27 April 2023

Hannah Pearce
Senior Officer, Water Resources Permitting
Natural Resources Wales
Cambria House, 29 Newport Road, Cardiff CF24 0TP

By email to: Hannah.Pearce@cyfoethnaturiolcymru.gov.uk

Dear Hannah

Aberdunant Hall Holiday Park Proposed Micro-Hydroelectric Power Generation Scheme: Application References PAN-021527, PAN-021528, PAN-021531, PAN-021532, PAN-021533 & PAN-021534

Thank you for your letter of 19th April 2023 outlining a number of points of information that you require for the above application to be validated. Taking the points in turn:

Intake and Outfall Locations

We have reviewed the grid references using high-resolution OS mapping and these should be as follows:

- 'Middle': SH 58006 42074
- 'Far': SH 57914 41924
- Outfall: SH 58938 41876

We have updated references on plans accordingly.

Abstraction quantities

The maximum abstraction rate for hydroelectric power generation is controlled at the turbine. Although the turbine can take no more than 48lps, the designed maximum abstraction at each intake is higher than one third of 48 lps to cope with reductions in abstraction capacity from debris obstructions, and variability in flow across the different watercourses.

The absolute maximum potential abstraction at each intake under high river flow with no obstructions is 34 lps and this is secured by the size of the screen and intake structure.

Under typical conditions, significantly less than 34 lps will be abstracted at each intake.

During periods of higher flow (48 lps equates to about Q28 in the flow duration curve), and assuming there are no significant obstructions, the amount of water arriving at the header tank will be in excess of 48 lps. In this case, any excess water is immediately returned to the Afon Mûr-gwenyn via the overspill shown in the Header Chamber drawings.

Technical drawings

Your understanding is correct that the design and dimensions of the intake structures is the same at all three intakes.

As requested, we have added the base of the HoF notch and outfall structure levels to the drawings. I attach a full set of drawings containing the amendments.

Hands-off Flow

Your understanding is correct. 5 litres per second equates to Q95 flow.

Stage 1 Photosurvey

As requested, please find enclosed with this letter the updated survey to which we have added a key plan showing the locations where the photographs were taken. Grid references have been added below each photograph.

If you require any further information or clarifications, please do not hesitate to contact me.

Yours sincerely,

Tom Bartlett

Development Manager
Derwent Hydroelectric Power Limited
Tel: 01773 921 844

Encs: Full set of technical drawings
Revised Geomorphology Photosurvey