

## **Dunalastair Dam – Interaction of Risk Assessment and Emergency Response Plan.**

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**SYNOPSIS.** Dunalastair Dam is a concrete gravity dam built in 1933 incorporating vertical spillway gates to divert flows into the Tummel Aqueduct for Tummel Power Station. Stability assessment shows that the dam is stable up to the 1:10,000 year return period flood, but that larger flows could cause failure of the dam. Dunalastair Dam is Category A, with the village of Tummel Bridge at risk. Dambreak analyses show that failure at PMF of Dunalastair Dam would inundate Tummel Bridge village to a depth of up to 5.9m, but that this would not cause much more damage than the PMF alone. To increase the spillway capacity to pass the PMF would require a complete re-build of the dam. QRA assessment indicates that risks should be mitigated. Flooding in Tummel Bridge commences at about the 1:100 year flow, and becomes widespread between the 1:1,000 and 1:10,000 year events. Scottish and Southern Energy (SSE) is well placed to predict flood conditions leading to extreme floods before the situation becomes imminent. It is anticipated that the limited population of Tummel Bridge could and would be evacuated to safety before the critical 1:10,000 year flood peak is reached, and that evacuation significantly mitigates the consequences of dam failure. An emergency response plan for evacuation of Tummel Bridge is currently being developed to provide flood risk mitigation.