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By Email and Post

21 February 2018

The Hinkley Point C (Nuclear Generating Station) Order 2013 – S.I. 2013 No. 648 (the "DCO")

Application for Non-Material Changes to the Development Consent Order (DCO) in relation to HPC Main Development Site – Summary of Flood Risk Issues Related to Realigned Sea Wall

Dear Ms Williams

As part of the submission for a Non-Material Change (NMC) to the Hinkley Point C DCO, submitted 28th September 2017, the alignment of the HPC Sea Wall was amended over a 70 metre length (100 metres including the relocation of access steps to the foreshore). The reason for realigning the sea wall is to avoid possible conflict with the former Graving Dock used during the construction if Hinkley Point A.

The potential for the realigned wall to change the flood risk of the site was investigated as part of the submission for a NMC. Further discussions followed with the Environment Agency and a meeting held between EDF Energy and the EA on 19th January 2018 and summarised below.

For the nuclear safety case, extreme sea conditions (10,000 year return period) were considered. It is found that nearshore sea conditions of the following magnitude would not cause unacceptable overtopping for nuclear safety (accounting for the offset):
- for present-day (uneroded) foreshore levels: significant wave height (Hm0) of 5.25m combined with still water level of 9.16m AOD
- for future (moderately eroded) foreshore levels: significant wave height (Hm0) of 4.98m combined with still water level of 8.64m AOD.

Further assessment was then undertaken to look at shorter return periods, in line with current flood risk assessment requirements. At shorter return periods, the present-day sea conditions are of the following magnitude:
• 200 year return period - wave height (Hm0) of 3.75m combined with still water level of 7.35m AOD
• 1,000 year return period - wave height (Hm0) of 4.0m combined with still water level of 7.6m AOD

The pattern of results from the physical modelling (which included some conservative 200 year return period sea conditions for rock armour stability), indicates that there would be no overtopping onto the HPC site platform in these conditions and hence no impact on safe site operation. The wave conditions at the sea wall toe would be largely depth-limited (present foreshore level of 6m to 7m AOD) and potentially impulsive (although this would be offset by the oblique nature of the general wave attack).
It is judged that any overtopping of the sea wall crest would be limited to ‘the odd wave’ during a storm. As discussed in the EurOtop Manual (Second Edition, 2016, Section 3.3), it is not possible to entirely preclude very occasional overtopping of vertical sea wall structures when the significant wave height is greater than 3m. For pedestrian safety on the coastal path, EurOtop suggests a maximum overtopping wave volume of 0.6m$^3$/m which corresponds to a mean overtopping rate of 0.3 L/s/m for a significant wave height of 3m. It is judged that this condition would be satisfied along the general length of the sea wall. The parapet formed by the sea wall crest improves safety of pedestrians caught in any overtopping water.

**Conclusion**

From the evidence summarised above, the changes proposed to the sea wall alignment are not of significance to flood risk and can therefore be dealt with appropriately as a non-material change.

Yours Sincerely

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