



**DAM SAFETY
MANAGEMENT
PROGRAM**

Controlled Copy 1

Revision 0
May 2010

REVISION STATUS

Revision No.	Date	Amendment Details
0	May 2010	

DISTRIBUTION LIST

Controlled Copy Number	Agency	Responsible Person	Location
1	Seqwater	Chief Executive Officer	Brisbane
2	Seqwater	Executive General Manager, Water Delivery	Brisbane
3	Seqwater	Dam Safety and Source Operations Manager	Brisbane
4	Seqwater	Principal Engineer Dam Safety	Karalee
5	Seqwater	Operations Coordinator, North	Landers Shute
6	Seqwater	Operations Coordinator, Central	Wivenhoe Dam
7	Seqwater	Operations Coordinator, South	Karalee
8	DERM	Dam Safety Regulator	Brisbane

DEFINITIONS

“**Act**” means the *Water Supply (Safety and Reliability) Act 2008*;

“**AHD**” means Australian Height Datum;

“**ANCOLD**” means Australian National Committee on Large Dams;

“**Chairperson**” means the Chairperson of Seqwater;

“**Controlled Document**” means a document subject to managerial control over its contents, distribution and storage. It may have legal and contractual implications;

“**Dams**” means dams to which this document applies, that is all referable dams owned by Seqwater;

“**Dam Operator**” means a person who has been trained and who is competent to operate a Dam;

“**Dam Supervisor**” means the senior on-site officer at a Dam;

“**Data Book**” means Data Book for a Dam;

“**DERM**” means the Queensland Department of Environment and Resource Management;

“**EAP**” means Emergency Action Plan for a Dam;

“**EL**” means elevation in metres Australian Height Datum;

“**Flood Manuals**” means Manual of Operational Procedures for Flood Mitigation for a Dam;

“**FSL**” or “**Full Supply Level**” means the level of the water surface when the reservoir is at maximum operating level, excluding periods of flood discharge;

“Gauge” when referred to in (m) means river level referenced to AHD, and when referred to in (m³/s) means flow rate in cubic metres per second;

“O&M Manual” means Operations and Maintenance Manual for a Dam;

“Referable Dam” means a dam that requires a failure impact assessment under the Act and the assessment states that the population at risk from a failure of the dam is two persons or greater;

“Seqwater” means the Queensland Bulk Water Supply Authority trading as Seqwater.

“SOP” means Standing Operating Procedures for a Dam;

CONTENTS

1	Introduction	6
2	Seqwater’s Dam Safety Management Program.....	7
2.1	Seqwater Dam Safety Policy Statement.....	7
2.2	Objective of Seqwater’s Dam Safety Management Program.....	7
2.3	Description of Seqwater’s Dam Safety Management Program	7
2.4	Seqwater’s Dam Safety Management Structure.....	8
3	Dam Safety Personnel and Training.....	11
3.1	Required Personnel Proficiencies.....	11
3.2	Staff Development and Training.....	12
4	Dam Safety Documentation	14
5	Dam Safety Inspection and Surveillance	16
5.1	Annual and Comprehensive Inspection.....	16
5.2	Dam Safety Review.....	16
5.3	Surveillance Policy.....	16
5.4	Dam Safety Routine Inspection.....	17
5.5	Dam Safety Instrumentation Data Gathering and Analysis	17
6	Dam Operations and Maintenance	19
7	Dam Flood Operations	20
7.1	Gated Spillway Dams.....	20
7.2	Uncontrolled Spillway Dams	21

APPENDICES

<i>Details of Referable Dams owned by Seqwater.....</i>	<i>A</i>
<i>Seqwater Dams – Dam Safety Inspection and Dam Safety Review Program.....</i>	<i>B</i>
<i>Seqwater Dams – Documentation Review Program.....</i>	<i>C</i>
<i>Seqwater Dams – Routine Inspection Program.....</i>	<i>D</i>

1 INTRODUCTION

Seqwater owns and operates 25 referable dams in South East Queensland. These dams fulfil an important role within the community providing water for urban, industrial and irrigation use as well as providing for hydroelectric power generation, flood mitigation and community recreation.

The failure of any one of Seqwater's dams can have significant consequences ranging from loss of life or injury, to economic loss and damage to property and the environment, to loss of critical water supplies. Seqwater has an excellent dam safety record and the purpose of this document is to describe Seqwater's Dam Safety Management Program. This program has been developed to ensure the safety of Seqwater's dams and to preserve Seqwater's excellent dam safety record.

In Queensland, under both the *Water Supply Act 2008* and common law, responsibility for the safety of a dam rests with the dam owner. Dam owners are liable for a loss or damage caused by the failure of a dam or the escape of water from a dam. Consequently, dam owners need to be committed to dam safety and have an effective dam safety management program. Seqwater is committed to dam safety management and its dam safety management program is intended to minimise the risk of dam failure.

Potential hazards that impact on the safety of Seqwater's dams and that are managed by Seqwater's Dam Safety Management Program include:

- Flood.
- Earthquake.
- Potential design or construction flaws currently unknown.
- Deterioration of dam infrastructure over time.
- Interference with dam infrastructure by an external influence.

These potential hazards are managed by robust dam safety systems for staff training, dam safety documentation, dam surveillance and inspection, dam safety review and dam operations and maintenance.

2 SEQWATER'S DAM SAFETY MANAGEMENT PROGRAM

2.1 Seqwater Dam Safety Policy Statement

Seqwater is committed to ensuring the continued safe operation of its dams, by managing its dams in accordance with the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management.

2.2 Objective of Seqwater's Dam Safety Management Program

The primary objective of Seqwater's Dam Safety Management Program is to ensure that each of its dams is operated and maintained in a manner that is both safe and minimises the risks associated with a dam failure.

Seqwater's commitment to dam safety is realised through the provision of adequate funding and resources to carry out the programs described in this document which ensure dam safety.

2.3 Description of Seqwater's Dam Safety Management Program

Seqwater's Dam Safety Management Program contains the following requirements:

- Seqwater manages its dams in accordance with the Dam Safety Conditions issued by DERM under the Act.
- The responsibilities for dam safety management within Seqwater are clearly defined within the Standing Operating Procedures for the dams.
- All Seqwater personnel with responsibilities for dam safety management are suitably qualified and experienced personnel and are provided with appropriate training.
- Seqwater undertakes operation, maintenance and surveillance activities at its dams in accordance with accepted best practice for dam safety management.

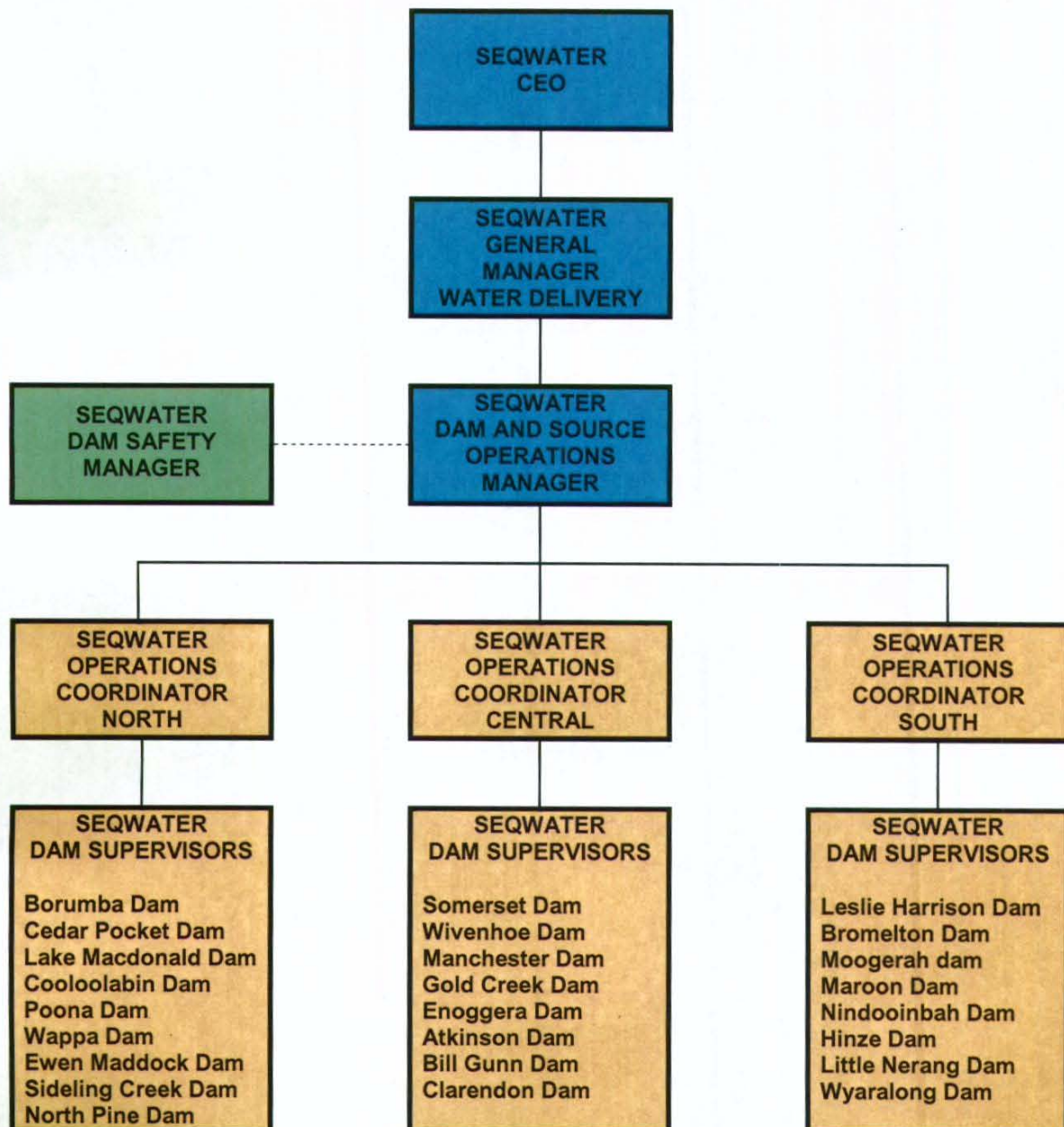
2.4 Seqwater's Dam Safety Management Structure

Seqwater contains a dedicated Dam Safety Team that is responsible for the overall management of Seqwater's Dam Safety Management Program. The Dam Safety Team is located within the Water Delivery Group of Seqwater, one of four Groups under the organisations Chief Executive Officer.

Day to day operations and maintenance of the dams is the responsibility of Operations Coordinators also located within the Water Delivery Business Unit of Seqwater. There are three Operations Coordinators, each having a defined geographic region of responsibility. These are termed the north, central and south areas as shown in the following diagram.



There is a distinct management separation between the Dam Safety Team and the Operations Coordinators. This ensures an independence of accountability in managing the program. This organisational structure is summarised in the following diagram.



Details of the responsibilities of each of the positions shown in the above diagram are contained in the Standing Operating Procedures for the dams.

2.5 Audit by the Dam Safety Regulator

The Dam Safety Regulator audits Seqwater's dams for compliance with Dam Safety Conditions on a regular basis. Seqwater's policy in relation to these audits is to provide full cooperation to the auditor. This includes the following:

- All information requested by the auditor is made available by Seqwater in both hardcopy and electronic format as required.
- Subject to Workplace Health and Safety constraints, Seqwater will make available for inspection any area or piece of equipment on a dam site that is required to be inspected by the auditor.
- Subject to Workplace Health and Safety constraints, Seqwater will demonstrate the operation of any piece of dam infrastructure equipment if requested by the auditor.

Seqwater views the audit process as an opportunity for improving the provision of its Dam Safety Program and welcomes any audits that may be undertaken.

3 DAM SAFETY PERSONNEL AND TRAINING

3.1 Required Personnel Proficiencies

The following table summarises the proficiencies that Seqwater requires for personnel involved in the Dam Safety Management. As shown in the table, as well as maintaining considerable “in-house” expertise, Seqwater also relies on “expert” advice from a range of consultants on a range of matters related to the safe management of the dams, and ways to improve management practices and/or the structures themselves

GROUP	PRINCIPAL AREAS OF DAM SAFETY PROFICIENCY
Executive and Senior Management Team	<ul style="list-style-type: none"> • Awareness of environmental, regulatory and financial responsibilities relating to dam safety. • Understanding of the significance of hazard and risk.
Dam Safety Manager	<ul style="list-style-type: none"> • Detailed understanding of dam safety regulatory responsibilities. • Detailed understanding of dam operation and maintenance principles and procedures. • Detailed understanding of dam surveillance principles. • Detailed understanding of emergency action planning and response associated with large dam failures. • Understanding of dam design principles including structural, geotechnical, hydrologic and hydraulic. • Understanding of dam construction techniques.
Operations Coordinators	<ul style="list-style-type: none"> • Understanding of dam safety regulatory responsibilities. • Understanding of dam operation and maintenance principles and procedures. • Understanding of dam surveillance principles. • Understanding of emergency action planning and response associated with large dam failures. • Understanding of the contents of the following documentation in relation to the dams for which they are responsible: <ul style="list-style-type: none"> ○ Emergency Action Plan ○ Standing Operating Procedures ○ Operation and Maintenance Manual ○ Flood Operations Procedures (if applicable)
Dam Operators	<ul style="list-style-type: none"> • Understanding of the contents of the following documentation in relation to the dams for which they are responsible: <ul style="list-style-type: none"> ○ Emergency Action Plan ○ Standing Operating Procedures ○ Operation and Maintenance Manual ○ Flood Operations Procedures (if applicable)
Consultants	<ul style="list-style-type: none"> • Provide expert advice as required on: <ul style="list-style-type: none"> ○ Design intent and principles including structural, geotechnical, hydrologic and hydraulic. ○ Dam Safety surveillance. ○ Dam Operation and Maintenance.

3.2 Staff Development and Training

Development of Dam Safety personnel within Seqwater is gained through experience and formal education. This includes experience with the current management of the dams and relevant “formal” seminars, particularly those provided by ANCOLD and the Queensland Dam Safety Regulator.

Seqwater’s Dam Safety Manager is responsible for establishing and providing a dam safety training program. This includes presentations to the Seqwater Board as well as Seqwater’s Executive and Senior Management Teams. The program also involves training of dam operations personnel to ensure each of the following aspects of management of the dams is properly understood:

- Familiarisation with the dam, the equipment at the dam and the location of controls, tools and keys required to properly operate the dam;
- Instruction on the Emergency Action Plan;
- Instruction on the Standard Operating Procedures;
- Instruction on the Operation and Maintenance Manuals;
- Instruction on the Flood Operations Procedures.
- Instruction on routine dam surveillance including proper reading of the dam safety instrumentation.

Seqwater’s Dam Safety Manager is responsible for determining the need for operator training, however training of all operations staff with responsibilities at Seqwater’s gated spillway dams is to take place prior to 30 September each year. No staff members are permitted to take responsibility for flood operations at a dam during a flood event if this training has not been satisfactorily completed.

Seqwater’s Dam Safety Manager is responsible for maintaining suitable records of the following aspects of all dam safety training:

- Details of the content of all dam safety training provided to Seqwater personnel;

- The names of all Seqwater personnel who have satisfactorily completed dam safety training provided by Seqwater;

Seqwater's approach to dam safety training is to develop an ongoing awareness of the need for vigilance, surveillance and maintenance in providing a successful dam safety management program. Seqwater believes that safe management of dams is a frame of mind that involves all the people concerned – from Seqwater's Chief Executive Officer to the Dam Operators responsible for day-to-day dam operations and maintenance at a dam site.

4 DAM SAFETY DOCUMENTATION

Seqwater requires the following levels of documentation to be available for each of its dams:

- Investigation, Design, and Construction Documentation including the Data Book and where available, the Design Report.
- As-Constructed Details including plans and drawings.
- Emergency Action Plan.
- Standing Operating Procedures.
- Operations and Maintenance Manuals.
- Dam Inspection and Evaluation Reports.
- Dam Safety Reviews.
- Manual of Flood Mitigation (required for all gated spillway dams).
- Flood Operations Procedures.

Seqwater's Dam Safety Manager is responsible for maintaining this documentation in accordance with the requirements of the Dam Safety Conditions issued by DERM, the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management. Seqwater securely stores these documents both in hard copy and electronic format at Karalee. Controlled hard copies of the following documents are stored on site:

- Emergency Action Plan.
- Standing Operating Procedures.
- Operations and Maintenance Manuals.
- Manual of Flood Mitigation (at gated spillway dams only).
- Flood Operations Procedures (at gated spillway dams only).

Controlled hard copies of the following documents are provided to the Dam Safety Regulator:

- Emergency Action Plan.
- Standing Operating Procedures.

- Manual of Flood Mitigation (at gated spillway dams only).
- Flood Operations Procedures (at gated spillway dams only).

Controlled hard copies of the Emergency Action Plan are provided to all Local Authorities with potential emergency response responsibilities associated with the failure of a dam as well as to Emergency Management Queensland.

Seqwater reviews its dam safety documentation on a formal basis annually, in accordance with issued Dam Safety Conditions. The program for this review is contained in Appendix C.

5 DAM SAFETY INSPECTION AND SURVEILLANCE

5.1 Annual and Comprehensive Inspection

Seqwater schedules and completes Annual and Comprehensive Inspections of its referable dams in accordance with dam safety conditions issued by DERM for the dams. The inspections are conducted in accordance with the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management. The program for Annual and Comprehensive Inspection of Seqwater's referable dams is contained in Appendix B.

Copies of the inspection reports are provided to DERM once the inspections are completed, in accordance with the dam safety conditions issued by DERM for the dams.

5.2 Dam Safety Review

Seqwater schedules and completes Dam safety Reviews for its referable dams in accordance with dam safety conditions issued by DERM for the dams. The reviews are conducted in accordance with the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management. The program for Dam Safety Review associated with Seqwater's referable dams is contained in Appendix B.

Copies of the reviews are provided to DERM once the reviews are completed, in accordance with the dam safety conditions issued by DERM for the dams.

5.3 Surveillance Policy

Seqwater undertakes dam surveillance in accordance with the recommendations contained in the ANCOLD Guidelines for the Management of Large Dams. This is considered best practice for the management of large dams in Australia. This relates to both routine visual inspection of the dams and also the gathering and analysis of data from dam safety instrumentation installed at the dams.

5.4 Dam Safety Routine Inspection

Routine visual inspection is undertaken at Seqwater dams to identify and report on dam safety deficiencies by visual observation. These inspections are undertaken by the staff responsible for day to day operations at the dams as part of their duties at the dam. Frequency of inspection is dependant on dam hazard category and is undertaken in accordance with ANCOLD guidelines as shown in the following table.

HAZARD CATEGORY	INSPECTION FREQUENCY
Extreme	Daily
High	Daily to Tri Weekly
Significant	Twice Weekly to Weekly

Seqwater's program for the routine inspection of its dams is shown in Appendix D. This information is also contained in the individual Standing Operating Procedures for each of the dams.

All routine inspection reports are completed in written hardcopy and sent electronically to Seqwater's Dam Safety Manager. Seqwater's Dam Safety Manager saves the individual reports on the Dam Safety Server and this Server is then backed-up on a daily basis. Any anomalies reported in the inspection reports are investigated by the Dam Safety Manager.

5.5 Dam Safety Instrumentation Data Gathering and Analysis

Dam Safety Instrumentation is used to assess the structural performance of a dam. This instrumentation monitors a range of dam safety parameters that vary from storage to storage but can include rainfall, storage level, seepage, pore pressure, surface movement, internal movement and post tensioning. Frequency of data gathering is dependant on dam hazard category and is undertaken in accordance with ANCOLD guidelines as shown in the following table.

PARAMETER	HAZARD CATEGORY		
	SIGNIFICANT	HIGH	EXTREME
Rainfall	Weekly	Daily	Daily
Storage Level	Weekly	Daily	Daily
Seepage	Weekly	Tri Weekly	Daily
Pore Pressure	3 Monthly	Monthly	Monthly
Surface Movement	-	2 Yearly	Yearly
Internal Movement	-	Monthly	Monthly
Post Tensioning	-	5 Yearly	5 Yearly

Specific information for instrumentation data gathering is contained in the individual Standing Operating Procedures for each of the dams.

All gathered instrumentation data is provided electronically to Seqwater's Dam Safety Manager. Seqwater's Dam Safety Manager saves this data on the Dam Safety Server and this Server is then backed-up on a daily basis. The data is then graphed and analysed by the Dam Safety Manager and any anomalies are further investigated.

6 DAM OPERATIONS AND MAINTENANCE

Seqwater operates its dams in accordance with the Standing Operating Procedures developed for each dam; and Seqwater maintains its dams in accordance with the Operation and Maintenance Manuals developed for each dam. These procedures and manuals have generally been developed in accordance with the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management and contain accepted best practice principles for dam safety management.

Renewals and refurbishment programs for the dams are generated from the Annual and Comprehensive Inspection Reports and the Dam Safety Reviews. There is also an opportunity for renewal and refurbishment projects considered necessary for dam safety reasons to be added to the program through the annual budget review process by Seqwater's Dam Safety Manager.

Seqwater makes annual funding allocations available for all renewal and refurbishment work required at the dams, to maintain the dams at a safety standard that is consistent with the recommendations of the Queensland Dam Safety Management Guidelines and the ANCOLD Guidelines on Dam Safety Management.

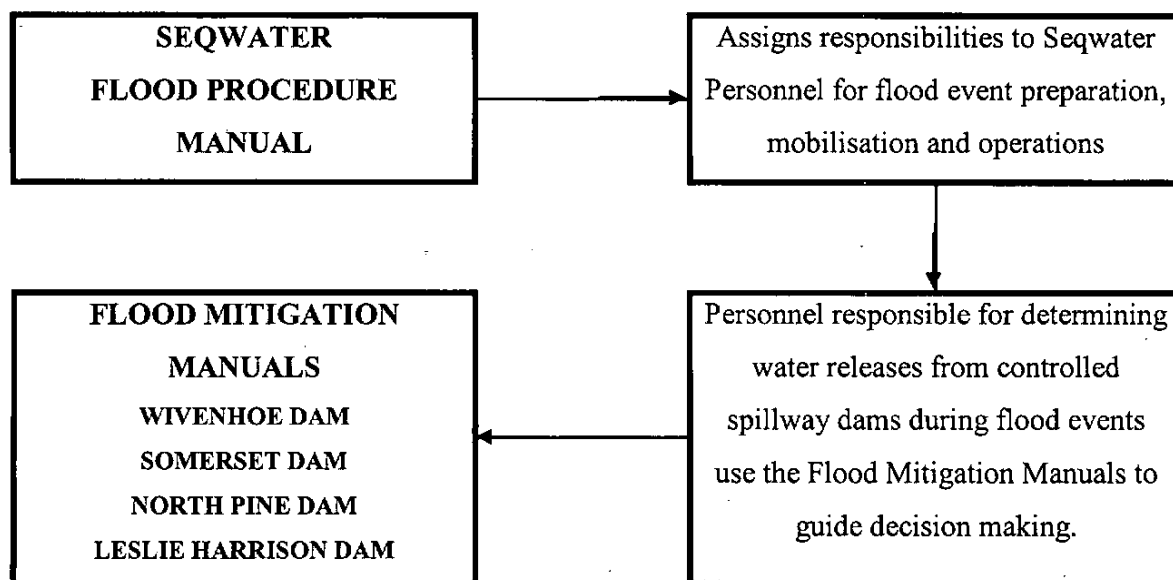
7 DAM FLOOD OPERATIONS

7.1 Gated Spillway Dams

Given their potential significant impact on downstream populations, it is imperative that Seqwater's four gated spillway dams are operated during flood events in accordance with clearly defined procedures to minimise impacts to life and property. Seqwater has developed and maintains a detailed manual of procedures that describes the responsibilities of Seqwater personnel for flood event preparation, mobilisation and operation, in relation to its gated spillway dams.

For Wivenhoe, Somerset and North Pine Dams, the procedures refer to Flood Mitigation Manuals that have been prepared and gazetted in accordance with the Water Supply Act 2008. These Manuals contain operating principles under which decisions relating to the release of water from these dams during flood events must be made. A Flood Mitigation Manual has also been prepared for Leslie Harrison Dam and although this Manual is yet to be gazetted under the Act, it is still used as the basis for decision making in relation to the release of water during flood events.

The relationship between this Manual and the Flood Mitigation Manuals for Wivenhoe, Somerset, North Pine and Leslie Harrison Dams is outlined in the diagram below. The



The Seqwater Executive Management Team has endorsed an Expert Panel approach involving major stakeholders, to ensure the Flood Mitigation Manuals are kept current. This provides the necessary assurance that any updates or changes to the Manuals will be suitable for use in supporting critical decision making during major flood events. The Expert Panel contains the following minimum membership:

- Seqwater (Dam Safety Manager)
- Seqwater (Principal Hydrologist)
- DERM (Dam Safety Regulator)
- DERM (Principal Hydrologist)
- Bureau of Meteorology (Principal Hydrologist Flood Warning)
- Brisbane City Council (Principal Hydrologist)
- SunWater (Principal Hydrologist)
- Independent Expert/s (as required)

Meetings of the Expert Panel are convened by Seqwater's Dam Safety Manager as required. This would occur following major flood events and if any manual of system changes are proposed.

7.2 Uncontrolled Spillway Dams

Seqwater owns twenty uncontrolled spillway dams. During flood events, these dams fill and overflow from a spillway, with Seqwater having no facility to regulate or change these outflows. Uncontrolled Spillway dams do not have associated Flood Mitigation Manuals as it is not possible to in any way influence flood releases from these dams during flood events. Seqwater's primary responsibility during such events is to monitor the safety of the dam and provide dam outflow information to the relevant emergency agencies as required. Such agencies will generally be the Bureau of Meteorology and the Local Authority responsible for the area impacted by the dam outflow.

Seqwater's twenty uncontrolled spillway dams generally contain earth and rockfill structures that cannot withstand overtopping without damage or risk of failure. The exceptions to this

are Little Nerang Dam and Moogerah Dam that can withstand some limited overtopping without risk. The structural safety of the dams is paramount as failure of a dam could have catastrophic consequences due to the magnitude of the flood damage which would be caused downstream. Seqwater ensures that its dam spillways are kept clear and well maintained and ready for flood outflows at all times and that a Dam Supervisor is always available monitor flood releases as required.

Seqwater has developed and maintains procedures that describe the responsibilities of Seqwater personnel for flood event preparation, mobilisation and operation, in relation to its uncontrolled spillway dams.

APPENDIX A

DETAILS OF REFERABLE DAMS OWNED BY SEQWATER

DAM	FULL SUPPLY		HAZARD CATEGORY
	Level m AHD	Capacity ML	
Atkinson	65.72	30,488	High C
Baroon Pocket	217.00	61,000	High A
Bill Gunn	110.00	6,947	High A
Borumba	135.01	45,952	High A
Bromelton	44.50	8,210	High C
Cedar Pocket	100.90	730	High C
Clarendon	96.00	24,276	High A
Cooloolabin	295.91	13,800	High A
Enoggera	74.37	4,567	Extreme
Ewen Maddock	25.30	16,587	Extreme
Gold Creek	92.75	801	High A
Hinze	82.20	161,073	Extreme
Lake Macdonald	95.33	8,018	High A
Lake Manchester	51.90	26,217	Extreme
Leslie Harrison	18.32	24,868	Extreme
Little Nerang	168.02	6,705	High C
Maroon	207.14	44,319	High A
Moogerah	154.91	83,765	High A
Nindooinbah	122.80	322	High C
North Pine	39.60	214,302	Extreme
Poona	152.70	655	High C
Sideling Creek	20.42	14,370	Extreme
Somerset	99.00	379,849	Extreme
Wappa	44.81	4,694	High A
Wivenhoe	67.00	1,165,238	Extreme

APPENDIX B

SEQWATER DAMS – DAM SAFETY INSPECTION DAM SAFETY REVIEW PROGRAM

DAM	ANNUAL PERIODIC		FIVE YEAR COMPREHENSIVE		TWENTY YEAR REVIEW	
	Review Due	Notification Due	Review Due	Notification Due	Review Due	Notification Due
Atkinson	<i>Not Required</i>		1 June 2014	1 September 2014	1 June 2019	1 September 2019
Baroon Pocket	1 July	31 July	1 July 2012	1 October 2012	1 July 2027	1 October 2027
Bill Gunn	1 June	30 June	1 June 2012	1 September 2012	1 June 2022	1 September 2022
Borumba	1 August	31 August	1 August 2010	1 November 2010	1 August 2020	1 November 2020
Bromelton	<i>Not Required</i>		2013	2013	2013	2013
Cedar Pocket	<i>Not Required</i>		1 September 2011	1 December 2011	1 September 2021	1 December 2021
Clarendon	1 June	30 June	1 June 2010	1 September 2010	1 June 2020	1 September 2020
Cooloolabin	1 October	31 October	1 October 2010	1 January 2010	1 October 2020	1 January 2020
Enoggera	1 November	30 November	1 November 2010	1 February 2010	1 November 2024	1 February 2024
Ewen Maddock	1 March	31 March	1 November 2014	1 February 2014	1 November 2029	1 February 2029
Gold Creek	1 March	31 March	1 March 2014	1 June 2014	1 March 2014	1 June 2014
Hinze	1 May	31 May	2013	2013	1 May 2028	1 August 2028

DAM	ANNUAL PERIODIC		FIVE YEAR COMPREHENSIVE		TWENTY YEAR REVIEW	
	Review Due	Notification Due	Review Due	Notification Due	Review Due	Notification Due
Lake Macdonald	1 November	30 November	1 November 2010	1 February 2010	1 November 2024	1 November 2024
Lake Manchester	1 June	31 June	1 June 2010	1 September 2010	1 June 2021	1 September 2021
Leslie Harrison	1 May	31 May	1 May 2011	1 August 2011	1 May 2016	1 August 2016
Little Nerang	<i>Not Required</i>		1 April 2010	1 July 2010	1 April 2012	1 July 2012
Maroon	1 August	31 August	1 December 2010	1 March 2010	1 December 2019	1 March 2019
Moogerah	1 January	31 January	1 January 2012	1 April 2012	1 January 2022	1 April 2022
Nindooibah	<i>Not Required</i>					
North Pine	1 October	31 October	1 October 2010	1 January 2010	1 October 2015	1 January 2015
Poona	<i>Not Required</i>		1 October 2010	1 January 2010	1 October 2020	1 January 2020
Sideling Creek	1 October	31 October	1 October 2012	1 January 2012	1 October 2016	1 January 2016
Somerset	1 October	31 October	1 October 2010	1 January 2010	1 October 2015	1 January 2015
Wappa	1 October	31 October	1 October 2010	1 January 2010	1 October 2020	1 January 2020
Wivenhoe	1 October	31 October	1 October 2010	1 January 2010	1 October 2015	1 January 2015

APPENDIX C

SEQWATER DAMS – DOCUMENTATION REVIEW PROGRAM

DAM	ANNUAL REVIEW DUE BY	NOTIFICATION TO REGULATOR DUE BY
Atkinson	1 June	30 June
Baroon Pocket	1 July	31 July
Bill Gunn	1 June	30 June
Borumba	1 August	31 August
Bromelton	1 July	31 July
Cedar Pocket	1 September	30 September
Clarendon	1 June	30 June
Cooloolabin	1 October	31 October
Enoggera	1 November	30 November
Ewen Maddock	1 March	31 March
Gold Creek	1 March	31 March
Hinze	1 May	31 May
Lake Macdonald	1 November	30 November
Lake Manchester	1 June	31 June
Leslie Harrison	1 May	31 May
Little Nerang	1 April	30 April
Maroon	1 November	30 November
Moogerah	1 January	31 January
Nindooibah	-	-
North Pine	1 October	31 October
Poona	1 October	31 October
Sideling Creek	1 October	31 October
Somerset	1 October	31 October
Wappa	1 October	31 October
Wivenhoe	1 October	31 October

APPENDIX D

SEQWATER DAMS – ROUTINE INSPECTION PROGRAM

DAM	ROUTINE INSPECTION FREQUENCY	HAZARD CATEGORY
Atkinson	Tri Weekly	High C
Baroon Pocket	Tri Weekly	High A
Bill Gunn	Tri Weekly	High A
Borumba	Tri Weekly	High A
Bromelton	Tri Weekly	High C
Cedar Pocket	Tri Weekly	High C
Clarendon	Tri Weekly	High A
Cooloolabin	Tri Weekly	High A
Enoggera	Daily	Extreme
Ewen Maddock	Daily	Extreme
Gold Creek	Tri Weekly	High A
Hinze	Daily	Extreme
Lake Macdonald	Tri Weekly	High A
Lake Manchester	Daily	Extreme
Leslie Harrison	Daily	Extreme
Little Nerang	Tri Weekly	High C
Maroon	Tri Weekly	High A
Moogerah	Tri Weekly	High A
Nindooinbah	Tri Weekly	High C
North Pine	Daily	Extreme
Poona	Tri Weekly	High C
Sideling Creek	Daily	Extreme
Somerset	Daily	Extreme
Wappa	Tri Weekly	High A
Wivenhoe	Daily	Extreme