

## CASE STUDY

### CLIENT

Northumbrian Water Group

### PROJECT

Saltburn Bathing Waters.  
Located in Saltburn-by-the-Sea

### SCOPE OF WORK

- ▶ Replacing existing MCC
- ▶ New actuated penstock
- ▶ Increase the storage capacity
- ▶ Replace existing control equipment
- ▶ New peak screen and level controller installed

### CONSTRUCTION DATE

Jun 2015 – Feb 2016

### PROJECT VALUE

£140,000



## SALTBURN BATHING WATERS

The works consisted of replacing the existing Motor Control Center (MCC), which was beyond its asset date and non-compliant, with a new, fully compliant MCC. Works also included installation of new actuated penstocks and new instrumentation to control the flow from a new 6000m<sup>3</sup> storage tank at Guisborough works (the Works).

The storage capacity of the Works was to be increased during Bathing Water Season, typically March to October, by utilising the old Primary Tanks by means of the operation of actuated valves controlled from a Programmable Logic Controller (PLC) installed in the MCC.

The flow from the Works was controlled so as not to exceed a predetermined figure, taking into account normal flow through the Works and the discharge flow from the new 6000m<sup>3</sup> storage tank. This was achieved by the PLC calculating the required flow from the storage tank using the normal flow through the Works, then modulating the storage tank outlet actuated penstock to control the flow from the storage tank. This actuator was provided with Uninterruptable Power Supply (UPS) back-up to close the outlet penstock in the case of mains power failure.

The existing Storm Return Pumps were originally to be reused, but the existing control equipment was again non-compliant and in poor condition. This was replaced and rewired as part of the scheme. As the pumps would sit idle for a 6-month period in every year, an exercise routine was written into software to negate the risk of seizing.

A new Peak Screen and level controller were installed in the newly constructed overflow chamber to prevent debris being discharged to the water course in the case of the 6000m<sup>3</sup> storage tank backing up and overflowing. The ability for the operations and maintenance staff to modify set points and view flows, levels and other system information was provided by a Human Machine Interface (HMI) installed in the new MCC.