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Dear Mr Woznicki

Merchant Shipping (Ship-to-Ship Transfers) Regulations 2010
Consultation on Ship to Ship Transfer Licence for the Cromarty Firth Port Authority.

Thank you for consulting us on the above Oil Transfer Licence application.

Summary

- We do not agree with conclusion of the Environmental Statement that there will be no residual Likely Significant Effect on European designated sites.
- We advise the Maritime and Coastguard Agency, as competent authority, to carry out an appropriate assessment.
- We advise that mitigation can reduce but not eliminate the risks to the integrity of several designated interests.
- We advise that it may not be possible to conclude no adverse effect on site integrity in relation to the Moray Firth Special Area of Conservation (dolphins).

General comments

The Environmental Statement (ES) has identified the movement and presence of ships, the accidental spillage of oil and the discharge of ballast water as the key issues of concern in relation to the environment. We agree that these are the main issues. We also recognise the intention for the ship to ship transfers to be tightly planned, controlled and managed but we also advise that it is not possible to eliminate all risk. It is important to emphasise that even a small volume of spilt oil in such an environmentally sensitive area is significant.

We advise that there is inadequate analysis of the potential impacts of an oil spill on designated sites and species and we do not agree that the conclusion in the ES of no Likely Significant Effect on European designated sites is justified or has been demonstrated. In relation to oil pollution, the ES focuses on the likelihood of an accident occurring, and the control measures which it proposes will be put in place to minimise this, however the treatment

of risk within the assessment is, in our view, optimistic. A number of potential impacts are discounted, with no clear explanation as to why and other effects are underplayed. We highlight the following key deficiencies in the ES that would need to be addressed to inform the preparation of the appropriate assessment for the European interests:

1. The proposal is within an area of high natural heritage importance. The choice of location is a key mitigation that has not been considered within the ES.
2. The high importance of the inner Moray Firth and the Sutors for dolphins is not fully recognised and the potential effects of even 1 tonne of spilt oil on these animals has not been properly assessed.
3. There are gaps and deficiencies in the data used and in some of the assumptions in analysing that data.
4. The scenarios used to assess oil spill movement and impacts are limited, focussing on 'average' (not defined) conditions.
5. There is no worst case analysis.
6. The 1 tonne maximum spill has not been justified or substantiated and other potential causes of spilt oil have not been assessed.
7. The ES does not acknowledge, notwithstanding the control measures which will be put in place, that there are some residual risks of an accident occurring as part of the Ship to Ship (STS) process – including accidental fire/explosion and failing moorings during the transfer operation.
8. The ES states that there will be Likely Significant Effects on multiple designated interests but that these effects can be avoided with mitigation. The ES however does not assess the limitations of the mitigation measures which would be put in place to respond to an accident, should one occur. For example, the ability to deploy such measures, and their effectiveness, is dependent upon factors such as weather, currents and effective communication.
9. The ES does not recognise or consider the risks associated with the related increase in the volume of oil being moved around the Moray Firth and "in combination" effects.

We were not involved in pre-application discussions with the applicant at any stage and we have not been consulted on the screening or scoping phases of the ES. Had these discussions taken place then many of the deficiencies in the ES may have been addressed at an earlier stage.

Consideration of Natura Sites (SACs and SPAs)

The requirements of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended, (the "Habitats Regulations") apply in this case. See http://www.snh.gov.uk/docs/A423286.pdf for a summary of the legislative requirements. The Merchant Shipping (Ship-to-Ship Transfers) Regulations 2010, Schedule 1 are also pertinent in relation to the requirements of the Habitats Directive.

In our view, this proposal is likely to have a significant effect on a number of European designated sites that have been screened into the ES. The Maritime and Coastguard Agency, as the lead competent authority, is therefore required to carry out an appropriate assessment in view of the sites' conservation objectives for their qualifying interests. We advise that it may not be possible to conclude no adverse effect on site integrity, particularly in relation to the Moray Firth Special Area of Conservation (dolphins).

More detail about the issues raised above is provided in Annex 1.

Please contact Ben Leyshon (ben.leyshon@snh.gov.uk) or I if you have any questions or require further clarification on this letter.

Yours sincerely,

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ANNEX 1

MERCHANT SHIPPING (SHIP-TO-SHIP TRANSFERS) REGULATIONS 2010 CONSULTATION ON SHIP TO SHIP TRANSFER LICENCE FOR THE CROMARTY FIRTH PORT AUTHORITY.

BACKGROUND

The following advice focuses on the potential impact of the proposal on a range of European designated sites and these are likely to be key issues for the determination of this application. We also advise on sites and species of national importance.

We agree with the ES that the key issues to consider relate to the presence of ships, the accidental spillage of oil and the discharge of ballast water. Please note that the Scottish Environment Protection Agency will lead on ballast water issues in relation to this case. We have however provided comments below on any specific implications of ballast water discharges on designated interests.

EUROPEAN DESIGNATED SITES – THE CONTEXT

The proposed Ship to Ship (STS) operations could affect a number of coastal European sites. The status of European sites mean that the requirements of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended; (the "Habitats Regulations") apply[1]. Consequently, as outlined in Schedule 1 of the Merchant Shipping (Ship–to–Ship Transfer) Regulations 2010 (as amended) ("STS Regulations") a determination is required as to whether the cargo transfers to be carried out under the requested license are likely to have a significant effect (LSE) on any European site.

In providing specific advice on this application, we highlight that determination of LSE is a precautionary screening process. According to European Court of Justice case law[2], a conclusion of LSE should result from the possibility of there being a significant effect, with no need to establish such an effect. Due to the precautionary nature of the Habitats Regulations Appraisal process, and because the screening operates "merely as a trigger", in order to determine whether an appropriate assessment must be undertaken"[3], any mitigation at this stage should also be both proven and certain to succeed.

In our view, this proposal is likely to have a significant effect on a number of European designated sites that have been screened into the ES. The Maritime and Coastguard Agency (MCA), as the lead competent authority, is therefore required to carry out an appropriate assessment in view of the sites' conservation objectives for their qualifying interests.

Our following advice is provided to inform the MCA review, on behalf of the Secretary of State under section 2(1) of the STS Regulations. Our advice aims to help the MCA to fulfill this role by providing further detail about the information that should be included within the appropriate assessment.

GENERAL COMMENT – EVALUATING THE RISK OF AN OIL SPILL

We advise that the appropriate assessment should fully address the level of risk to environmental receptors. This is clearly dependent on the likely volumes and types of oil that

[1] Please see SNH website at http://www.snh.gov.uk/docs/A423286.pdf for a summary of the legislative requirements
[2] Sweetman' case. ECJ case C-258/11, Opinion of the Advocate General, (paragraph 47).
[3] 'Sweetman' case. ECJ case C-258/11, Opinion of the Advocate General, (paragraph 49).

may be spilt. Annex B of the ES models the likely dispersion of oil in the event of an incident occurring and this identifies specific locations around the Moray Firth coast where spilt oil is predicted to reach shore. The ES also states in Table 5.2, page 28 that 'an oil spill has the potential to impact the coastline anywhere in the Moray Firth'. We agree with the statement on page 28 of the ES and our advice is given on that basis.

We advise that the appropriate assessment considers a worst case scenario. The ES states that a spillage of is 1 tonne is the worst case scenario based on a ruptured hose with the total volume of oil contained within the hose being lost. We do not consider that this worst case scenario has been justified in the ES. In addition to the risk of a ruptured hose (or hoses) the ES describes other risks associated with the STS process (see section 5.3.1.2); however these are not elaborated on within the rest of the document. Of those issues listed, the risk of accidental fire or explosion and mooring failure are particularly relevant. The proximity of the anchor points to land makes the risk of broken or dragged moorings very pertinent. We advise that the appropriate assessment fully addresses any risk associated with grounding of one or more of the vessels.

The ES states that vessel sizes are approximately 62,395 gross tonnage or 115,605 dead weight tonnage. Our understanding is that vessels of this size will have drafts of around 12m. With the possibility of a 2m swell and the pitching and rolling of vessels combined with the need for a 3m under keel clearance, we advise that the appropriate assessment should assess whether anchorages 14, 15, 16 and 17 provide adequate water depth for safe STS cargo transfer operations.

The Cromarty Firth Port Authority Oil Spill Contingency Plan – Revision 7 sets out a risk assessment for crude oil export operations (see section A.1.1.1). This provides both general information about spill occurrence globally as well as specific details about pump rates and Emergency Shutdown (ESD) times for current operations at the Nigg Oil Terminal. In relation to operations at the Terminal, maximum credible size of spillage during tanker loading operations is 75 tonnes. We appreciate that this may relate to a different operation (Land-to-Ship transfers) although this is not explicit in the Plan. We advise that the appropriate assessment should provide similar levels of detail for the current STS proposal including details of pump rates, the number of hoses to be deployed in the transfer process and the ESD times.

We also note that Merchant Shipping Notice 1829 (M), section 7.1 states that *"Adequate Oil Pollution response equipment shall be provided by the STS operator and forward located at immediate readiness to provide sufficient response resource to deal with an estimated worst case scenario 300t spill of Heavy Fuel Oil."* We advise that the appropriate assessment should consider the effect of spills of this scale or explain why such an assessment is not considered to be necessary in this case.

The other key element dictating the likely impact of an oil spill on the environment is the effectiveness of the oil pollution counter response. The ES and Oil Spill Contingency Plan describe the resources available to deal with spilt oil, but there is no information about the efficacy of these measures in the range of weather conditions that may be experienced (e.g. 2m swells and 27 knot wind speeds). The response times and efficiency for dealing with spilt oil in the worst case scenario should be explicit within the appropriate assessment and this should recognise the limitations of oil recovery even in favourable weather conditions.

The 'worst case scenario' is clearly a key point and we are aware that there is much interest in this aspect by a number of stakeholders. We therefore advise that the 1 tonne volume is clearly explained and justified in the appropriate assessment in order to address these concerns and if greater spills are possible, then these also need to be properly addressed in the assessment.

Our comments below in relation to the designated interests are made in the context of a 1 tonne spill; however the impacts described would be significantly greater if larger spills are possible.

IN COMBINATION ASSESSMENT

Under regulation 48 of the 1994 Habitats Regulations (or regulation 61 of the 2010 Regulations in respect of reserved matters), the competent authority, MCA, has a duty to determine whether the proposal is likely to have a significant effect on a European site either individually or in combination with other plans or projects. This requirement is also set out in Schedule 1, section 1(b) of the Merchant Shipping (Ship–to–Ship Transfer) Regulations 2010 (as amended).

We recognise that the Oil Transfer Licence application concerns the STS cargo transfer and not wider shipping movements within the area as other provisions are in place to deal with this. Despite this, we do not consider that the ES has adequately addressed the proposal in combination with other plans or projects. We advise that the appropriate assessment should consider the in-combination effects based on:

- The risks associated with the related increase in the volume of oil being moved around the Moray Firth both as a result of this proposal and other existing operations, such as the STS transfers at the Nigg Oil Terminal.
- An assessment of the risk of collisions occurring between 'general shipping' and vessels actively carrying out the STS cargo transfer. General shipping includes vessels that are accessing the Cromarty Firth from the wider Moray Firth as well as tankers that are holding-off or travelling to the Sutors to carry out STS transfers and then their subsequent onward travel.
- Consideration of the efficacy of oil spill clean-up operations if the STS transfers associated with this proposal occurs simultaneously with STS or Land-to-Ship transfers at the Nigg Oil Terminal.

DESIGNATED SITES

The proposal could affect a range of designated coastal sites in the Moray Firth. These are listed in Appendix C of the ES. The effects are most likely for those sites where there is direct or immediate connectivity with the proposal, specifically the Moray Firth Special Area of Conservation (SAC), the Dornoch Firth and Morrich More SAC and the Cromarty Firth Special Protection Area (SPA).

Information on the special features and conservation objectives for all of the designated sites that may be affected can be found on our website:
http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/

MORAY FIRTH SAC – BOTTLENOSE DOLPHINS

We do not agree with the conclusion of the ES that there will be No LSE on the dolphins.

In relation to the appropriate assessment for dolphins, we advise that it may not be possible for the Maritime and Coastguard Agency to conclude no adverse effect on site integrity.

This proposal could not have been located in a more sensitive location for the Moray Firth dolphins. The Sutors is the most used location for the most dolphins within the entire SAC and

the North East Scotland dolphin population as a whole. The dolphins use the Sutors year round, with some seasonal variation. An estimated 102 individual dolphins used the SAC during the summer of 2011, 112 in 2012 and 94 in 2013. At the Sutors, dolphins were detected on over 90% of days in April, October, November and December, only slightly less than in the summer, and for on average between 5 and 7 hours per day. 48 - 57% of the entire Scottish east coast dolphin population regularly uses the Sutors, including the proposed anchor areas for the STS proposal[4].

Oil pollution

Whilst we recognise that the risk of an oil spill occurring may be low, the consequences to the dolphin population as a whole are significant. Contrary to the statements in the ES that dolphins are "not particularly sensitive to oiling" the literature reports that dolphins are vulnerable to oil pollution and that they do not necessarily move away from spills. Numerous studies from the Deepwater Horizon oil spill in the Gulf of Mexico cite a range of impacts including[5]:

- Low survival rates and a high rate of reproductive failure.
- Unusually high rates of stranded dolphins including perinatal dolphins were observed post-spill.
- High prevalence of multiple hematologic abnormalities and poor body condition.
- Moderate-to-severe lung disease.
- Changes in immune functions.

We recognise that the volumes of oil involved in the Gulf of Mexico are an order of magnitude greater than any spill that may arise as a consequence of this proposal should a licence be granted. However these recent studies report that dolphins, some of which were far away from the source of the spill, showed adverse effects. We advise that even a spill of 1 tonne in the Sutors area would be significant. Depending on the time of the year it is possible that over a 24 hour period a high proportion of the dolphin population (*circa* 25%) may be exposed to any oil spilt in this area. Even the loss of one adult female, through injury or death, would have a significant effect which could impact upon the Moray Firth dolphin population as a whole.

We advise that the appropriate assessment should assess the risk of an oil spill in this area on the dolphins based on:

- A realistic understanding of the effects of oil on dolphins through both direct exposure and through impacts on their prey.
- A scenario i.e. 1 tonne of oil in the Sutors area during the summer months when the dolphins are most prevalent.
- The number of dolphins that could come in to contact with the oil, both on the surface and in the water column.
- Further information on the type of oils to be transferred and the predicted spread of 1 tonne on the surface of the water/in the water column.
- Further detail about how 1 tonne of the oil types being transferred might behave in a range of weather and tidal conditions.
- The likely consequences of this for the integrity of the SAC, dolphin feature.

[4] Put in full title: Cheney, B., Graham, I.M., Barton, T.R., Hammond, P.S. and Thompson, P.M. 2014. Site Condition Monitoring of bottlenose dolphins within the Moray Firth Special Area of Conservation: 2011-2013. Scottish Natural Heritage Commissioned Report No. 797 http://www.snh.org.uk/pdfs/publications/commissioned_reports/797.pdf
Bailey, H. & Thompson, P.M. (2009). Using marine mammal habitat modeling to identify priority conservation zones within a marine protected area. Marine Ecology Progress Series, 378: 279-287.

[5] https://www.marinemammalscience.org/conference/conference-schedule/

In addition to the potential effects of oil on dolphins in the event of a spill, the appropriate assessment should also assess risk associated with routine STS cargo transfer operations at this locality. Specifically, the effects of volatile organic compounds (VOC's) on human health are considered in the ES but the potential effects on the dolphins is lacking and is likely to be significant. The appropriate assessment should describe the possible effects of VOC's on dolphins as part of the STS transfer operation and assess the implications of this for the dolphin population.

Vessel movements and underwater noise

The proposal has the potential to affect the dolphins through underwater noise and disturbance associated with increased shipping movements and noise associated with engines and machinery, including pumps. It is unclear whether vessels will have engines running during the STS transfer, how many vessels will be involved (including tugs) and whether or not vessels will be using Dynamic Positioning (DP). Noise from DP, whether from vessels taking part in the STS transfer or 'holding off', is likely to be particularly disturbing for the animals. There is overlap between bottlenose dolphin communication vocalisations and the likely noise associated with STS transfers and there is the possibility that noise from the transfer operations may mask dolphin communication signals or effect foraging success.

There is little assessment of the likely noise output from the proposed activity within the ES and the effect that this might have on the dolphins. The ES states that the vessel movements associated with the STS proposal will result in a 13% increase in ship movements within the Cromarty Firth Port Authority area. This does not take into account the additional time that vessels may spend in a core area for the animals or the new operations that will occur there.

We advise that the appropriate assessment should assess the risk of underwater noise and increased shipping movements in this area based on:

- Information about the numbers, types and behaviour of vessels involved in the STS transfer operations.
- Detail about whether DP will be used.
- The likely consequences of this for the integrity of the SAC, dolphin feature.

Ballast water exchange/discharge

Bottlenose dolphins can be affected by a range of pathogens found in coastal waters (including viruses, bacteria and fungi) although the link between pathogen levels in coastal waters and disease in dolphin populations is not clear. Ballast water discharged into coastal waters may contain human pathogens and dolphins are known to be susceptible to at least some of these. Most microbial pathogens are unable to survive for significant lengths of time in the marine environment, especially in the presence of sunlight. Terrestrially derived bacteria typically have lifespans of between 12-24 hours although if they become associated with suspended particles or accumulate in sediments this can be lengthened from hours to a period of days to weeks.

We advise that the appropriate assessment considers the risk to the dolphins from environmental contaminants, including pathogens, through ballast water discharge. We advise that issues in relation to pathogens should be overcome if ballast water meets a Bathing Water standard. We can provide further information on this issue on request.

Other comments

The University of Aberdeen (UoA) has been undertaking long term monitoring of seal and dolphin populations in the Inner Moray Firth area since 1989. The focus of their research on the dolphins is between the Sutors and Chanonry Point and in particular within the eastern, seaward extent of the Cromarty Firth Port Authority area of jurisdiction. Should an Oil Transfer License be granted in this locality then we advise that the applicant liaise with the UoA to understand what the implications of this might be for their long term studies and steps should be agreed to ensure that the work of the University can continue to yield valuable data in the future.

MORAY FIRTH SAC – SUBTIDAL SANDBANKS

We do not agree with the conclusion of the ES that there will be No LSE on the subtidal sandbanks. Oil spills can negatively impact this qualifying interest through smothering and contamination of benthic species and habitats. The effects of anchoring and anchor scour will also result in direct disturbance to the sea bed.

The proposed STS locations are in relatively shallow water and the nearest sandbank record is at 15m depth, therefore in rough weather, oil from a spill in this area would disperse into the water column (due to mixing) and quickly reach the seabed.

We advise that the appropriate assessment should assess the risk of oil pollution and anchoring on the sandbank feature based on:

- Information about the occurrence of the sandbank feature in the vicinity of the Sutors (we can provide further information on this).
- The likely consequence of oil contamination and anchoring/anchor scour on the sandbank feature and likely rates of recovery.
- The likely consequence of oil spill clean-up measures on the sandbank feature.

DORNOCH FIRTH AND MORRICH MORE SAC – COMMON SEALS

We do not agree with the conclusion of the ES that there will be No LSE on common seals.

The proposal is less than 50km from the Dornoch Firth and Morrich More SAC therefore there is connectivity between the proposal and the common seal interest of that site. We also know that common seals tagged in the Dornoch Firth regularly use the inner Moray Firth and there are large haul-out sites both in the Cromarty Firth and at Whiteness Head. The haul-out at Whiteness Head holds 20% of the Moray Firth population of common seals and it is the most important haul-out for this species, not only in the Moray Firth but on the east coast of Scotland.

Common seals are vulnerable to oil spills, particularly during the breeding season (June, July and August inclusive) and when they moult[6]. Even a small spill of 1 tonne at the Whiteness Head haul-out site would be significant if it occurred during the breeding or moulting season.

We advise that the appropriate assessment should assess the risk of oil pollution on common seals, especially animals that haul-out at Whiteness Head and in the Cromarty Firth. The assessment should address:

[6] The common seal moult - for all animals older than pups - follows the pupping season. The moulting season usually lasts about 4–5 weeks, although the time of the moult for individuals may vary according to age, sex and reproductive status.

- The effects of oil on common seals through both direct exposure and through impacts on their prey.
- A scenario i.e. 1 tonne of oil at the Whiteness Head haul-out site during the common seal breeding/moulting season.
- The likely consequences of this for the integrity of the Dornoch Firth and Morrich More SAC, common seal feature. This should be set against a significant decline in common seal numbers in the Moray Firth and the UK as a whole.

CROMARTY FIRTH SPA/RAMSAR

The ES, Table 5.2 identifies the potential environmental effects of oil pollution on intertidal habitats and birds, including impacts through smothering, ingestion and hypothermia. Table 6.5 states that, without mitigation, there will be likely significant effects on the qualifying interests of the Cromarty Firth SPA and Ramsar site.

We agree with the range of effects on the Cromarty Firth SPA and Ramsar qualifying interests listed in Table 5.2 and we agree that without mitigation these effects are significant. However, we do not consider that sufficient evidence has been presented in the ES to support the conclusion of no residual LSE after application of the proposed mitigation measures. Many of the measures (Table 6.4), such as application of "best practice", are not an integral part of the specifications of the proposed STS operations.

We advise that in the event of an oil spill, the ES has not demonstrated, with the certainty required to conclude no LSE that the Oil Spill Contingency Plan could avoid impacts or reduce them to insignificance. For example, the operating envelope outlined (whereby transfers could proceed in wind speed up to 27 knots and swell over 2 meters) is such that spills might occur under conditions where standard booms may not be effective in containing a spill.

Given our concerns about risk of uncontained oil spills, and the sensitivity of a number of the features identified in the initial screening to oil contamination, we advise that the likelihood of a significant effect "cannot be excluded on the basis of objective information"[7], and therefore the conclusion of no LSE is not supported.

We advise that MCA undertake an appropriate assessment that re-assesses the efficacy of the various proposed mitigation measures in avoiding adverse effects on site integrity of the qualifying interests in all the weather conditions applicable to the STS operation.

MORAY FIRTH DRAFT SPA

On 22 July 2014[8] the Scottish Government released information on the suite of Scottish marine draft Special Protection Areas (dSPAs), which includes the Moray Firth. The application makes reference to the Moray Firth draft SPA and the qualifying species, i.e.: great northern diver, red throated diver, Slavonian grebe, scaup, common eider, long tailed duck, common scoter, velvet scoter, common goldeneye, red-breasted merganser and European shag. The information release was designed to alert stakeholders to additional marine sites that are being considered by the Scottish Government over the next few months. The dSPA suite is an indicative list, and until specific Ministerial approval has been granted there is no certainty that the locations included will all go forward to become possible SPAs (pSPAs) subject to formal consultation.

[7] Waddenzee' judgement. ECJ case C-127/02 (paragraph 45).
[8] http://www.snh.gov.uk/docs/A1350044.pdf

Assessment of the potential impacts of the proposed STS operations covered by this licence application on the Moray Firth dSPA is not a statutory requirement at this time. However, should the Moray Firth dSPA be progressed to pSPA status the site will then be subject to policy protection of a similar standard as the legal protection that applies to classified SPAs.

The qualifying interests of the Moray Firth dSPA have high sensitivity to oil spill, and for some species there could be risk of long-term population impacts in event of a major incident, meaning that the conservation objectives for the site may not be met and hence there may be a risk to site integrity. Some species may also be vulnerable to significant disturbance in particular locations or seasons (e.g. common eiders when flightless during moult). Accordingly, MCA may wish to consider requesting the preparation of information by the applicants to inform a "shadow Habitats Regulations Appraisel" with respect to the Moray Firth dSPA.

EUROPEAN PROTECTED SPECIES

The Habitats Regulations 1994 (as amended in Scotland) provide the protection afforded to European protected species (EPS) of animals and plants (those species listed on Annex IV of the Habitats Directive whose natural range includes Great Britain). These Regulations apply across the terrestrial environment and Scottish inshore waters (up to 12nm from the shore)[9]. All cetacean species (whales, dolphins and porpoises) that occur in UK waters are EPS. The main cetacean species that will be affected by this proposal are bottlenose dolphin, porpoise and minke whale. Other cetaceans may be in the vicinity but are likely to be transient in nature or occur in low numbers. We advise that if the issues identified for dolphins can be overcome then concerns in relation to other cetacean species will also be addressed.

ROSEMARKIE TO SHANDWICK COAST SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI) – GREAT CORMORANT

The population of cormorants breeding on the North Sutor is one of the largest in Scotland and the largest in the Inner Moray Firth. The site supports more than 2% of the national breeding population. Cormorants breed on the cliffs at the entrance to the Cromarty Firth. The largest concentration occurs at the North Sutor.

Whilst cormorants do not appear to be the most susceptible species to oil pollution they are vulnerable to direct impacts. Auks are the most commonly cited species in papers referring to oil spills; however cormorants have similarities to auks that would also make them vulnerable to oil pollution. They prey mainly on benthic fish species by diving, although they do not dive as deeply as auks and are rarely observed to dive below 10m. Being pursuit divers they can attempt to feed on fish below oil slicks and surface through the slick and become contaminated. In the context of the STS proposal they tend to feed in sheltered waters close to the shore and during the breeding season rarely forage beyond 10km meaning any spill is likely to impact on a large proportion of the SSSI population.

We advise that the importance of cormorant as a qualifying interest of this SSSI should be considered as part of the determination of this application. This should include:

- The likely consequence of oil contamination on the cormorant population using this SSSI and their likely rates of recovery.
- The likely consequence of oil spill clean-up measures this interest.
- The implications of any impact on this cormorant population in a wider Moray Firth and Scottish context.

[9] http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/legal-framework/habitats-directive/euro/

OTHER DESIGNATED SITES

Appendix C of the ES screened all designated sites within 100km of the STS locations; 34 designated sites have been screened in for potential significant effects. We advise that a number of these sites are particularly susceptible to oil pollution.

We advise that if the issues identified for the Cromarty Firth SPA/Ramsar site can be overcome then concerns in relation to these other sites will also addressed.

Please note that the River Moriston SAC has been omitted from the screening process. The River Moriston is designated for Atlantic salmon and freshwater pearl mussel. Fish that access the River Moriston will use the inner Moray Firth. Freshwater pearl mussels rely on Atlantic salmon to fulfil their life history; therefore there is connectivity between the River Moriston SAC and this proposal. Migrating salmon are vulnerable to oil spills and some clean up measures depending on the type and quantity of oil and the time of the year. We therefore advise that the proposal could result in a LSE to the Atlantic salmon interest of this SAC. However given the distance of the STS locations from the SAC we consider that there will be no adverse effect on site integrity. Given the distance involved and the indirect nature of any effect, we do not consider that there will be a LSE on the freshwater pearl mussel of this SAC.

PRIORITY MARINE FEATURES

Scottish Government's National Marine Plan offers policy protection to Priority Marine Features (PMF's)[10]. Horse mussel beds are a PMF[11] and they have been recorded in the entrance to Cromarty Firth, with the closest predicted horse mussels being 500m from the nearest STS location (anchor point 14). Horse mussels are also a Biodiversity Action Plan[12] habitat and an OSPAR[13] Threatened and Declining habitat. Other PMFs within 12km of the anchor points include blue mussel beds, intertidal mudflats and seagrass beds.

Oil spills can negatively impact mussel beds as they take up contaminants from suspended particulate material through filter feeding. Hydrocarbon concentrations in mussel beds following oil pollution incidents can persist for many years. There is no direct information on the impact of oil on horse mussel beds, however, this is a long lived, slow growing bivalve species and subject to multiple stressors therefore recovery is expected to take longer than other mussels species, such as the blue mussel. Sea grass is vulnerable to oiling although studies have suggested that impacts associated with heavy oiling may not persist for more than a year. Eel grass is an important food source for intertidal birds, particularly widgeon.

We advise that the importance of PMFs should be addressed as part of the determination of this application. This should include:

- Information on the occurrence of PMF's in the vicinity of the Sutors (we can provide further information on this).
- The likely consequence of oil contamination on PMF's and likely rates of recovery.
- The likely consequence of oil spill clean-up measures on PMF's.

[10] http://www.gov.scot/Resource/0047/00475466.pdf
[11] http://www.snh.gov.uk/protecting-scotlands-nature/priority-marine-features/
[12] http://jncc.defra.gov.uk/page-5705
[13] http://www.ospar.org/