



Section 2 Template is available free for members and non-members in Microsoft Word, to allow you to generate your own document. Download from www.waterdirectorate.asn.au or contact info@waterdirectorate.asn.au for a copy.

Water Directorate Inc. PO Box 200 Forster NSW 2428 Email: info@waterdirectorate.asn.au www.waterdirectorate.asn.au

Dam Safety Management System Guideline October 2021

# SECTION 1 OVERVIEW AND GUIDANCE ON PREPARING A DSMS

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### **Version and Document Control**

Version No.	Revision Description	Prepared/Revised By	Reviewed By	Approved By	Revision Date
1	Original	D McGregor	B. Guiney		Oct 2021

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### **Acknowledgement**

This Guideline has been prepared in consultation with Dams Safety NSW and the NSW Department of Planning Industry and Environment.

## **HOW TO USE THIS DOCUMENT**

Before referring to the Guideline, familiarise yourself with the Dams Safety Regulation (2019) which has been made under the *Dams Safety Act (2015)* which can be sourced at https://www.legislation.nsw.gov.au/view/pdf/asmade/sl-2019-506

You should also be familiar with ISO 55001 (Asset Management Standard). Relevant elements of ISO 55001 are included in tabular form in subsection 14 of Section 3 Template.

The Guidelines primarily comprise a Template to assist LWUs/Councils in developing their own Dam Safety Management System (DSMS) and a **Sample** DSMS Manual which is based on information provided by Dam Safety NSW.

The Template (in Section 2) is available free as a standalone Word Document for ease of use. This can be downloaded from the Water Directorate website: www.waterdirectorate.asn.au

There are shaded areas throughout the document to assist users. These are:

- Grey shading with red font = reference clauses of the Dams Safety Regulation (2019) and clauses of the Global Asset Management Standard ISO 55001 ('Reg.' = Dam Safety Regulation; 'Std' = ISO 55001)
- Grey shading with blue font = information to be inserted in the DSMS you create.

# **Overview and Guidance on Preparing a DSMS**

### **GENERAL**

This document is a dam safety management system (DSMS) Guideline and Template for Local Water Utilities (LWUs) who operate a declared dam(s) with a consequence category of 'Significant'. It is a requirement of the Dam Safety Regulation 2019 that owners of declared dams establish and implement a DSMS.

This document is presented in three sections:

- 1. Overview and guidance on preparing a dam safety management system (DSMS)
- 2. A blank 'template' DSMS for populating by the dam owner and customising to their local context. Section 3 is also available in Microsoft Word format for this purpose
- 3. A 'worked example' based on a hypothetical dam owner, Smith's Nursery.

Clause 13 (2)(b) of the Regulation stipulates that the DSMS document must:

- Deal with the safety matters that are identified in the Regulation.
- Contain a level of detail that is appropriate to the dam, having regard to (i) the nature, complexity and location of the dam, and (ii) the risks associated with the dam.
- Be readily understandable to the persons who use the manual.

Reference should be made to the *Dam Safety Act, 2015* and the Dam Safety Regulation, 2019.

The Regulation also requires the DSMS to be compliant with the Global Asset Management Standard, AS ISO 55001 ('the Asset Management Standard').

Councils and Local Water Utilities (LWUs) are legally bound under the *Dams Safety Act 2015* ('**the Act**') to meet the safety requirements that are outlined in the Dam Safety Regulation 2019 ('**the Regulation**').

Councils and Local Water Utilities must commit to implementing and continuously improving effective systems and procedures to meet the requirements of the Regulation.

In addition, Councils and Local Water Utilities shall incorporate this policy and its practical outworking within the organisation's business plan. The business plan will also acknowledge that a failure of the dam would involve potentially significant legal, commercial and reputational consequences.

### DAM SAFETY MANAGEMENT OBJECTIVES

### (Reg: Clauses 12, 13 and 14; Std: Clauses 4.1, 5.1, and 6.2.1)

Dam safety management objectives shall be based on the Council's/LWU's dam safety policy and relevant parts of its business plan. As such, the objectives must meet the requirements of the Regulation. The objectives should also align with the aspects of the business plan that describe (or relate to) the dam's fundamental importance to the water supply provided to the Council's/LWU's customers.

The objectives shall be refined and finalised after feedback from the consulting engineer for the dam and a management systems auditor.

Council/LWU will review these objectives—and will circulate them to the individuals identified in Section 3: subsection 2.5 and 4.3 (or similarly qualified experts)—every three years as part of its dam safety management review.

The primary goal of dam safety management is to meet the requirements of the Regulation, as stated in the policy. As such, each of the objectives is to be formulated, and pursued, with reference to the Regulation.

The dam safety management objectives, are to:

- Identify, manage and document dam risks.
- Engage suitably competent persons to undertake dam safety related tasks.
- Report to the Regulator any incidents or significant modifications which may have material impact on the dam's safety.
- Establish and maintain a DSMS, including the plans, records and other documentation required.
- Ensure completion of all required reviews relating to the dam and the other DSMS elements within the mandated timeframes.

The DSMS shall incorporate the following elements:

- Physical aspects of the dam.
- Documents and records related to dam safety.
- Roles and functions related to dam safety (for example, a manager whose function is to conduct visual inspections of the dam).

See Figure 1 below and (Regulation: Clause 13; Std: Clauses 4.3, 4.4 and 6.2.2)

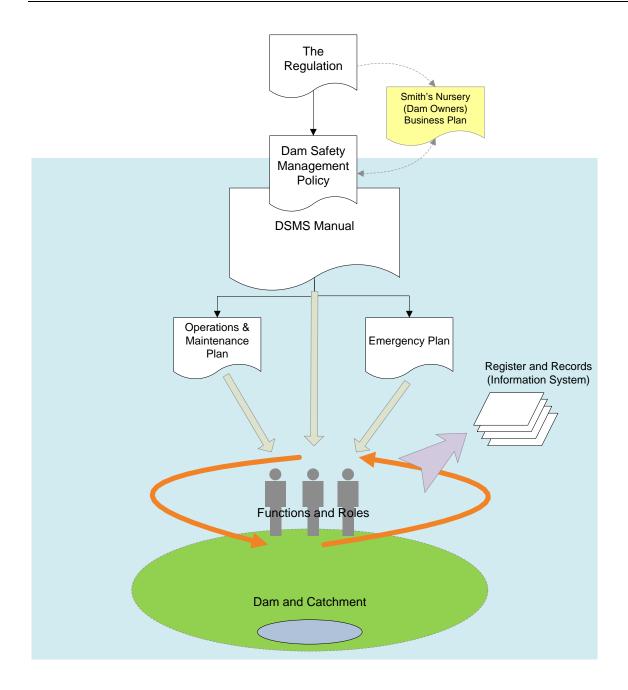


Figure 1: Dam Safety Management System, in-scope elements

### SAMPLE DECLARATION FOR GM/CEO

This declaration needs to be customised for your LWU/Council and signed by the CEO/General Manager, for inclusion at the start of your DSMS.

### **DAM SAFETY MANAGEMENT POLICY**

(Std: Clauses 4.1, 4.2, 5.1, 5.2, 6.2.2, 7.1 and 8.1)

Given the existence of a declared dam on its property, (Insert Council/LWU Name) is legally bound under the *Dams Safety Act 2015* ('the Act') to meet the safety requirements that are outlined in the Dam Safety Regulation 2019 ('the Regulation').

(Insert Council/LWU Name) is therefore committed to implementing and continuously improving effective systems and procedures to meet the requirements of the Regulation.

In addition, (Insert Council/LWU Name) will incorporate this policy and its practical outworking within the company business plan. The business plan will also acknowledge that a failure of the dam would involve potentially significant legal, commercial, and reputational consequences.

Signed:	(CEO/General Manager, Insert LWU)
Date:	

# DAM SAFETY MANAGEMENT SYSTEM TEMPLATE

# **TEMPLATE TO GENERATE DSMS MANUAL**

NOTE: This template is available to Local Water Utilities that are members of the Water Directorate as a Word Document for ease of use. This is supplied in an accompanying document.

For typical responses, refer to the following **Section 3: Sample DSMS Manual**. Note throughout the Template 'Reg' refers to clauses in the Dam Safety Regulation and 'Std' refers to clauses in ISO 55001.

1. INTRODUCTION	(Refer Std: Clauses 4.2, 4.4, 5.1 and 8.1)
Water Utility/Council name	Insert your details throughout the template
	See 1 in Section 3 <b>Sample DSMS Manual</b> , for an example of wording
DSMS reference (Title, date,	
location)	
Acknowledgement that you	
are following the Global Asset	
Management Standard, AS ISO	
55001 ('the Asset	
Management Standard').	

2. THE DAM & ITS	(Refer Std: Clauses 4.1 and 4.2)
CONTEXT	
2.1 DAM CHARACTERISTICS	See 2.1 in Section 3 <b>Sample DSMS Manual</b> for an example of wording
Name	
Location	
River/stream	
Owner	
Dam catchment	
Wall height:	
Storage volume:	
Material stored:	
Purpose:	
Type:	
Overtopping/overflow protection:	
Engineering/construction:	
Consequence categories:	
Sunny day consequence	Insert likely consequences (refer Section 3 for typical wording)
category	
Flood consequence category	Insert likely consequences (refer to Section 3 for typical
Note: Categories determined	wording)
by Consulting Dams Engineer	
(see Section D below), as per	Insert Name of Consulting Dams Engineer
Clauses 6 and 7 of Regulation.	

2.2 HISORY AND	(Std: Clause 8.2)
OWNERSHIP	
	Insert details
	See 2.2 in Section 3 Sample DSMS Manual, for an example of
	wording

2.3 DAM'S STATUS	(Std: Clause 8.2)
	See 2.3 in Section 3 <b>Sample DSMS Manual</b> , for an example of wording

2.4	(Reg: Clauses 12, 13 and 14; Std: Clauses 4.2 and 9.1)				
STAKEHOLDERS	See 2.4 in Section 3 Sample DSMS Manual for an example of wording				
Type of	Stakeholder	Location/	Number	Potential	Contact
Stakeholder	name	position	of stake	impact	type,
			holders		frequency
Insert Council/	Employees	Onsite	Insert no.	Bodily harm,	Verbal,
LWU Owner				private	annual
				property	N/A
	Council/ LWU	Onsite			
	name			Commercial	
Residential	Neighbours	Downstream	Insert no.	Bodily harm,	Email,
	(smallholdings)			private	annual
				property	
Small businesses	List businesses	Downstream	Insert no.	Bodily harm,	Email,
	affected			commercial	annual
Organisations	Regulator	Offsite	1	Legal	As per
					regulation
	Insert any	Downstream	Insert no.	Environmental	Email,
	downstream				annual
	users (for				
	example				
	irrigators)				
	la a a sub	0	la contra c	Land	Fil
	Insert	Owner	Insert no.	Legal	Email,
	Council/LWU				annual
	name				
	l		l	l	

2.5 REGULATORY ENVIRONMENT	Required dam safety review actions (Std: Clauses 4.2, 7.5 and 9.1) See 2.5 in Section 3 Sample DSMS Manual for an example of wording			
Area	Scope	Frequency	When (Insert appropriate	By Whom (Insert appropriate names)
			dates)	
DSMS review	Cl.17 and ISO 55001 – Cl.9.3	Annually	in June	Management and key staff
OM Plan – update	Cl.9	5 years		Competent dams engineer
EM Plan – update contact details	Cl.10(5)	Annually	in June	Management
EM Plan – general update	CI.9	5 years		Management
EM Plan – Emergency exercise	CI.22 (theoretical only)	3 years		Management

3. DAM SAFETY MANAGEMENT OBJECTIVES	(Reg: Clauses 12, 13 and 14; Std: Clauses 4.1, 5.1, and 6.2.1) See 3 in Section 3 Sample DSMS Manual for an example of wording
	Insert objectives outlined in Section 1: General Information

4. DSMS SCOPE	(Reg: Clause 13; Std: Clauses 4.3, 4.4 and 6.2.2)
	See 4 in Section 3 <b>Sample DSMS Manual</b> for an example of
	wording

4.1 CRITERIA	Insert criteria as outlined in Section 1: General Information
	See 4.1 in Section 3 <b>Sample DSMS Manual</b> for an example of wording

4.2 THE DAM & ITS IMMEDIATE ENVIRONMENT  Insert details of key components, geographic components); spillwarivers and/or creeks  See 4.2 in Section 3 Sample DSM wording	ay; catchment area including any
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4.3 ROLES & FUNCTIONS	(Std: Clauses 5.3, 6.2.2, 7.1 and 10.2) Certify that all the people in key roles understand their roles and functions  See 4.3 in Section 3 Sample DSMS Manual for an example of wording		
Owner Council/LWU (Insert name)	<ul> <li>Ensure that Regulation followed</li> <li>Provide necessary funds/resources</li> <li>Ensure dam manager has adequate DSMS skill set</li> <li>Overall responsibility for O&amp;M Manual and Emergency Manual</li> <li>Liaise with the Regulator</li> </ul>		
Manager (Insert name)	<ul> <li>Enact O&amp;M manual</li> <li>Conduct monthly visual inspections of dam</li> <li>Ensure staff know/practice incident reporting requirements</li> <li>Notify owner immediately of any significant problems/issues</li> <li>Oversee dam maintenance</li> <li>Provide access to inspectors/contractors</li> </ul>		
Consulting Dams Engineer (Insert Name)	<ul> <li>Conduct inspections of dam as requested</li> <li>Measure for significant changes/movement of structure</li> <li>Report on an exception basis</li> </ul>		
Hired Experts (Insert Names)	<ul> <li>Deliver reports as requested/specified by the LWU</li> <li>Write O&amp;M and Emergency Manual</li> </ul>		

### 4.4 INFORMATION SYSTEMS

(Std: Clauses 6.1, 7.5, 7.6.1, 7.6.2, 7.6.3, 8.1 and 9.1)

Insert details of organisation's information systems

See 4.4 in Section 3 Sample DSMS Manual for an example of wording

4.5 DOCUMENTARY ELEMENTS	(Std: Clauses 5.1 and 7.6.1) Insert details of documents and procedures outlined below See 4.5 in Section 3 Sample DSMS Manual for an example of wording
Documentary Element	Detail & Regulatory Connection
- Policy	Statement of practical commitment to meet requirements of Regulation
- O&M Plan	Record of O&M procedures required to meet the Regulation
- Emergency Plan	Documented dam information/procedures re potential failure of the dam (see Clause 10 of the Regulation).
- DSMS Manual	Master document describing DSMS.  DSMS' purpose is to meet the overarching aims of the Act (see Clause 3) and the specific requirements set out in the Regulation.

### 5. RISK MANAGEMENT (Reg: Clauses 13-15; Std: Clauses 4.1, 6.2.2 and 8.1)

Refer to 5 in **Section 3 Sample DSMS Manual** in for information required in the strategy with respect to risk management.

### 6. INCIDENT REPORTING (Reg: Clause 19; Std: Clauses 6.2.2 and 8.1)

Refer to 6 In Section 3 for information required in the strategy with respect to incident reporting.

### 7. SAFETY REVIEW (Reg: Clauses 13 and 20; Std: Clauses 6.1, 6.2.2, 8.1, 9.1 and 10.2)

Refer to 7 in Section 3 for information required in the strategy with respect to the requirements for safety review.

### 8. NOTIFICATION OF CHANGES (Reg: Clause 21; Std: Clauses 6.2.2, 8.1 and 8.2)

Refer to 8 in Section 3 for information required in the strategy with respect to the requirements for notification of changes.

# 9. COMPLIANCE WITH THE ASSET MANAGEMENT STANDARD—ISO 55001 (Reg: Clause 13; Std: Clauses 5.1, 6.2.2 and 8.1)

Refer to 9 in Section 3 for information required in the strategy with respect to the requirements for compliance with asset management standard 1SO 55001.

# 10. RESOURCES FOR DSMS (Reg: Clauses 9, 10, 12 and 13; Std: Clauses 5.1, 5.3, 6.1, 6.2.2, 7.1, 7.3 and 7.4)

Refer to 10 in Section 3 for information required in the strategy with respect to the requirements for compliance with resources.

### 11. COMPETENCE (Std: Clause 7.1 and 8.1)

Refer to 11 in Section 3 information required in the strategy with respect to the requirements for compliance with competence.

### 12. OUTSOURCED ACTIVITIES (Std: Clause 8.3)

Refer to 12 in Section 3 for information required in the strategy with respect to the requirements for compliance with outsourced activities.

# 13. PERFORMANCE EVALUATION & IMPROVEMENT (Std: Clauses 6.1, 6.2.2, 9.1, 10.1, 10.2 and 10.3)

Refer to 13 in Section 3 for information required in the strategy with respect to the requirements for compliance with performance evaluation and improvement.

44 15	ITEDNIAL ALIDIT			
	ITERNAL AUDIT KLIST			
CHEC	KLIST			
COM ISO 55	ISO 55001 ADVICE & PLIANCE REQUIREMENTS 5001 (Asset Management ard) Compliance Map	Note: 14.1 outlines the Clauses in ISO 55001 that LWUs are required to comply with - and is a checklist.  Please also refer to Section 3 Sample DSMS Model to review the Section numbers presented in Column 2 below.		
ISO	O 55001 REQUIREMENTS	DSMS MANUAL COVERAGE REFERENCES (numbers refer to both the Template and the Sample DSMS Manual)	COMMENT	
4.1	Context of the organisation Understanding the organisation and its context	Section 2.1 Dam's characteristics Section 5 Risk Management, Section 3 DSM Objectives, Policy		
4.2	Context of the organisation Understanding the needs and expectations of stakeholders	Policy; Section 1 Introduction; Section 2.4 Stakeholders	This is primarily adherence to the Regulation.	
4.3	Context of the organisation Determining the scope of the asset management system	Section 4 DSMS Scope		
4.4	Context of the organisation Asset management system	Section 1 Introduction; Section 4 DSMS Scope		
5.1	Leadership Leadership and commitment	Policy; Section 1 Introduction; Section 3.2 Objectives; Section 4.5 Documentary Elements, Section 5 Risk Management, Section 9 Compliance with AS ISO 55001; Section 10 Resources for DSMS; Section 13 Performance Evaluation and Improvement	The DSMS Manual is the SAMP.	
5.2	Leadership	Policy;		
	Policy	Section 13.4 Review of Management System		
5.3	Leadership Organizational roles, responsibilities and authorities	Section 10 Resources for DSMS; Section 4.3 Roles and Functions		

6.1	Planning Actions to address risks and opportunities for the asset management system	Section 4.4 Information Systems, Section 5 Risk Management, Section 6 Incident Reporting, Section 7 Safety Review, Section 10 Notification of changes, Section 13 Performance Evaluation and Improvement	
6.2.1	Planning Asset management objectives and planning to achieve them - Asset Management Objectives	Section 3 DSM Objectives, Section 13.4 Review of Management System	
6.2.2	Planning Asset management objectives and planning to achieve them - Planning for asset management	Comprehensive relevance throughout most of the DSMS Manual	Refer also to the Emergency Plan and Operations and Maintenance Plan which are the Asset Management Plans.
7.1	Support Resources	Policy; Section 4.3 Roles and Functions, Section 10 Resources for DSMS	Policy commitment translates to commitment that the resources will be provided.
7.2	Support Competence	Section 11 Competence, Section 13.4 Review of Management System.	
7.3	Support Awareness	Section 10 Resources for DSMS	
7.4	Support Communication	Section 10 Resources for DSMS	
7.5	Support Information Requirements	Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems	Primarily as required by the Regulation; then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan. Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.
7.6.1	Support  Documented Information - General	Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements	
7.6.2	Support  Documented Information - Creating and Updating	N/A	Formal procedures not warranted due to size of the organisation.
7.6.3	Support  Documented Information - Control of Documented Information	Section 4.4 Information Systems, Section 13.4 Review of Management System	
8.1	Operation Operational planning and control	Comprehensive relevance throughout most of the DSMS Manual	Refer also to the Emergency Plan and Operations and Maintenance Plan.

8.2	Operation	Section 2.2 Dam's History,	
0	Management of change	Section 2.3 Dam's status,	
	Wanagement of change	Section 5 Risk Management,	
		Section 7 Safety Review,	
		Section 8 Notification of changes,	
		Section 13.4 Management Review	
8.3	Operation	Section 12 Outsourced activities,	Refer also to the Emergency Plan
	Outsourcing of asset	Section 13.4 Review of	and Operations and Maintenance
	management activities	Management System	Plan for aspects such as
	management detirine		Competence, Awareness and
			Documentation and control of
			the activities.
9.1	Performance evaluation	Section 2.4 Stakeholders,	Refer also to the Emergency Plan
	Monitoring,	Section 2.5 Regulatory	and Operations and Maintenance
	measurement, analysis	environment - required dam safety	Plan.
	and evaluation	review actions;	
		Section 4.4 Information Systems,	
		Section 7 Safety Review;	
		Section 13 Performance Evaluation	
		and Improvement	
9.2	Performance evaluation	Section 13.3 Internal audit	
	Internal audit		
9.3	Performance evaluation	Section 13.4 Review of	Prescribed asset management
	Management review	Management System	requirements exist via the
		Management System	Regulation.
10.1	Improvement	Section 13 Performance Evaluation	
	Nonconformity and	and Improvement	
	corrective action		
10.2	Improvement	Section 7 Safety Review;	
	Preventive action	Section 4.3 Roles and Functions,	
		Section 13 Performance Evaluation	
		and Improvement	
10.3	Improvement	Section 13 Performance Evaluation	
	Continual Improvement	and Improvement, Policy	

14.2.1 DAM SAFETY INSPECTION AND REVIEW AUDIT CHECKLIST	Note: Subsections 14.2.1 and 14.2.2 are presented in the formats suggested for inclusion in your DSMS.			
Audit Question	Audit Findings C- Compliant OFI - Opportunity for improvement, CAR – Corrective Action Required, NC- Non-conformity	Audit Evidence – reference to documentation	Opportunity for Improvement - Suggestions	
Are competence requirements defined?		(Insert relevant information throughout)		
Is the person aware of competence requirements?				
Is person aware of their responsibility?				
Are inspection records retained?				
Is the current inspection checklist being used?				
Is person aware of specific requirements as detailed in the Operations and Maintenance Plan?				
Is person aware of what action to take if a problem is identified?				
Is person aware of what action to take if a questionable trend is noted?				

14.2.2 DAM SAFETY MANAGEMENT SYSTEM AUDIT CHECKLIST			
Audit Question	Audit Findings C- Compliant OFI - Opportunity for improvement, CAR – Corrective Action Required, NC- Non-conformity	Audit Evidence – reference to documentation	Opportunity for Improvement - Suggestions
Are key documents and records known and accessible?			
Has the Management System Review been carried out as planned?			
Are actions from the Management System Review being addressed in a timely and effective manner?			
Are records with the Excel Workbook up to date?			
Are competency requirements up to date?			
Is the stakeholder table reflective of current circumstances?			
Are identified risks being mitigated?			
If any incidents have occurred, were they reported in writing to the Regulator within 72 hours?			

# **15. DSMS MANAGEMENT** (Insert relevant information) **REVIEW MINUTES** Refer to 15 in Section 3 for information required in the strategy with respect to the requirements for Management Review Minutes. (Insert LWU) DSMS Review Minutes (Insert date) Reg: Clause 19; Std: ISO 55001 1 Status of actions from previous meeting Review of actions arising from meeting of (Insert date) Review of minutes from meeting of (Insert date) 2 Changes in external and internal environment/issues Insert details below Discussion Conclusion

**Person Responsible** 

**Deadline** 

**Action items** 

☐ None

# 3 Information on the performance and effectiveness of the DSMS Discussion Conclusion **Action items** ☐ None **Person Responsible** Deadline 4 Other actions required by the Asset Management Standard (AS ISO 55001) Discussion Conclusion **Action items** □ None **Person Responsible Deadline**

### NOTE:

On the following page is a sample Declaration to be signed by the General Manger/CEO and included at the start of your DSMS.

### DAM SAFETY MANAGEMENT POLICY

(Std: Clauses 4.1, 4.2, 5.1, 5.2, 6.2.2, 7.1 and 8.1)

Given the existence of a declared dam on its property, (Insert Council/LWU Name) is legally bound under the *Dams Safety Act 2015* ('the Act') to meet the safety requirements that are outlined in the Dam Safety Regulation 2019 ('the Regulation').

(Insert Council/LWU Name) is therefore committed to implementing and continuously improving effective systems and procedures to meet the requirements of the Regulation.

In addition, (Insert Council/LWU Name) will incorporate this policy and its practical outworking within the company business plan. The business plan will also acknowledge that a failure of the dam would involve potentially significant legal, commercial, and reputational consequences.

Signed:	(CEO/General Manager, Insert LWU)
Date:	

# SECTION 3 SAMPLE DSMS MANUAL

### SAMPLE DSMS MANUAL

### PRELIMINARY DRAFT – DSMS MANUAL – SAMPLE – SIMPLE DAM

Note: This sample document contains additional items that are not found in the Template provided in Section 3.

### Sample case: Smith's Nursery Pty Ltd

### **ABOUT THIS MANUAL**

This document is a sample dam safety management system (DSMS) manual for a small business (Smith's Nursery Pty Ltd) that is operating one declared dam with a consequence category of 'Significant'. It is a requirement of the Dam Safety Regulation 2019 that owners of declared dams establish and implement a DSMS.

It is recognised that small businesses may face challenges doing so due to:

- Minimal resources (staff and/or finances).
- Difficulty interpreting and applying regulatory requirements.

The Regulation has been designed to be flexible enough to allow small businesses to create a DSMS that takes account of such limitations, while still meeting safety requirements. Clause 13 (2)(b) of the Regulation stipulates that the DSMS document must:

- Deal with the safety matters that are identified in the Regulation.
- Contain a level of detail that is appropriate to the dam, having regard to (i) the nature, complexity and location of the dam, and (ii) the risks associated with the dam.
- Be readily understandable to the persons who use the manual.

The example dam used in the following manual is a basic earth embankment dam. Likewise, the example business, 'Smith's Nursery', is small operation in which a few people are required to undertake a wide variety of tasks—and in which recordkeeping and communications between staff members are straightforward and direct. Therefore, the simplicity of the dam and the business is reflected in the relatively simple nature of the sample DSMS manual. At the same time, the processes outlined in the manual are adequate to cover the requirements of the Regulation and the dam's 'Significant' consequence category.

### Note:

Larger organisations, operating more critical dams, may also benefit from the sample manual by adapting some of it for their own needs. However, caution should be exercised, given that not all features of the manual will be appropriate for entities responsible for 'High' or 'Extreme' consequence dams.

### **DAM SAFETY MANAGEMENT POLICY**

(Std: Clauses 4.1, 4.2, 5.1, 5.2, 6.2.2, 7.1 and 8.1)

Given the existence of a declared dam on its property, Smith's Nursery Pty Ltd is legally bound under the Dams Safety Act 2015 ('the Act') to meet the safety requirements that are outlined in the Dam Safety Regulation 2019 ('the Regulation').

Smith's Nursery is therefore committed to implementing and continuously improving effective systems and procedures to meet the requirements of the Regulation.

In addition, Smith's Nursery will incorporate this policy and its practical outworking within the company business plan. The business plan will also acknowledge that a failure of the dam would involve potentially significant legal, commercial and reputational consequences.

Signed:	(Owner, Smith's Nursery Pty Ltd)
Date:	

### 1. INTRODUCTION (Std: Clauses 4.2, 4.4, 5.1 and 8.1)

The property of Smith's Nursery Pty Ltd includes a dam ('the dam') that is a declared dam in terms of the Act.

In keeping with Clause 12 (4)(b) of Regulation, Smith's Nursery has established and implemented a Dam Safety Management System ('**DSMS**').

The Regulation also requires the DSMS to be compliant with the global asset management standard, AS ISO 55001 ('the Asset Management Standard').

### 2. THE DAM AND ITS CONTEXT (Std: Clauses 4.1 and 4.2)

### 2.1 The Dam's Characteristics (Std: Clauses 4.1)

Dam specification	Detail
Name	Dam 1
Location	Upper Woodglen Heights (Latitude 151, Longitude 33, Elevation: approx. 260m).
River/stream	Unnamed creek.
Owner	John Smith, 2 Woodglen Rd, Upper Woodglen Heights.
Dam catchment	1.3km2
Wall height	5m
Storage volume	22ML
Material stored	Rain/reclaimed water.
Purpose	Nursery irrigation
Туре	Earth fill (embankment) dam.
Overtopping/overflow protection	Rock-lined spillway, designed to withstand a 1 in 100-year flood.
Engineering/construction	Designed by Fred Jones, built in 1992 by Mike White.
Consequence categories	Sunny day consequence category—low (dam break will not reach houses on adjoining property)
	Flood consequence category—significant (dam break may affect adjoining property during flood)
	Note: consequence categories determined by Max Redmond, consulting dams engineer (see Section D), as per Clauses 6 and 7 of Regulation.

### 2.2 History and Ownership (Std: Clause 8.2)

The dam was originally used for crop irrigation and livestock purposes. In 1998, the area was subdivided and the current 20 acre property, including the dam, was purchased John Smith, who converted it to nursery use.

No modifications to the dam have been made by Smith.

### 2.3 Dam's Status (Std: Clause 8.2)

Smith's Nursery has no plans for structural changes to the dam and intends to continue using it in the current manner for the foreseeable future.

### 2.4 Stakeholders (Reg: Clauses 12, 13 and 14; Std: Clauses 4.2 and 9.1)

Group/type	Identity	Location	Number	Potential impact	Contact type, frequency
Smith's Nursery	Employees, family	Onsite	8	Bodily harm, private property	Verbal, annual N/A
	Nursery business	Onsite	1	Commercial	
Residential	Neighbours (smallholdings)	Downstream	10	Bodily harm, private property	Email, annual
Small businesses	Woodglen Village	Downstream	5	Bodily harm, commercial	Email, annual
Organisations	Regulator	Offsite	1	Legal	As per regulation
	Woodglen Bird Club	Downstream	1	Environmental	Email, annual
	Woodglen National Park	Downstream		Environmental	Email, annual
	Council	Woodglen District	1	Legal	Email, annual

### 2.5 Regulatory environment—required dam safety review actions (Std: Clauses 4.2, 7.5 and 9.1)

Area	Scope	Frequency	When	By Whom
DSMS review	Cl.17 and ISO55001 –	Annually	in June	Management and key staff
	Cl.9.3			and key stan
OM Plan – update	Cl.9	5 years	2024	Competent
				dams engineer
EM Plan – update contact details	Cl.10(5)	Annually	in June	Management
EM Plan – general update	Cl.9	5 years	2025	Management
EM Plan –	Cl.22	3 years	2023	Management
Emergency	(theoretical	, , , , , , , , , , , , , , , , , , , ,		
exercise	only)			
Risk assessment	Cl.15	5 years	2024	Competent
report				dams engineer
Internal audit	ISO55001 – Cl.9.2	Biannual	Biannual	Management
Safety Review	Cl.20	15 years or earlier, refer	2022	Competent
		Cl.20		dams engineer
Consequence	CI.7	15 years or earlier, refer	2027	Competent
category		Cl.7		dams engineer
assessment				

### 3. DAM SAFETY MANAGEMENT OBJECTIVES (Reg: Clauses 12, 13 and 14; Std: Clauses 4.1, 5.1, and 6.2.1)

### 3.1 The Policy and Dam Safety Management Objectives

Smith Nursery's dam safety management objectives are based on its dam safety policy and relevant parts of its company business plan. As such, the objectives meet the requirements of the Regulation. The objectives also align with the aspects of the business plan that describe (or relate to) the dam's fundamental importance to the nursery business.

The objectives, as originally drafted, were refined and finalised after feedback from the consulting engineer for the dam and a management systems auditor.

Smith's Nursery will review the objectives—and will circulate them to the three individuals identified above (or similarly qualified experts)—every three years as part of its dam safety management review.

### 3.2 Objectives

The primary goal of Smith's Nursery's dam safety management is to meet the requirements of the Regulation, as stated in the policy. As such, each of the objectives has been formulated, and will be pursued, with reference to the Regulation.

Our dam safety management objectives, are to:

- Identify, manage and document dam risks.
- Engage suitably competent persons to undertake dam safety related tasks.

- Report to the Regulator any incidents or significant modifications which may have material impact on the dam's safety.
- Establish and maintain a DSMS, including the plans, records and other documentation required.

Ensure completion of all required reviews relating to the dam and the other DSMS elements within the mandated timeframes.

### 4. DSMS SCOPE (Reg: Clause 13; Std: Clauses 4.3, 4.4 and 6.2.2)

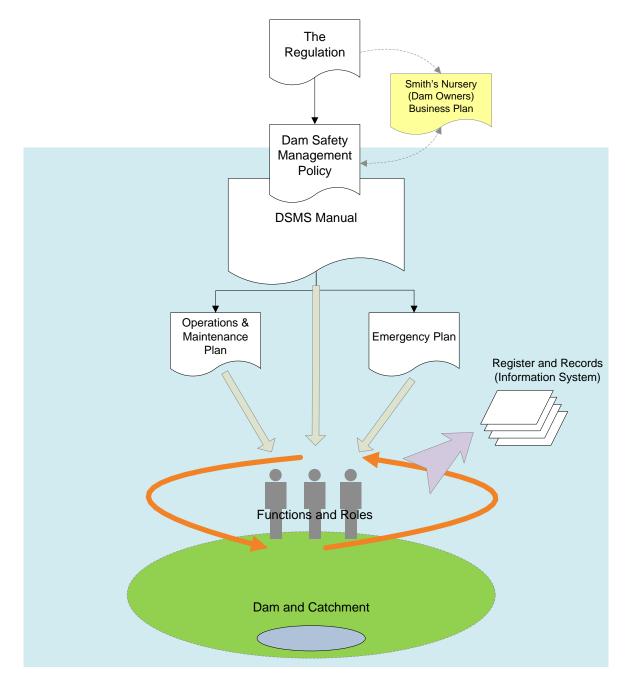


Figure 1 – Smith's Nursery Dam Safety Management System, in-scope elements

### 4.1 Criteria

The DSMS incorporates the following elements:

- Physical aspects of the dam.
- Documents and records related to dam safety.
- Roles and functions related to dam safety (for example, a manager whose function is to conduct visual inspections of the dam).

### 4.2 The Physical Asset (the Dam) and its Immediate Environment

Key components of the asset/dam include the:

- Dam wall (geographic coordinates—latitude 151, longitude 33).
- Spillway.
- Catchment area, including the creek (1.3km², incorporating the elevated portion of the Smith's Nursery property).

### **4.3 Roles and Functions** (Std: Clauses 5.3, 6.2.2, 7.1 and 10.2)

Role	Function
Nursery owner (John Smith)	<ul> <li>Ensure that Regulation is followed</li> <li>Provide necessary funds/resources</li> <li>Ensure nursery manager has adequate DSMS skill set</li> <li>Overall responsibility for O&amp;M Manual and Emergency Manual</li> <li>Liaise with the Regulator</li> </ul>
Nursery Manager (Steve Kerrigan)	<ul> <li>Enact O&amp;M manual</li> <li>Conduct monthly visual inspections of dam</li> <li>Ensure staff know/practice incident reporting requirements</li> <li>Notify owner immediately of any significant problems/issues</li> <li>Oversee dam maintenance</li> <li>Provide access to inspectors/contractors</li> </ul>
Consulting Dams Engineer (Max Redmond)	<ul> <li>Conduct inspections of dam as requested</li> <li>Measure for significant changes/movement of structure</li> <li>Report on an exceptions basis</li> </ul>
Hired experts	<ul> <li>Deliver reports as requested/specified by owner</li> <li>Write O&amp;M and Emergency Manual</li> </ul>

### **4.4 Information Systems** (Std: Clauses 6.1, 7.5, 7.6.1, 7.6.2, 7.6.3, 8.1 and 9.1)

Smith's Nursery maintains all records required for the DSMS, including all actions arising and their tracking, within an Excel Workbook named 'Smith's Nursery Declared Dam Management' ('the Excel Workbook'). This Workbook is stored securely in the cloud on its Microsoft OneDrive, with a copy emailed to the owner and the nursery manager as a backup at the end of each month.

Any email correspondence relating to dam management is copied (Cc'd) to the email address <u>smiths-nursery-dam@outlook.com</u>. This practice ensures that a record of communication can be readily accessed by the owner, nursery manager or consultant engineer Max Redmond, who has web-based access to the email account as outlined in his contract with Smith's Nursery.

Manuals, plans and procedures, including those required under the Regulation such as this DSMS Manual are stored securely in the cloud on Smith's Nursery's Microsoft OneDrive and the version number is included in the file name.

### 4.5 Documentary Elements (Std: Clauses 5.1 and 7.6.1)

Documentary	Detail & regulatory connection
element	
Policy	Statement of practical commitment to meet requirements of Regulation
O&M Plan	Record of O&M procedures required to meet the Regulation
Emergency Plan	Documented dam information/procedures re potential failure of the dam (see Clause 10 of the Regulation).
DSMS Manual	Master document describing Smith's Nursery DSMS.  DSMS purpose is to meet the overarching aims of the Act (see Clause 3) and the specific requirements set out in the Regulation.

### 5. RISK MANAGEMENT (Reg: Clauses 13-15; Std: Clauses 4.1, 6.2.2 and 8.1)

Following is a summary of the risk management procedures:

- Smith's Nursery reviews dam safety risks at least once a year, in July, and more frequently if there has been a significant change to the dam's operating environment.
- Smith's Nursery records hazard identification, risk assessment and risk treatment in its risk register. The register consists of a worksheet labelled 'Risks' within the Excel Workbook.
- Every five years, or if a major change to the dam is proposed, Smith's Nursery produces a written report on all foreseeable risks to the dam.

### 6. INCIDENT REPORTING (Reg: Clause 19; Std: Clauses 6.2.2 and 8.1)

Below is a summary of incident reporting requirements. See Clause 19 of Regulation for full/definitive description.

Smith's Nursery will telephone the Regulator as soon as possible if any of the following incidents or situations occur in relation to the dam:

- Failure of the dam (or spillway).
- Likely failure of the dam.
- Death or serious injury to a person.
- Significant damage to property or the environment.
- An incident that is reasonably likely to cause concern to a member of the public (this
  includes incidents that could become a subject of discussion among the public or could be
  reported by the public to authorities).

- A security incident (trespass, sabotage, vandalism, etc) that has, or could, affect the safety of the dam.
- A significant failure or shortcoming of the DSMS that <u>could</u> have caused death, injury, property/environmental damage.

<u>Further action</u>: after contacting the Regulator by phone, Smith's Nursery will follow up with a written report of the incident within three days (72 hours).

Smith's Nursery records all incidents and related details in its dam management Excel Workbook. Both aspects are entered on a worksheet labelled 'Incidents' in the workbook.

### 7. SAFETY REVIEW (Reg: Clauses 13 and 20; Std: Clauses 6.1, 6.2.2, 8.1, 9.1 and 10.2)

Smith's Nursery will initiate a safety review for the following reasons:

- Mandatory schedule (every 15 years).
- Significant change to the dam.
- Instruction from the Regulator.

Smith's Nursery will check the competence of its safety reviewer by sighting evidence of his/her experience and qualifications, and by verifying those through an independent industry body or association approved by the Regulator.

Smith's Nursery will sign a contract with the safety reviewer prior to the review in order to ensure that the reviewer will provide an impartial opinion. The Nursery currently maintains such a contract with Max Redmonds, a qualified dams engineer (<a href="www.redmonds-engineering.com.au/about-us">www.redmonds-engineering.com.au/about-us</a>, <a href="max@redmonds-engineering.com.au/about-us">max@redmonds-engineering.com.au/about-us</a>, <a href="max.engineering.com.au/about-us">engineering.com.au/about-us</a>, <a href="max.engineering.com.

### 8. NOTIFICATION OF CHANGES (Reg: Clause 21; Std: Clauses 6.2.2, 8.1 and 8.2)

Smith's Nursery will notify Dams Safety NSW in writing of any plans to change the dam's structure—including the configuration of its spillway/overflow features—if such changes may affect the safety of the dam.

Any such notifications will be recorded in a worksheet labelled 'Notifications', which is part of the Excel Workbook.

# 9. COMPLIANCE WITH THE ASSET MANAGEMENT STANDARD—AS ISO 55001 (Reg: Clause 13; Std: Clauses 5.1, 6.2.2 and 8.1)

Smith's Nursery will meet the requirements of the Asset Management Standard by:

- Following guidance from the Regulator.
- Implementing the DSMS as described in this manual.
- Maintaining the DSMS.
- Creating and maintaining this DSMS Manual.

Subsection 14 includes detailed mapping of the DSMS manual against the AS ISO 55001 requirements.

10. RESOURCES FOR DSMS (Reg: Clauses 9, 10, 12 and 13; Std: Clauses 5.1, 5.3, 6.1, 6.2.2, 7.1, 7.3 and 7.4)

The owner will take responsibility for:

- Managing and maintaining the DSMS.
- Ensuring that relevant parties are suitably aware of the DSMS and their role in it.
- Determining and enacting internal and external communications about the DSMS and all elements within its scope as is required by the Regulation as a minimum and otherwise as is appropriate.

Smith's Nursery engaged a specialist technical writer to develop the O&M Plan and the Emergency Plan in conjunction with Max Redmond. The plans will be reviewed by Redmond if the owner requests it, and Redmond will be the first point of contact for any technical advice.

Smith's Nursery has a line item in its annual budget to cover expenses associated with managing and maintaining the DSMS.

### 11. COMPETENCE (Std: Clause 7.1 and 8.1)

SN identifies each role of people who work on the dam as unskilled, semi-skilled, skilled and specialist. The table below shows the competency requirements for each level.

Level of Role	Example	Requirement
Unskilled	General staff/ground maintenance	Site safety induction (SSI) only
	person	
Semi-skilled	Owner/Manager with specific	SSI + knowledge of 'Dams Common
	DSMS role, including routine visual	Problems' document by Regulator
	inspections of dam	
Skilled	Backhoe operator	SSI + licence
Specialist	Dams Engineer	SSI + Professional affiliation +
		evidence of experience + contact a
		referee

The details of people's competencies will be recorded in a worksheet labelled 'Competencies', which is part of the Excel Workbook.

### 12. OUTSOURCED ACTIVITY (Std: Clause 8.3)

Smith's Nursery monitors and maintains oversight of contractors who work on/near the dam, as follows:

Service provider	Role	Contract/Documentation
M. Redmond	Dams engineer	Contract and Confidentiality agreement stored on
		OneDrive
Jim's Mowing	Grounds maintenance	T&C on company website

Outsourcing records are kept on a worksheet named 'Outsourcing' in the Excel Workbook.

### 13. PERFORMANCE EVALUATION AND IMPROVEMENT (Std: Clauses 6.1, 6.2.2, 9.1, 10.1, 10.2 and 10.3)

### 13.1 Overview

The sub-sections below cover performance evaluation and improvement for both the DSMS and the dam.

### 13.2 Monitoring, Evaluation, and Related Record-keeping (Reg: Clauses 9, 20 and 27; Std: Clause 9.1)

Task	Frequency	Person	Documentation
		responsible	
Routine maintenance (clearing	Monthly	Staff under	Maintenance checklist +
of spillway, vegetation, etc)		supervision	Excel Workbook
Visual inspection of dam	Monthly	Manager	Visual inspection checklist +
			Excel Workbook
Visual inspection +	Every 6	Dams	Visual inspection checklist +
measurements & analysis	months	engineer	Excel Workbook
Safety review	Every 15	Dams	Safety review checklist, final
	years	engineer	report

### Note:

- 1. Details/checklists for routine maintenance, visual inspections and safety reviews are contained in the O&M Plan.
- 2. Checklists have categories for scheduled action, conformity/non-conformity, corrective action and improvement opportunity.
- 3. All data is entered on an Excel Worksheet named 'Inspection & Maintenance actions'. The actions are recorded to create accountability for their completion in an effective and timely way.

### 13.3 Internal audit (Std: Clause 9.2)

Smith's Nursery uses a risk-prioritised internal audit methodology.

During establishment of the Operations and Maintenance Plan, advice received from our competent dam engineer recommended our internal audit program should focus on the following aspects of that Plan:

Focus area	Frequency	Auditor	Documentation
<ul> <li>Routine</li> </ul>	Twice a year	Owner, manager,	Audit checklist (see
maintenance		staff member	subsection 14.2.1)
<ul> <li>Visual inspection</li> </ul>	s		

Further, internal audits of the DSMS will be carried out as follows:

Focus area	Frequency	Auditor	Documentation
<ul> <li>Selected DSMS sections</li> </ul>	Twice a year	Owner, manager, staff member	Audit checklist (see subsection 14.2.2)

### Note:

- 1. Audits are not to be carried out by the same person more than once a year.
- Results of audits, including conformities/non-conformities, corrective actions and
  improvement opportunities will be recorded on a worksheet named 'Internal Audit' within
  the Excel Workbook, categorised as either Dam safety inspection and review (DSIR) or Dam
  Safety Management System (DSMS). Actions are recorded to create accountability for their
  completion in an effective and timely way.

### 13.4 Review of Management System (Reg: Clause 17; Std: Clauses 5.1, 5.2, 6.2.1, 7.1, 7.6.2, 8.3 and 9.3)

Smith's Nursery will review the DSMS at an annual meeting, during which it will hold discussions (and record minutes/actions) on following matters:

- Dam Safety Management Objectives
- Status of actions arising from previous review.
- Changes to external and internal environment issues/risks.
- Performance/effectiveness of DSMS.
- Performance/effectiveness of outsourced activities.
- Dam monitoring results.
- Competency needs.
- Audit results.
- Continual improvement opportunities.
- Others DSMS activities or actions required by the Asset Management Standard.

The results of each management review will also be recorded in a worksheet labelled 'Management System review Actions', which is part of the Excel Workbook, and creates accountability for actions to be completed in an effective and timely way.

Subsection 15 below provides an example/sample of DSMS management review minutes.

### **14. INTERNAL AUDIT CHECKLIST**

# 14.1. ISO 55001 Asset Management Standard Compliance Map

ISO	O 55001 REQUIREMENTS	MANUAL COVERAGE REFERENCE/S	COMMENT
4.1	Context of the organization Understanding the organization and its context	Section 2.1 Dam's characteristics, Section 5 Risk Management, Section 3 DSM Objectives, Policy	
4.2	Context of the organization Understanding the needs and expectations of stakeholders	Policy; Section 1 Introduction; Section 2.4 Stakeholders	This is primarily adherence to the Regulation.
4.3	Context of the organization Determining the scope of the asset management system	Section 4 DSMS Scope	
4.4	Context of the organization Asset management system	Section 1 Introduction; Section 4 DSMS Scope	
5.1	Leadership Leadership and commitment	Policy; Section 1 Introduction; Section 3.2 Objectives; Section 4.5 Documentary Elements, Section 5 Risk Management, Section 9 Compliance with AS ISO 55001; Section 10 Resources for DSMS; Section 13 Performance Evaluation and Improvement	The DSMS Manual is the SAMP.
5.2	Leadership Policy	Policy; Section 13.4 Review of Management System	
5.3	Leadership Organizational roles, responsibilities and authorities	Section 10 Resources for DSMS; Section 4.3 Roles and Functions	
6.1	Planning Actions to address risks and opportunities for the asset management system	Section 4.4 Information Systems, Section 5 Risk Management, Section 6 Incident Reporting, Section 7 Safety Review, Section 10 Notification of changes,	

Section 13 Performance Evaluation and Improvement			6 11 42 B 6	T
Improvement				
6.2.1 Planning Asset management objectives and planning to achieve them - Asset Management Objectives Asset management objectives and planning to achieve them - Planning for asset management  7.1 Support Resources Planning Section 13.4 Review of Management objectives and planning to achieve them - Planning for asset management  7.2 Support Resources Planning Section 10 Resources for DSMS Policy; Section 10 Resources for DSMS  7.3 Support Competence Section 11 Competence, Section 13.4 Review of Management System.  7.4 Support Competence Section 10 Resources for DSMS  7.5 Support Communication Support Information Requirements Section 10 Resources for DSMS  7.6 Support Communication Support Information Requirements Section 1.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems  7.6.1 Support Documented Information - General Support Documented Information - Section 4.5 Documentary Elements Documented Information - Creating and Updating  Policy: Section 4.5 Documentary Elements Formal procedures not warranted due to size of the organisation.				
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7.3 Support Awareness  7.4 Support Communication  7.5 Support Information Requirements Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems  7.6.1 Support Documented Information- General  7.6.2 Support Documented Information- Creating and Updating  Section 13.4 Review of Management System.  Section 10 Resources for DSMS  Primarily as required by the Regulation; then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan. Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  Formal procedures not warranted due to size of the organisation.	7.2	Support		
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7.4 Support Communication  Section 10 Resources for DSMS  Primarily as required by the Regulation; then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan. Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  7.6.1 Support Documented Information - General  Policy; Section 4.4 Information Systems  Policy; Section 4.5 Documentary Elements  N/A  Formal procedures not warranted due to size of the organisation.	7.3	Support	Section 10 Resources for	
7.5 Support Information Requirements Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems Section 4.4 Information General  Primarily as required by the Regulation; then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan. Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  N/A Formal procedures not warranted due to size of the organisation.		Awareness	DSMS	
7.5 Support Information Requirements Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems Section 4.4 Information General  Primarily as required by the Regulation; then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan. Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  N/A Formal procedures not warranted due to size of the organisation.	7.4	Support	Section 10 Resources for	
Information Requirements  Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems  Policy; Section 4.4 Information General  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  N/A  Formal procedures not warranted due to size of the organisation.  then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan.  Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  Formal procedures not warranted due to size of the organisation.		Communication	DSMS	
Information Requirements  Section 2.5 Regulatory environment - required dam safety review actions, Section 4.4 Information Systems  Policy; Section 4.4 Information General  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  N/A  Formal procedures not warranted due to size of the organisation.  then as deemed suitable for recording in the Excel register. Technical information management detail stated in the Operations and Maintenance Plan.  Consideration of information requirements is evident throughout DSMS Manual and Operations and Maintenance Plan.  Formal procedures not warranted due to size of the organisation.	7.5	Support		Primarily as required by the Regulation;
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7.6.1 Support Documented Information - General  7.6.2 Support Documented Information - Creating and Updating  Systems  Systems Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  Formal procedures not warranted due to size of the organisation.			I	_ ·
7.6.1 Support Documented Information - General  7.6.2 Support Documented Information - Systems, Section 4.5 Documentary Elements  N/A  Formal procedures not warranted due to size of the organisation.				
7.6.1 Support Documented Information - General  7.6.2 Support Documented Information - Creating and Updating  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  Policy; Section 4.4 Information Systems, Section 4.5 Documentary Elements  Formal procedures not warranted due to size of the organisation.			Systems	
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Documented Information - Section 4.4 Information Systems, Section 4.5 Documentary Elements  7.6.2 Support Documented Information - Creating and Updating  Section 4.4 Information Systems, Section 4.5 Documentary Elements  N/A Formal procedures not warranted due to size of the organisation.	7.6.1	Support	Policy;	
General Systems, Section 4.5 Documentary Elements  7.6.2 Support Documented Information - Creating and Updating  Systems, Section 4.5 Documentary Elements  Formal procedures not warranted due to size of the organisation.			-	
Section 4.5 Documentary Elements  7.6.2 Support Documented Information - Creating and Updating  Section 4.5 Documentary Elements  N/A Formal procedures not warranted due to size of the organisation.		-	Systems,	
7.6.2 Support N/A Formal procedures not warranted due to size of the organisation.  Creating and Updating			=	
Documented Information - Size of the organisation.  Creating and Updating				
Creating and Updating	7.6.2		N/A	
				size of the organisation.
<b>7.6.3</b> Support Section 4.4 Information		Creating and Updating		
	7.6.3	Support	Section 4.4 Information	
Documented Information - Systems,		Documented Information -	I	
Control of Documented Section 13.4 Review of		Control of Documented		
Information Management System		Information	Management System	
8.1 Operation Comprehensive relevance Refer also to the Emergency Plan and	8.1	Operation	I	
Operational planning and throughout most of the Operations and Maintenance Plan.				Operations and Maintenance Plan.
control DSMS Manual		control	DSMS Manual	

8.2	Operation	Section 2.2 Dam's History,	
	Management of change	Section 2.3 Dam's status,	
		Section 5 Risk Management,	
		Section 7 Safety Review,	
		Section 8 Notification of	
		changes,	
		Section 13.4 Management	
		Review	_
8.3	Operation	Section 12 Outsourced	Refer also to the Emergency Plan and
	Outsourcing of asset	activities,	Operations and Maintenance Plan for
	management activities	Section 13.4 Review of	aspects such as Competence, Awareness and Documentation and control of the
		Management System	and Documentation and control of the activities.
9.1	Performance evaluation	Section 2.4 Stakeholders,	Refer also to the Emergency Plan and
9.1		Section 2.5 Regulatory	Operations and Maintenance Plan.
	Monitoring,	environment - required dam	Operations and Maintenance Flan.
	measurement, analysis	safety review actions;	
	and evaluation	Section 4.4 Information	
		Systems,	
		Section 7 Safety Review;	
		Section 13 Performance	
		Evaluation and	
		Improvement	
9.2	Performance evaluation	Section 13.3 Internal audit	
	Internal audit		
9.3	Performance evaluation	Section 13.4 Review of	Prescribed asset management
	Management review	Management System	requirements exist via the Regulation.
10.1	Improvement	Section 13 Performance	
	Nonconformity and	Evaluation and	
	corrective action	Improvement	
10.2	Improvement	Section 7 Safety Review;	
	Preventive action	Section 4.3 Roles and	
		Functions,	
		Section 13 Performance	
		Evaluation and	
		Improvement	
10.3	Improvement	Section 13 Performance	
	Continual Improvement	Evaluation and	
		Improvement, Policy	

# **14.2 Sample Internal Audit checklists**

# 14.2.1 Dam safety inspection and review audit checklist

Audit Question	Audit Findings C- Compliant OFI - Opportunity for improvement, CAR – Corrective Action Required, NC- Non-conformity	Audit Evidence – reference to documentation	Opportunity for Improvement - Suggestions
Are competence requirements defined?			
Is the person aware of competence requirements?			
Is person aware of their responsibility?			
Are inspection records retained?			
Is the current inspection checklist being used?			
Is person aware of specific requirements as detailed in the Operations and Maintenance Plan?			
Is person aware of what action to take if a problem is identified?			
Is person aware of what action to take if a questionable trend is noted?			

# 14.2.2 Dam Safety Management System audit checklist

Audit Question	Audit Findings C- Compliant OFI - Opportunity for improvement, CAR – Corrective Action Required, NC- Non-conformity	Audit Evidence – reference to documentation	Opportunity for Improvement - Suggestions
Are key documents and records known and accessible?			
Has the Management System Review been carried out as planned?			
Are actions from the Management System Review being addressed in a timely and effective manner?			
Are records with the Excel Workbook up to date?			
Are competency requirements up to date?			
Is the stakeholder table reflective of current circumstances?			
Are identified risks being mitigated?			
If any incidents have occurred, were they reported in writing to the Regulator within 72 hours?			

### **15. SAMPLE DSMS MANAGEMENT REVIEW MINUTES**

# Smith's Nursery DSMS Review Minutes, 12 Feb. 2021

Ref. Clause 19 of Regulation, ISO 55001

2 Status of actions from previous meeting							
	Review of actions arising from meeting of 12 February 2020						
ŀ							
	Review of minutes from meeting of 12 February 2020						
L							
2 Changes in external and internal environment/issues							
Ī	Discussion						
	Discussion						
	Conclusion						
ŀ							
	Conclusion						
ŀ	Action items	□ None	Person Responsible	Deadline			
ŀ	Action items	L None	r erson kesponsible	Deduille			
ľ							
Į							
3	Information on the n	erformance and	d effectiveness of the DSMS				
΄,			a circuiteriess of the Boilio				
	Discussion						
	Conclusion						
	Action items	□ None	Person Responsible	Deadline			
ĺ	<u> </u>						

DAM SAFETY MANAGEMENT SYSTEM GUIDELINE: Section 3 Sample DSMS Manua						
Other actions required by the Asset Management Standard (AS ISO 55001)						
Discussion						
Conclusion						
Action items	□ None	Person Responsible	Deadline			

# **APPENDIX A: NSW DECLARED DAMS**

See the following website for the most up to date list: https://www.damsafety.nsw.gov.au/publications/list-of-declared-dams-in-nsw



## Water Directorate Incorporated

Brendan Guiney, Executive Officer

Address: PO Box 200, Forster NSW 2428

**Mobile:** 0498 765 055

Email: info@waterdirectorate.asn.au
Web: www.waterdirectorate.asn.au

