

HM Senior Coroner Kevin McLoughlin
Her Majesty's Coroner's Office and Court
71 Northgate
Wakefield
WF1 3BS

30 June 2021

Dear HM Senior Coroner Kevin McLoughlin

Regulation 28 Report

I write on behalf of Yorkshire Hydropower Limited ("YHL") in response to your Regulation 28 report dated 30 April 2021 regarding the death of Elliot Peter Burton at the Kirkthorpe Hydropower Facility on 29 July 2019.

I would like to begin by, once again, expressing my condolences to Elliot's family and my sorrow for their loss.

The design, planning and construction of Kirkthorpe Hydropower Plant (the "Facility") was concerned with the risks associated with unauthorised access into it. Since the Facility came into our control, we have implemented a wide range of further measures with the aim of reducing and preventing unauthorised access, but recognise that the issues present an ongoing challenge.

Present measures include physical deterrents (perimeter fencing, warning signs, CCTV, internal barriers, gates and covers), to community engagement through the local police (to educate and raise awareness).

The Facility requires open access to the river, a number of deep-water channels and pools for its operation and systems to reduce debris blockage and ensure its safe removal. As such, steps to further secure and/or cover hazards have to be carefully considered in light of other risks that they may introduce.

In response to the evidence heard at the inquest and your comments, a further detailed review of the known routes taken by trespassers has been undertaken, with the assistance of an external health and safety advisor.

Turning to the specifics of the Regulation 28 report, I respond to the detailed points raised in section 5.

1. Response to Paragraph (1)

- 1.1 The Facility was designed to be unmanned. It does not need workers present for operation, which can be monitored and controlled remotely. However, contractors are on site at least 3 times a week to undertake checks and routine maintenance.
- 1.2 As set out in evidence before the inquest, public safety and site security is aided by extensive CCTV which is monitored by Servo, our security contractors, who can communicate directly via the site PA system and also will make reports to the Police and relevant key holders.
- 1.3 We are currently trialling having a manned security presence on site between the hours of 10am to 8pm, 7 days a week for the summer months. Primarily the guard is a deterrent. The guard will be limited in challenging trespassers, for example they will not be able to physically remove them from the Facility.

1.4 We will review the effectiveness of this at the end of the summer. This review will include consideration of any interactions between the guard and potential or actual trespassers, the personal safety of the guard, whether trespass was deterred and/or incidents prevented and whether the times were aligned with the periods of activity in the locality. The effectiveness and/or necessity of having such a security presence will also be viewed in the context of the other measures being implemented, these are discussed in response to your other paragraphs below.

2. **Response to Paragraph (2)**

2.1 YHL was subject to a share sale which completed a week prior to Elliot's tragic death. Following the tragedy, all reports were requested from the incumbent security contractors. These reports informed the measures which the board then undertook. However, it was apparent from the evidence at the inquest that a full record had not been provided.

2.2 We recognise that incidents of trespass have been ongoing for some time. Although from a review of all the records the method of entry across the weir was not previously used until the weekend of Elliot's death. The challenges of traversing 90 metres across the weir before climbing over the sluice gates and up and into the Facility meant that this was not a route of access which had previously been anticipated. As described below we have engaged with Wakefield Metropolitan District Council ("WMDC") and Canal and River Trust ("CRT") as the relevant landowners to identify and implement practicable measures to deter access along this route.

2.3 In relation to access from the landside perimeter, we have added further fence panel returns and signage, we have also now had expert advice as to the use of galvanised metal spiked fans. Where practicable these will be used to deter persons from climbing around the edge of perimeter fence panels where they open on to the river and accessing ledges within the Facility. The objective is to make access difficult and unattractive to the Facility as a whole, and within it in relation to those areas where there are drops to deep and potentially fast flowing water. However, these measures must not create debris traps that import significant risk for those required to then remove debris and maintain the structures.

3. **Response to Paragraph (3)**

3.1 On entry to the Facility, there are a number of uncovered channels. These comprise the screening channel, outlet channel, fish pass and eel pass. There exists edge protection in the form of timber fencing and metal railing in areas where those working in the Facility have to walk. This edge protection is designed to stop the accidental passage of persons into an area of danger, it is not effective at stopping someone who deliberately ignores it, placing themselves in danger.

3.2 The use of fences and barriers within the Facility, as well as the covering of channels has to be considered in the context of debris entrapment and critically, access for those removing it. The force of the river and the substantial debris that collects can and has caused damage to the Facility, this is one of the major operational concerns in this dynamic environment.

3.3 The size of the outlet channel makes any proposal to cover it with decking, steel or other material, difficult to safely install and maintain (the outlet channel cannot be readily drained). Maintenance will bring several operational issues, particularly around the issue of debris which will, in flood conditions, be deposited on top of the decking bringing with it an uncertain loading regime and a requirement to remove it. Such removal would require workers to have to venture onto the decking which might have become damaged or dislodged from the flooding. Anyone falling through such decking would have no ready means to escape. Consequently, it is not considered reasonably practicable to cover a channel of this type and size. Further a cover would only be across the screening channel itself and not the inlet.

- 3.4 We are reducing the attraction of this route at the upstream end by extending the access along the screen walkway to include access over the end of the screenings channel. This would reduce the attraction to climb through/over to see what is beyond. This will be achieved by relocating the existing end handrail and fitting additional mesh decking.
- 3.5 We have also considered the feasibility of covering the top of the screening channel, between the fish pass bridge and the outlet bridge. The channel is some 750mm wide and would suit open mesh decking. Such decking however would not remove the risk of falling, just transfer it to the fish pass on one side or the outlet channel on the other. Covering the screening channel whilst not removing the risk could encourage people to walk along the decking. To prevent this we have considered hand railing on either side but again this would further suggest that this was a thoroughfare, which it is not. It is therefore not considered prudent to deck this channel as it is likely to increase the trespass risk and dangers associated with it.
- 3.6 We have in turn also considered covering the fish pass, however the concern is that this could create hazards which do not currently exist. At some 3.69m wide such decking would require substantial support steelwork to support the individual panels. The level at which such decking would be placed would have to vary in line with the varying height of the side walls and differences in level from one side to the other.
- 3.7 The overall profile would be for the level of the decking to have to fall as the side walls to the fish pass itself fall. The fish pass is frequently submerged during flood conditions, this would present a number of hazards not least that of potentially pulling a person caught in the water beneath the covers. In such a situation any lifejacket or other item that they make take with them (such as an inflatable) would most likely trap a person resulting in drowning. Without covers such a person, whether a canoeist, swimmer or person simply having fallen into the water, would be flushed out downstream with a chance of subsequent rescue.
- 3.8 In addition, Environment Agency guidance on fish pass design also discourages covers to fish passes as these can cause fish to be hesitant about using them.
- 3.9 Presently access into this area is restricted by a locked access gate and as described in our response to paragraph 4, plans are in development to install a security fence to the left hand side to prevent access into the Facility from the weir and sluice gates.
- 3.10 In relation to any cover across a potentially fast flowing channel, debris would be pulled under the covers and then pushed upwards exerting a force against the underside of the covers. Large debris such as sections of trees etc. would produce significant upwards forces with potential to damage the decking and support steelwork. Such decking would require inspection post flood to ensure that it remained intact and safe. This inspection and potential repair work would, in itself, present risks to maintenance teams that do not currently exist. Finally, it is again of general concern that such covers would encourage persons to walk on them creating the perception that this area was safe.
- 3.11 It is therefore considered that preventing access onto the walls is a preferable method rather than allowing such person onto the walls and then trying to keep them safe.
- 3.12 With reference to access along the capping beam which encloses the outlet channel, we have had to balance the need for any structures to be robust so as to resist flood impact and also to be reasonably accessible for maintenance (for example through the use of hand tools). We will be installing a galvanised steel fan, bolted to the capping beam and spanning out over the outlet channel.

- 3.13 We are also going to install galvanised steel fans across the wall that borders the fish pass. This will prevent access to that ledge from each end and also a possible access point adjacent to the turbine house.
- 3.14 Another area which we have further reviewed is the very downstream end of the outlet, to block this route we will install a further fan located just upstream of the escape ladder, combined with a small panel of fencing.
- 3.15 Another area which has had interest from trespassers is the high level bridge across the intake penstock which provides operational access to the penstock actuator. Access to the bridge is via a vertical ladder. We will be installing a hinged, and lockable plate, fitted to the ladder to prevent it being climbed by unauthorised persons.
- 3.16 In overview we have tried to look at access to all areas within the Facility, particularly focussing on where there are drops to channels. Having carefully considered the feasibility of covering them, we have determined that to do so will introduce other risks that are more likely to result in an incident with the consequence of serious injury. Covering the channels may guard against one risk, but in practice will create a greater exposure to danger. The series of fans and gates present a more effective and ultimately safer measure of trying to block off these routes to trespassers.

4. **Response to Paragraph (4)**

- 4.1 The route used by Elliot to access the Facility was to walk across the weir from the bank opposite, climb over the sluice gate structure and over a timber fence. The sluice gates (which are a listed structure) and the weir substantially predate the construction of the Facility.
- 4.2 The sluice gates and weir are not on land which is owned or controlled by YHL. Since the tragic incident YHL has sought to engage with the relevant parties to consider whether it is feasible to construct an additional barrier on or around these structures where they interface with the Facility. YHL does not have the authority to take action unilaterally in relation to any such works.
- 4.3 YHL has been part of a working group with WMDC and CRT since before the inquest. YHL commissioned a detailed options report which formed the basis of the final design, agreed by the group, for a barrier at this location. The details of that design have been submitted by WMDC to the local planning authority.
- 4.4 YHL are supporting WMDC in the procurement process for the steel works while the planning application is being reviewed.
- 4.5 As WMDC take the lead to see construction through to completion, YHL will continue to input on design and procurement where necessary, as well as facilitating the actual construction.

5. **Response to Paragraph (5)**

- 5.1 YHL has taken a number of actions to review and implement measures to deter unauthorised access to the Facility and, should access be gained, to try and minimise the risks that are present. The dynamic environment, the impact of flood water and debris as well as the requirement to facilitate safe operational access makes this site very challenging. YHL has shown that it is committed to continual improvement. In summary since Elliot's tragic death, the key measures that YHL has implemented are:
- (a) Additional fence returns and mesh infills to deter climbing/access from the land side of the Facility
 - (b) Additional warning signs

- (c) Enhanced CCTV system (with greatly improved coverage and resolution), actively monitored at all times.
- (d) Improved PA system to enable loud warnings to be issued remotely on detection of trespassers.
- (e) Various measures to block off routes within the Facility, through the use of barriers and secure gates.
- (f) Covering of some channels where practicable to do so.
- (g) Ongoing liaison with the local emergency services.
- (h) Daily manned security presence during summer months from 10am to 8pm.

5.2 It remains the case that both youths and also adults are accessing the Facility or attempting to do so with little regard for their own safety. We are addressing areas of vulnerability as we become aware of them.

5.3 Whilst traversing across the weir in itself presents significant risk to the individual, we are aware that this remains a key vulnerability in terms of the security of the Facility. It is anticipated that with the progress now being made with the riverside fencing this will soon be addressed. In the interim, we hope that the ongoing manned security presence and remote monitoring will deter further trespass.

6. Summary

6.1 The Facility was designed to be a safe working environment within a secure outer perimeter. To that end a complete security fence was installed to keep trespassers out of the Facility, and guard rails and approved access routes were provided to keep authorised persons within the Facility safe.

6.2 Following the death of Elliot Burton in July 2019 investigations have demonstrated that despite significant and constantly developing measures to prevent unauthorised access some individuals are still determined to access the Facility and are prepared to take on significant risks to their own safety in order to do so.

6.3 This presents numerous challenges due to the location of the Facility and the time it takes to respond to trespass entries, time which the entrants know they have before they are likely to be physically challenged by police or security staff. The site is complex and presents many potential hazards to those prepared to actively bypass passive safety devices. However, normal preventative measures are complicated by the Facility's location within a flood plain and an active flood zone. This necessitates specific measures to ensure the Facility's resilience to such flooding and the safety of the maintenance contractors who are responsible for clearing up and repair the Facility following these natural events.

6.4 It is not possible to remove all potential risks from a site such as this and there remains a balance between ensuring the safety of those who make a deliberate attempt to gain unauthorised entry to private property and those who have to legitimately operate and maintain the same Facility. The measures detailed and discussed in this response seek to manage that balance to ensure that the Facility remains safe and operational yet minimise the risks to all people, even those who choose to trespass.

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Director for and behalf of Yorkshire Hydropower Limited