POLICY
Flood Operation of Goulburn-Murray Water's Headworks Structures

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Policy decision

1. Purpose of Policy

The policy provides direction for the flood operation of Headworks structures by Goulburn-Murray Water (G-MW). The document details the Authority's policy on surcharging of storages.

1.1 Objectives of Policy

The objective of the policy is to specify G-MW's operational practice in relation to flood routing and surcharging of Headworks storages.

1.2 Background

1.2.1 Definitions

Full Supply Level (FSL): The maximum normal operating level of a storage, as defined on Goulburn-Murray Water's General Arrangement drawing for that storage.

Surcharging: A condition where water level in a storage is above the designed or agreed Full Supply Level for that structure.

Freeboard: The vertical distance between a stated water level and the top of the non-overflow section of a dam. The part of the freeboard that relates to a flood surcharge is sometimes referred to as the "wet freeboard", and that above the flood surcharge, due to wind and other effects, is sometimes referred to as the "dry freeboard".

1.2.2 General

Goulburn-Murray Water's Headworks Group operates 17 large dams, including 4 on behalf of the Murray-Darling Basin Commission. Each of these structures (dams or weirs) has been designed with an FSL and Freeboard provision, with the exception of Mildura Weir, which has no design freeboard.

The spillway structure and freeboard allowances are critical elements in the design of any dam, and are intended to allow safe passage of design flood

flows from the dam, without the storage water rising above the crest of the dam, which has the potential to cause failure of the dam.

Most G-MW dams have unregulated spillway crests - that is once the water level in the storage exceeds the level of the spillway crest, the storage starts to spill and continues to do so until the water level returns to the spillway crest level.

Some dams have spillways from which the flow is regulated by the use of gates. G-MW's gated spillways are on Lake Buffalo, Lake Eildon, Goulburn Weir, Cairn Curran Reservoir, and Laanecoorie Weir. MDBC weir structures managed by G-MW at Yarrawonga, Torrumbarry and Mildura also include gated or regulated spillways. For these types of storages, FSL is maintained by adjusting the release through the outlet works and/or gates in accordance with operating procedures.

The primary objective of flood operation is to ensure that FSL is not exceeded for longer than necessary, and that peak outflow from the reservoir does not exceed peak inflow. It is recognised that minor unavoidable surcharging may occur during flood routing due to operational constraints.

The operation of gated spillways and outlet works allows flood discharges to be passed at a rate determined by the dam owner. It is possible to control spillway gate and outlet works operation to change the characteristics of a flood release from a reservoir, by manipulating the duration and magnitude of releases.

It is possible to operate gated spillways and outlet works to surcharge storages for reasons other than for flood control, such as to increase water harvesting. The dam safety implications, flood mitigation and water harvesting objectives need to be reconciled through operational procedures. G-MW will develop these procedures for all storages, which will recognise any applicable constraints and limitations in flood routing procedures. The Manager Headworks shall approve all flood operation procedures.

1.3 Amendments to Previous Policy

Nil

2. Policy Statement

"The primary purpose of flood operation is to ensure the safety of Goulburn-Murray Water's Headworks structures. Surcharging of storages is not permitted, except in accordance with documented operational procedures for the structure approved by the Manager Headworks."