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My assessment of the weir within the A-H Intake Arrangement from the plans presented within the planning application for Conwy Hydro scheme are that it will present a risk to both water users and other members of the public. This assessment is informed by the Rescue 3 Europe and Environment Agency Weir Risk Assessment.

These structures are potentially very dangerous due the recirculation created at the base of the weir / Coanada screen. This recirculation has the potential to retain floating objects indiscriminately, whether this be debris or people. The danger these structure present is the combination of a number of factors including size and shape but also public access and proximity to other hazards.

Applying the plans for the A-H Intake Arrangement to the Rescue 3 / EA Weir Risk Assessment produces a weir risk rating of high; requiring immediate action to control the risk. This based on the hazard presented and the likely hood.

Hazard assessment.

Although it is not possible to assess all the criteria, the outcome is based on details within the plans. Based on these the structure scores a hazard rating of 22 or high

The major points that cause it to score as a high hazard are;

- Tow back or size of the recirculation created by the hydraulic jump. The base of the Coanda screen to the chamfer is 2m; this distance will determine the size of the recirculation.
- Height of drop - 1.1m from the dimensions of Coanda screen. The larger the drop the drop the more kinetic energy there will be.
- Slope of face of weir or Coanada screen angle of 45 degrees. This will create an equal vertical and horizontal component. The vertical component creates a deeper more retentive recirculation.
- The inclusion of the Smolt chute may create a weakness with the recirculation although this weakness and therefore possible exit for victims in the centre of the river, away from an egress point and possible rescue.
- The closed ends of the hydraulic stop water exiting at this point but also victims.
- Orientation of 90 deg to flow represents more of a hazard than if it were angled. As, if angled, the water will flow towards the lowest point, which will be towards the bank for possible egress or rescue.
- Major downstream hazard of Conwy falls means that if a victim were able to exit this hydraulic they would be swept downstream into further difficulty.

These hazards are not only an issue for water users and members of the public but also any workers on site and Emergency Service personnel that are responding to incidents at this site.

Likelihood assessment

As well as the hazard that this structure will present the likelihood is a key area to assess. Based on assessment tool, likely hood it scores very likely.

This is due to;

- The amount of public access to the weir and the river. The plans details the creation of an access track.
- The lack of control measures to reduce access both on the bank and in the water. Although there is signage and egress included in the proposal this is very close to weir. Any misjudgement could result in water users being swept over the weir.

Combining these two areas, hazards and likely hood, to a 5x5 risk assessment matrix it scores high and requires immediate attention.

Additional consideration will need to be given to creation of new hazard and how this will impact on the emergency services and their response to this, bearing in mind the hazard it presents, remoteness as well as the significant case history of rescues (including rescuer injury) at this site.