal creating congestion on the port internal road network, at the gatehouse and potentially on the local road network, resulting in increased safety risks and implications on the existing commercial operations at the Port of Immingham (refer to paragraph 2.2 of this summary). This may also lead to increased demand of truck parking facilities located outside the port.

4.5 The Applicant has indicated an intent to revise Chapter 2 of the ES with the new annual figure in response to Question BGC.1.16. DFDS would also anticipate that this submission will provide a description of any further mitigations required (for example additional truck stop capacity, or gatehouse operational systems) to be identified within this revision of the ES regarding how the Applicant intends to manage congestion external to the terminal.

4b. Road traffic surveys and predicted traffic generation.

4.6 In response to a query about data used for road traffic surveys and predicted traffic generation, DFDS confirmed ExA's understanding that volumes are now back to pre-COVID levels (although private vehicles are somewhat lower). Leaving aside the HGV/PCU miscounting explained in paragraph 4.1 above, DFDS requested the Applicant provide validation for the A160 traffic surveys to confirm the survey data being used.

4.7 The ExA asked if the schemes excluded from the scope of the Transport Assessment as mentioned in page 20 of **REP2-010** were the same ones mentioned in paragraph 6.1.3 of the Transport Assessment [**AS-008**]. DFDS indicated that the Altalto committed development would likely have the most additive effects on the system, and this would be especially critical given the revised assessment with corrected PCU numbers indicates the system is sensitive to

addition of traffic volumes on the road network because the baseline and committed development volumes are much higher than previously modelled. However, DFDS could not fully comment without the Applicant's more detailed written response.

4c. Distribution of vehicular traffic entering and exiting the Port of Immingham in association with the operation of the Proposed Development.

4.8 The ExA queried how the Applicant would maintain the Transport Assessment's 85/15 split between East and West Gates, to ensure West Gate remains functional. DFDS commented that:

4.8.1 existing operations are in Killingholme, where most if not all drivers would currently use the A160 to access. The Applicant has not responded to this point, but DFDS does not anticipate a significant change in driver behaviour;

4.8.2 there is limited difference in driving time between the two gates, which has been assessed by both DFDS and the Applicant to only be 1 to 2 minutes faster via the East Gate when using the A1173 or via using the A160 to Manby Road, compared to the West Gate;

4.8.3 goods are likely to be distributed to local facilities outside the port such as those located on the A160 and Eastfield Road, as well as those located around the Port of Immingham. This is counter to the Applicant's statement that all vehicles need not use local facilities. During the third Transport Working Group discussion, the Applicant's consultant agreed to seek further information from the intended operator, however the intended operator has confirmed they have no data to support the Applicant's current assumptions. During the fourth Transport Working Group discussion, the Applicant and the Interested Parties consultants agreed to develop a map of nearby depots, distribution centres, warehouses, etc to inform the East versus West gate distribution;

4.8.4 the Applicant has only recently clarified an intent to modify wayfinding in the local area, but this is not secured under the dDCO; nor has its inclusion or exclusion been assessed, nor have any details of what wayfinding modifications would be included been shared with interested parties; and

4.8.5 on the suitability of the carriageway, the A160 is dual lane with appropriate width for heavy goods vehicles, whilst A1173 is single lane only and therefore exposed to potential HGV breakdowns or road works.

4.9 DFDS agreed with the ExA's emphasis on the parties engaging to agree a Statement of Common Ground to settle the point at which traffic at the East Gate stops working properly. However, DFDS noted that if the traffic distribution to West Gate changed from 15% to 45%, vehicles would likely be queueing onto the highway network even without accounting for other sensitivities DFDS wants to see taken into account.

4d. Effects for the operation of the public highway and whether there is any need for mitigation and what form any such mitigation might take.

4.10 DFDS also raised the point that the corrected HGV/PCU information has not been shared with Local Highway Authorities, but at least one has a policy expecting to see mitigation measures proposed to ensure 'nil-detriment' to the highway network. Mitigation works should be designed to include deliverable junction upgrades / amendments to accommodate anticipated flows. The Applicant should make the affected Local Highway Authorities aware of the new data, in case the relevant threshold will be reached, and they may want mitigation.

5 Agenda Item 5: Any effects for the integrity of the Humber Estuary Special Area of Conservation, Special Protection Area and Ramsar site (the designated sites)

5.1 DFDS did not speak on this point.

6 Agenda Item 6: Any Other Business

6.1 DFDS did not speak on this point.

7 Agenda Item 7: Review of matters and actions arising

7.1 ISH3 ended without a review of matters and actions arising, which DFDS and the other parties agreed to address in writing as the ExA requested.

APPENDIX 1– COMPARSION BETWEEN NRA METHODOLOGIES

IMMINGHAM EASTERN RO-RO TERMINAL

NRA Differences:

Applicant's NRA and DFDS NRA

DFDS Seaways

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1 Primary differences between DFDS NRA and the Applicant's NRA

The table below lists the key differences between the NRA submitted with DFDS responses at Deadline 2 with Application ref REP2-043 (the DFDS NRA) and the NRA produced for the IERRT Development Consent Order application by ABPmer with Application ref APP-089 (the Applicant's NRA).

Section	Aspect of difference	Applicant's NRA reference	DFDS NRA reference
2	Data gathering and understanding	Section 3 Navigation Baseline Information	Section 3 Navigation Baseline Section 4 Vessel Traffic Analysis
3	Hazard identification process	Section 7 Hazard Identification Workshops Section 8 Hazard Scenarios	Section 6 Hazard Identification
4	Methodology used	Section 6 NRA Methodology	Section 5 Risk Assessment Methodology
5	Likelihood definition	Section 6.3 Stage 2:Risk Analysis	Section 5.2.1 Hazard Likelihood
6	Risk Score Calculation and risk Matrix	Section 6.3 Stage 2:Risk Analysis (note no calculation, but reference is to risk analysis section)	Section 5.2.3 Risk Matrix

7	ALARP and Tolerability Definition	Section 9.7 Risk Assessment and Cost-Benefit Analysis	Section 5.2.4 Acceptability / Tolerability
8	Risk Controls	Section 9.5 Further Applicable Controls Section 9.8 Risk Assessment: Applied Controls	Section 8 Additional Risk Controls

2 Data gathering and understanding

The Applicant's NRA appears to consider only a relatively high level of detail about the Port of Immingham's operations and vessel traffic. This limits readers' and stakeholders' understanding of the baseline present-day scenario for vessel operations, vessel movements and tidal influences. This is necessary to fully appreciate the potential impacts introduced by the proposed IERRT development, other future planned developments, or general increases in port traffic during the lifetime of the IERRT. One of the core early objectives of an NRA, as shown in the DFDS NRA, is to provide a deeper understanding of the marine navigation in the area so that future changes can be understood in the correct context. The main differences between the DFDS NRA and the Applicant's NRA is that the DFDS NRA includes:

- More detailed investigation into the baseline vessel traffic data using Automatic Identification System (AIS) data, including:
    - More detailed spatial and temporal analysis of vessel traffic disposition and traffic density plots.
    - Vessel movements by terminal.
    - Density analysis of vessels accessing the IOT finger pier (area in closest proximity to the IERRT development).
    - Swept paths (which show the physical footprint of vessels as they navigate) of vessels using the stemming area.
    - Tidal analysis of vessel traffic in the port and within the channel that are tidally restricted.
- Detailed consideration of operations including the expected usage and associated navigational impacts from future nearby projects Able Marine Energy Park and Immingham Green Energy Terminal (IGET).
- Detailed consideration of metocean conditions (within the limitations of the data available) and how this may vary and influence future operations.
- Consideration of risk for the project beyond its 50-year design life (as is the intention of the Applicant's operations).

- More defined assessment of incidents and incident frequency for navigation-related incidents (within the limitations of the data available and without detailed information from MarNIS) to consider consistent contributing factors and indicative incident frequencies.

The core objective of this stage of the DFDS NRA is to provide greater clarity on where and how vessels currently navigate in the area of the IERRT to allow informed decisions on risk assessment and to also present these in a form that allows comprehension by stakeholders. This step ultimately underpins the baseline understanding of the risk assessment.

The lack of detailed investigation and breakdown shown in the Applicant's NRA does not appear to acknowledge the possible influences of future scenarios that would have the effect of increasing the future risk profile. This influences the perception of how risk would evolve over time and, importantly, the perception of an appropriate amount of redundancy, or margin for error, to be considered as safe and appropriate/proportionate.

3 Hazard identification process

The DFDS NRA used a structured format to ensure hazards were identified and at a sufficiently detailed level to allow an informed assessment of the risk posed by each individual hazard. The hazard identification process is underpinned by a detailed and thorough understanding of the baseline marine navigation environment obtained from the Data Gathering phase covered above. The structured process is discussed within the DFDS NRA and the key differences between the hazards presented by the Applicant's NRA identified are below. This includes:

- Separation of one of the Applicant's hazards *O.6 Collision: Ro-Ro on passage to/from Immingham Eastern Ro-Ro Terminal* with another vessel, into 7 unique hazards with individually varying frequency and/or consequences to better assess higher-risk scenarios:
    1. Collision - Project Vessel (Passenger / Driver) ICW Project Vessel (Passenger / Driver)
    2. Collision - Project Vessel (Passenger / Driver) ICW Coastal Tanker
    3. Collision - Project Vessel (Passenger / Driver) ICW Bunker Barge
    4. Collision - Project Vessel (Passenger / Driver) ICW Cargo
    5. Collision - Project Vessel (Passenger / Driver) ICW Tanker
    6. Collision - Project Vessel (Passenger / Driver) ICW Tug, Service and Other Small Vessel
    7. Collision - Project Vessel (Passenger / Driver) ICW Passenger
- Separation of one of the Applicant's hazards O.*2 Allision: Tanker Manoeuvring on/off IOT Finger Pier (flood tide)*, into 2 unique hazards with individually varying frequency and/or consequences to better assess high-risk scenarios:
    1. Contact (Allision) - Coastal Tanker with IOT Finger Pier (or moored vessel)
    2. Contact (Allision) - Coastal Tanker with IERRT Jetty (or moored vessel)

- Separation of one of the Applicant's hazards *O.3 Allision: Barge manoeuvring on/off IOT Finger Pier (flood tide)* into 2 unique hazards with individually varying frequency and/or consequences to better assess high-risk scenarios:
    1. Contact (Allision) – Bunker Barge with IOT Finger Pier (or moored vessel)
    2. Contact (Allision) – Coastal Tanker with IERRT Jetty (or moored vessel)

Additionally, process undertaken in the DFDS NRA identified credible new hazards introduced as a result of the IERRT vessel or terminal or where the IERRT development would influence the risk of other existing hazards, including:

1. Contact (Allision) - Coastal Tanker with IOT Trunkway
2. Contact (Allision) - Bunker Barge with IOT Trunkway
3. Contact (Allision) - Project Vessel (Passenger / Driver) with IOT River berths (or moored vessel)
4. Contact (Allision) - Tanker with IERRT Jetty (or moored vessel)
5. Contact (Allision) - Tug, Service and Other Small Vessel with IERRT Jetty (or moored vessel)
6. Breakaway - Coastal Tanker at IOT Finger Pier
7. Breakaway - Bunker Barge at IOT Finger Pier
8. Breakaway - Tanker at Eastern Jetty
9. Fire - Project Vessel (Passenger / Driver) at IERRT Jetty
10. Foundering / Swamping - Tug, Service and Other Small Vessel from Project Vessel thrust

4 Methodology used

The DFDS NRA methodology used was in line with the Port Marine Safety Code (PMSC) which is also based on the IMO Formal Safety Assessment (FSA) stepwise process. This intended approach produces a structured, objective and transparent NRA. This was also a consistent methodology used on other relevant and recent NRAs for/with ABP harbour authorities: following the same PMSC methodological approach as approved by ABP Southampton on the Marchwood Port development NRA for Solent Gateway in 2021; and approved by ABP Humber for the Able Marine Energy Park NRA for Able UK (both original 2011 and NRA update in 2021). Small differences do exist in definitions of likelihood used between these, but fundamentally the same structured approach in terms of the calculated risk matrix, ALARP concept and tolerability being defined in a transparent and objective way is used.

The Applicant's NRA states it uses two methodologies: the PMSC and the MCA Marine Guidance Note (MGN) 654 for Offshore Renewable Energy Installations (OREIs). However, The Applicant's NRA doesn't adopt the methodology recommended in either of these and instead adopts a different methodology altogether. This is explained below:

- **PMSC Guide to Good Practice (GtGP).** This document displays an example risk matrix with a distinct and separate ALARP band (copied below); however, the Applicant's NRA did not treat the concept of ALARP this way, instead treating ALARP and tolerability as mutually exclusive items. Whilst the five-letter acronym of ALARP (As Low As Reasonably Practicable)

simply means to reduce within reason and could theoretically be applied in everyday scenarios, it's specific use and application within an NRA is fundamentally linked to whether or not something can be deemed tolerable.

The example risk matrix shown in the PMSC GtGP shows the delineation of an ALARP band bridging intolerable and acceptable risks. This is the same approach as the DFDS NRA's structured risk assessment. The PMSC GtGP section 4.3.5 also describes whether hazards *"fall within the ALARP band"* and the PMSC itself (on page 140) describes the Marine Safety Management System (MSMS) as to ensure that *"the more severe ones* [risks] *must either be eliminated or reduced to the lowest possible level, so far as is reasonably practicable (that is, such risks must be kept as low as reasonably practicable or "ALARP")",* clearly indicating the intended application of ALARP which has been consistently adopted throughout the DFDS NRA, IOT NRA, Solent Gateway NRA and Able Marine Energy Park NRA and is used by the ports industry for NRA's (e.g. the following major risk assessment packages use this approach – ABP/ABPmer MarNIS, Marico Hazman and NASH OPRA).

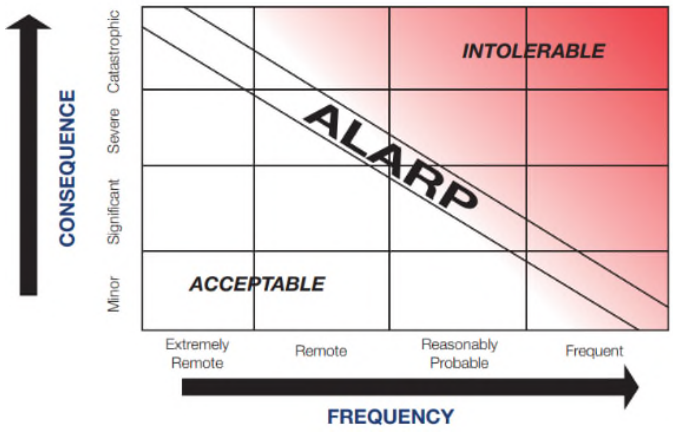

Figure 1: Example risk matrix copied from GtGP figure 2, section 4.3.20.

- **MCA's MGN 654 Safety of Navigation: Offshore Renewable Energy installations (OREIs).** This document directs the user to its recommended methodology to use when preparing an NRA for assessing marine navigational safety, being its Annex 1: *Methodology for Assessing the Marine Navigational Safety Risks & Emergency Response of Offshore Renewable Energy Installations*[1]. This methodology also shows an example risk matrix and likelihood definitions that have defined probabilities for each likelihood band and a risk matrix that has scoring aligned with tolerability (in Appendix C5 (p55 of that document) and copied below for ease of reference).

The examples provided in the MGN 654 Annex 1 Appendix C5 are taken from the International Maritime Organization (IMO) where the core elements that define a structured risk assessment approach can be clearly observed and that should be taken into account when preparing a purpose-specific navigation risk assessment. These core elements include:

[1] https://assets.publishing.service.gov.uk/media/60894584e90e076ab34f6f1c/MGN_654_Annex_1_NRA_Methodology_2021.pdf

- Likelihood tables with clear distinction of frequency (or regularity) of the hazard occurrence.
- Defined categorisation of severity or consequence.
- Objective and transparent risk matrix with a relationship to defining the magnitude of risk.
- Clear and defined tolerability as directly related to the magnitude of risk determined above.

C.5.1 IMO Example of Likelihood/Frequency Index

Frequency Index			
Frequency	7	Frequent	Once per month on one ship
	5	Reasonably Probable	Once a year in a fleet of 10 ships
	3	Remote	Once a year in a fleet of 1000 ships
	1	Extremely Remote	Once in 20 years of a fleet of 5000 ships

C.5.2 IMO Example of Severity/Consequence Index
(Note: this example does not consider severity/consequence to property)

Severity Index			
Severity	4	Catastrophic	Multiple fatalities
	3	Severe	Single fatality of multiple severe injuries
	2	Significant	Multiple of severe injuries
	1	Minor	Single of minor injuries

C.5.4 HSE Example of Tolerability Matrix[15]

Risk Matrix Score	Tolerability	Explanation
7	Unacceptable	Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent
6	Unacceptable	Risk must be mitigated with design modification and/or engineering control to a Risk Class of 5 or lower before consent
5	Tolerable with Modifications	Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class of 4 or below before construction
4	Tolerable with Additional Controls	Risk should be mitigated with design modification, engineering and/or administrative control to a Risk Class 3 or below before operation
3	Tolerable with Monitoring	Risk must be mitigated with engineering and/or administrative controls. Must verify that procedures and controls cited are in place and periodically checked
2	Broadly Acceptable	Technical review is required to confirm the risk assessment is reasonable. No further action is required.
1	Broadly Acceptable	Technical review is required to confirm the risk assessment is reasonable. No further action is required

		Minor	Significant	Severe	Catastrophic
4	Frequent	**8**	**9**	**10**	**11**
		7	**8**	**9**	**10**
3	Reasonably Probable	**6**	**7**	**8**	**9**
		5	**6**	**7**	**8**
2	Remote	**4**	**5**	**6**	**7**
		3	**4**	**5**	**6**
1	Extremely Remote	**2**	**3**	**4**	**5**

Column 1 defines a Risk Matrix Score that demands increasing levels of risk reduction measures dependent on the magnitude of risk.

Above 6: Intolerable region requiring reduction.

3 to 5: Effective ALARP band being "tolerable with…" varying degrees of effort to implement.

1 or 2: Acceptable region. Being acceptable based on current embedded risk mitigation measure an that no new measures would be required.

The Applicant uses an entirely different methodology with regard to ALARP and tolerability – treating these as mutually exclusive aspects and has not applied a structured approach to risk categorisation, tolerability and risk assessment. This results in confusion for stakeholders as it is unclear how risk relates to tolerability, and in the context of the Applicant's NRA, stakeholders are misinformed without clear understanding , and there is misalignment between parties on the actual level of risk.

5 Likelihood definition

The Applicant's likelihood descriptors (shown in their NRA section 6.3.5 and copied below) has used loose guide words (described by the applicant as "word pictures" at ISH 3) of "very rarely", "might", "could", "quite likely" and "will". There are no mathematical probabilities, return periods or even indications of frequency of occurrence / regularity except "within the lifetime of the entity" - which also adds to confusion since the design life of the terminal is 50 years, but the terminal is intended to operate for longer than 50 years. Therefore, if the terminal is operable for 75 years, this represents an additional 50% duration which would have a bearing on the judgement of risk occurring "in the lifetime of the entity".

In the context of the construction and construction/operation phase of the Applicant's NRA, then the "lifetime of the entity" definitions would be different for each phase, and the lifetime could be considered to be as short as 1 – 2 years for construction and between 2-5 years for the construction/operation phase. So, if a hazard has the same likelihood classification and consequence classification it could relate to a hazard of the same consequence occurring once every 2 years (construction), 5 years (construction/operation) or 50 years (operation) – all of which would have the same risk score and all of which would have the same tolerability levels applied.

The definitions used in the Applicant's NRA are effectively just subjective interpretation and relate to the possibility of a single occurrence; however, do not provide an indication of the regularity of that occurrence – that is, will the hazard likely occur every year, every 5 years, 10 years, 25 years, etc. This results in stakeholders having different perspectives and the risks potentially being incorrectly assigned – for example, a stakeholder may not be able to determine the distinction between and event that "might" vs "could" occur which can result in an underestimation of the magnitude of risk which influences the tolerability of that risk and the perception of what are appropriate risk controls.

Table 16 Frequency Descriptors

Descriptor	Frequency
The impact of the hazard is realised but should very rarely occur (within the lifetime of the entity)	Rare (1)
The impact of the hazard might occur but is unlikely (within the lifetime of the entity)	Unlikely (2)
The impact of the hazard could very well occur, *but it also may not* (within the lifetime of the entity)	Possible (3)
It is quite likely that the impact of the hazard will occur (within the lifetime of the entity)	Likely (4)
The impact of the hazard will occur (within lifetime of entity)	Almost Certain (5)

Figure 2: Likelihood definitions used in the Applicant's NRA

The DFDS NRA used probabilistic definitions to define the boundaries of each likelihood bracket instead of the loosely defined "word picture" terminology (which, if used, is more appropriate for lower lever operational risk assessments). Defined boundaries for the likelihood rankings removes the subjective interpretation of a guide word and allows better alignment of perspective across stakeholders and assists in achieving consensus of the stakeholder group. It also allows for empirical analysis of historical incidents rates to be used in the hazard scoring process to inform hazard likelihood occurrence (e.g. how many allisions have there been in the port, region or county over the last 10-20years? Where have they occurred and is the proposed development and or operation more or less challenging).

This is essential for any stakeholder-driven qualitative risk assessment. Stakeholders operating in a port will also have a clear comprehension of at least up to a 1 in 100 year events as this is regularly how storm severities are described and is also the approach taken for the basis of design of a marine terminal (the return period typically used in design is the 1 in 100 year design for wind, wave, current and tide).

The return period defines the probability of occurrence and its expected regularity. The probability of occurrence of an event to occur in a 1 year period is directly related to the expected return period of that event, as follows:

Probability of Occurrence in 1 year		**Expected return period.** (that is, is reasonably expected to occur every X years)
1.00 (= 100% chance of occurring in 1 year)	=	Once or more in 1 year expected (i.e. at least a yearly occurrence)
0.10 (= 10% chance of occurring in 1 year)	=	Once or every 10 years
0.01 (= 1% chance of occurring in 1 year)	=	Once in every 100 years
0.0001 (= 0.1% chance of occurring in 1 year)	=	Once in every 1000 years

The DFDS NRA likelihood definitions are:

Table 13: Hazard Likelihood Classifications.

Likelihood Score	Descriptor	Definition
1	Remote	An event that could be expected to occur less than once > 1, 000 years.
2	Unlikely	An event that could be expected to occur once in 1,000 years.
3	Possible	An event that could be expected to occur once in 100 years.
4	Likely	An event that could be expected to occur once in 10 years.
5	Frequent	An event that could be expected to occur yearly

Figure 3: Likelihood definitions used in the DFDS NRA

6 Risk Score Calculation and Risk Matrix

The Applicant's NRA used a risk matrix and risk classifications which did not adopt any scoring mechanism (as shown below). They have instead used basic risk classifications of "Very High", "Significant", "Medium", "Low" and "No Practicable Risk" but these classifications have no relationship to the tolerability on three of the fours risk receptors, that is, sometimes significant level hazards are tolerable and sometimes they are not (tolerability differences are discussed in Section 7 below) – making the risk classifications completely irrelevant.

Therefore the definition of the risk classification in the Applicant's NRA has no bearing on whether or not the risk is tolerable and this allows risks to be easily misjudged based on the loose definition of likelihood (using the "word picture") and unclear interpretations of what is deemed tolerable.

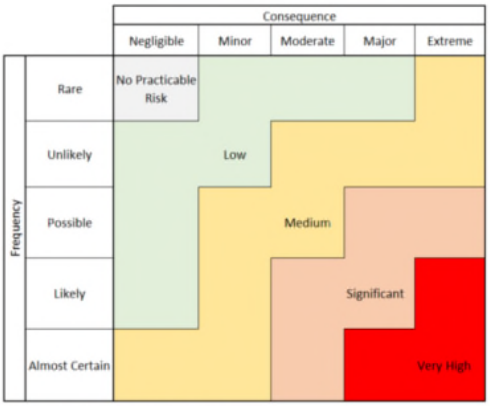

Figure 23 Five-by-Five Risk Matrix

Figure 4: Risk Matrix used in the Applicant's NRA

The DFDS NRA has used a structured risk assessment formula to calculate the risk score. This is used to assess all risks and allow ranking of hazards based on their score. All processes in a well-structured NRA, like the DFDS NRA, have their place, are justified, and are inherently linked: that is, likelihood and consequence definitions are well-defined and linked through the risk assessment, which is linked to a risk score calculation, which is linked to tolerability thresholds. The risk matrix is a clear and unambiguous representation of this. This ensures a transparent approach is taken to risk assessment and that the tolerability definitions are clear and understandable to stakeholders that helps facilitate a unified perspective on risk and assists consensus.

Risk Matrix							
Frequency	Frequent	5	0	6	8	9	10
	Likely	4	0	3	6	7	8
	Possible	3	0	2	4	6	7
	Unlikely	2	0	2	3	5	6
	Remote	1	0	1	3	4	5
			0	1	2	3	4
			Negligible	Minor	Moderate	Serious	Major
			Consequence				

Figure 5: Risk Matrix used in the DFDS NRA

Colours green, yellow, orange and red in the DFDS NRA Risk Matrix are the Acceptable (green), Tolerable if ALARP (yellow) and Intolerable (orange and red) scores which are based on the magnitude of the score. The colours have been overlaid onto the risk matrix according to their risk score. The differences on the tolerability definition, including the principle of ALARP, are described below.

7 ALARP and Tolerability Definition

The Applicant's tolerability is defined separately for each of the receptor groups (consequence classifications) of the risk assessment (termed People, Property, Environment and Port business) and in three of the four receptor groups, the tolerability does not align with the Applicant's risk classification of "Very High", "Significant", "Medium", "Low" and "No Practicable Risk". As noted above, this separation of tolerability from the risk matrix then permits two hazards that are classified as significant risk where

one could be intolerable but the other tolerable – an example is Property damage 4M-8M, when either "likely" or "possible" would be a "significant" risk but one is tolerable and the other intolerable; however as noted above, there is no clear definition of what "likely" or "possible" means. This is entirely illogical and shows that the Applicant's whole risk assessment process is flawed. Further, this makes it impossible for stakeholders to follow the process and creates significant difficulty in reaching stakeholder understanding, comprehension and ultimately consensus around what the risk is and whether or why it is tolerable.

Additionally, the Applicant's tolerability does not delineate between the stepped increases to likelihood or consequence, as would be expected in a risk assessment. For example, in the Applicant's NRA, two hazards with a likelihood of "unlikely", where one has a consequence to people of "a single fatality" and the other "multiple fatalities", would score the same (medium risk) and both would be equally tolerable – there is, in effect, no way to differentiate the risk between these hazards using the Applicant's approach, despite the actual magnitude of the consequences being significantly different.

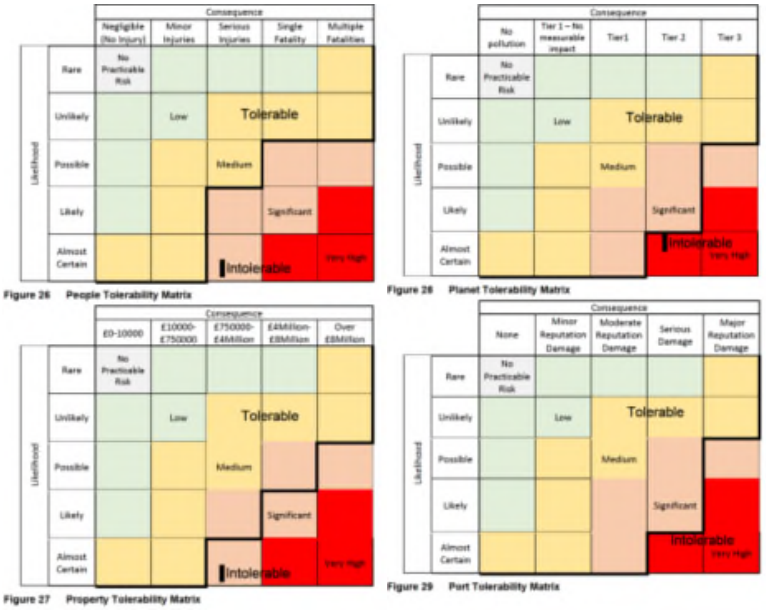

Figure 6: Tolerability definition from Applicant's NRA

The methodology used in the DFDS NRA links all parts of the risk assessment through to the tolerability thresholds, which is the whole purpose of a risk assessment. The means of determination of tolerability against each of the four receptor groups of the risk assessment (People, Property, Environment and Port business) can then be determined based on the consequence definitions of those receptor groups which allows the tolerability definition to remain consistent, appropriately structured, and clear to stakeholders. The risk scoring mechanism allows for a structured and objective definition of the distinction between Acceptable, Tolerable if ALARP, and Intolerable risk score ranges used in the risk assessment. This is visually identified in the risk matrix above by colour and facilitates a clear understanding for the stakeholders during the entire risk assessment process.

The Applicant has questioned the equivalence of a Tier 2 pollution event and a fatality (from the Applicant's interim response to the DFDS NRA, document REP3-009); however, a Tier 2 pollution event has the ability for the Secretary of State's Representative (SOSrep) to take control of the situation which could result in the complete and immediate closure of the Humber estuary and, in effect, all Humber

ports. This then significantly affects all waterway users on the Humber and is therefore considered as an intolerable outcome for that level of likelihood. This is an example of a rationale behind a robust, structured, transparent and linked NRA process.

Because all elements of a robust risk assessment are linked, the selection of appropriate likelihood and consequence definitions are vitally important. For example, the likelihood ranking used in the Applicant's NRA appears to be based around a nominal 50 year lifetime of the IERRT terminal ('lifetime of the entity' as used in the frequency descriptor) which doesn't appear to facilitate appropriate levels of tolerability for loss of life. That is, the Applicant's NRA shows an **Extreme** consequence for people resulting in multiple fatalities which is tolerable if "*the impact of the hazard might occur but is unlikely (within the lifetime of the entity)"*. That is, hazards where multiple fatalities might occur in 50 years is considered tolerable in the Applicant's NRA.

Table 16: Hazard risk score classifications.

Risk Level	Risk Score	Tolerability
Negligible	0 - 0.99	Acceptable
Low	1 - 2.99	Acceptable
Medium	3 - 5.99	Tolerable if ALARP
Significant	6 - 8.99	Intolerable
High	9 - 10	Intolerable

Risk Matrix							
Frequency	Frequent	5	0	6	8	9	10
	Likely	4	0	3	6	7	8
	Possible	3	0	2	4	6	7
	Unlikely	2	0	2	3	5	6
	Remote	1	0	1	3	4	5
			0	1	2	3	4
			Negligible	Minor	Moderate	Serious	Major
			Consequence				

Figure 7: (top) Tolerability definition from DFDS NRA. (bottom) DFDS NRA risk matrix with additional black line drawn showing stepped tolerability.

8 Risk Controls

Differences in the additional risk controls between the Applicant's NRA and the DFDS NRA were primarily driven by one or more of the following:

- Some of the "additional" IERRT project risk controls identified in the Applicant's NRA are already in place and used already in the Humber. Stakeholders would therefore consider they are expected to be undertaken for IERRT development and would score hazards at a hazard workshop as though they were in place and working effectively – they are contained in the baseline and should therefore be embedded risk control measures.

  These were:
  - #3 Additional pilotage training / familiarisation
  - #7 Additional training (also same as #3 above)
  - #14 Marking safe water with Aids to Navigation

- The remaining Applicant's NRA additional risk controls were reordered and grouped as they were considered to be either duplicated or could be combined into more informative risk control definition.

  These were:
  - #4 Charted safety area, berthing procedure (effectively same as #1 berthing criteria and grouped)
  - #5 Tidal limitations / weather restrictions (same as #1 above and grouped)
  - #9 Berth specific weather parameters (same as #1 and #5 above and grouped)
  - #13 Increased use of tugs (same as #8 Additional tug provisions – however, not clear specifically what this covers, hence grouped)

The DFDS NRA then better defined the grouped risk controls above, reinstated previously discounted risk controls, or identified new risk controls to be carried through into the assessment of residual risk (that is, resulting risk after mitigation measures are applied).

These were:

- (grouped) RC01 Berthing / unberthing criteria
- (new) RC02 Standby tug provision
- (new) RC03 Deconfliction plan
- (reinstated) RC04 Mooring equipment and infrastructure (Applicant's NRA had partially or fully discontinued with this)
- (reinstated) RC05 Impact protection for IOT trunkway (Applicant's NRA had discontinued with this)
- (reinstated) RC06 Moving finger pier (Applicant's NRA had discontinued with this)

For all identified/grouped/redefined additional risk controls used in the DFDS NRA, their definition was enhanced and more detail provided as to anticipated extent or coverage of the risk control (which also helps facilitate consensus on residual risk scoring).

Side by side the difference in additional risk controls are shown below with colours indicating which of the Applicant's mitigation measures were grouped into which of the DFDS NRA's mitigation measures (note that the Applicant's additional risk controls that would be Embedded controls are marked with an *. These were not carried across into the DFDS NRA as applied mitigation measures since they should already be in place).

Applicant's NRA applied mitigation measures	**DFDS NRA applied mitigation measures**
1 Berthing criteria	RC01: Berthing / unberthing criteria
2 Moving finger pier [subsequently discontinued]	RC02: Standby tug provision [new]

3 Additional pilotage training/ familiarisation*	RC03: Deconfliction plan [new]
4 Charted safety area, berthing procedures	RC04: Mooring equipment and infrastructure
5 Tidal limitations/ weather restrictions	RC05: Impact protection for IOT Trunkway
6 Additional storm bollards	RC06: Moving finger pier
7 Additional Training*	
8 Additional tug provisions	
9 Berth specific weather parameters	
10 Hooks with load monitoring	
11 Impact protection [subsequently discontinued]	
12 Increase size of dredge pocket	<- *Not considered necessary.*
13 Increased use of tugs	
14 Marking safe water with AtoN*	

9 Summary

There remains a fundamental lack of confidence around the adequacy of risk assessment associated with the flawed methodology employed in the Applicant's NRA and the extent or effectiveness of their proposed additional mitigation measures. More specifically this is due to:

- A very real potential for risks to be underestimated which is directly linked to the required level of mitigation required. This is due to:
    - The adoption of an alternative methodology to those recommended, using an unclear and unstructured approach.
    - Lack of definition of the likelihood values.
    - Inconsistent application of risk categorisation.
    - Variability and lack of stepped definition of the tolerability definition.
    - Lack of unified stakeholder understanding on risk.
    - Lack of transparency in determination of the tolerability.
    - Lack of transparency in the Cost Benefit Analysis as justification of appropriate mitigation measures.

- A lack of adequate information within the Applicant's NRA and submission regarding navigation to and from Berth 3 (inner berth) in proximity to the Eastern Jetty and the high-risk chemical tankers or the Eastern Jetty tug barge.
- A lack of apparent conservatism (also referred to as redundancy or room for error), in assessing viable safety of the proposed IERRT movements. Noting specifically that ship simulation cannot be used to replicate a real-world scenario and further conservative judgement should be made from its findings.
- The intended extent of limitations to weather conditions (noting that a lower limit will also affect the viability of a regular service and therefore there is practical floor to which these limits can realistically be set, yet limits have not been defined).

10 Differences between the Applicant's NRA and the DFD NRA due to time constraints or available information

There are differences between the DFDS NRA and the Applicant's NRA due primarily to the limitation of time available for the DFDS Risk Assessment Team to complete a functional, well-rounded, informed and considered risk assessment between Issue Specific Hearings (ISH) 2 and Deadline 2 – the schedule only allowing for approximately 4 weeks. Therefore, there are some additional aspects that could be undertaken, which can be broadly summarised as:

1. Cost Benefit Analysis has not been assessed in the DFDS NRA primarily due to available time to complete the study. However, whilst this would benefit the understanding of the level of effort to implement risk controls versus the level of risk reduction they provide (namely for RC05: Impact protection for IOT Trunkway and RC06: Moving finger pier), the conclusion drawn by the DFDS NRA's Risk Assessment Team was that due to limitations of the other identified risk controls, there remained a credible potential for intolerable catastrophic outcomes and therefore these risk controls would still be required. The Applicant's NRA includes a cost benefit analysis although detail of this, including the assumptions used, methodology, consultations, acceptability criteria are not provided.
2. Additional Construction and Construction + Operations phases of the project have not been assessed in the DFDS NRA (but it is noted that this is an area of further work)
3. Additional and wider stakeholder engagement to include structured and planned meetings with various stakeholders such as the Port of Immingham, ABP Humber, HES, IOT, etc. As explained in the DFDS NRA, stakeholder feedback was therefore integrated into the work through using local area expertise from individuals that have been involved in the entire Applicant's stakeholder engagement process to date, combined with the limited information on previous stakeholder engagements made available through the Applicant's NRA.

There are also observable differences between the DFDS NRA and the Applicant's NRA due to the availability of information provided to DFDS or its Risk Assessment Team by the Applicant. These are associated with the Applicant not providing:

1. Historical incident details from its MarNIS system, including causation factors, locations, vessel types, consequences observed, etc.
2. The Port's current baseline risk assessment (which should also be shared with all stakeholders).

3. IERRT design vessel details including maximum, minimum, example vessels and anticipated propulsion systems for each.
4. Consolidated stakeholder response summaries including key areas, hazards and objections.
5. Details from the Port's metocean station regarding historical winds local to the terminal site (to benchmark the measurements taken at the airport which were used in the Applicant's NRA).
6. Details of the impact protection design and related engineering details (including size, displacement and speed of impacting vessel).