Basic Details

Publish Date

02 September 2025

Case ID#

3121

Title

Leakage from within tunnel in bank

Nation

England

Regulator Reference No.

311

Legal Status

Statutory

Reservoir Type

Non-impounding

Reservoir Capacity

10M+ m3

Year of Construction

1970 - 1989

Main Construction Type

Earth fill embankment

Dam Height

15 - 29.99 metres

Dam Flood Category

A

Hazard Class

High-risk reservoir

Reservoir Use

- Other

Owner Type

Limited company

Incident Details

Date & Time of Incident

08 April 2006 - 12:00

Date Incident Closed

Observations that Caused the Incident to be Declared

- Leakage or seepage from a new leakage point

Describe the Incident

Significant water leakage was noted in the road adjacent to the dam toe. This was due to leakage from a wet tunnel under the dam, and the reservoir water level was lowered as a precaution. The owner is still assessing the exact cause of the problem with the tunnel. In order to stabilise pressure within the tunnel a shut down and isolation of the Pumps at the Inlet Pumping Station was undertaken along with closure of the Valves at the Inlet Tower to the Reservoir. A precautionary drawdown was undertaken until the situation was fully assessed. The precautionary drawdown was stopped once the condition was assessed as stable via a CCTV Submarine Survey of the wet tunnel was completed.

Supporting Photos

Causes and Impacts

Natural Processes which Initiated or Contributed to the Incident

- None

Main Contributing Factors to the Incident Occurring

Dam Factors

- Failure or damage to pipes or culverts

External Factors

- None

Shortcomings

- No apparent shortcoming

Root Cause of the Incident

Impacts on the Reservoir

- Failure or damage to pipework

Supporting Photos

Supporting Contributions and Studies

Human Factors which Influenced the Incident

Instrumentation at the Reservoir

Was Instrumentation Effective?

Not Applicable

Assistance by External Parties and Impacts on Downstream Population

None

Summary of Studies or Investigations Undertaken

A Forensic Investigation of the Failure was undertaken whilst repairs were in progress. In addition to this a technical review of all Wedgeblock Tunnel Assets was undertaken.

Lessons Learnt

Lesson 1

- Surveillance and Monitoring

Ensure that all tunnels under dams are inspected on a regular basis and records made of their repairs signed off by a competent person. The frequiency of the inspections should be as often as technically required as part of the understanding of the initial design assumptions and any subsequent condition assessment from previous inspections

Lesson 2

- Records and studies

Ensure that all design information regarding design of tunnels and inpection reports under dam structures are kept with the reservoir records and form part of the inspection

Lesson 3

- Emergency response

The quick isolation of the tunnel was made possible as a result of the owners practices regarding regular key valve testing and maintenance along with the existance of isolation procedures which were fully understood by local operatives

Closing Comments

Supporting Photos

Information provided has been sent from reservoir owners and engineers, and cleansed of personal information by the enforcement authority. We cannot guarantee the accuracy of the data, but if you find an error please contact the relevant enforcement authority.