Basic Details

Publish Date

02 September 2025

Case ID#

3112

Title

Deep seated slip in bank

Nation

England

Regulator Reference No.

301

Legal Status

Statutory

Reservoir Type

Impounding

Reservoir Capacity

10 - 24,999m3

Year of Construction

1950 - 1969

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

16 October 2006 - 12:00

Date Incident Closed

Observations that Caused the Incident to be Declared

- Deformation or instability of crest (settlement, cracking, depressions)

Describe the Incident

Settlement monitoring of the dam crest highlighted that movement had accelerated at three points. A deep seated slip in the upstream shoulder is thought to have been caused by operational drawdown of the reservoir in the summer and high pore water pressure within the upstream shoulder of the embankment.

Supporting Photos

Causes and Impacts

Natural Processes which Initiated or Contributed to the Incident

- None

Main Contributing Factors to the Incident Occurring

Dam Factors

- Instability

External Factors

- None

Shortcomings

- No apparent shortcoming

Root Cause of the Incident

Impacts on the Reservoir

- Settlement / deformation (outside normal or expected parameters)

Supporting Photos

Supporting Contributions and Studies

Human Factors which Influenced the Incident

Instrumentation at the Reservoir

Was Instrumentation Effective?

Yes

Assistance by External Parties and Impacts on Downstream Population

None

Summary of Studies or Investigations Undertaken

Intensive monitoring (weekly level survey, piezometer and toe drain readings etc.), ground investigation (including trial pits on the crest and below the upstream toe beam and boreholes in the upstream shoulder) and preliminary stability analyses.

Lessons Learnt

Lesson 1

- Records and studies

Plotting the settlement data graphically was very useful. The time of the year that the survey is carried out could be important. In our case where the cause of the problem appears to be related to drawdown it is best to carry out the survey in the autumn after the reservoir is drawn down during the summer.

Lesson 2

- Emergency response

The incident has highlighted the need to have adequate emergency drawdown capacity during times of heavy rainfall and inflow to the reservoir.

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.