



Supplementary Environmental Information

*Impact of the SPMTs and the Cranes on the Operational Buffer, and
Operational Noise Effects on Birds at North Killingholme Haven Pits*

Explanatory Note EX 11.22

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EXPLANATORY NOTE ON THE IMPACT OF THE SPMTS AND THE CRANES ON THE OPERATIONAL BUFFER, AND OPERATIONAL NOISE EFFECTS ON BIRDS AT NORTH KILLINGHOLME HAVEN PITS (NKHP)

INTRODUCTION

- 1.1.1 This explanatory note describes the noise impact within the operational buffer by SMPTs and cranes acting independently and the levels that would arise on the core mitigation area. In addition it clarifies the noise levels resulting from operation of the AMEP site on North Killingholme Haven Pits (NKHP) in response to a request from Natural England.
- 1.1.2 Construction noise will be dominated by the piling activity on the new quay, and the source of the L_{Amax} levels that will have the greatest effect on birds will arise from this activity. The effects of piling noise on SPA birds both on the intertidal mudflats and at NKHP have already been assessed (see *Annex F* of the *Habitats Regulations Assessment Report* which was submitted with the application).

SPMT AND CRANES

- 1.1.3 Operation of the SPMT and cranes on the quay area has already been considered in the operational noise assessment (see *Section 16.6 Impacts* of the ES, and the source terms in *Annex 16.4*). The assessment has applied the source sound power level, typical speeds and expected operation of these items of plant to conduct the noise predictions. The predicted operational L_{Aeq} noise levels expressed as noise contours are shown in *Figure 16.8.3* and *Figure 16.8.4* in the ES.

NOISE EFFECTS ON BIRDS AT NKHP FROM OPERATION

- 1.1.4 *Figures 16.8.3* and *16.8.4* show the contours resulting from day time and night time operation. The predicted noise levels shown are $L_{Aeq,1hr}$, however, the effects on birds are usually described in terms of L_{Amax} .
- 1.1.5 It is difficult to predict L_{Amax} noise levels and the relationship between the L_{Aeq} and L_{Amax} is dependent on the variability of the operation, or how much the noise level is likely to fluctuate. This fluctuation is dependent on the noise sources and their characteristics, and in particular, their ability to produce impulsive, intermittent or repetitive noise emissions. The level of fluctuation could cause the L_{Amax} to be in

the order of 10 dB higher than the L_{Aeq} for activities such as fabrication workshops and some types of construction activities, whereas for other processes that exhibit more continuous characteristics, the L_{Amax} level can be within 5 dB of the L_{Aeq} .

- 1.1.6 Given that the operation is not considered to generate impulsive noise emissions, and considering that when the cranes and SPMTs are in operation, they are relatively continuous in nature with only minor fluctuations, it could be reasonable to expect that L_{Amax} noise levels would be in the order of 3 to 8 dB higher than the L_{Aeq} .
- 1.1.7 The predicted L_{Aeq} values in the operational contours in *Figures 16.8.3* and *Figure 16.8.4* show the levels at the boundaries of NKHP are typically less than 50 dB(A), with levels only exceeding this at the extreme south west of NKHP. Hence it is likely that L_{Amax} levels exceeding 55 dB(A)¹ are only likely also in the south western part.
- 1.1.8 These figures are based on assumptions about extent of usage, routes, speeds, loads *etc.* A more refined prediction of the levels which are likely to occur will be possible once the detailed designs of the site are available including actual usage and proposed paths of the vehicles, speeds under various loads *etc.*, and verification of source noise levels associated with the vehicles. Given that the predicted L_{Amax} levels are close to 55 dB(A), there is a realistic expectation that such levels at the boundary of NKHP can be achieved with the more refined predictions alone. If despite the refined predictions L_{Amax} levels are found to exceed 55 dB(A) at NKHP in areas that would have effects on SPA birds, then design parameters (*eg* speed, power output, routes taken across the site) will be adopted to ensure that L_{Amax} levels are no greater than 55 dB(A). Hence there can be certainty even at this stage that there will be no significant noise disturbance impacts on SPA birds due to the operation of SPMT's and cranes *etc* on the AMEP site.

CONCLUSION

- 1.1.9 Clarification of the noise levels expected from operation of the vehicles requires further information that can only be obtained at the detailed design stage, based on a more detailed understanding of the operation of the SPMTs and cranes, and verification of the associated source noise levels. However, based on the information currently available there is a

¹ This is a level which Natural England has indicated is used by them as a precautionary level. If noise levels of less than 55 dB L_{Amax} can be achieved, then no likely significant effect can be concluded, and the need to consider the effects as part of an Appropriate Assessment under the Habitats Regulations will not be required.

reasonable expectation that operational noise levels (L_{Amax}) which do not result in significant effects on SPA bird species at NKHP can be achieved through a more refined assessment. If necessary, design parameters will be adopted to avoid significant noise disturbance impacts to SPA birds.