CLYDE DAM

Dam

- The Clyde Dam is the largest concrete gravity dam in New Zealand. It was constructed between 1977 and 1989 but commissioning was delayed until 1992 while landslide remedial works were completed.
- The dam incorporates a seismic slip joint that was designed to accommodate 2m of movement on the River Channel Fault.
- Length 490m.
- Height Nominal 60m but 105m from the deepest foundation to the crest.
- Width 10m at crest. 70m at base.
- Volume of Concrete 1 million cubic metres.

Reservoir

- Lake Dunstan has an area of 26.4km^2 and an operating range of 1m.

Power Generation

- The total installed capacity is 432 MW from four generators. I.e. approx 8.6% of NZ's peak demand.
- Mean annual production is about 2,100GWh. I.e. approximately 6% of New Zealand's requirement.
- Generation output is determined from available water and market demand.

Penstocks

- Four at 7.8m diameter. Maximum flow capacity is approximately 1,000 cumecs.
- Two spare penstocks were incorporated into the dam to provide potential for increasing peak generation.

Spillway

- Four radial gates each 14.3m high by 10m wide with a maximum capacity of 4,600 cumecs.
- The aeration slot reduces the risk of cavitation erosion of the stilling basin.
- The combined stilling basin and 3-dimensional flip bucket is used to dissipate energy.
- The largest discharge to date was 3,500 cumecs during the November 1999 flood.

Sluice Gate

- Radial gate 9.6m high by 6m wide with a maximum flow capacity of 1,430 cumecs.
- The sluice channel incorporates a horizontal curve introduced due to site layout constraints.

Irrigation Pipeline

- The irrigation pipeline is jointly owned by Contact Energy and the Earnscleugh Irrigation Company to supply irrigation water 2.4 cumecs + 1 cumec for Fraser River minimum flow augmentation.

Hydrological Statistics

Catchment Area	12,000 km^2.	Mean Inflow	472 cumecs.
1:100 AEP Flood	3,000 cumecs.	Annual Low Inflow	258 cumecs.
PMF	5,800 cumecs.	1:10 AEP Low Inflow	184 cumecs.