

Headgate blocks incorrectly installed

When going to prepare work area and check isolations for the removal of Unit 3 headgate water was observed to be leaking out of the side of the headgate at over 6ft up. Upon checking the contractor observed that the headgate blocks were not in place and gate was completely shut allowing water to back up behind the headgate.

The headgate blocks were positioned under the headgate as part of the Issuer Applied Safety Measures, in a location which the Operator believed was appropriate for the task. The Operator then lowered the headgate. It was at this stage that the Operator noted that the headgate position indicator dial was reading approximately 1.3% open, and that there was a small amount of water flowing downstream of the headgate. It was this information which led the Operator to assume that the headgate was now sitting on the blocks.

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When asked if the blocks had been positioned at the 'round plates' at the bottom of the headgate the operator tasked with installing the blocks replied that they were not aware of a specific position for placing the blocks, this was found to be the case with other operators as well.

Recommended actions

- Provide clear physical identification of the correct position for installation of the headgate blocks. This could be achieved by painting arrows/brief instructions on the headgate at the specific locations. Other long term options should be considered for providing this identification.
- Add a line to the required Operating Orders to instruct the operator to visually confirm the blocks are in their correct positions after the headgate has been lowered, and that the blocks do indeed provide a gap between the lower end of the headgate and the base of the penstock.

Image of Benmore Unit 3 headgate lower end (gate removed for refurbishment work and lying horizontal), showing the correct/desired position for the headgate blocks circled in Red, and the actual position the blocks were positioned in Blue.

The position indicated in blue allows the headgate to close and seal before contact is made with the blocks.

