



Trade &
Investment

NSW Dams Safety Review

Community Consultation Paper

A call for public comment on the NSW dams safety regime



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Pindari Dam photo on cover page: Photo © NSW Department of Primary Industries

Pindari Dam is located on the Severn River 58 kilometres northeast of Inverell NSW Australia. The dam is managed by the NSW State Water Corporation.

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The information contained in this publication is based on knowledge and understanding at the time of writing (August 2013). However, because of advances in knowledge, users are reminded of the need to ensure that information on which they rely is up to date and to check the currency of the information with the appropriate officer of NSW Trade & Investment, or the user's independent advisor.

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Minister's foreword



I am pleased to present the public Consultation Paper for the review of the NSW dam safety regulatory framework.

Dam safety is a critical concern of the NSW Government and the NSW community, and NSW has an impeccable dam safety record that we intend to maintain. However, to ensure that an appropriate level of public safety is achieved and maintained requires careful consideration of the extent to which the current regulatory framework provides an appropriate balance between dam safety risk reduction and the costs of achieving this risk reduction.

The *Dams Safety Act 1978* and associated Dams Safety Committee were established to ensure that prescribed dams in NSW do not pose an unacceptable danger to life and property, or adversely affect public welfare. In 2012, the NSW Commission of Audit, in part reported on the dam safety regime in NSW and observed that in relation to some dams being managed by public authorities, it appears that very small reductions in risk are being achieved seemingly at disproportionate cost.¹

While it is imperative that the safety of dams is maintained at a high and publicly acceptable level, good public stewardship also requires that public expenditure on reducing dam safety risk is not wasteful and leading to excessively high dam costs and excessively high household and industry water charges. The NSW Commission of Audit review was a broad review and could not give this matter detailed attention, so it was determined that a more comprehensive review should be carried out.

The Dams Safety Committee and its enabling legislation have not been reviewed since the gazettal of the legislation in 1978. An independent review of the Act and the Committee is timely to ensure consistency with contemporary regulatory standards, and to better understand the expectations of the NSW public and the approaches taken in other jurisdictions to the safety of dams. The NSW Government is therefore very interested in obtaining your input to this review.

I therefore invite and welcome your comments on this important matter.

Katrina Hodgkinson MP
Minister for Primary Industries

¹ NSW Commission of Audit, 2012, Final Report on Government Expenditure, 4 May 2012, http://www.nsw.gov.au/sites/default/files/uploads/common/CommissionofAudit-FinalReport_RPT_v01.pdf.

1. Introduction

1.1 BACKGROUND

The *Dams Safety Act 1978* arose from a perceived need for government regulation to ensure that dams in NSW did not pose an unacceptable risk to life and property. A number of serious dam failures during the 1970s in other countries had given rise to concern to avoid similar disasters in NSW. In response, the NSW Government acted to ensure that public and private dam owners were subject to “independent expert surveillance” in relation to dam design, construction and operational procedures. The Dams Safety Committee (DSC) was therefore constituted for this purpose.

The DSC is an independent statutory body representing the Crown and is under the direction and control of the Minister for Regional Infrastructure and Services and the Minister for Primary Industries.

The DSC consists of nine members nominated by:

- Snowy Hydro Limited;
- the portfolio Minister under the *State Owned Corporations Act 1989* for electricity generators;
- the Sydney Catchment Authority;
- State Water Corporation;
- the Hunter Water Corporation;
- the Minister administering the *Public Works Act 1912*;
- the Federal Council of the Institution of Engineers Australia (two members); and
- the Minister administering the *Mining Act 1992*.

Many of these member organisations are dam owners/operators. It is also a requirement of the Act that, with the exception of the nominee of the Minister administering the *Mining Act 1992*, all members of the DSC must be experienced in dam engineering.

The DSC is primarily funded by the NSW Government at an annual cost of around \$1.3 million. However, the Committee member agencies and corporations also contribute in-kind support, estimated to be approximately \$150,000 per member per year.

Under the *Dams Safety Act 1978*, the role of the DSC is to ensure the safety of “prescribed” dams, i.e. dams formally identified as potentially posing a significant public safety risk. These functions include requiring dam owners to arrange for:

- proper operation and maintenance of their dams;
- regular dam surveillance;
- emergency planning and security precautions for their dams;
- ongoing assessment of their dam(s) and regular review of their dam's compliance with current DSC requirements; and
- actions to ensure that their dams are maintained in a safe condition.

In addition, the *Mining Act 1992* and the *Local Government Act 1993* create requirements for the DSC to be notified and/or consulted in relation to certain matters and developments.

The regulatory focus of the DSC is primarily on the safety of dam structures and associated infrastructure. While the Committee formally has a role in regulating dam operations, in practice this is limited to the development of guidelines and requiring dam owners to have an Operations and Maintenance Manual for certain categories of dams. Dam operations also subject to matters outside the scope of the DSC, such as principles for the management of dams during floods and spills defined in Water Management Plans established under the *Water Management Act 2000*.

1.2 REASON FOR THE REVIEW

The NSW Commission of Audit was established by the O'Farrell Government to review the current level of productivity and quality of service across the public sector. The Commission examined the dam safety regime and reported that it appeared that very small reductions in risk were being achieved at a cost that was disproportionate to safety cost/benefit trade-offs in other industries. The Commission recommended that:

“...an independent review be conducted of the standards set by the Dams Safety Committee following a thorough risk and cost assessment.”

An earlier inquiry by the Independent Pricing and Regulatory Tribunal (IPART) also raised concerns over whether the level of dam safety expenditure in NSW was in accord with good public management practice. The report on the *Review of the Productivity Performance of State Owned Corporations* released by IPART in July 2010, noted that:

“The efficiency and prudence of proposed capital expenditure is subject to scrutiny through the price determination process but the driver of that expenditure - dam safety standards and the level of safety achieved - is not. Given the high costs of dam safety and related requirements, which are borne by the NSW Government on behalf of the community, it is important to ensure that benefits from increased dam safety and security outweigh the costs of compliance works. This issue may merit further inquiry.”²

In response to these concerns, this review is examining the operation of the *Dams Safety Act 1978* (the Act) and the DSC to ensure that the NSW dam safety regulatory framework is in line with best practice and that dam owners are not being required to reduce dam safety risk beyond the level expected by the community, or at unreasonable cost.

² IPART (2010) *Review of the Productivity Performance of State Owned Corporations Other Industries — Final Report*, Page 32, http://www.ipart.nsw.gov.au/Home/Industries/Other/Reviews/Productivity_Performance/Review_of_the_Productivity_Performance_of_State_-_Owned_Corporations

1.3 TERMS OF REFERENCE

The Terms of Reference for the review are:

- a) Clarify the objectives of the *Dams Safety Act 1978* and the ‘market failures’ being addressed.
- b) Consider alternative means for achieving the objectives of the legislation and identify if and where these objectives can only be achieved by regulatory intervention.
- c) Consider the most effective methods of ensuring public safety from prescribed dams while retaining as much functionality as practical.
- d) Consider the *Risk Management Policy Framework for Dam Safety 2006* and whether amendment of this policy is warranted.
- e) Assess and balance the costs and benefits to the community and Government, including risk implications, of proposed retained or new interventions.
- f) Make recommendations to the Minister for Primary Industries on possible amendments to the Act and Dams Safety Committee constitution and role.
- g) Consider how advice from the Dams Safety Committee can be better integrated with the development assessment process, particularly for state significant development.

In undertaking this analysis, the review is required to:

- a) Consider the role and performance of equivalent statutory arrangements in other jurisdictions.
- b) Consider the safety cost/benefit trade-offs that are made in other industries.
- c) Report on the potential impact of extractive (mining) activities on dam safety.
- d) Consult with the Dams Safety Committee, dam managers (including State Water Corporation, Sydney Catchment Authority, Sydney Water and Hunter Water) and other relevant water managers in NSW.
- e) Consult with the Department of Finance and Services, the State Emergency Service, WorkCover, NSW Trade & Investment (Resources and Energy), NSW Department of Primary Industries (Fisheries) and any other NSW Government agency relevant to dam safety.

1.3 REVIEW PROCESS

A cross-agency Steering Committee was formed to provide whole-of-government strategic advice and direction throughout the review. The Steering Committee comprises senior representatives of NSW Trade and Investment (Chair), NSW Treasury, the Department of Premier and Cabinet, Finance and Services, the NSW State Emergency Service, the Department of Planning and Infrastructure and the NSW Office of Water.

Stage One

The consultants KPMG Australia were engaged to conduct an independent review of the Act and the DSC. KPMG were also assisted by the firm GHD Australia on dam engineering and risk expertise.

To inform their review, KPMG held targeted stakeholder workshops with the DSC, with large dam owners and with relevant NSW Government agencies. An on-line survey was also distributed to all prescribed dam owners in NSW, Government agencies and the DSC.

The KPMG report has been publically released with this Consultation Paper to enable informed community input on the dam safety regulatory framework in NSW.

Stage Two

Stage Two of the review is this community consultation phase. This Consultation Paper was developed to provide open opportunity for the community to have a say about potential improvements to the NSW dam safety regulatory framework.

Stage Three

The third and final stage of the review will involve implementation by the NSW Government of their response to the Stage One independent review report and community views expressed in Stage Two.

2. The Stage One (KPMG) Review of Dam Safety

Australian jurisdictions vary markedly in the nature of their dam safety regulatory frameworks. They vary from the relatively prescriptive approach in NSW, to there being no specific regulation in Western Australia.

KPMG identified little difference to date in the public safety outcomes being achieved under these alternative approaches, but reported significant stakeholder concern and evidence from at least one overseas jurisdiction, that in the absence of government regulation, there may be under-investment in public safety measures, particularly for smaller dams.

On the other hand, there was evidence that owners of large dams may be less inclined to under-invest in dam safety due to the more substantial legal liability they face in the event of dam failure.

KPMG assessed the adequacy of the NSW dam safety regulatory framework by applying better regulation principles and identified opportunities to enhance the current NSW framework.

It is important to appreciate, however, that KPMG did not find or suggest that the current regulatory framework in NSW has failed to ensure that dams in NSW are safe. Rather, they found evidence that the current approach has resulted in over-investment in engineering measures to achieve improvements in public safety by large dam owners in NSW. KPMG suggest that a regulatory approach similar to that used in Victoria would be more appropriate, where the regulator has less of a “hands-on” approach to determining compliance strategies for dam owners, and dam owners are more clearly responsible for ensuring and demonstrating compliance with

standards. This could reduce compliance costs and would bring greater clarity to the respective roles and responsibilities of dam owners and government.

Features of the current regulatory framework identified by KPMG as contributing to less than optimal NSW outcomes are:

- (i) a lack of clear objectives in the Act and hence a primary focus on engineering solutions to achieve public safety;
- (ii) a lack of transparency for dam owners in regard to determinations by the DSC on what dam owners are required to do in terms of upgrading dam infrastructure to reduce the risk of dam failure to "as low as reasonably practicable"; and
- (iii) only a limited focus on applying benefit cost analysis to identify the most efficient dam safety risk reduction options.

KPMG also observed that it is not consistent with best practice for the DSC, the dam safety regulator, to be comprised (in part) of representatives of the same dam owners being regulated, due to the real or perceived conflicts of interest this creates.

KPMG also considered that an increased focus on considering the full range of alternative risk reduction strategies, beyond engineering solutions and complemented by rigorous benefit cost analysis of those strategies, would pave the way for significant improvements in the efficiency of public safety investment by NSW dam owners

Key recommendations made by KPMG are:

- 1) the objectives of the Act should be defined to be to achieve socially acceptable levels of public safety risk in relation to dams and stored waters in NSW in the most efficient manner possible (i.e. consideration should be given to the broadest range of risk reduction strategies, thereby avoiding a primary focus on dam-wall engineering solutions); and
- 2) that the dam safety regulator:
 - a) be independent of the businesses it regulates (in contrast to the current arrangement);
 - b) be comprised of representatives of relevant government agencies as well as independent skill based members with expertise in areas such as engineering, public safety risk management and benefit cost analysis; and
 - c) be fully funded by those who create the need for dam safety regulation, which is all owners of prescribed dams.

The second point above was to provide for greater awareness of and integration across government activities that impinge on dam safety, as well as the capacity to consider the broadest range of possible approaches to dam safety risk reduction, and so better position the regulator to efficiently achieve the Act objective.

3. Reform Options for the NSW Government

The Stage One review has therefore added further weight to concerns previously raised by the NSW Commission of Audit and IPART, that in some cases only very small gains in public safety are being achieved relative to public expenditure on dam safety.

Together, these reports provide a strong case to consider reforms to the current dam safety regulatory framework in NSW to ensure it is consistent with regulatory best practice and delivers an appropriate balance between the safety outcomes achieved and the cost of achieving them.

3.1 WHAT SHOULD BE THE OBJECTIVE OF THE ACT?

KPMG identified it to be fundamentally important for there to be clear objectives in relation to the outcomes that are intended to be achieved on behalf of the citizens of NSW. Clear Act objectives would provide critical guidance to both the regulator and dam owners on what they should be aiming to achieve.

The Stage One review revealed that the current Act does not have clearly stated, outcome based objectives. Therefore, consistent with KPMG's recommendations, the following Act objective is proposed:

To achieve levels of public safety risk associated with dams and stored waters in NSW that are acceptable to the citizens of NSW and are achieved in the most efficient manner possible.

An issue on which community views would be appreciated is whether this objective should explicitly include not only acceptable levels of public safety risk, but also acceptable levels of downstream risk to economic and environmental assets.

3.2 THE ROLE OF THE DAM SAFETY REGULATOR

To achieve this Act objective, it will be important that the respective roles and responsibilities of the regulator and dam owners are unambiguously clear.

This will involve ensuring that dam owners clearly understand that they are responsible for complying with dam safety standards. This will in turn provide clear incentives for dam owners to invest in dam safety to an extent that aligns with community expectations and preferences.

To reinforce these 'market signals' and guide dam owners on the standards they are expected to meet, it has been proposed by KPMG that the regulator should (i) establish relevant dam safety standards, (ii) ensure that information on standards is readily available to current and prospective dam owners, and (iii) monitor and report on compliance by dam owners with the relevant standards to dam owners and to the NSW Government. This would be similar in part to the current role and approach of the DSC and hence retain positive features of the current regulatory framework.

The regulator would also have powers to enforce compliance with standards, but importantly would have less of a 'hands-on' prescriptive approach in determining the particular dam safety investment strategies that dam owners undertake to achieve regulatory compliance.

Public safety risks arising from dams depend on a number of factors other than the structural integrity of the dam, such as dam operations, changes in downstream development and emergency management procedures. Providing dam owners with the flexibility to explore a broad array of options to deliver the required level of public safety and to apply benefit cost analysis to identify the most efficient dam safety risk reduction strategy would allow and promote the ongoing development of innovative and efficient solutions. This approach would therefore minimise compliance costs, which can be passed on to households and industry by way of lower water charges and reduced government expenditure.

3.3 THE FORM OF THE REGULATOR

As previously outlined, KPMG recommended that the regulator be independent of the businesses it regulates and be composed of members from relevant NSW Government agencies and members with special expertise in areas such as engineering, risk management and benefit cost analysis.

It was further recommended that the dam safety regulator be fully funded by dam owners.

An option suggested by KPMG is that an independent regulatory body similar to the DSC be maintained, but that its composition and funding be changed. Again, this strategy would deliver significant best practice improvements, while retaining desirable features of the current regulatory framework. An alternative would be for the regulatory functions to be assigned to a government agency, with support from an advisory committee of independent experts and other stakeholder agencies. Community views on this issue would be appreciated.

A further issue identified in the Stage One review is the need to have a very proactive dam safety regulator that achieves early engagement, of itself and by dam owners, in the planning approval process for mines and downstream developments that may potentially affect the safety or upgrade requirements of dams. Early consideration of the cost of possible dam safety upgrades in development approvals may assist in achieving efficient development outcomes.

While the proposal for direct participation of relevant government agencies on the dam safety regulator may effectively address this issue, views are sought on whether additional measures may be appropriate.

4. Feedback Process

The NSW Government invites your input to the review of the *Dams Safety Act 1978* and the Dams Safety Committee.

You do not need to respond to each issue presented in this paper and there may be issues that you wish to raise that are not covered in the paper.

Submissions may be lodged electronically, by post or by email. Please provide your submission by 5 November 2013 to one of the addresses below:

Email to: damsafety.review@industry.nsw.gov.au

Post to: Dams Safety Review
NSW Trade and Investment
GPO Box 5477
Sydney NSW 2001

Important note: public release of submissions

All submissions will be made publically available through the NSW Trade and Investment website. If you do not want your personal details or any part of your submission published, please indicate this clearly in your submission together with your reasons. Even if you state that you do not wish certain information to be published, there may be circumstances in which the Government is required by law to release that information, for example, to meet obligations under the *Government Information (Public Access) Act 2009*.