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Mr Greg Watkinson
Director, References & Research
Economic Regulation Authority
PO Box 8469
Perth Business Centre
Perth WA 6849

Issues Paper: Inquiry on Harvey Water Bulk Water Pricing

This submission is in response to the Issues Paper: Inquiry on Harvey Water Bulk Water Pricing of 13 October 2006.

I am a Professional Engineer with a background in the investigation, design, construction, and project management of major civil engineering projects such as dams, tunnels and water distribution systems. This has included various senior roles within Goulburn-Murray Water – a significant dam owner within Victoria. I am currently the manager of engineering consultant GHD's Perth Dams group.

Although the Issues Paper covers a range of matters my interest is limited to those that may influence overall dam safety. I therefore make the following comments in respect to the Issues Paper:

Issue 2)

Dam safety within Australia has historically been managed very well with the advice provided by relevant ANCOLD guidelines. Although dam failures have occurred there has been only one incident in this country that has resulted in loss of life.

The current ANCOLD Guidelines have evolved over many years and have been developed by a broad range of Australian professionals in response to many of the concerns that gave rise to this Issues Paper. The ANCOLD guidelines are therefore an expression of the contemporary values of engineers and other professionals who have a wealth of expertise in these areas and who have consulted widely within the community.

However ANCOLD Guidelines are simply guidelines of good practice and it is open to those responsible for the safety of the community to proscribe alternative approaches to dam safety.

The Issues Paper suggests a possible approach involving the establishment of a benchmark for the level of expenditure that is required to prevent a fatality. This approach appears to be very narrow and ignores a number of fundamental issues associated with contemporary societal risk. Although others have produced more rigorous examinations of societal risk (in particular the Churchill Fellowship on this issue written by Mr Shane McGrath of Goulburn-Murray Water) there are two key elements that make comparing different risks on an economic basis problematic:

- In general society has a bias against rare events with high consequences compared to more common events with lesser consequences. To illustrate compare the attention given to improving and maintaining an impeccable aircraft safety record in Australia to the tolerance of our current road safety record, and
- Australians appear to have a higher tolerance for risk that is self imposed compared to a risk that is imposed upon them by others. For example people often choose to engage in high risk activity (such as smoking cigarettes) knowing that they have a statistically greater risk of reduced lifespan, but would react strongly against the construction of a hazardous waste incinerator adjacent to their homes if an absolute guarantee of zero health impacts cannot be given.

The ANCOLD Guidelines have also developed with consideration of the full consequences of a dam failure. Although the Issues paper focuses exclusively on loss of life the consequences of a dam failure could be expected to be much broader.

Although not specifically addressed in the ANCOLD guidelines there would also almost certainly be a very high political risk associated with the failure of a major dam both for the dam owner and the incumbent government.

Issue 3)

For the reasons outlined above I believe that the ANCOLD Guidelines are a key element in the effective allocation of Government expenditure. However the allocation of expenditure across a broad range of areas for a wide range of services is essentially a political activity and must take into account the resources available and the views of the broader community.

The ANCOLD guidelines have assisted other dam owners around Australia to reconcile their responsibilities for dam safety with their resources.

Issue 4)

Perhaps this issue would be better framed by replacing the words “economically efficient levels of dam safety expenditure” with “optimal asset management arrangements”. It is rare for dam safety expenditure to be considered purely on economic grounds.

The current institutional arrangements have the advantage of a steward with highly developed dam safety and technical skills. Any changed arrangements would need to be mindful of the importance of fostering a team of people with appropriate technical, organisational and political skills to manage a number of hazardous facilities that each have an extremely long asset life and pose a very high risk to the community.

The challenges involved in the effective ongoing management of a large dam are considerable and must not be compromised by unworkable institutional arrangements.

Issue 6)

When considering the extent to which dam safety should be based on measures that are comparable throughout the economy the key question is “Comparable to what?”

There are few facilities in Australia with risks comparable to a large dam, however the existing Lucas Heights nuclear reactor would seem to be the most relevant.

Issue 7)

In a narrow sense the beneficiaries of operating and maintenance expenditure on the South West irrigation dams are those that use the water and the communities that support them. However downstream properties gain from the flood mitigation provided, the dams attract tourist revenue, and provide aesthetic and some environmental value.

In a related matter the hazard rating of a dam is closely associated with the number of people downstream of the dam. However a dam owner generally has little or no influence over the occupation and land use of the area below a large dam, which would generally lead to the hazard rating of a large dam increasing over time. ANCOLD guidelines would then require the dam owner to upgrade the dam even though the basic parameters of the dam would be unchanged.

It has been acknowledged elsewhere in Australia that these issues are beyond the scope of most dam owners and that therefore government has an appropriate role in providing dam safety funding assistance.

I hope that these comments are helpful to your consideration of the much wider issue of bulk water pricing and I would be pleased to provide any further assistance that might be useful to the Economic Regulation Authority.

Yours Faithfully

Steven Fox

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