



COMPREHENSIVE SAFETY REVIEWS (CSR)

CSRs are the confirmation of satisfactory behaviour or identification of deficiencies by;

- a thorough on-site inspection
- evaluating data, and
- applying current criteria and state of the art knowledge.

Equipment should be test operated to identify deficiencies.

International dam safety guidelines typically recommend frequency of CSRs depending on the Potential Impact Classification of the dam:

- High: 5 yearly
- Medium: 5 – 7 yearly
- Low: 10 yearly.

DAM SAFETY REVIEW SERVICES

DamWatch has undertaken over forty CSRs and PPRs in New Zealand and Australia and assisted with others. The following provides some examples of CSRs and PPRs completed by DamWatch since 2000. Damwatch has also conducted numerous safety reviews for smaller dams.

COMPREHENSIVE SAFETY REVIEWS

Tongariro Power Development:

Genesis Power Ltd, New Zealand

Moawhango, Rangipo and Poutu dams.

Mangahao Power Station, King Country Energy Ltd, New Zealand

Three combined earth/concrete dams of 1920s vintage and up to 35 m high; connected by tunnels they provide 270 m of head to a 29 MW Power Station.

Snowy Mountains Hydro Schemes: Snowy Hydro, Australia

Talbingo, Khancoban and Jounama Dams,

Rowallan and Parangana Dams, Hydro Tasmania, Australia

High hazard category of rockfill/central core dams, 43 m & 53 m high. Built in the 1960s providing storage and head for the Mersey Forth Power Development.

Tungatinah Power Development, Hydro Tasmania, Australia

The 1950s vintage Echo, Binneys, Bradys and Tunagatinah rockfill/clay core dams of up to 20 m high and 1.3 km long. They are connected to provide the storage and head for the Tungatinah Power Station.

PERFORMANCE PARAMETER REVIEWS (PPR)

The PPR is based on existing dam safety evaluations, condition assessment and historical records. Through consideration of potentially feasible failure modes, the PPR focuses on what needs to be monitored and visually inspected for these structures.

The requirements for monitoring the general behaviour of the structures is also considered.

PERFORMANCE PARAMETER REVIEWS

Meridian Energy Ltd, New Zealand:

Aviemore, Pukaki and Waitaki Dams; Tekapo, Pukaki, Ohau B and C Canals; Te Anau and Manapouri Lake Control Structures; Manapouri Underground power station.

These include concrete gravity, earthfill/central core dams, and combinations of the two, up to 120 m high. There is 56 km of earth-lined canals up to 560 cumecs flow capacity. They form the Waitaki hydro electric chain with generation capacity of 1760 MW.

Mighty River Power Ltd, New Zealand:

Ohakuri, Karapiro, Waipapa, Maraetai and Arapuni Dams

These include concrete arch, concrete gravity and combined earthfill/concrete dams up to 90 m high with deep gated spillways on the Waikato River providing storage and head for hydro electric generation capacity totalling 775 MW.

