Contents

Tables

1 Summary

Health and Safety is Snowy Hydro's first priority and central to the successful delivery and completion of the Project. Snowy Hydro has developed a comprehensive health and safety management strategy and plan that effectively addresses all relevant risks and ensures best practice safety performance throughout the life of the Project. The strategy was informed by a thorough review of regulatory requirements, relevant risks applicable to the Project, best practice safety approaches on comparable industry projects and established internal safety standards.

The success of this strategy is underpinned by the engagement of a Principal Contractor who understands and can deliver on Snowy Hydro's best practice safety expectations, and effective oversight and management by Snowy Hydro. Accordingly, Snowy Hydro has conducted rigorous and extensive due diligence over the shortlisted Contractors to assess their safety competence and performance on comparable projects. The results of this due diligence were an integral part of the Contractor evaluation and selection process. Snowy Hydro has also developed a clear and coherent framework for managing the Contractor throughout the Project to discuss safety objectives and responsibilities, monitor safety performance against agreed targets, and escalate and resolve any new risks and issues in a timely manner.

This chapter sets out Snowy Hydro's safety philosophy, the health and safety strategy and regulatory framework for the Project, Snowy Hydro's due diligence of, and approach for, ongoing engagement with Contractors in relation to health and safety management, the key health and safety risks for the Project and the controls developed to appropriately mitigate these risks.

1.1 Introduction

The safety of workers and the community is Snowy Hydro's priority during the design, construction, and operation of the Project. To ensure the highest level of safety performance, the Project must demonstrably be aligned with Snowy Hydro's belief that 'all incidents are preventable' and be constructed following the applicable health and safety laws, regulations and codes of practice. To implement an effective safety management system, Snowy Hydro and the Principal Contractor must jointly develop and align a cohesive strategy combining safety expectations, risks and controls and systems, policies and procedures.

Snowy Hydro intends to engage a Principal Contractor(s) for the Civil Works Package(s). The Principal Contractors who have extensive and relevant experience in constructing infrastructure projects will be responsible for the safety of the site works for the Project package(s), including any site works performed by the Electrical/Mechanical (***E&M***) Contractor, whether or not the E&M Contractor is 'wrapped' (see Supporting Chapter Three - *Contracts and*

legal). References to the Principal Contractor in this Chapter refer to each Principal Contractor for their respective scopes.

For Snowy Hydro and the Principal Contractor to fulfil their duties to ensure the health and safety of all workers engaged for the Project, the following needs to occur:

1. Snowy Hydro establishes Employer's Requirements that clearly articulate our health and safety targets, objectives and strategy for the Project - this has been completed;
2. Snowy Hydro to engage and authorise a Principal Contractor to undertake the Works. When deciding to award this contract, Snowy Hydro must undertake a comprehensive program of due diligence activities to be assured that a) the contractor's safety management system complies with all applicable health and safety laws, regulations and codes of practice, and b) the contractor is able to create and sustain an effective safety culture with all workers for the duration of the Project that will meet the Employer's Requirements - this is underway with significant progress;
3. Snowy Hydro and the engaged Principal Contractor to establish an ongoing process for the assessment and management of health and safety risks;
4. The engaged Principal Contractor to develop a Project Health and Safety Management Plan (***HSMP***), inclusive of a Project Emergency Response Plan that considers the outcomes of the above risk assessment process, the health and safety regulatory framework and the Employer's Requirements;
5. The Project HSMP to be reviewed by the Owner's Team and an independent health and safety auditor, assuring the Plans at a minimum meet or exceed both the regulatory requirements and Employer's Requirements; and
6. For the duration of the Project, the Owner's Team to verify, by inspection and audit, that the Principal Contractor is taking the necessary and appropriate steps to manage the health and safety of all workers on the Project, and is compliant with the requirements of the approved Project HSMP.

See *Supporting Chapter Fifteen - Contractors' execution approach* for more detail.

Snowy Hydro's Employer's Requirements regarding health and safety have been shared with the shortlisted Contractors, and in the period between the Feasibility Study and Final Investment Decision (***FID***), Snowy Hydro has maintained alignment with the shortlisted Contractors through a due diligence framework, maintaining rigour on safety performance expectations. See *Supporting Chapter Two - Procurement* for more details.

As at FID, submissions from the shortlisted tenderers were being assessed by Snowy Hydro.

1.1 Activities undertaken

Snowy Hydro, its consultants, stakeholders and prospective Contractors undertook a comprehensive program of site visits, desktop review, interactive workshops and consultation to establish the preferred Project Health and Safety approach prior to FID.

1.3 Health and safety regulatory framework

The Project is principally governed by NSW legislation, regulation and codes of practice. Both Snowy Hydro and the Principal Contractor are considered under the legislation as 'persons conducting a business or undertaking' (***PCBU***),[1] and the Project as a 'construction project', with the attendant duties and responsibilities.

Chapter Six of the *Work Health and Safety Regulation* is particularly relevant to the Project,[2] as it sets out the requirements for construction work. The Project meets the definition of a 'construction project'. The *Regulation* requires every construction project to have an appointed Principal Contractor, who must manage and control the Work Health & Safety (***WH&S***) risks associated with that construction work. Snowy Hydro has determined that the Civil Contractor is best placed to discharge the duties of the Principal Contractor,

Engaging the Civil Contractor as the Principal Contractor does not absolve Snowy Hydro from responsibility for WH&S. For construction work, the *Regulation* allocates duties to not only the Principal Contractor but to a range of other duty holders, including designers. The *WH&S Act* specifies designers must ensure structures are designed to be safe when used as a workplace during their life cycle. Each of the duty holders must consult, coordinate and cooperate with each other to ensure that risks to health and safety are managed. This is an equal duty between the parties and must be carried out before and during the construction work.

Since the transfer to 100% Commonwealth ownership in July 2018, Snowy Hydro is also governed by the Commonwealth *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2017*, both harmonised with the NSW *WH&S Act* and *Regulation*.

However, it has been confirmed that Safework NSW will be the Regulator for all Works undertaken.

The *Work Health and Safety (Mines) Act 2013* (NSW) (***Mines Act***) will not apply to underground construction works associated with the Project.

The regulatory provisions in relation to explosives are set out in the *Explosives Act 2003 (NSW)* (***Explosives Act***) and the *Explosives Regulation 2017 (NSW)* (***Explosives Regulation***).

[1] As defined in section 5 of the NSW *Work Health and Safety Act 2011* (***NSW WH&S Act)***.
[2] NSW *Work Health and Safety Regulation 2017* (the ***Regulation***).

1.2 Project Health and Safety Management System

The Principal Contractor will implement a HSMP prior to commencement as part of a suite of management plans (see *Supporting Chapter Fifteen* for other plans) that will define the Principal Contractor's health and safety management system and safe systems of work, and demonstrate how this plan interfaces with those of any subcontractors of the Principal Contractor. The Principal Contractor's safety management system must comply with all relevant requirements of the *WH&S Act* and *Regulation* and the Employer's Requirements.

1.3 Emergency Response Requirements

The *Regulation* imposes specific emergency preparedness and response duties.. The Principal Contractor must plan and manage emergency response with careful consideration to the Project's remote area and constrained access to specialist underground rescue expertise.

Snowy Hydro engaged in significant consultation with local and regional emergency response agencies prior to FID. Snowy Hydro will continue this consultation. Snowy Hydro and the Principal Contractor once appointed will develop a joint crisis management plan, however, the Principal Contractor is responsible for developing an appropriate Project-specific emergency response plan.

2 Activities undertaken

2.1 Overview

Snowy Hydro, its consultants, stakeholders and prospective Contractors undertook a comprehensive program of site visits, desktop review, interactive workshops and consultation to establish the preferred WH&S approach prior to FID.

The following activities were undertaken prior to FID:

1. Internal consultation, validation, and testing through Snowy Hydro Legal, Risk, Procurement and Safety, People and Culture teams and the Owner's Team representatives;
2. A desktop review of applicable Safework NSW, Comcare and Safework Australia regulatory provisions;
3. WH&S risk workshops with Owner's Team representatives and shortlisted contractors to identify key health and safety risks and controls;
4. Development of the Employer's Health and Safety requirements, to clearly articulate to the shortlisted contractors Snowy Hydro's expected health and safety targets, objectives and strategy for the Project and the minimum requirements for the Project HSMP;

5. Consultation with representatives from Safework NSW and Comcare, as the regulators of workplace health and safety;
6. Consultation, workshops and desktop emergency exercises with local professional emergency response agencies;
7. Consultation with local health services, including private medical practices and the local area health service;
8. Consultation and visits to existing greenfield and brownfield Project sites operating with a Fly-in/Fly-out ***(FIFO)*** workforce, to identify industry best practice standards for FIFO work patterns, including worker camp accommodation;
9. Participation in the Early Contractor Consultation (***ECC***) process *(see Supporting Chapter Two - Procurement)*;
10. Visits to reference sites of the shortlisted Civil, Electrical/Mechanical (***E&M***) and Exploratory Works - Roads (***EWR***) tenderers;
11. Completion of tender design clarification workshops and contract risk allocation workshops;
12. Review of Snowy Hydro's requirements and issue update for shortlisted contractors as required;
13. Review and evaluation of the proposed HSMPs of the shortlisted Civil, E&M and EWR contractors, to ensure compliance with both the regulatory requirements and the Employer's Requirements; and
14. Review of past health and safety performance by all shortlisted contractors, including key lag indicators and historical health and safety prosecutions.

2.2 Site visits

A scheduled program of visits was completed by representatives of the Owner's Team to active Project sites (both within Australia and internationally) of the Civil, E&M and EWR shortlisted contractors, with the aim of undertaking an evaluation of current safety, environmental and quality standards and performance.

3 Health and safety regulatory framework

3.1 Overview

The Project is principally governed by NSW legislation, regulation and codes of practice. Both Snowy Hydro and the Principal Contractor are considered under the legislation as PCBUs, and the Project as a 'construction project', with the attendant duties and responsibilities.

This section details the WH&S regulatory framework applicable during the Project, including the specific WH&S requirements and duties.

3.2 General workplace health and safety regulatory provisions

As the Project works are to be undertaken within NSW, WH&S regulatory requirements applicable to the Project are principally addressed within the *WH&S Act* and the *Regulation*.

Additionally, NSW has adopted a range of supporting Codes of Practice (***COP***) that provide greater detail in relation to the management of specific workplace hazards. Examples of COPs relevant to the Project include *Tunnels under Construction (2006), Construction Work (2016)*, *Managing Noise and Preventing Hearing Loss (2016)*, *Excavation Work (2015)*, *Managing the Risks of Plant in the Workplace (2014)*, *Managing the Risks of Falls at Workplaces (2016)* and *Safe Design of Structures (2014)*.

The Principal Contractor will be governed by but is not limited to the WH&S legislative requirements listed in Table 2 below.

Acts	1. *Work Health and Safety Act 2011 (NSW);* 2. *Explosives Act 2003 (NSW);* 3. *Dangerous Goods (Road and Rail Transport) Act 2008 (NSW);* 4. *Workplace Injury Management and Workers Compensation Act 1998 (NSW);*
Regulations	1. *Work Health and Safety Regulation (NSW) 2017;* 2. *Explosive Regulations 2017 (NSW);* 3. *Dangerous Goods (Road and Rail Transport) Regulation 2014 (NSW);* 4. *Workers Compensation Regulation 2016 (NSW).*
NSW Codes of Practice 2011 – 2017	1. *NSW Code of Practice: Abrasive blasting;* 2. *NSW Code of Practice: Confined spaces;* 3. *NSW Code of Practice: Construction work;* 4. *NSW Code of Practice: Demolition work;* 5. *NSW Code of Practice: Excavation work;* 6. *NSW Code of Practice: first-aid in the workplace;* 7. *NSW Code of Practice: Hazardous manual tasks;* 8. *NSW Code of Practice: How to manage and control asbestos in the workplace;* 9. *NSW Code of Practice: How to manage work health and safety risks;* 10. *NSW Code of Practice: How to safely remove asbestos;* 11. *NSW Code of Practice: Labelling of workplace hazardous chemicals;* 12. *NSW Code of Practice: Managing electrical risks in the workplace;* 13. *NSW Code of Practice: Managing noise and preventing hearing loss at work;* 14. *NSW Code of Practice: Managing risks of hazardous chemicals in the workplace;* 15. *NSW Code of Practice: Managing the risk of falls at the workplace;* 16. *NSW Code of Practice: Managing the risks of plant in the workplace;* 17. *NSW Code of Practice: Managing the work environment and facilities;* 18. *NSW Code of Practice: Preparation of safety data sheets for hazardous chemicals;* 19. *NSW Code of Practice: Safe design of structures;* 20. *NSW Code of Practice: Spray painting and powder coating;* 21. *NSW Code of Practice: Welding processes;* 22. *NSW Code of Practice: Work health and safety consultation, coordination and cooperation.*
NSW Codes of Practice – pre-2011	1. *Collection of domestic waste code of practice (2005);* 2. *Control of work-related exposure to hepatitis and HIV (blood-borne) viruses code of practice (1995);* 3. *Cutting and drilling concrete and other masonry products code of practice (1996);* 4. *Formwork code of practice (1998);* 5. *Moving plant on construction-sites code of practice (2004);* 6. *Overhead protective structures code of practice (1994);*

	7. *Safe use of synthetic mineral fibres code of practice (1993);* 8. *Safe work on roofs part 1 commercial industrial code of practice (2009);* 9. *Safety in forest harvesting operations code of practice (2002);* 10. *Technical guidance code of practice (2001);* 11. *Tunnels under construction code of practice (2006);* 12. *Work near overhead power lines code of practice (2006).*

Table 2: Legislative requirements

Since the transfer to 100% Commonwealth ownership in July 2018, Snowy Hydro is also governed by the Commonwealth *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2017*, both of which are harmonised with the NSW *WH&S Act* and *Regulation*. The primary difference is that the NSW *WH&S Act* and *Regulation* are regulated by Safework NSW, whereas the Commonwealth Act and Regulation is regulated by Comcare.

Snowy Hydro Owner's Team representatives have met with both Safework NSW and Comcare to clarify the role of each regulator for the Project, and have confirmed that Safework NSW will be the Regulator for all Works undertaken. Comcare will have a role as the regulator for Snowy Hydro in its capacity as the Employer. This will centre on ensuring Snowy Hydro has conducted, and will continue to conduct for the duration of the Project, adequate due diligence activities to ensure it is discharging its duties under the Act in its appointment and ongoing engagement of the Principal Contractor.

3.3 Workplace health and safety legislative duties

The *WH&S Act* imposes a range of specific duties on the PCBU, officers of the PCBU and on workers. Additional duties are imposed on specific classes of duty holders (for example PCBUs that install, construct, or commission plant). For the duration of the Project, there will be multiple PCBUs, including Snowy Hydro, the engaged Principal Contractor and their subcontractors.

The *WH&S Act* imposes a number of 'primary' duties on a PCBU. These duties include ensuring the health and safety of workers; the provision of safe plant and structures; the provision of safe systems of work and the provision of adequate facilities for the welfare of workers. PCBUs are required to discharge their WH&S duties to a standard of 'reasonably practicable'; officers of the PCBU are required to 'exercise due diligence' and workers are required to take 'reasonable care'.

In addition to the allocation of duties, the *WH&S Act* specifies the principles that apply to all WH&S duties. These principles preclude the transfer of a duty to another person; allow for a person to hold more than one duty and also allow more than one person to concurrently hold the same duty.

3.4 Regulatory requirements for construction work

Chapter Six of the *Regulation* is particularly relevant to the Project. It sets out the requirements for construction work. The Project meets the *Regulation* definition of construction work, as being 'any work carried out in connection with the construction …. of a structure'. The meaning of 'structure' is defined in the *WH&S*

Act as 'anything that is constructed, whether fixed or moveable, temporary or permanent and includes …. underground works (shafts and tunnels)'.

The Project also falls under the *Regulation* definition of a 'construction project', defined as construction work with costs exceeding $250,000. The *Regulation* requires every construction project to have an appointed Principal Contractor, who must manage and control the WH&S risks associated with that construction work, as well as perform specific duties additional to those ordinarily imposed upon a PCBU. The 'Principal Contractor' is defined as either:

1. The PCBU that commissions a construction project (ie Snowy Hydro); or
2. Another PCBU engaged as Principal Contractor for the construction project and who is authorised to have management and control of the workplace and to discharge the duties of Principal Contractor.

Specific duties imposed on the Principal Contractor include the development of a Safety Management Plan relevant to the construction work, management of risks associated with traffic in the vicinity of the workplace, and management of risks associated with essential services at the workplace.

Snowy Hydro has determined given the scale and complexity of the Project and the subsequent skill set and experience required to undertake the Works, that the Civil Contractor is best placed to discharge the duties of the Principal Contractor. For this reason, Snowy Hydro will authorise the Civil Contractor to have management and control of the Project workplace(s) (see *Supporting Chapter Fifteen - Contractor's execution approach*).

The *Regulation* provides that only one PCBU can have management or control of a defined workplace at any given time - ie, there can be only one Principal Contractor at any given time. Snowy Hydro will engage one Principal Contractor, the Civil Contractor, to act as Principal Contractor for the duration of the Project. Any subcontractors of the Civil Contractor, as well as the E&M Contractor and any subcontractors of the E&M Contractor, will work under the one approved Project HSMP as developed by the Civil (Principal) Contractor.

Engaging the Civil Contractor as the Principal Contractor for the Project does not absolve Snowy Hydro from responsibility for meeting a range of WH&S duties and obligations. For construction work, the *Regulation* allocates specific duties (in addition to the primary duties imposed by the *WH&S Act*) to not only the Principal Contractor but to a range of other duty holders that include persons who commission construction work (in the case of the Project, Snowy Hydro), persons who design structures, and other PCBUs such as any subcontractors. Each of these PCBUs must consult, coordinate and cooperate with each other to ensure that risks to health and safety are managed. This is an equal duty between the parties and must be carried out before and during the construction work. As a PCBU who has commissioned construction work, Snowy Hydro has a duty to provide to the Principal Contractor information that it holds in relation to hazards and risks at, or in the vicinity of, the workplace where the Project construction work will be carried out. A series of health and safety risk workshops have already been undertaken with the shortlisted civil contractors and further risk workshops will be undertaken following contract award.

There are two key components Snowy Hydro needs to undertake in order to continue to meet the primary duties imposed by the WH&S Act as detailed above:

1. Prior to the appointment of the Principal Contractor, for Snowy Hydro to undertake a comprehensive program of due diligence activities to be assured the selected Civil Contractor has:
    a. A health and safety management system that complies with all applicable health and safety laws, regulations and codes of practice, and
    b. The ability to create and sustain an effective safety culture with all workers for the duration of the Project that will meet the Employer's Requirements.
2. For the duration of the Project, Snowy Hydro must have an ongoing program of assurance and due diligence activities to verify that the Principal Contractor is taking the necessary and appropriate steps to manage the health and safety of all workers on the Project, and are compliant with the requirements of the approved Project HSMP.

Snowy Hydro's existing safety procedures are to be followed by the Owner's Team in relation to the development and execution of the Project safety management plan and worksite management requirements.

Examples of activities that will be undertaken include:

1. A program of scheduled site inspections and formal audits;
2. Participation in regular meetings with the EWR, Principal Contractor and Safework NSW at the Project worksites;
3. Monthly review of health and safety performance data; and
4. Review of incident investigation reports for serious incidents.

3.5 Regulatory requirements for high-risk construction work

In addition to the duties detailed above, the *Regulation* imposes further duties in relation to 'high-risk construction work' and defines the types of construction work that are considered high-risk. The Project meets the definition of high-risk construction work, as it involves several different construction work activities defined as 'high-risk', including work that has a risk of a person falling more than two metres, work carried out in or near a tunnel, work involving the use of explosives, and work carried out at a workplace where there is movement of powered mobile plant.

The specific duties in relation to high-risk construction work largely relate to the requirement of the Principal Contractor to develop, communicate and retain Safe Work Method Statements (***SWMS***) for all activities deemed to be high-risk construction work.

3.5 Underground construction works

Workplace health and safety regulatory obligations that apply to the underground component of the Project are the same as those described in the previous sections: the *WH&S Act* and *Regulation* will apply, with particular

emphasis on requirements in relation to construction work and high-risk construction work.

The *Work Health and Safety (Mines) Act 2013* (NSW) (***Mines Act***) will not apply to underground construction works associated with the Project, as the Mines Act specifically excludes 'any activity where the extraction of minerals is incidental to the activity (eg: civil works such as tunnelling to create a road)'.

3.6 Explosives

The regulatory provisions in relation to explosives are set out in the *Explosives Act 2003 (NSW)* (***Explosives Act***) and the *Explosives Regulation 2017 (NSW)* (***Explosives Regulation***). Collectively, these instruments specify the requirements for the storage, use, transport, and disposal of explosives. The *Explosives Act* and *Explosives Regulation* require specific security measures to be implemented, (including licences and security clearances for relevant personnel), prescribe how explosives are to be transported and stored (in a safe magazine) and detail systems aimed at restricting access to explosives. These regulatory provisions will apply to all Project construction works involving explosives. See *Supporting Chapter Fifteen* for detailed requirements.

3.7 Safety-in-design

Safety-in-design aims to prevent injuries by considering hazards as early as possible in the planning and design process. The *WH&S Act* specifies designers must ensure structures are designed to be safe when used as a workplace during their life cycle, by considering the safety of those who construct, commission, operate, clean, maintain, modify and, if required, demolish the structure, and the safety of those who work in or with it. Designers must also consider the safety of people in the vicinity of the workplace.

For the Project, as per the *WH&S Act* and *Regulation*, the PCBU nominated as the Designer (in the context of the Act) and Snowy Hydro have obligations around safety-in-design, specifically:

1. The Designer has a duty to report on the potential hazards unique to the design of the Project (including access roads, underground and surface structures and E&M components) that may pose a hazard to people carrying out the construction works;
2. The Designer must supply this information to anyone who constructs, uses, maintains or demolishes that structure; and
3. All parties have a duty to consult with each other to ensure the information is communicated.

For the Project there are two PCBUs who are nominated designers: for the EWR, SMEC is the designer but for the main project the Principal Contractor (Civil contractor) is the nominated designer.

Safety-in-design has been applied throughout the Feasibility Study and Pre-FID investigative works to date across four key aspects (Civil, E&M, environmental

and geotechnical design) and will continue throughout the Project life cycle, including:

1. Consultation with user groups, to ensure operational and maintenance requirements are considered in the design process (see *Supporting Chapter Twelve - Facilities*);
2. Safety design risk assessments, using tools including CHAIR,[3] HAZOP,[4] HAZID,[5] and CHAZOP,[6] to address technical and operational hazards and risks relevant to the Project (see *Supporting Chapter Twelve*);
3. Risk identification and management processes to eliminate, adequately minimise or control associated hazards (see *Supporting Chapter Seventeen*); and
4. Ensuring information on any hazards unable to be eliminated is communicated to stakeholders to facilitate the development of appropriate safe work procedures to control the hazard.

4 Project Health and Safety Management System

4.1 Overview

The Principal Contractor will implement a HSMP prior to commencement as part of a suite of management plans (see *Supporting Chapter Fifteen*) that will define the Principal Contractor's health and safety management system (***HSMS***) and safe systems of work, and demonstrate how this plan interfaces with those of any subcontractors of the Principal Contractor. The Principal Contractor's safety management system must comply with all relevant requirements of the *WH&S Act* and *Regulation* and the Employer's Requirements.

4.2 Project Health and Safety Management Plan

The appointed Principal Contractor will prepare and implement a Project HSMP that will detail:

1. General information on the Contractor's organisational structure and line of responsibility;
2. Scope of work, processes for works planning and execution of works;
3. Works site management processes;
4. Risk management framework and processes;
5. How work health and safety risk controls are to be implemented;
6. Processes to be used to monitor and review risk controls;
7. Details of health surveillance processes;
8. Training and competency requirements;
9. Work health and safety performance targets, lead and lag indicators and outcomes;

[3] Construction Hazard Assessment Implication Review.
[4] Hazard and Operability.
[5] Hazard Identification.
[6] Control HAZOP.

10. Processes for work health and safety consultation and communication, including with workers on-site, the Owner's Team representatives and with the regulator;
11. Processes for incident management and corrective actions;
12. Processes for emergency preparation and response;
13. How the relationship with the Owner's Team will be maintained, including processes to enable Snowy Hydro to undertake the necessary program of due diligence and assurance activities; and
14. Review processes to ensure the currency of the health and safety management plan.

The HSMP will form part of a suite of plans that together will outline how the Project will be managed, to ensure an integrated approach to meeting the Project requirements. Other plans that will interface with the safety management plan (and noted in other chapters within this Report) include the Construction Environmental Management Plan, Security Management Plan and Traffic Management Plan.

There will be no requirement for the Principal Contractor to adopt elements of the Snowy Hydro safety management system and it is likely there will be variations between the safety management systems of business-as-usual (***BAU***) Snowy Hydro and the appointed Principal Contractor - for example, fatigue management rostering rules for the Principal Contractor may be different to Snowy Hydro BAU considering that Project works will be 24/7 as opposed to Snowy Hydro BAU, which is typically 5 days per week, day shift only. T

See *Supporting Chapter Fifteen* for further details of Snowy Hydro's expectations for the Contractors.

5 Emergency Response Requirements

5.1 Overview

The *Regulation* imposes specific emergency preparedness and response duties. The Project area is remote and challenging, with long response times from external emergency agencies, and constrained access to specialist underground rescue expertise. The Principal Contractor must plan and manage emergency response accordingly.

5.2 Regulatory duties

, The *Regulation* imposes specific duties in relation to emergency preparedness and response, including the duty to prepare, maintain, and implement an emergency plan.

Additionally, there is a duty to ensure that the workplace is equipped with first-aid equipment, that workers have access to first-aid equipment and facilities, and that workers have adequate access to personnel who are trained to administer first-aid.

5.3 Project context

Emergency planning, procedures, equipment, and training must be customised to meet the specific and unique working environment of the Project. Accordingly, emergency processes will be developed with consideration to the following criteria, in addition to the regulatory obligations:

1. Geography and climate;
2. Response capability of existing local emergency response agencies; and
3. Workplace activities and associated workplace hazards.

The Project area is characterised by extremes of temperature, remote undulating mountainous terrain with heavily forested areas, significant variations in elevation, and incomplete coverage for most forms of electronic communication. Each of these factors directly influences emergency planning and response capability.

Response times by professional emergency agencies to the Project area, relative to urban standards are slower. Ambulance, police and fire response agencies are located in the surrounding townships of Cooma, Tumut, and Tumbarumba. Road response times from these agencies to the general Project area will typically be in the order of 90 to 120 minutes.

These response times are likely to be greater during peak tourism times in the Snowy Mountains region, particularly during winter, when emergency agencies are regularly alternatively tasked to incidents near the ski resorts of Perisher and Thredbo, when roads are affected by snow and/or ice, and during weather events such as high wind and/or rain events that result in fallen trees and other negative impacts on the accessibility of both sealed and unsealed roads. The NSW Ambulance Service currently has a limited number of ambulances in the Cooma and Tumut areas with 4WD capability allowing them to travel on unsealed roads; this may also impact on response times as many of the access roads for the Project will be unsealed.

The closest hospitals to the general Project area are located in Cooma and Tumut respectively. However, both of these hospitals have limited capacity to manage emergencies. In practice, all but minor injuries will be transported directly by either by road or helicopter to larger hospitals, primarily in Canberra and to a lesser extent in Wagga Wagga or Bega.

The nearest helicopter aero-medical retrieval service is based in Canberra (however see the note below about the provision of a medical service and a paramedic for the project). This service is currently operated by Toll and provides 24/7 response capability. Retrieval flight crews typically include a doctor and NSW Ambulance helicopter paramedic. Flight time from Canberra to the Project area is approximately 30 to 40 minutes; however, mobilisation time and alternate tasking may lead to an increase in response times. Additional delays may be experienced during periods of extreme weather, such as high winds or fog, common in KNP.

In addition to the issues resulting from the geographic location of the Project, consideration needs to be given to the emergency response to underground

construction operations. The locally available emergency response agencies are not trained or equipped to respond to emergencies in an underground environment. Within the state of NSW, the most capable professional underground rescue agency is Mines Rescue NSW. However, Mines Rescue NSW will be unable to provide a response to an emergency in any Project underground location given:

1. The primary responsibility and priority for Mines Rescue NSW are emergencies associated with underground mining; and
2. The agency only has stations located in the Wollongong, Sydney and Hunter Valley areas, none of which are near the Project area. However, Mines Rescue NSW can undertake assessments of underground emergency response needs and provide approved training for underground rescue personnel.

5.4 Snowy Hydro Emergency Management responsibilities

Significant consultation has occurred between the Owner's Team and local and regional emergency response agencies throughout the Feasibility Study and Pre-FID periods, including:

1. Workshops to discuss key emergency risks and controls;
2. Site familiarisation visits;
3. Development of an emergency response plan for the geotechnical investigation program (***GIP***);
4. Desktop emergency response exercises related to the GIP.

Snowy Hydro will continue to foster strategic liaisons with local and regional emergency response agencies in the lead up to the commencement of Project works, to ensure these agencies have sufficient lead time to secure the appropriate level of resourcing (both personnel and equipment) required throughout the various phases of the Project.

Once the Principal Contractor is appointed, a joint crisis management plan for the Project will be developed that clearly articulates the crisis management team structure, roles and responsibilities for representatives from both the Principal Contractor and the Owner's Team.

5.5 Contractor's responsibilities

With the aim of ensuring effective emergency capabilities and considering each of the factors outlined above, the Principal Contractor will implement the following for the Project by:

1. Development of a Project-specific emergency response plan in consultation with local emergency response agencies. This plan will be subject to periodic reviews over the course of the Project, in response to changes in work locations, work activities and number of personnel employed;

2. Development and fostering of strategic liaisons with local emergency response agencies, including both development of and participation in multi-agency emergency planning and emergency exercises. Local emergency response agencies will also be provided with copies of the Project emergency response plan;
3. Ensuring electronic communication modalities are appropriate and available in the event of an emergency. An upgrade to the current mobile phone network (through the installation of new mobile phone tower/s) in the Project area is the preferred option and discussions between the Owner's Team and Telstra have commenced in relation to the same. In the interim, the temporary mobile phone trailers (which work off satellite technology) installed to support the geotechnical investigation program will be maintained;
4. Adoption of risk mitigation strategies in relation to managing bushfire risks within the Project area, including strategies to minimise the risk of work activities causing a bushfire and strategies on how to protect both Project personnel and Project assets in the event of a bushfire;
5. Provision of a contract 24/7 medical and paramedic service based on-site within the Project area to significantly reduce response times in the event of a time-critical medical emergency. This service would be equipped with advanced life support equipment and 4WD ambulance capability, and be supported by first-aid/medical rooms in close proximity to each work front. The paramedic service will be tasked with providing services exclusively to Project personnel and will provide a full medical/emergency response to above-ground operations. For underground operations, the paramedic service would work in tandem with appropriately trained and equipped underground rescue personnel;
6. Ensuring there are sufficient medical facilities within the camp locations to enable the Principal Contractor to independently manage illness and minor injury amongst the Project workforce and therefore not place additional burden on existing medical services within the nearby towns of Cooma and Tumut;
7. Ensuring there are sufficient numbers of appropriately trained and equipped underground rescue personnel as part of each work crew; and
8. Engaging a subject matter expert (***SME***) to undertake a formal evaluation of underground rescue training, underground emergency rescue equipment and emergency resource requirements for the duration of the Project.

See *Supporting Chapter Fifteen* for further details of Snowy Hydro's expectations for the Contractors in relation to emergency management.

6 Risks

The management of risk is an integral part of the Project. Throughout the Feasibility Study and Pre-FID period (including the management of geotechnical investigation work undertaken to date), health and safety risks have been identified, analysed and controlled.

Health and safety risk management will continue throughout the Project life cycle, specifically:

1. The identified Project risks inclusive of health and safety risks will be reviewed regularly and amended as required;
2. Mechanisms will be in place to ensure the workforce is consulted when identifying health and safety risks and when developing risk controls;
3. The hierarchy of controls will be applied when determining controls to mitigate risk;
4. SWMS will be developed for all high-risk construction works;
5. Scheduled, regular workplace inspections will be undertaken by the Principal Contractor to ensure the effectiveness of identified controls and compliance to SWMS, procedures and systems;
6. A system will be in place to manage work permits;
7. A system to report hazards will be in place to proactively manage hazards;
8. A system to report incidents will be in place to immediately respond to and investigate incidents, as well as share incident learnings; and
9. Mechanisms will be in place to ensure health and safety risks are communicated to the workforce through various mediums, such as pre-start briefings and toolbox talks, which take account of factors such as workers from non-English speaking backgrounds or those with poor literacy skills.

Health and safety risks arising out of the Project will be managed in accordance with the *WH&S Act* and *Regulation* and, where applicable, the *Explosives Act* and *Explosives Regulation*. Safety risks associated with construction activities will generally be mitigated through the implementation of appropriate construction methodologies, practices and procedures.

The overall risk management approach for the Project is detailed in *Supporting Chapter Seventeen - Risk management*.

7 Definitions and abbreviations

BAU	Business-as-usual
COP	Codes of Practice
ECC	Early Contractor Consultation
EWR	Exploratory Works - Roads
FID	Final Investment Decision
FIFO	Fly-in/Fly-out
HSMP	Health and Safety Management Plan
HSMS	Health and safety management system
PCBU	Persons conducting a business or undertaking
SME	Subject matter expert
SWMS	Safe Work Method Statements
WH&S	Work Health & Safety

8 Bibliography

This chapter has no bibliography.