23 November 2017

Dear Sir / Madam

**Hinkley Point ‘C’ Nuclear Power Station – Non-Material change 3 – Main Development Site**

I refer to the letter from EDF energy dated 28 September 2017 regarding an application for a Non-Material change in relation to Hinkley Point C Development Site Consultation under Regulation 7 of the infrastructure Planning (Changes to, and Revocation of Development Consent Orders) Regulation 2011’.

1. **General**

The Marine Management Organization (MMO) have two functions to consider under this variation.

1) We are an interested party to this variation and the enforcing body for many requirements below Mean High Water Springs (MHWS) within the Development Consent Order (DCO) and;
2) We are the Decision Maker and enforcing body on the marine licence granted to Hinkley Point C by the MMO (ref MLA/2012/00259) in June 2013. This licence duplicates requirements within the DCO that apply below MHWS.

Any changes made to the DCO for activities below MHWS may require a variation to the marine licence and conversely any request to vary the marine licence may require an amendment to the DCO.

In this instance, for reasons outlined below, the MMO have no objection to the amendments raised in Non-Material change request number 3. However, we request that you consult the MMO on changes requested by other parties to requirements under which we are / will be the enforcing body. This is to ensure;

a) any amendments / additions are agreed with the MMO and are enforceable and;
b) any changes to the DCO requirements are be reflected within the marine licence where appropriate.
We have informed EDF energy that they are also required to submit an application to vary the marine licence. We await the outcome of your consultation before we make our determination on that application.

2. MMO review of Non-Material change 3

2.1 In our consideration we have reviewed Document Number: HPC-NNBGEN-XX-000-REP-100674, September 2017 to The Hinkley Point C (HPC) (Nuclear Generating Station) Order 2013 (Statutory Instrument 2013 No 648) (the “DCO”) dated 18 March 2013.

Activities subject to MMO remit under the DCO are:
- The erection of pipework on the underside of the temporary jetty to redirect discharges from the site; and
- Alteration to the alignment of the seawall.

We have considered the potential impact of these changes on:
- Coastal Hydrodynamics and Geomorphology;
- Marine Water and Sediment Quality; and
- Marine Ecology.

3. Temporary Jetty Pipework

3.1 Coastal Hydrodynamics and Geomorphology

MMO are content that the attachment of the discharge pipe to the underside of the jetty will have no hydrodynamic or geomorphological impact above that already assessed for the DCO for the temporary jetty.

Maximum discharge from the base of the pile will be about 65 l/s under the worst case scenario. This is a small discharge compared to the tidal flows and flow speeds from the ‘holes in the piles’ will quickly reduce. The results of the CORMIX model infer that effects at the bed will be limited to within 5 m of the pile, covering an area of about 78 m² around the single pile. As a result any physical impact on the seabed is likely to be negligible and confined to a similar extent as that occurring due to scour from the tidal flows around the pile.

Consequently, the proposed discharge arrangement will have negligible additional impact on the Coastal Hydrodynamics and Geomorphology (seabed) over that for the temporary jetty assessed for the DCO, although additional flow from the discharge will occur throughout the construction period.

3.2 Marine Water and Sediment Quality

As a result of the screening and modelling analysis it is considered that there is likely to be negligible potential for widespread impact on water and sediment quality or seabed features as a result of the proposed discharge. There will therefore be no effects on the features of the designated sites or the Water Framework Directive waterbodies as a result of changes to water and sediment quality.

3.3 Marine Ecology

The modelling has shown that most change occurs in the surface layers of the water column over a negligible area immediately adjacent to the pile. There is no effect at the bed. The plume extent is small and there is no identified impact pathway for the discharges to affect the following designated features (and therefore the marine ecology
thereof) of:

- Mudflats and Sandflats not covered by seawater at low tide;
- Atlantic salt meadows; and
- Sandbanks which are slightly covered by seawater at all times

With respect to reefs, the modelling of the worst case for potential effects predicted that the designated intertidal and subtidal biogenic reef features are within the area of the discharge plume from the temporary jetty. The mean concentration in the plume interacting with the sea bed was orders of magnitude below the Environmental Quality Standard (EQS) and given the dynamic nature of the hydrodynamics of the Severn Estuary, we consider the likelihood of bioaccumulation effects is considered negligible. Therefore any effect on the designated reef features are likely to be unlikely/inconsequential.

The other specifically designated feature is the Hard Substrate Habitat, comprising the *Corallina* waterfalls. The modelling again shows that zinc from the plume does pass over the *Corallina* patches, and that the maximum concentration in the upper water column is 4 times lower than the EQS, which is only exceeded immediately around the discharge location.

Any effect from the proposed discharge on the designated *Corallina* Hard Substrate, we therefore also agree, to be unlikely/inconsequential. It should also be noted that the proposal would eliminate the current licenced discharge which directly flows over the intertidal area at low water, without the aid of mixing in the water column. Hence, the designated features are already exposed to some contamination from the existing discharge.

Consideration has also been given to Marine Invertebrate Assemblages as food sources for fish and birds as well as the direct potential for impact on fish and bird assemblages. Given the limited potential for the discharge to exceed the individual pollutant EQS’s and in most cases are either not near the EQS concentration level or when they do exceed the EQS they only affect a very small area around the discharge location, the potential to affect the food-web for both fish and birds is considered negligible. The change in design and location of the discharge makes no difference to the hydrodynamics, change to the seabed or intertidal areas. Therefore, as a result of these small physical and chemical changes there is no likely significant effect on the fish and bird assemblages that has not already been assessed for the original consent order.

Overall, the effects resulting from the proposed discharge from the pile of the temporary jetty are inconsequential to the patches of *Sabellaria* and *Corallina* and we consider will result in no likely significant effect on benthic communities, fish or birds. The change in design will reduce the existing direct effect to some of these areas due to the removal of the current direct discharge over the area, particularly at low water. As a result there is no change to the assessment with respect to marine ecology from that assessed for the project as a whole for the DCO.

4. **Seawall**

4.1 No specific studies have been made as to the detailed effects of the small change in the wall alignment. However, given the scale of the change with respect to the development as a whole assessed for the DCO, MMO concur that the high level assessment undertaken is suitable to assess the potential impacts of the small design change.
4.2 Coastal Hydrodynamics and Geomorphology Impacts

The proposed change will have no material change to the coastal hydrodynamics as the proposed ‘recess’ in the seawall only interacts with the coastal processes during storm events. The upper beach composed of gravel/pebbles (shingle) is part of an eastward moving sediment transport system. The recess will cause a small change to the localised transport rate, which will be temporary until a new equilibrium is established. Storm conditions are likely to infill the recess over time reducing the sediment transport to the east whilst this infill occurs. Once the infill is completed the existing transport rate along the fronting shingle will resume.

During the infill process a small change in fronting beach level/profile would be expected, but no other geomorphological impacts are foreseen.

As noted in the non-material change application there is already a requirement to monitor the effects of the whole sea wall (requirement PW17 of the DCO and condition 5.2.2 of the marine licence), post construction. The re-aligned section of the wall is a small component of the whole seawall and the current monitoring condition will also identify any change of the new proposal.

We also agree that any impacts would be best mitigated by permanently infilling the recess with suitable (equivalent size and density) material to form the existing shingle profile and alignment. This would eliminate the change in longshore transport associated with the period of natural infill of the recess. Shingle bypassing has also been suggested as mitigation. This is not seen as the best mitigation as the transport is likely to be intermittent based around episodic storm events and the amounts at the correct time would be difficult to determine. The bypassing is unlikely to be able to replicate the storm effects and therefore the bypassing may introduce further perturbations into the longshore transport system, although it would maintain the shingle supply to the east.

Overall, any impact on the Coastal Hydrodynamics and Geomorphological Impacts as a result of the seawall realignment will be small/negligible, temporary and episodic in character. Such effects would be mitigated by an infill of the recess. Furthermore, the monitoring programme already required is sufficient to determine any effects of the whole seawall structure.

4.3 Marine Water and Sediment Quality

The change to the seawall alignment does not alter the pathways for impacts on the marine water and sediment quality, to those that were assessed for the DCO submission. The original assessment therefore remains valid. This assessment however, would be compromised if the wall construction were to release any contaminated sediment from the historic graving dock infill. As this source of contamination was unknown at the time of the DCO submission any potential impacts would not have been assessed.

4.4 Marine Ecology

The marine processes and sediment types will be unaffected by the seawall realignment, just a temporary change in rates of movement. No changes are likely to the sediment and water quality (assuming the historic graving dock contamination is not disturbed). As a result there is no pathway for change to the marine ecology arising from the proposed small change in the seawall alignment.
5. Conclusion

The proposed non-material changes relating to discharges from the temporary jetty and a small realignment to the seawall will have minimal/inconsequential impacts in their own right and will have no effect on the assessments made for the original DCO, with respect to Coastal Hydrodynamics, Geomorphology, Water and Sediment Quality, and Marine Ecology.

MMO do not request any amendment to existing requirements within the DCO.

MMO defer to Natural England as the Competent Authority on matters related to Habitats Risk Assessment, and the Environment Agency on water discharge / permitting requirements.

Should any amendments be requested by interested parties on requirements for which the MMO are the enforcing body, please allow us to review prior to making the change to the DCO to ensure they are robust and enforceable and may be transferred to the marine licence where appropriate.

Should any objections be raised on any aspect of the seawall or temporary jetty variation please inform us of the outcome so that we may consider as part of the variation to the marine licence.

Yours sincerely

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