



Minimum Requirements for Dams Engineering Advice

Description/Summary/Background:

This document clarifies Melbourne Water's requirements for the qualifications required for consultants to provide design, construction supervision and other miscellaneous advice for Melbourne Water's existing and future dam assets. It has been developed in response to concerns about the fairness of restricting dams-related work to a select number of consultants. The aim is to provide more transparency in the decision-making process, and the reasons for having minimum standards.

A dam, for the purposes of this document, includes any structure that is required to hold water and has a maximum height of 0.5 metres or more above the downstream natural surface level. This includes water supply dams, retarding basins, levees and wastewater lagoons.

Key Points/Issues:

Melbourne Water is an asset owner and manager, and intrinsic in our ability to perform these functions efficiently and effectively is ensuring that we are provided with good Advice. It is our opinion that any additional cost to employ a suitably qualified engineer will reduce both the likelihood and consequences of our assets being unsafe or unfit for purpose.

Next Steps/Proposed Approach:

As a minimum, Melbourne Water requires any engineer providing advice, design or engineering input on our existing or future dam assets to satisfy the ANCOLD definition of a Dams Engineer (ANCOLD, 2003):

A professional engineer who is suitably qualified and recognised by the engineering profession as experienced in the engineering of dams and its various subfields.

Melbourne Water takes this to include an individual who has a broad understanding of all aspects of dam design, construction, operation and maintenance including:
Demonstrated experience in the use and application of ANCOLD Guidelines; and, an appreciation of the sub-fields of dams engineering including:

- Risk assessments;
- Consequence assessments;
- Flood Hydrology;
- Failure mode and likelihood assessments;
- Design and construction of dams, spillways and outlet works; and,
- Dam operations including flood routing, surveillance and instrumentation.

In addition to a general understanding of dams engineering, an individual must have up-to-date knowledge, as well as relevant and recent experience in the specific area for which they are providing advice.

As examples, due to their reputation and standing in the dams community and their organisation's awareness of the risks associated with Dams Engineering, Melbourne Water considers the following organisations as having suitably qualified Dams Engineers:

SMEC
GHD
Jacobs
AECOM

If a third party would like to use a different organisation or individual on a specific project that they are completing for Melbourne Water, they must submit a case that the individual meets the criteria outlined above, which includes referees. The submission will be reviewed and decided upon by a panel headed by Melbourne Waters Principal Dams Engineer.

Note that on a case-by-case basis Melbourne Water also may engage an independent peer reviewer who will assist in reviewing works proposals, designs and risk assessments.

References:

ANCOLD (2003). Guidelines on Dam Safety Management. Australian National Committee on Large Dams Inc. August 2003.