Immingham Eastern Ro-Ro Terminal ("IERRT")

PINS Ref: TR030007

Deadline 3 submission of Associated Petroleum Terminals (Immingham) Limited and Humber Oil Terminals Trustee Limited (referred to together as "the IOT Operators")

11 September 2023

Comments on Responses to the Examining Authority's First Written Questions (ExQ1)

ExQ1		Response	Comments by the IOT Operators
		Associated British Ports	
BGC 1.7	**Effects of construction of impact protection** Paragraph 16.87 in [APP-052] of the ES refers to the construction of the proposed vessel impact protection measures being "timed to avoid works to the IOT finger pier berths 8 and 9 when they are in use". Elaborate on that statement and provide an outline method statement for the	The Applicant provided a response to ISH2 Action Point 21 describing how the impact protection measures, if required, would fit into the construction programme for the IERRT. The Applicant's assessments demonstrate and conclude that impact protection measures are not required. If, however, it was determined by the Applicant at some stage in the future that such measures should nevertheless be put in place, it is anticipated that the works would take place in line with the broad methodology provided below although a formal methodology would be prepared by the Principal Contractor appointed to undertake the works bearing in mind that both construction methodology and design may evolve with time. In brief, the piles would be installed with a piling gate on a floating/jack-up barge with a mounted crane. Each	The IOT Operators do not consider the impact protection (which is identified, but not proposed by the Applicant to be constructed) would be effective in preventing damage to the Immingham Oil Terminal ("IOT"). This is because no details have been provided by the Applicant on the ability of the impact protection structures to withstand an impact from an IERRT vessel travelling at 4 knots (the speed of an ebb tide at the IERRT). Further, no details have been given in relation to the IERRT infrastructure itself to withstand an impact by an IERRT vessel. Therefore, an errant IERRT vessel, travelling at 4 knots making contact with the IERRT infrastructure will result in the IERRT vessel and the IERRT pontoons becoming detached from the holding piles and then drifting onto the IOT Trunkway.

	construction of the impact protection measures should it be determined they would be needed.	pile would be pitched into the gate using the crane and vibrated to refusal with a vibro-hammer. The pile will then be percussively hammered to reach final level. Following pile installation, in-situ pile plugs would be installed in each pile followed by the installation of pre-cast pile caps. The pile caps will support pre-cast concrete troughs/boxes which would be installed between each pile creating a longitudinal beam. Following this, in-situ reinforcement would be installed into the preformed beam, tied by an in situ concrete pour. The Environmental Statement Chapter 10 [APP-046] assesses the effects of construction occurring at the same time as the other marine and landside infrastructure, as well as construction occurring sequentially once the northern finger pier, with two berths is in operation. The process, if required would include liaison with the IOT Operators through the establishment of a Port Liaison Officer whose role will be to develop a marine liaison plan and ensure that vessel activity in the area is appropriately deconflicted through effective communication between VTS and the development contractors/operators. This is represented in the NRA [APP-089] in Annex B, Table B1, where there is an 'Applied Control' identified for a 'Port Liaison Officer' to be implemented by the Port of Immingham.	In order to investigate these issues the IOT Operators commissioned a report from highly reputable marine engineers - Beckett Rankine (BR) (see Appendix D of the IOT Operators' shadow Navigation Risk Assessment (sNRA) [REP2-064]), which determined that the impact force of an IERRT vessel would be in excess of 30 Mega Newtons (equivalent to approximately ~3,300 ton force). BR carried out a high-level review of the impact protection measures proposed by the Applicant and documented the following concerns: • The protection system is shown remarkably close to the existing terminal infrastructure which leaves little margin for deflection of the protection structure. Also, vessel overhangs may over-ride the protection structure with a risk of contacting the IOT pipework. • The proposed location does not protect the IOT Finger Pier for berths 6 to 9 from vessel impact. • The system appears under designed considering the tidal conditions and the potential magnitude of the impact. Although, it should be noted, a detailed calculation check has not been undertaken and the type of fender system is not defined. As a result, BR identified that piles would need to be in the order of 2.8m diameter (nearly three times the diameter proposed by the

			Applicant) - and located upstream of the IOT Finger Pier. The IOT Operators are therefore concerned that as the design and location of the impact protection measures are inadequate to mitigate impact by IERRT vessels, then the actual impact to IOT operations as a result of its construction cannot be determined with any degree of certainty. Therefore, the IOT Operators consider it necessary to impose a requirement on the Applicant that construction of the impact protection cannot impact any day to day operations of the IOT Finger Pier. The IOT Operators note that the Applicant will <u>if required</u> establish a Port Liaison Officer role, who will liaise with the IOT Operators and develop a Marine and Liaison Plan. It is not clear how the Applicant will establish the need for the role, or the extent to which the IOT Operators will be consulted on the development of the Marine and Liaison Plan, or indeed whether the IOT Operators are able to review and approve any plan.
BGC 1.8	**Confirm to what depth berth pockets would be dredged** The Construction Environmental Management Plan (CEMP) [paragraph 1.3.3 of APP-111]	As stated at paragraph 2.3.21 of Chapter 2 of the ES [APP038], the berthing area for the IERRT project will be dredged to a depth of 9 m below chart datum (CD), with an allowance for the general tolerances of the dredging equipment. The area beneath the floating pontoons will be dredged to 6 m below CD. This is referenced at a number of points throughout the ES and these depths have been assessed in the relevant topic-specific chapters of the ES.	The Applicant states that "*The area beneath the floating pontoons will be dredged to 6 m below CD*". Once pontoons are in place, it is unclear how the depth underneath them would be maintained. In the event of silting and given the presence of the pontoon caissons, it is not clear what the increase in tidal flow funnelling between IERRT

	states "… The berth area will be dredged with the appropriate side slopes to a depth of 9m below Chart Datum (CD), including an allowance for over dredge". Elsewhere in the ES it is stated that the dredge pocket would be dredged to a depth of 7m below CD. Please confirm if the impact assessment throughout allows for impacts of dredging to a depth of 7 metres depth or 9 metres including over dredge. Provide signposting to all places in the ES where the dredge depth is relevant to the impact assessment.	The references to depths of 7 m below CD are within Chapter 4 of the ES [APP-040] (at paragraphs 4.3.31, 4.3.49, 4.3.56 and 4.3.57) and in Chapter 7 of the ES [APP043] (at paragraph 7.6.10). In both instances, what is being described is the existing water depths in the main channel of the Humber Estuary as opposed to the proposed depths of the capital dredging which will be undertaken for the IERRT project.	pontoon (including IERRT vessel alongside) and the IOT Finger Pier. Given that the IERRT pontoon and IERRT vessels will provide a blockage to tidal flow (both for flood and ebb tides), there will be a resulting increase in flow rates and also likely a change to the tidal flow direction compared to that presently experienced, potentially running through IOT Finger Pier berths 6 and 8 at an angle less aligned to the direction of the jetties than at present, therefore making the berthing of ships more technically challenging. This does not appear to have been investigated in any detail or addressed in the Applicant's NRA [APP-089].
BGC 1.11	**Inter-active effects consequent on "stemming" of waiting shipping traffic:** Respond in detail (with signposting of where the	It is understood that the Harbour Master Humber will also be responding to this question in terms of navigational practicality. In brief, however, the socio-economics chapter of the ES assesses the impact of additional shipping movements resulting from the IERRT in the Immingham area upon existing merchant traffic flow. The overall conclusion is that three additional vessel calls per day	The Applicant states that the *'...three additional vessel calls per day is well within the margin of variation that is already seen every day at the port'*. The additional arrivals mentioned are likely to be in close succession due to just-in-time market requirements and co-incident with the already busy schedule of morning arrivals of

	assessment of likely effects has been made) to the Relevant Representation made by DFDS [paragraphs 5.2 and 5.4 in RR-008] that maintains that adverse effects both to shipping and to the environment would result from "stemming" (waiting) of shipping traffic.	is well within the margin of variation that is already seen every day at the port – with additional reassurance to be taken from the fact that the overall trend for vessel numbers, as explained in the Navigational Safety Chapter, is declining (albeit with cargo parcel sizes and consequently vessel sizes, showing a growing trend.) The Applicant has provided a plan (Appendix 15 to the ISH2 Oral submissions [REP1-009]) which identifies the allowable waiting – or 'stemming' – areas for vessels awaiting berths at the Port of Immingham. This indicates that separate sectors of the frontage are effectively 'reserved' space for those vessels awaiting ready berths along the frontage.	other Ro-Ro ferry traffic to Immingham Dock, Immingham Outer Harbour, Humber River Terminal and Hull. As a consequence there will be more traffic congestion and the lack of pilot and tug availability during periods of unfavourable weather would be compounded. The IOT Operators' sNRA [REP2-064] currently shows peak usage of the approaches to the IERRT is between 06:00 and 08:00 (UTC) and a further peak at between 1400 to 21:00 (UTC), which coincides with the arrival and departure time proposed for the IERRT vessels (see IOT Operators' sNRA Figure 43). It should be noted that one of the stemming areas for vessels transiting to Immingham Dock is immediately to the north of the Eastern Jetty (in the approaches to the IERRT). Therefore if the IERRT infrastructure was in place, this constrained area between Immingham Dock and the IERRT is unlikely to be practical to use for stemming going forward.
BGC 1.14	**Impact protection measures for the Immingham Oil Terminal (IOT)** Should the CEMP [APP-111] include wording in the tables of mitigation measures, most particularly Table 3.4,	The Applicant does not consider that the potential construction of impact protection measures should be included in the CEMP. The principal purpose of a CEMP is to explain how an Applicant or developer will minimise any potential negative environmental impacts that may arise during the construction phase of the project. As the ExA is aware, the Applicant is of the view that impact protection measures are not, in any case,	The IOT Operators' sNRA [REP2-064] has confirmed (through qualitative (Section 9) and quantitative assessment (Section 10) incorporating transparent Cost Benefit Analysis (Section 12)) that impact protection measures are necessary, and also that the design as presented by the Applicant is not sufficient to arrest an errant IERRT vessel (Appendix D of the sNRA).

	to provide for the potential construction of the IOT impact protection measures, should those measures be required?	required. Should that position change, however, the installation of such measures would not be categorised as mitigation of a negative environmental effect during the construction of the IERRT.	As such, the IOT Operators require that appropriately designed impact protection be included in the CEMP or otherwise secured through the Development Consent Order (DCO).
BGC 1.17	**Potential impact of sediment transport** With the proposed dredge pocket expected to require maintenance dredging, explain why the "*magnitude of change*" for future sediment transport has been rated as "*small*" [paragraphs 7.8.64 and 7.8.65 in APP-043]?	With respect to the assessment set out in paragraphs 7.8.64 and 7.8.65 [App-043], this specifically relates to changes in hydrodynamic forcing and the consequent effect this may have on future sediment transport across both near-field and far-field areas. In other words, the IERRT infrastructure and berth pockets has the potential to lead either to faster flows which would increase bed erosion, or lower flows which would encourage sedimentation. Such changes to the driving tidal flows could result in associated changes to the local and/or regional sediment transport pathways across the wider estuary. This is described in the context of changes within the proposed dredge pocket, and outside the proposed dredge pocket in paragraph 7.8.64. The subsequent assessment of exposure to change considers the probability to be 'high' (since the dredge pocket and support piles will lower flow speeds in the area and lead to increased accretion, likely requiring maintenance dredging) but considers the magnitude of change to be 'small'. This assessment is based on: • The existing (baseline) pattern and magnitude of accretion in and around the neighbouring berths, to provide context to local accretion rates (Figure 7.21) [APP-063]; and	The area between Immingham lock and the IOT is renowned for silting. The IOT Operators understand that this is well known by captains operating dredgers in the River Humber. It is possible that as a result of the changes to riverbed morphology brought about by the IERRT dredged area and the infrastructure that IOT berths could become silted quicker, causing operational issues to the IOT Operators. As such, the IOT Operators require assurances that the IOT berths will be dredged with sufficient regularity to ensure that there is no adverse impact on the IOT.

		• The extent and magnitude of predicted change associated with the proposed IERRT infrastructure, shown in Figure 7.19 [APP-063], which predicts the majority of accretion being restricted to a relatively small area underneath the pontoons and jetties, rather than across the wider berth pockets themselves). As described in paragraph 7.8.65, the combination of a 'high' probability of occurrence and a 'small' magnitude of change results in an overall 'low' exposure to change for local (near-field) sediment transport pathways. Away from the IERRT site, the modelling assessment reveals very limited changes to the baseline sedimentation and erosion rates (paragraph 7.8.64). Changes to suspended sediment concentrations and sedimentation, as a result of the potential future maintenance dredging and disposal, are assessed in paragraphs 7.8.83 to 7.8.89. Based on the evidence that is described in these paragraphs, and in the context of the existing (baseline) maintenance dredging and disposal from the wider Immingham berths, the probability of occurrence is considered high although the magnitude of change is assessed as small, resulting in an overall low exposure to change.	
NS 1.8	**Effects on navigation adjacent to the Proposed Development** With regard to Risk O.6 in the NRA [APP-089], elaborate on the	The controls recorded as embedded in the NRA are detailed below although this list should not be viewed as exhaustive in that they essentially comprise an aggregation of the readily obvious controls raised and discussed in the HAZID workshops. **Towage, available and appropriate**: Coverage provided by local tugs is a control that reduces the risk	Paragraph 9.9.26 of the IERRT NRA [APP-089] discusses "*O.6 [Collision] Ro-Ro on passage to/from Immingham Eastern Ro-Ro Terminal with another vessel"* and as noted by the ExA, no additional risk control measures over and above those that are already in place (embedded controls) is proposed.

	embedded controls assessed for collision risk with another vessel for a Ro-Ro vessel on passage to/from the Proposed Development.	of collision by providing greater manoeuvrability for a vessel at slow speed whilst berthing or departing. **Communications – traffic broadcast**: This is a control that is supported by VTS (see below) as vessels transit through the Competent Harbour Authority area. By this means Pilots/PEC holders and Masters as appropriate receive up-to-date relevant information, thereby ensuring the safety navigation. This means of communication can be provided by both the Humber Harbour Master and the Port of Immingham Dock Master. **International COLREGs 1972 (as amended):** Application of the International Rules for Prevention of Collision at Sea – colloquially termed the COLREGs (Collision Regulations) assists in reducing the risk of collision between vessels by dictating how vessels should manoeuvre in different situations. For example, for vessels in all states of visibility, the rules include but are not limited to - the use of effective lookout, proceeding at a safe speed, actions to avoid collision and conduct within narrow channels. Additional rules include instructions as to the steps to be taken when vessels are in sight of one another and where vessels are operating in areas of restricted visibility. The Regulations provide a series of fundamental rules designed to reduce risk and are common knowledge for every mariner. **Passage Planning**: This control takes into account the navigation of a vessel. Ships plan how they will manoeuvre when they enter a port and will adhere to relevant guidance in so doing. For example, ships will try to keep to the right-hand (starboard) side of a narrow	The key embedded controls that are in place, but that are not identified by the Applicant in their response are: 1. Pilotage – IERRT vessels (and most other commercial vessels) will be required to carry a Humber pilot or to have a Pilot Exemption Certificate. 2. General Directions mandate whether a vessel may navigate in the area adjacent to the proposed IERRT. This is monitored and enforced by VTS personnel. 3. There are various restrictions in place to manage vessels which presumably are contained within the ABP HES MSMS. One such restriction is that coastal tankers arriving and departing the IOT Finger Pier are only able to do so during flood tides. This was put in place to mitigate the risk of a IOT coastal tanker striking the IOT Trunkway and has been in operation for some time. The IOT Operators assume that there are other restrictions to other berths adjacent to the IERRT – however as the Marine Safety Management System (MSMS) for the port has not been shared the extent and detail of embedded risk control measures is not clear. The IOT Operators note that the embedded controls listed are a mixture of those applicable to all vessels, mandated by International Convention, and those put in place and

		channel or passage and will use various marks within a port environment to guide them as to when to manoeuvre. The planning will also account for manoeuvring data such as advance and transfer (how much a ship will 'slide' in a turn at a certain speed for a certain amount of course altered). **Vessel propulsion redundancies**: This control takes account of the fact that many of the vessels operating in the Humber have redundancy available if they lose part or all means of their primary propulsion system. For example, some vessels have two engines which can each power one or both propellor shafts. Other vessels may also have what is known as “Power Take-in/Power Takeout” built into their propulsion system. This enables a transfer of power so as to provide power for propulsion from generators, if required, due to the primary means of propulsion (engines) being lost. As will be appreciated, there are many ways in which modern ships can safeguard against the loss of their primary means of propulsion and whilst some vessels may only have a single engine with no redundancy this is not the norm. Propulsion redundancy aids the safety of navigation and reduces the risk of collision by enabling a vessel to employ an alternative means of propulsion should that be required. **Vessel Traffic Services**: this control relates specifically to the important role Vessel Traffic Services (VTS) play in collision avoidance. VTS includes (but is not limited to) operators who manage the surface plot and spacing of vessels, AIS tracking, ARPA (Radar) Tracking, and communication with vessels to deconflict transits. The service provided by VTS enables better water-space	administered by ABP Humber Estuary Services and/or terminals themselves. The former should be considered within the baseline of any NRA, whilst the latter should be derived from the ports own NRA and MSMS (neither of which have been provided as part of the Environmental Statement (ES) for the IERRT). As such the list provided is not definitive and does not seem to be focused on the specifics of vessels navigating in and around the area of the proposed IERRT. **Towage, available and appropriate** Tug use is generally not recommended on Ro-Ro vessels due to the limited locations at which they can be secured, the lack of flat ship’s side and the close proximity of a tug to high powered bow thrusters’ wash and propeller wash accentuated by high powered engines and high lift rudders. Tugs can quickly lose control due to these plumes of wash. Given the tidal flows in the river, an arriving or departing Ro-Ro will regularly be manoeuvring at speeds in excess of 6 knots though the water in order to maintain the desired speed over ground. At such speeds, a tug is using much of its power to maintain position leaving little in reserve to assist the ship. Tug use in such conditions can therefore hinder a Ro-Ro rather than assist it and restrict the ability to power out of a close quarters situation until a tug’s line is disconnected and the tug is clear. The risk of catastrophic hydrodynamic interaction between tug and ship is increased, especially with types of tugs currently deployed on the Humber

		management and as a result reduces the risk of collision. **Accurate tidal measurements**: Accurate understanding of the state of tide helps to avoid vessel collision in that the state of the tide is an environmental condition central to safe navigation. Understanding the speed of flow and height of water is critical when conducting pilotage and berthing/departure procedures as it will often dictate where some vessels can or cannot manoeuvre (due to their draughts) or how some vessels may need to manoeuvre to maintain their planned passage. Byelaws: Use of this control is a recognition of the powers of direction available in the context of the safety of navigation. These measures may include wind limits, speed restrictions, or berthing windows for certain berths. This helps to reduce the risk of collision through positive control of conduct within the Compulsory Harbour Authority area. **Aids to Navigation, Provision and maintenance of**: Aids to Navigation provide visual reference points that help to identify safe water and aid vessels in following their passage plans through basic principles of pilotage and navigation. These aids enable vessels to safely manage their own navigation by providing a visual reference. **Harbour Authority requirements**: Much like byelaws, albeit implemented at a different level, the requirements of the Statutory Harbour Authorities can dictate how vessels are to conduct safe navigation. Strict adherence to the published requirements has a positive impact in reducing the risks associated with vessels colliding.	Estuary (especially Azimuth Stern Drive (ASD)) working at the bow of a vessel. Further, ferry captains, including those with Pilot Exemption Certificates are generally not as experienced or confident as pilots in use and management of tugs, especially with the idiosyncrasies of individual tugs and the customs and practice of how they are used in each port. The primary purpose of tugs is to assist a vessel in manoeuvring and berthing at slow speed which is why they are engaged in the vicinity of a terminal; whilst they do reduce the likelihood of allision with a moored vessel or infrastructure they are not secured for most of a vessel's port navigation and have limited benefit in averting a collision. Indeed, collision between a tug and IERRT vessel is a credible hazard, especially due to the proximity of the tug berths located immediately upriver of the IERRT. Tug services on the Humber are provided by independent tug operators who provide a level of tugs and manning to cater for average demand based on commercial viability. Increase in shipping numbers would not necessarily result in an increased number of tugs and even if it did the time lag can be substantial. Tug operators will generally look after the clients whose ships use their services as a

		Joint emergency drills with VTS and Port staff: This control encapsulates the holding of drills involving VTS and port staff to practise immediate actions in the event of an emergency or incident. The use of drills as a control to offset incidents is well known and good practice. This control is a valuable means of reducing both the risk of collision and the issues that could arise in circumstances when a collision does occur by the reduction of cascading errors and the rehearsal of the corrective steps to be taken. **Local Port Services**: This control is provided by the Port of Immingham's local port services. Local Port services is a generic term covering a variety of controls – all of which contribute to the safety of navigation and the reduction in collision risk. These include elements such as tugs, line handlers and the communication of weather and tidal data together with the provision and use of a wide range of physical and data-based assets or information. **Availability of latest hydrographic information**: Having regularly updated charts and knowledge of the available depth of water throughout a port is critical to assisting in the reduction of the risk of collision as vessels are better able to understand the limits of the safe water available. **Arrival/Departure, advanced notice of**: as a subfunction of VTS this control helps to avoid collision through the positive control of vessel movements within the harbour.	matter of routine, such as tankers and bulk carriers. Ships not routinely using tugs, such as RoRo ferries, are unlikely to get priority and unlikely to obtain tug services at short notice, especially around times of high water when tidally constrained shipping movements take place. Even if tugs are available, the increased requirements for tug crew hours of rest can mean that crew are 'out of hours' and the tug is unavailable for use. **Vessel propulsion redundancies** This paragraph is **simply not true**. Very few vessels have diesel electric propulsion as stated. Most ships have a single engine and a single propeller with no redundancy. Many (but not all) Ro-Ro ferries have two propellers, but each is usually connected by a shaft to a single engine with no means of 'switching' to another power source. If one engine fails, a ship can generally (subject to weather) be steered in a straight line when on passage in open sea, but to do so within a port environment is not safe and even a simple berthing manoeuvre ill advised. Control systems failures and human error can also result in loss of propulsion even if the engine machinery is operational. **International COLREGs 1972 (as amended):** The IOT Operators challenge the premise of Restricted Visibility, as the 210m / 35,000mt Ro-Ro traffic at the IERRT would be able to manoeuvre through the Port in <0.5nm visibility conditions (which the IOT Operators understand is a ABP HES MSMS control –

		Oil spill contingency plans: Whilst this control has no impact on the frequency of collision between vessels it does, however, have a positive impact on the consequence outcomes. For example, if two vessels were to collide and the SHA has not put in place an oil spill plan, then the consequences of such a collision could be considerably worse from an environmental perspective. The PMSC requires risks to be considered across four receptors (including environment), therefore, this control can be described as a 'reactive' control for the environment receptor which helps reduce the environmental consequences of a collision.	although this has not been provided), whilst the 104m <5,000mt tankers moored to the IOT Finger Pier (only 90m from the IERRT) would not be allowed to manoeuvre. Given the proximity of the terminals and the vessels, the IOT Operators want to understand whether the Applicant's intention is to apply the same restrictions to IERRT Ro-Ro traffic as that of IOT traffic.
NS 1.11	**Learning from simulation runs** Comment, with examples, on how learning to date from the aborted or failed simulation runs for the Proposed Development has been captured and fed back into re-assessing the rating of risks in the NRA and how that would be fed into the MSMS for an extended port.	APP 090 to 092 are appendices to the NRA [APP-089] which contain the simulation reports from HR Wallingford. It is common practice when undertaking navigational simulations to test benign conditions initially as a proof of concept that the design is at the very least feasible. Following this stage, conditions are then progressively degraded from the "easy" to the "difficult", not to simulate day-to day practical conditions – but to gain an understanding of limiting conditions. During ISH2, DFDS and the IOT Operators in particular, selected a specific failed Run (#59) and attempted to demonstrate that this failed run was typical of the conditions and difficulties faced by a vessel berthing at the proposed development. This is not the case and the simulations are being misused. Such assertions fail to recognise the purpose of navigational simulations. DFDS conducted their own simulations with HR Wallingford immediately after the Applicant's simulations had finished in November 2022	The Applicant states that *'The simulations do not themselves form part of the completed NRA'*. However, simulations are used to inform and assist the NRA process in determining risk. Representatives of the IOT Operators were not present for the majority of Ro-Ro simulations, however as a general comment, simulations cannot be seen as 'robust and accurate', or used to identify limiting conditions when the conditions simulated do not accurately replicate/represent the actual conditions experienced in the area of proposed development. The Applicant also states that '*The intent of presenting the NRA and the simulations separately is to enable the SHAs to consider the specific parameters they will implement to control the identified risks'*. Specifically, it is not understood how risk can be accurately identified when, in all but the final few

		– and DFDS will know that navigational simulations are not intended to test what is “easy” but what is “difficult” and to identify limiting conditions. Accordingly, devoting ISH time to consideration of one specifically selected failed run is misleading and misses the purpose and point of the simulations. The simulations do not themselves form part of the completed NRA. The Applicant intends to provide further information to the ExA as to the basic objectives of navigational simulations and how they are used in light of the misleading representations made during ISH2 and in the Deadline 1 submissions. By way of example only at this stage, it can be seen that Run (#59) which was relied on by the Interested Parties at ISH2 is not and is not intended to be a typical Run. The environmental conditions deliberately applied by the simulator for this Run included 27 knots of wind from the NNE which wind condition accounts for approximately 1% of the actual wind experienced within the study area as supported by data within the NRA [APP-089]. In other words, 99% of the wind experience in the study area is either from the SW and below 27 knots or is from other directions which will have different impacts on vessels manoeuvring in proximity of berths. The purpose of undertaking navigational simulations in such a range of conditions is to understand the parameters so that what is then learned can be applied in practice. It is also important to note a further misunderstanding about the simulations themselves. They are not part of	simulations, wind shielding was not used, and the wind gust criteria unclear, both in respect of the data source used, the durations and peaks of gusts simulated and how these relate to the conditions of mean wind and gusting normally experienced in each quadrant of the IERRT area (see paragraph 109 of the IOT Operators’ sNRA [REP2-064]).

		the NRA itself but are referenced in general [APP-089]. This is because the simulations are to be viewed in conjunction with the NRA but have not been assessed to draw conclusions in the NRA. The intent of presenting the NRA and the simulations separately is to enable the SHAs to consider the specific parameters they will implement to control the identified risks. An example of this could include 'Wind Limits' which appears in the NRA as an 'Applied Control'. The SHAs will then consider the simulated runs and determine what specific 'Wind Limits' they will apply to manage the risk as part of the MSMS (e.g., berthing restrictions when wind from the NNE exceed 26 knots). As far as the learnings gleaned from the navigational simulations are concerned, during the Post-Decision stage, both SHAs (Immingham and Humber) will consider and take into account all learnings, lessons and indeed advice encapsulated in the NRA [APP-089] and its associated appendices [APP-090-092]. These will be considered together with any additional reliable, related and pertinent sources of information (which may include NRAs from other sources if they adhere to the PMSC). What has been gathered will then be refined and incorporated within the MSMS. Supporting Directions will be issued by the appropriate bodies bearing in mind, as noted above, that the purpose of a risk assessment is to identify and define the risks and it is for the safety management system to manage the risks – an obvious example in this context being the identification as a result of the simulations (and indeed	

		the separate NRA) for pilotage and PEC training in the context of the three new IERRT berths. This process will occur for every risk and the associated controls will be incorporated by the Applicant. It should be noted, contrary to views expressed by the Interested Parties, there is no need, nor requirement to re-assess risk in the NRA based on the comprehensive simulations already undertaken. This is because robust and accurate simulation has already been undertaken in order to inform the SHA, in combination with the NRA. It should also be noted in this context that pilots will be trained in a simulated environment prior to real world operations. This will further inform and support navigational safety. The culmination of the lessons learned from the simulations will be fully taken into account and in due course, at the appropriate time, transferred from the NRA to the MSMS via the procedures in the PMSC's Guide to Good Practice associated with Risk Assessment and the MSMS Cycle (PMSC GtGP, Figure 1 page 32).	
NS 1.12	**Reducing Risk of Allision with IOT trunkway to ALARP** Is it correct that the submitted NRA [APP-089] states that the implementation of	No, that is not correct. The NRA [APP-089] has concluded that impact protection measures for the IOT trunk way are not required to meet the ALARP required condition. The comment that is being referenced underlines, what is considered to be the good practice adopted by the Applicant, namely that the NRA faithfully records and	The IOT Operators do not consider the impact protection would be effective at withstanding an impact from an IERRT vessel travelling at 4 knots (the speed of an ebb tide at the IERRT).This point is also addressed in response to BGC 1.7.

	impact protection measures for the IOT trunkway, proposed Work Number 3, as additional mitigation for allision risk would be necessary to control the risk of allision with the trunkway to attain "as low as possible reasonably practicable" (ALARP)?	takes into account the comments of the Interested Parties who attended the HAZID workshops and who made the suggestions – even though those suggestions may not be reflective of reality. It would have been wrong for the Applicant to have failed to have presented a balanced record of the comments received by the Interested Parties during those Workshops – even though some may have been influenced by the wish to protect their own commercial interests - from the generality of the formulation of the NRA. The Applicant's position remains, however, as stated above.	The IOT Operators' sNRA [REP2-064] has confirmed (through qualitative (Section 9) and quantitative assessment (Section 10) incorporating transparent Cost Benefit Analysis (Section 12)) that appropriately designed impact protection is necessary to mitigate intolerable risk to acceptable levels through use of ALARP. The IOT Operators do not agree that the Applicant's NRA [APP-089] is sufficiently robust and detailed to conclude that impact protection is not required due to allision hazards being ALARP as: • No "standards of acceptability", as required by the PMSC (see [REP1-015] section 2.7), have been provided by the Applicant in their NRA so it is not possible to determine whether hazards are acceptable or not. • Only two additional risk control measure are proposed by the Applicant to mitigate the risk of IERRT vessel contacting the Trunkway (see summary in Table 21 of the IOT Operators' sNRA [REP2-064]): o ABPmer RC1: Berthing criteria – although no berthing criteria are specified so the effectiveness is therefore unknown. o ABPmer RC2: Additional pilotage training/ familiarisation - which is considered by the IOT Operators to be an embedded control, otherwise attendees at

			the hazard workshops should have been informed that pilots / PEC's wouldn't be trained properly to visit the IERRT. • No details of any Cost Benefit Analysis is provided in the Applicant's NRA (e.g. details on the cost of the proposed impact protection or design parameters). • The Applicant's NRA methodology for likelihood uses qualitative descriptors and not mathematical probabilities. As such it is not clear how the cost benefit of a risk control measure, which is needed to determine ALARP, such as impact protection can be referenced to a reduction in hazard likelihood based on whether it is **very rarely** / **might** / **could** / **quite likely** / **will occur**.
NS 1.13	**Decision process flow for implementation of Impact Protection to IOT** Provide a note with a flow-diagram explaining the process for determining whether or not impact protection measures for the Immingham Oil Terminal would be installed. The	The draft DCO at Requirement 18, provides that if the Statutory Conservancy and Navigation Authority (effectively the Harbour Master Humber) considers that that the provision of impact protection measures may be necessary, then the "Company" i.e., the Applicant must give that recommendation "due consideration". The process for the Applicant's "due consideration" is outlined in the Note provided as REP1-014. In simple terms, however, bearing in mind that as noted, the Applicant does not consider that this scenario will actually arise, the process will involve the compilation of relevant assessments/reports followed by consideration of the recommendation – which of itself will have to be supported by explanatory data. The ultimate decision	The IOT Operators note that the impact protection as proposed by the Applicant resides within the Statutory Harbour Authority of the Port of Immingham and therefore falls outside the jurisdiction of the Harbour Master Humber who works for ABP Humber Estuary Services. The IOT Operators note the Applicant's approach to whether the impact protection is needed would "*involve the compilation of relevant assessments/reports*". The IOT Operators requires that these assessments/reports to be completed as soon as possible and submitted to the IERRT DCO Examination. The reports should:

	information provided should explain, amongst other things, precisely who would be involved in the decision making process and how and when the decision making process would be initiated. (If not already fully answered in written submission following ISH2)	will be made by the Applicant's HAS Board decision process by the "Duty Holder".	1. Address the issues identified within the IOT Operators' sNRA [REP2-064]. 2. Detail a robust and transparent Cost Benefit Analysis. 3. Specify the design loading the impact protection (and the IERRT infrastructure) is capable of withstanding. There is no reason why a decision on the need for impact protection cannot be made during the determination of the IERRT DCO application, and it is the IOT Operators' view that ought to be the case. No justification has been advanced by the Applicant for why that decision should be delayed. Further, the IOT Operators do not agree that the Applicant alone can be the decision maker on such a critical risk control measure or that it is acceptable to prove that the risk is credible by having an incident prior to construction of the impact protection.
NS 1.17	**Societal Risk Assessment** Explain what risks have been assessed in the application with respect to the potential impact of the Proposed Development's	COMAH establishments are regulated by the COMAH Competent Authority (CA), comprising the Health and Safety Executive (HSE) and the Environment Agency. Under the COMAH Regulations, the CA has statutory responsibility to provide regulatory oversight of highhazard industries using or storing quantities of dangerous substances that fall into the scope of the Regulations. Their approach aims to assure the public that onshore major hazard (not maritime) businesses	The IOT Operators disagree with the statements made by the Applicant regarding COMAH. An NRA must address the consequences of navigation hazards occurring such as impact with the IOT Trunkway and the consequential impact on societal risk. The PMSC (see [REP1-015] Section 2.7) is clear that "*risks associated with marine operations need to be assessed and a means of controlling them needs to be deployed*". The

	proximity to Control of Major Accident Hazards (COMAH) sites, including collateral societal risk for energy supply in the United Kingdom and how any necessary mitigation would be secured in a made DCO.	are meeting their responsibilities to control major accidents to people and the environment and to mitigate the consequences in the event of an industrial accident. The ExA should note that COMAH does not apply to navigation, and it is not correct to apply COMAH risks or controls to an NRA. COMAH legislation applies to the operator of the specific site. It also considers the type of substance, the quantity stored and what other combinations of product are stored in the area. For navigation purposes and movement of dangerous goods the Dangerous Goods in Harbour Area Regulations 2016 (DGHAR) define the meaning of a dangerous substance and set out the requirements for entry into the harbour area. It includes the Harbour Master's powers, marking and navigation of vessels, handling of dangerous substances, bulk liquids, packaging and labelling, storage and explosives. It requires the preparation of emergency plans by harbour authorities. Before Dangerous Goods can be handled within a harbour area, the harbour authority i.e., the relevant port SHA, must prepare an effective emergency plan. The harbour authority must consult the emergency services and any other body it considers appropriate in the preparation of such a plan. The harbour authority can appoint inspectors to enforce the entry of dangerous substances into the harbour area and ensure the marking and navigation of vessels is carried out in a safe manner. This is particularly important to	code does not delineate between whether the impact applies to a land based or marine based entity. It is clear from the Applicant's NRA [APP-089] that the Applicant has not addressed societal risk as: • no standards of acceptability (as required by the PMSC – (see [REP1-015] Section 2.7)) have been used that reference the Health & Safety Executive's (HSE) societal risk thresholds; • the Applicant's NRA methodology does not address the magnitude of consequences should the IOT Trunkway suffer major damage from an IERRT vessel (such as nationwide fuel shortages); and • the NRA methodology doesn't support societal risk determination. The IOT Operators have addressed these shortfalls in the sNRA [REP2-064] as follows: • Standards of Acceptability – see paragraph 212; • Magnitude of consequences to IOT – see Section 12.4 Residual QRA; and • Societal risk – see Section 10. As a result the sNRA [REP2-064] is at odds with the Applicant's NRA as it mandates controls such as the implementation of appropriate and robust impact protection.

		ensure third parties maintain adequate safety standards. A harbour master also has powers to prohibit the entry into a harbour of any vessel carrying dangerous goods, if the condition of those goods, or their packaging, or the vessel carrying them is such as to create a risk to health and safety, and to control similarly the entry on to dock estates of dangerous substances brought from inland (as prescribed in the DGHAR). The harbour master also has powers to regulate the movement of vessels carrying dangerous goods. Prior notice must be given to bring dangerous substances into a harbour area from sea or inland. The period of notice is normally 24 hours, although the harbour master has some powers of discretion on both the period and form of the notice. Harbour authorities have a duty to prepare emergency plans for dealing with dangerous substances. The Port of Immingham and HES MSMS provides that dangerous substances being transported or handled through ABP Ports must be handled in accordance with the Dangerous Goods in Harbour Area Regulations except those substances being stored under the COMAH Regulations.	
NS 1.18	**Direction of current between the IOT and the Proposed Development's berths** With regard to paragraphs 3.21 and	Two independent current flow monitoring surveys have been conducted in relation to the IERRT project. First - a seabed deployed Acoustic Wave and Current (AWAC) device was installed for a six-month period between 15 November 2019 and 5 June 2020. Over this period current speed and direction (as well as wave climate and water levels) was monitored at 0.5 m depth	The IOT Operators note that two independent current flow monitoring surveys have been conducted in relation to the IERRT project. The IOT Operators request that the Applicant provide this tidal data in the form of a tidal stream atlas for each hour of the tidal cycle with spring and ebb flow velocities and directions. IT should also be provided taking into account

	3.22 in DFDS' Relevant Representation [RR-008], comment on any expected change arising from the formation of the proposed dredge pocket and berthing infrastructure on the direction of current within the area between the IOT and the lock mouth of the port at times of peak flow with reference to Figures 2.7 and 2.8 in [APP-090]. In responding to this question commentary relating to the relevance of simulation Runs 08, 26 and 29 of November 2022 and Runs 18, 24 of July 2022 should be provided. [If not already fully answered within response to action points at ISH2].	intervals every 10 minutes. The instrument was located close to the location of the proposed IERRT marine infrastructure (53° 37.81252'N, 00°1 0.52781'W) – see plan provided at Appendix [12] to [REP1-009]. Current speed and direction data was initially provided as full depth-averaged data which is the standard output. A significant current direction sheer through the water column was, however, identified and, therefore, the data was reprocessed to provide datasets averaged over the upper 5 m, 6 m and 7 m of the water column to represent the expected drafts of vessels using the proposed berths. This data was used to assist the validation of hydrodynamic models used in the design and assessment of the IERRT project (see Appendix 7.2 – Numerical Model Calibration Report [APP-084]) and to develop a tidal model for use in the vessel navigation simulations (see Appendix 10.2 – Navigation Simulation Study [APP-090 and APP-091] and Appendix 10.3 – Navigation Simulation – Stakeholder Demonstrations [APP-092]). Second - a mobile, vessel based ADCP (Acoustic Doppler Current Profiler) survey was conducted along multiple transects within the vicinity of the proposed IERRT marine infrastructure. This was undertaken to understand the spatial variation of current flows in the area given the undulating bathymetry surrounding the IERRT site. The current monitoring transect surveys were conducted on two occasions: 11-12 October 2022 (spring tide) and 18 October 2022 (neap tide). The three transects were located at agreed locations to provide suitable data for model verification purposes – see plan provided at Appendix [12] to document [REP1-009].	changes brought about by the IERRT dredge area, infrastructure and three IERRT vessels at berth.

		Two transects (A and B) were located at the location of the proposed IERRT infrastructure, with Transect B crossing the location of the previously deployed seabed AWAC (for comparison purposes). The third transect (C) was located at the approaches to Immingham lock. A further transect (D) was conducted on a peak spring only and passed over a an AWAC device that was deployed at the time (for a direct comparison). Observations of the current at 0.5 m intervals through the water column, were conducted along each transect at 30-minute intervals over a full 13-hour tide period. Data was processed both as full depth-averaged and (as above) averaged for the upper 5 m, 6 m and 7 m of the water column. This data corroborated the data collected via the AWAC device. It should be noted that the Applicant commissioned HR Wallingford to run 3D TELEMAC flow models – which considered the effect of the intended dredged pocket. Sensitivity analysis on the effect of the dredged pocket concluded that the effect of the dredging on current speed and direction was localised within the intertidal zone and did not significantly affect the flows towards IOT or the Immingham bell mouth. The pile infrastructure for the new facility was not included in the modelling because given the pile 10-12m spacing, the effect of the piles on flows will only be localised. The proposed IERRT pontoons did affect the flows in the local area and were included. The changes in the flow due to the draught of the pontoons, however, was only observable at low water and did not extend as far	

		as the Immingham bell mouth. The effect in relation to IOT was considered during the simulations. The flows applied in the navigation simulation were provided as gridded data providing a single value of either depth averaged or draught averaged flows, with spatial and temporal variation included at 5m and 15 min intervals.	
NS 1.26	**For Port of Immingham additional predicted vessel movements** In terms of vessel movements to and from the Port of Immingham, for a typical week provide a summary of the existing vessel arrivals and departures and to that arrival and departure information add the vessel movements predicted to be generated by the Proposed Development.	Taking into account data from January 2022 to end of August 2023, the weekly average vessel arrivals and departures to/from the Port of Immingham total 199 movements. This only considers commercial vessels arriving or departing berths within the Port of Immingham jurisdiction and does not take account of vessels transiting to other ports or terminals within the Humber Estuary. As noted in the Applicant's response to ISH2 Action Point 2 [REP1-009], the marine activity recorded during the Familiarisation Site Inspection on 26 July was confirmed to represent a typical day. Therefore, the Applicant has undertaken an analysis of the Port of Immingham vessel arrivals and departures for the week of 24 July 2023 for consistency. Vessel movements during this period for the Port of Immingham total 192. The IERRT development will generate 42 additional vessel movements per week (i.e., 3 arrivals and 3 departures per day). Based on the above period the total weekly movements for the Port of Immingham including the IERRT vessels will be 234. In the context of the above, however, it should be noted that Stena already currently operate one service from the Port of Immingham which calls at a berth in-dock.	Analysis of AIS data in the IOT Operators' sNRA [REP2-064] at paragraph 254 show that 3,719 vessel tracks crossed a "gate" between the IOT and Immingham Bulk Terminal (see Figure 42 of the sNRA) in May and June, and therefore on a weekly basis this would indicate an average of around 425 vessels per week. This does not include vessels bound for the IOT's river berths or river facing berths upstream including Immingham Bulk Terminal. The implication of this is that there is a busier existing baseline which would lead to more significant effects.

		As a consequence, once the proposed development is operational, the net increase in Stena's operations will be 4 movements per day, or 28 movements per week. When added to the Port of Immingham weekly vessel movements, this totals 220 movements. The Applicant can confirm this is below peak vessel movements recorded within the Port of Immingham in the last 18 months.	
		Harbour Master, Humber	
NS 1.6	**Marine Incident in vicinity of IOT** Confirm/signpost how a marine incident reported in recent years involving allision of a tanker with a mooring buoy in the vicinity of the Proposed Development has been taken into account in the submitted NRA [APP-089] and the MSMS to date.	With regard to NS. 1.6, HMH has the following comments, noting that incident reports are confidential in nature so as to ensure frank and open participation and ensure that investigations and reporting are robust. The Selin S allision was reported as occurring at 1810 hours on 28/07/2022. As the vessel was departing its berth, it allided with the mooring buoy. It was confirmed that there was no damage to either the vessel or the buoy. The wind at the time was reported by VTS Humber as south east Force 4 (a moderate breeze) and, according to the pilot, was also gusting 20 knots. The tide was flooding (one hour before high water at Immingham) with good visibility. The small craft "Bull Sand" (an APT vessel that assists all Finger Pier berthings) was available to assist and participated during the manoeuvre. On disembarking following the incident, the Pilot was subjected to a drug and alcohol test (as is usual when an incident has occurred that may become reportable or have ongoing consequences). Subsequently an investigation was carried out by the Pilotage Operations Manager at HES. The cause of the incident was established as Master/Pilot error and subsequent action related directly to individuals rather than any process or procedure. It was not considered necessary to amend any	The IOT Operators note that the Selin S had an authorised ABP pilot on board and even in benign conditions contacted a mooring buoy located over 200m from its intended passage route. It is only in the Harbour Masters response that it is confirmed the vessel hit the mooring buoy (see IOT Operators' sNRA [REP2-064] Figure 47 for indicative plot of the Selin S from available AIS data). It is assumed that the pilot and master of the vessel did not intend to strike the mooring buoy, and so even if in the future the IERRT infrastructure were in place, there remains the possibility that vessels could strike it. It should be noted that in this context the location of the IERRT is proposed to be less than 100m from the IOT Finger Pier, and that in order for coastal tankers to pass the a vessel alongside the IERRT, the clearing distance would only be in the order of 30m, which is considerably less than the 200m the Selin S had to deviate in order to strike the mooring buoy.

		procedures or notices or the MSMS for the Humber, although the incident data contributes to the quantitative element of subsequent Risk Assessments for this area, as is usual.	It is not clear from the Applicants response, how this incident was is addressed in the Applicant's NRA [APP-089].
NS 1.7	**Historical allision of cargo vessel with vessel moored at IOT** With regard to DFDS' Relevant Representation, paragraph 3.5.1 in [RR-008], provide detailed commentary on the marine accident referenced, specifically noting: information on the wind and tide conditions; the details of the cargo vessel involved; the context of the navigation taking place; and the Marine Accident Investigation Branch's conclusions as to why the pilot was unable to maintain control despite having tugs made fast.	With regard to question NS.1.7, HMH believes this relates to the "Xuchianghai" and "Aberdeen" incident of December 2000. In summary the inbound vessel "Xuchianghai" made contact with the "Aberdeen" which was made fast at IOT Berth 1. The "Xuchainghai" was a 175m long, 27110 tonnes deadweight bulk carrier carrying a cargo of limenite from Australia inbound for Immingham Dock. The vessel was proceeding earlier than would usually be planned on a strong spring flood tide with a south easterly wind of 20 knots. It is worth noting that permission to enter the port early was given by the Dock and this incident pre-dates the current arrangements whereby pilots are managed directly by HES and there is more collaboration between HES and the Dockmaster for Immingham in the planning of vessel arrivals and departures. The investigation carried out by the Marine Accident Investigation Board (MAIB) confirms that, in accordance with usual practice, two tugs were in attendance and a pilot was on board. The MAIB report indicate that the vessel was inbound south of the leading lights (which are located at Killingholme to assist vessels with positioning when passing the Immingham Oil Terminal) when she swung to port in the tide and wind but was travelling too slowly to maintain control. Also, critically the aft tug was not confirmed as fast so was not able to be used to maintain control until it was too late. DFDS's Relevant Representation states that the vessel lost control with tugs fast; however, the issue was that it	The IOT Operators note that the MSMS was updated based on the findings of the investigation in the "Xuchianghai" and "Aberdeen" incident of December 2000. The IOT Operators require a proactive and transparent assessment of risk for the IERRT to determine whether appropriate controls such as impact protection is required. Given the critical national infrastructure status of the IOT, then waiting for an allision / impact to occur is not sufficient. Further, the Harbour Masters' response identifies measures that are in place since this incident which are contained within the ABP HES MSMS, a document(s) that has not been shared to date. This example demonstrates that adequate detail on embedded controls have not been included in the Applicant's NRA. Also, it is noted that the MSMS states that there is a 150m exclusion zone to the main IOT river berths, but does not include an exclusion zone for the IOT Finger Pier berth – this is to be expected as the MSMS does not include the IERRT infrastructure. However, to take the same exclusion zone parameters of 150m (and tugs to be made fast) and apply it to the IERRT vessels would not be possible as the IERRT is

		was uncertain to both the vessel and the aft tug whether the aft tug was fast, which was a contributory factor to the incident. Section 2.5 of the MAIB Report states as follows: "*All relevant parties understood the intention to secure Lady Cecilia and Lady Alma to the south-east of the IOT. The pilot had briefed the master, the mooring teams were on stations in good time, and the tugs were in position in the vicinity of No 10 Upper Burcombe buoy. Lady Cecilia was secured forward quickly and without any problems. The status of Lady Alma's tow wire, however, was not known to the pilot until about the time of the collision. He was, therefore, unable to use her when trying to correct the movement of Xuchanghai 's bow to port.* *The pilot could not see the tug aft and was reliant upon either Lady Alma's master, or Xuchanghai 's crew, to inform him when the tow was secure. The tug master was unable to confirm that the tow was secure because neither he, nor his crew, saw the visual signal from the second officer. However, it is unclear why Xuchanghai 's crew failed to inform the pilot that the tow was secure; a possible reason was the language difficulties between the master and the pilot. Consequently, the pilot could not use Lady Alma when needed. Had Lady Alma been secured and ready for use on passing IOT No 3, it is possible the collision could have been avoided."* This incident led to significant changes to the procedural requirements within the Humber MSMS, namely that a 150m exclusion zone was established at the IOT for vessels passing off the main berths (1, 2 & 3). Further, specific requirements were introduced for	proposed to be built only around 95m from the IOT Finger Pier.

		tugs to be made fast further to the west to ensure full control is maintained throughout the transit past the IOT jetty. The latest version of these rules remains in place today in the form of Humber Standing Notice to Mariners S.H. 34 (which is a general direction).	
NS 1.14	**Consequences of decision to abort berthing manoeuvre** If a pilot or ship's master with a pilot exemption certificate for Immingham decides dynamically that conditions would make it unsafe to continue with a berthing manoeuvre or entry into the Port's lock, what are the consequences for that physically and administratively?	The Master or Pilot of a vessel is always empowered to abort a passage, including a berthing manoeuvre, or to take other action to ensure the safety of the vessel. This can, and does regularly, occur for a variety of reasons. The consequences physically are that the vessel is put to a place of safety (e.g., an anchorage, back to sea or to another berth) until its movement can be replanned, which may be when wind or tide conditions improve. Administratively, a new voyage needs to be created and pilotage and other services planned accordingly.	The IOT Operators note that a delay to a bulk carrier or a tanker is generally not as commercially critical as that applicable to a shortsea Ro-Ro ferry carrying perishable cargo and having approximately 300 drivers/passengers onboard. Therefore, the operational pressure to maintain schedule is enormous and can lead to greater commercial pressure on the captain and a reluctance to delay a berthing, increasing the related risks.
		DFDS	
NS 1.24	**Relationship of project lifetime to risk assessment** With regard to paragraph 3.68 of DFDS' Relevant Representation [RR-008], expand on the contention as to why	The lifetime of the terminal has been decided at 50 years. However, this does not seem to be backed up by any relevant supporting evidence. Marine terminals usually have a life much greater than this. The dock at Immingham being an excellent example having opened in 1912; the IOT opened in 1969 and Immingham Bulk Terminal opened in 1970, none of which show any signs of reaching the end of their lives.	The IOT Operators agree with DFDS in their statement and have compared the short time scales of the Applicant's NRA [APP-089] with those from a HSE approved risk assessment methodology which is based on HSE Standards of Acceptability (see Table 4 and paragraph 186 of the IOT Operators' sNRA [REP2-064]). This issue is further exacerbated when related to construction and construction / operation

	the lifetime of the project "*serves to downplay risk*".	It is commonly accepted that since the presence of fatalities are a reliable barometer to a risk becoming intolerable, by the Applicant choosing to only assess the risk based on this 50-year timeline will give a distorted view of the risks involved because the likelihood of a fatality will be lower when considered over a shorter time, as is illustrated in the NRA commissioned by DFDS. Indeed, as noted in that NRA (paragraph 4.2.1), the Applicant intends the project to be used for more than 50 years (see paragraph 3.2.25 in [APP-039]).	phase likelihoods in the Applicant's NRA as the only time frame considered is the lifetime of the entity (i.e. the duration of construction or construction operation). For example, the most likely frequency descriptor (see Table 16 of the Applicant's NRA [APP-089]) relates to "the impact of the hazard will occur (within the lifetime of entity) which is described as 'Almost Certain'". For the operational phase of the IERRT then the Applicant considers the lifetime to 50 years, but for the construction phase the Applicant considers it to be 24 months. Therefore the "Almost Certain" category for construction is x25 more likely to occurrence compared to the same category for the operational phase occurrence. However, thresholds of acceptability documented in Section 9.7 of the Applicant's NRA [APP-089] are not differentiated between construction and operation phases. In effect this means that the Applicant accepts x25 higher probability of a hazard occurring for the construction compared to operation. This confounds the risk assessment methodology provided in the Applicant's NRA [APP-089] as it means the tolerability of risk is different between different phases of the same project.

Comments on Deadline 2 submissions

IOT Document and Paragraph	IOT Submission (Deadline 1)	Applicant's Response (Deadline 2)	Comments by the IOT Operators

ISH2 Written Submission of Oral Case [REP1-036] Paragraphs 2.2, 2.3, 2.10	IOT Operator's written summary of its oral submissions made in respect of Item 5: Navigation and Shipping effects. These paragraphs relate to the consideration of the effects of the IERRT and IOT Operator's commitment to producing its own NRA by Deadline 2	In response to paragraph 2.2, the IOT Operator's appear to be confused as to the core purpose of an NRA in the context of an application for development consent. The sole purpose of the NRA is to provide a formal risk assessment of the navigational risks as part of the EIA for the development. Its purpose is not to consider risks for the wider port operations or functions. The Applicant is satisfied and confident that the Navigational Risk Assessment (NRA) [APP-089] has fully addressed all risks relating to navigation. On that basis, the "agent of change" principle has been fully addressed. The Applicant notes that the IOT Operators will produce their own NRA for Deadline 2 and would request that this is accompanied by a narrative explaining how the NRA and its methodology is fully compliant with the PMSC. The Applicant trusts that the NRA will be produced in a format applicable for a consent application rather than an operational risk assessment for port operations.	The IOT Operators has set out in Section 2 of the sNRA [REP2-0664] the clear deficiencies in the Applicant's NRA and demonstrated that the sNRA complies with the PMSC in Section 2.1.6 of the sNRA.
ISH2 Written Submission of Oral Case [REP1-036]	IOT's written summary of its oral submissions made in	The Applicant confirms that the required, but not all, sections of the Port of Immingham Marine Safety Management	The IOT Operators note that ABP South Wales provides an "Online" MSMS Manual which documents the

Paragraph 2.4	respect of Item 5: Navigation and Shipping effects. This paragraph relates to the Port of Immingham MSMS.	System (MSMS) are in the public domain and provide port users with information on port procedures, operations and policy. This is not contrary to the PMSC as suggested by IOT Operators. There is a lack of understanding as to the purpose and role played by an MSMS. For example, the MSMS cannot, and indeed should not, be available "online". The MSMS is not one single document. It comprises a number of operational processes, policies, assessments, guidance and risk controls which work in a systematic manner to facilitate the safe marine operation in the SHA and Port. The MSMS is effectively an ever evolving, moving process – not a static document.	process and policy of managing marine safety. ABP Humber does not provide such a document and neither has it made available the current NRA for the area, which should be the appropriate starting point for the Applicant's NRA.
ISH2 Written Submission of Oral Case [REP1-036] Paragraphs 2.5 - 2.6	IOT's written summary of its oral submissions made in respect of Item 5: Navigation and Shipping effects. Paragraphs 2.5 and 2.6 relate to scheme details and underlying data that supported the NRA.	The NRA considers the points raised by the IOT Operators in paragraph 2.5. The underlying data supporting the NRA was shared during the HAZID workshops, which the IOT Operators attended. As addressed by the Applicant in ExQ1 NS.1.17, there is no known industry or government guidance which includes COMAH considerations when undertaking an NRA. The purpose of the NRA is to assess navigational risk.	The IOT Operators have requested missing information and data from the Applicant which has not been provided. A copy of correspondence on this issue was submitted at Deadline 1 [REP1-035]. The IOT Operators also address the relevance of COMAH considerations to the NRA in Section 5.2 of the sNRA [REP2-064].

		With regard to the proposed development, the Applicant has consulted with the Health & Safety Executive (HSE), who are well aware of the Land Use Planning Zones at Immingham and the COMAH sites operating there. In its letter of 28 June 2023, the HSE noted that it would not advise against the NSIP.	
ISH2 Written Submission of Oral Case [REP1-036] Paragraph 2.7	The IOT Operator's written summary of its oral submissions made in respect of Item 5: Navigation and Shipping effects. IOT reference that no attempt was made to reach consensus on the key issue of tolerability.	The Applicant must stress that it is not up to stakeholders to define tolerability.	The PMSC requires that Ports consult with stakeholders on navigation risk assessment and that consensus should be reached. The IOT Operators do not consider that the Applicant's NRA has defined tolerability and neither has the Applicant made efforts to include the IOT (or transparently communicate) in the cost benefit analysis of key risk controls such as impact protection. The Applicant is therefore arbitrarily deciding what level of risk is acceptable to the IOT Operators as a piece of Critical National Infrastructure.