**LOWER YARROW FLOOD ACTION GROUP**

**CROSTON DAM OPERATION**

**Preamble**

\* The purpose of the Dam is to keep the river level as it flows through the village low enough to allow surface water landing on or arriving in the village to continue to drain into it. If the level gets too high, the water will level off with it and flooding of roads and properties may occur.

\* The Dam achieves this by “impounding” water in the valley (known as the Basin) upstream of it. It has 2 gates (known as Penstocks) which are lowered in stages when flooding is threatened. These work automatically from the river level at Castle Bridge and the way to find what that is, and at the 3 other measuring stations on the Yarrow, is to go onto the Environment Agency website – River and Sea Levels in England – Location Croston – River Yarrow – River Yarrow at Castle Bridge, Croston.

**Closing Operation**

\* The Dam will start to operate when the river level rises to 3.36 metres. The first of the 2 Penstocks will move to fully closed. Nothing more will happen for 90 minutes but if the level then is 3.42m or higher, the second Penstock will close by the first of 3 steps to 33% closed.

\* Again nothing more happens for 90 minutes but if then the river level is still 3.42m or higher, the second Penstock will close by another step to 66% closed. And if after another 90 minutes the river level is still 3.42m or higher, the second Penstock will move to fully closed.

\* In all it takes a minimum of 4.5 hours for the Dam to go from fully open to fully closed.

**Raising Operation**

\* The Penstocks start to be raised when the river level at Castle Bridge drops to 3.31m. The first Penstock will then be raised by 1 stage. Nothing more will happen for 90 minutes but if the level is still 3.31m or lower, the first Penstock will be raised by another stage.

\* Provided the river level remains 3.31m or lower, this process will continue every 90 minutes until both Penstocks are raised to fully open. In all it takes 7.5 hours for the Dam to go from full closed to fully open.

**Capacity of the Basin**

\* The basin will hold 1,300,000 cubic metres of impounded water, up to the point when water would start to run over the “spillway” on top of the Dam. At that point, the river level at the Dam would be 8.1m.

\* The highest level so far recorded at the Dam since it became operational in late 2016 is 6.7m (Flood Event 18-21/1/21), so using slightly less than 50% of the basin’s capacity.

**Sources of Details Quoted**

\* Penstock Closing /Raising Procedure – e-mail from James Chapman (EA) dated 5 June 2023.

\* Basin Capcity – Graph received in e-mail from Chris Tomlin (EA) dated 14 December 2022.

**RIG**  **25 February 2024**