

Appendix B8

Construction Hazard and Risk Management Plan

Project: Keepit Dam Work Package 2 - Post Tensioning Works
Location: Keepit Dam, Namoi River, Northern NSW
Client: WaterNSW
Contract: 04532F31



Construction Hazard and Risk Management Plan

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PREPARED: Rebecca Walker-Edwards Date: 21 - 04 - 17

(for acceptance) Andrew McFarlane 21 - 04 - 17

Project Manager

ACCEPTED:  Date: 21 - 04 - 17

(for release) Andrew McFarlane

Project Manager

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Abbreviations

Term	Definition
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CTP	Compliance Tracking Program
DPE	Department of Planning and Environment
EA	Environmental Assessment
EMR	Environmental Management Representative
EMS	Environmental Management System
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	Environment Protection Authority
HRMP	Construction Hazard and Risk Management Plan
NSW	New South Wales
Project, the	Keepit Dam Work Package 2 – Post Tensioning Works
SoC	Statement of Commitments
SRG	SRG Limited
WaterNSW	The client

Construction Hazard and Risk Management Plan

1. Introduction

1.1. Context

This Construction Hazard and Risk Management Plan (HRMP or Plan) is a Sub plan of the Construction Environmental Management Plan (CEMP) for the Keepit Dam Stage 2, Work Package 2 – Post Tensioning Works project (Keepit Dam Post Tensioning Works) (the Project).

This HRMP has been prepared to address the requirements of the *Keepit Dam Upgrade Environmental Assessment* (PB, 2007), the *Keepit Dam Upgrade Submissions Report and Preferred Project Report* (PB, 2008), the resulting Project Approval (06_0155) issued for upgrade of Keepit Dam, and all applicable legislation.

1.2. Background

Keepit Dam is situated on the Namoi River, 13 km upstream of its confluence with the Peel River in the north-west of NSW.

The NSW Dams Safety Committee requires that Keepit Dam be upgraded to be able to safely pass the probable maximum flood and to withstand earthquake events. WaterNSW is therefore undertaking dam safety upgrade works to Keepit Dam to comply with the requirements of the NSW Dams Safety Committee.

WaterNSW has adopted a two stage approach to upgrading Keepit Dam;

- Stage 1 - Construction of two fuse plug spillways – completed in 2011.
- Stage 2 - Electrical relocation, post tensioning of the main dam wall and raising of the dam concrete monoliths and the main embankment.

The Stage 2 works have been procured into three separate contract work packages, these being;

1. Electrical relocation works – completed in 2015.
2. Post tensioning the main dam wall.
3. Raising of the dam concrete monoliths and main embankment.

This Construction Hazard and Risk Management Plan (HRMP) has been prepared for the Keepit Dam Stage 2, Work Package 2 - Post Tensioning Works.

1.3. Environmental Management System Overview

The overall Environmental Management System for the Project is described in the Construction Environmental Management Plan (CEMP).

The HRMP is part of the SRG Limited (SRG) environmental management framework for the Project, as described in Section 4.1 of the CEMP. Management measures identified in this Plan will be incorporated into site or activity specific Environmental Work Method Statements (EWMSs) or Work Method Statements (WMSs) where relevant.

EWMSs / WMSs will be developed and signed off by environment and management representatives prior to associated works, and construction personnel will be required to undertake works in accordance with the identified mitigation and management measures.

Used together, the CEMP, strategies, procedures and EWMSs form management guides that clearly identify required environmental management actions for reference by SRG personnel and contractors.

The review and document control processes for this Plan are described in Section 9 of the CEMP.

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2. Purpose and objectives

2.1. Purpose

This Construction Hazard and Risk Management Plan describes how SRG propose to manage potential hazards and risks associated with construction of the Keepit Dam Stage 2, Work Package 2 – Post Tensioning Works project.

2.2. Objectives

The key objective of the HRMP is to ensure that key risks and hazards are identified and managed. To achieve this objective, SRG will undertake the following:

- Ensure that key risks and hazards relating to workplace health and safety and dam safety are managed in accordance with the Safety Management Plan.
- Ensure appropriate measures are implemented to address the relevant requirements of the Conditions of Approval in Table 3-1 and Statement of Commitments in Table 3-2.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Plan.

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3. Environmental Requirements

3.1. Relevant legislation and guidelines

3.1.1. Legislation

Legislation relevant to hazards and risks includes:

- *Work Health and Safety Act 2011.*
- *Work Health and Safety Regulation 2011.*
- *Protection of the Environment Operations Act 1997 (POEO Act).*
- *Protection of the Environment Operations (General) Regulation 1998.*
- *Environmentally Hazardous Chemicals Act 1985.*
- *Environmentally Hazardous Chemicals Regulation 1999.*
- *Contaminated Land Management Act 2008.*

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in the CEMP.

3.1.2. Guidelines and Standards

The main guidelines, specifications and policy documents relevant to this Plan include:

- Australian Standard, AS4801 – *Occupational health and safety management systems.*
- SafeWork NSW – *Code of Practice for Storage and Handling of Dangerous Goods 2005.*
- *Waste Classification Guidelines Part 1: Classifying waste (NSW EPA, 2014).*
- *Waste Classification Guidelines Part 2: Immobilisation of waste (NSW EPA, 2014).*
- *Storing and Handling Liquids, Environmental Protection: Participants Manual (NSW DECC, 2007).*
- Department of Environment and Conservation (DEC): *Bunding & Spill Management, November 1997.*

3.2. Conditions of Approval

The requirements of the Project Approval relevant to air quality are detailed in Table 3-1.

Table 3-1 Conditions relevant to the Air Quality Management Plan

CoA No.	Condition	Where addressed
2.12	<p>Prior to the commencement of construction of the project, the Proponent shall:</p> <p>a) prepare and submit for the approval of the Director-General a Construction Safety Study. This study shall cover all relevant aspects detailed in the Department's Hazardous Industry Planning Advisory Paper No. 7, "Construction Safety Study Guidelines". The Proponent shall include a safety management plan as part of this study, in consultation with relevant authorities, addressing the safety of construction workers in the event of a flood, bushfire and any other likely hazard or risk;</p> <p>b) erect signs and fencing as necessary, to ensure the safety of bushwalkers etc. near the site during construction;</p>	<p>Occurred prior to Stage 1 works.</p>

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CoA No.	Condition	Where addressed
	<ul style="list-style-type: none"> c) provide adequate fire protection works on site during construction in consultation with the NSW Rural Fire Service; d) ensure that all dangerous goods and materials stored on site are stored in accordance with the relevant Australian Standards; and e) ensure that all explosives and fuel are removed from the site or disposed of appropriately, at the completion of construction work. 	

3.3. Statement of Commitments

Statement of Commitments from the Submissions and Preferred Project Report relevant to air quality are detailed in Table 3-2.

Table 3-2 Statement of Commitments relevant to air quality

SoC No.	Condition	Where addressed
41.1	A Hazards and Risk Management Sub Plan will be prepared as part of the CEMP. The Sub Plan will include:	This Plan
	<ul style="list-style-type: none"> a) details of the hazards and risks associated with the Activity during Construction; and b) mitigation measures including contingency plans. 	<ul style="list-style-type: none"> Section 4, CEMP Appendix C CEMP Appendix C



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4. Environmental Mitigation Measures

A range of environmental requirements and control measures are identified in the various environmental documents, including the EA, Submissions and Preferred Project Report and Project Approval. Specific measures and requirements to address potential hazards and risks are outlined in Table 4-1.



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Table 4-1 Environmental management measures

ID	Environmental Management Measure	When to implement	Responsibility	Reference
HR1	Health and safety hazards and risks for the project will be managed through the SRG management system including the Safety Management Plan and Project Risk Assessment.	Pre-construction and construction	SRG	SoC 41.1
HR2	All personnel will undergo a site induction which will address key safety hazards and risks, and environmental aspects and management measures.	Pre-construction and construction	SRG	SoC 41.1
ZHR3	All personnel will be toolboxed on appropriate site practices, and safety and environmental procedures and measures required to manage hazards and risks.	Pre-construction and construction	SRG	SoC 41.1
HR4	Environmental risks will be managed through the Environmental Risk Assessment process detailed in Appendix C of the CEMP.	Pre-construction and construction	SRG	SoC 41.1
HR5	Environmental incidents and emergencies will be managed in accordance with Section 7 of the CEMP.	Construction	SRG	Good practice
HR6	All project safety incidents and emergencies will be managed through the SRG Safety Management Plan.	Pre-construction and construction	SRG	Good practice

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5. Compliance Management

5.1. Roles and Responsibilities

The organisational structure and overall roles and responsibilities are outlined in the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 4 of this Plan.

5.2. Training

All employees and contractors working on site will undergo site induction training relating to hazards and risks. The induction training will address elements related to hazards and risks including:

- Relevant legislation.
- Key safety risks and hazards and relevant mitigation measures.
- Procedure to be implemented in the event of an incident.

Further details regarding staff induction and training are outlined in Section 5 of the CEMP.

5.3. Monitoring and Inspections

Weekly inspections will be undertaken with the inspection form provided in Appendix D of the CEMP completed.

Inspections relating to workplace health and safety will occur in accordance with the requirements of the Safety Management Plan.

5.4. Non-conformances

Non-conformances will be managed in accordance with Section 8.5 of the CEMP.

5.5. Audits

Audit requirements are detailed in Section 8 of the CEMP.

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6. Review and Improvement of the HRMP

6.1. Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

6.2. HRMP update and amendment

The processes described in Section 8 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Only the Environmental Site Representative, or delegate, has the authority to change any of the environmental management documentation. In terms of approval of updates or amendments to this Plan, this is to be carried out by the Environmental Management Representative (EMR), with the EMR verifying that the amendments are consistent (or not) with the Project Approval.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 9 of the CEMP.