



Kurri Kurri Power Station Emergency Response Handbook



October 2025

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1.0 INTRODUCTION

1.1 Purpose

To provide a structured approach to ensure emergency response at Kurri Kurri Power Station (KKPS) is both timely and appropriate due to adequate planning that encompasses emergency facilities, equipment, procedures and training.

Additionally, this handbook functions as the Pollution Incident Response Management Plan required by Kurri Kurri Power Station Environmental Protection Licence (EPL 21627).

The handbook is developed to align or adhere to the following:

- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (General) Regulation 2022
- Guideline: Pollution Incident Response Management Plans (NSW EPA, 2022)
- Infrastructure Approval SSI 12590060 Condition B13(b)
- AS1851 and AS3745
- ISO45001
- Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'

1.2 Scope

The KKPS Emergency Response Handbook applies to all emergency situations that occur within, or impact upon, KKPS land. This includes pollution events that occur within the Power Station land and impact the environment outside the Power Station land.

1.3 Definitions

Term	Definition
Emergency	As per Snowy Hydro Glossary of Terms.
Crisis	As per Snowy Hydro Glossary of Terms.
Pollution Incident	An event during which there is or is likely to be a leak, spill or other escape or deposit of a substance to the environment. A pollution incident for the purposes of this Handbook is one that is notifiable to the NSW Environment Protection Authority (EPA) and other regulatory agencies. An incident is notifiable where material harm to the environment is caused or threatened. A pollution incident does not include an incident or set of circumstances involving only the emission of any noise. Harm to the environment is material if: A. it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or B. it results in actual or potential loss or property damage of an amount, or amounts in C. aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and D. loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

1.4 Contact Details

Contact Name	Location call goes to	24-hour Contact Number
Snowy Hydro Internal Contacts		
Gen Ops - Snowy Mountains Control Centre (SMCC) control room desk	Cooma	02 6453 2484 or 2485 02 6453 2777
Kurri - Office (Business hrs only)	HPS Office	02 4356 8041 02 4356 8042
Kurri - Control Room / Operator In Charge (On Call)	HPS control room, then OIC Mobile	TBC
Plant Manager	Ian Cameron	0437 834 469
Area Manager	Gary Blanch	0417 453 320
A/General Manager Production	Drew Twigg	0477 044 027
Manager Access and Assurance	Isaac Strachan	0429 702 037
Head of Health and Safety	Rob Cavallaro	0400 277 411
Physical Security Service Manager	Ryan Hartnell	0418 760 586
Senior Environmental Advisor	Trevor Thompson	0403 569 989
General Manager Water, Environment and Lands	Charlie Litchfield	0427 773 504
Snowy Hydro Community Info	Cooma	02 6453 2888
APA	Kurri Kurri Storage Station	TBC
Nepean Longwall	Loxford Office	TBC
McCloy Group	Loxford Office	02 4954 7500

A full list of all Snowy Hydro [Emergency Contacts](#) (will need to be populated once known) can be found on the [Emergency Response and Crisis Management](#) page on The Grid.

The list of regulatory authorities in relation to a reportable environmental pollution incident, and their 24/7 contact details are contained in [Section 6.3: Environmental Pollution Incident - Notification to Relevant Authorities](#)

For additional emergency contact information, personnel may also refer to the Kurri Kurri Power Station section of [The Grid](#), where under the heading '[Emergency Contact list](#)' is a more comprehensive list of emergency contacts for the area.

2.0 FACILITY DESCRIPTION

2.1 Location

KKPS is located at Loxford in the Hunter Valley region of New South Wales. Nearby major population centres include Maitland (approx. 9km to the north east), Cessnock approx. 11km to the south-west), and Newcastle (approx. 30km to the south-east). See [Figure 2.1](#).



Figure 2.1: Kurri Kurri Power Station Location Map (image source: NSW Spatial Services)

2.2 Surrounding Land Use

KKPS is completely surrounded by adjacent land holdings associated with the decommissioned Hydro Aluminium Smelter. The surrounding land is presently owned by McCloy Group and The Loxford Estate development.

Adjacent to the Power Station is the APA Kurri Kurri Storage Station (KKSS). North of the Power Station is the APA Kurri Kurri Lateral Pipeline (KKLP) and Kurri Kurri Storage Pipeline (KKSP) as well as Ausgrid's Kurri North Switching Station (KNSS).

Beyond the boundaries of the Power Station land there are a number of nearby residential areas. These include Cliftleigh, Heddon Greta, Kurri Kurri, Weston and Sawyers Gully. (refer to [Figure 2.2](#) and [Figure 2.3](#)).



Figure 2.2: KKPS surrounding land use (image source: Google Earth)



Figure 2.3: Aerial view of KKPS looking south towards Kurri Kurri (image source: Snowy Hydro)

2.3 Access

KKPS is accessed from Hart Road at Loxford either from Weston or Sawyers Gully, or off the Hunter Expressway from a westbound direction only.

Routine access to the KKPS facility is by means of gates located adjacent to the administration building. Light vehicles access the main site access gates to enter the KKPS light vehicle carpark, with a second gate provided for heavy vehicles/diesel tankers. Refer to [Figure 2.4](#).



Figure 2.4: Regular KKPS site access points for light and heavy vehicles

2.4 Operations Description

2.4.1 Overview

The KKPS has the largest Gas Turbines in Australia with Snowy Hydro using them intermittently to firm renewable electricity demands.

The facility consists of two dual-fuel gas turbines and associated generators that are capable of generating 660MW in total. The gas turbines are typically powered by natural gas, however, low sulphur diesel may also be used as an alternative fuel source. Natural gas is supplied by a pipeline and associated infrastructure which is owned and operated by APA.

Ancillary plant equipment at KKPS includes an emergency diesel-powered generator, distillate fuel and demineralised water storages and fire water storages.

2.4.2 Gas Receival Facility

The gas receival facility is owned and operated by APA and is located adjacent (South-west) to the KKPS site.

The following plant safeguards are installed:

- minimum separation distance of 100m between the pipeline receival station and the gas turbine facility;
- the pipework is designed to comply with the requirements of Australian Standard AS4041 - Pressure piping;
- overpressure protection is provided by the following methods:
 - rapid control valve closure under alarm conditions;
 - pressure relief valve.
- an actuated isolation valve installed at the inlet to Each Power Island; and
- control and communications equipment to provide remote monitoring and central control of the system by the APA Control Centre.

2.4.3 Diesel Storage

3,6ML of low sulphur diesel storage is provided as an alternative fuel. Diesel fuel is used only when the supply of natural gas is compromised. The diesel storage tank is provided with the following safeguards:

- designed in accordance with AS1940-2003 (bunding, pipework, separation distances etc.); and
- Diesel Tank designed with API 650 - Welded Steel Tanks for Oil Storage.
- Bunding
- Fire Monitor system for tank cooling in the event of a Diesel fire

2.4.4 Gas Turbines

The KKPS generators are driven by 2 x Mitsubishi 701F5 gas turbines with each unit capable of generating approximately 330MW registered (design 375MW) on Natural Gas.

In the event of an interruption to the gas supply, or a drop in the gas pressure below the operating limit set by the gas turbine manufacturer, the gas turbine is capable of a fuel changeover diesel firing.

The enclosure for each Gas Turbine Generator has been installed with the following safeguards.

- gas detectors inside turbine enclosure
- CO₂ Extinguishing System on turbine enclosure;
- thermal detectors inside turbine enclosure;
- double block and bleed valves at gas control and fuel oil control enclosure prior to inlet into turbines; and
- Programmable Logic Controller (PLC) used for safety instrumented systems are certified or SIL (Safety Integrity Level) assessed so as to provide the required reliability.

2.4.5 Fuel Gas Supply

A 24km / 70 terajoule gas supply and storage pipeline (the Kurri Kurri Storage Pipeline- KKSP) has been constructed in a parallel lattice configuration adjacent the KKPS Power Station, along with a new Compressor Station and Delivery Station (the Kurri Kurri Storage Station- KKSS) and a 21km lateral feed pipeline (the Kurri Kurri Lateral Pipeline- KKLP) fed from the Jemena Sydney-Newcastle Gas Pipeline (SNGP) by APA Group.

The KKSS boosts the 4.5mPa lateral pipeline pressure to 153.6mPa KKSP pressure and the delivery station meters gas usage and regulates the gas supply pressure to the KKPS. Power Station supply is 4.4mPa +/- 0.4 mPa.

APA own and operate the lateral and storage pipelines (KKLP and KKSP) and the compressor and delivery station (KKSS).

Note: The gas connection infrastructure is owned, operated and maintained by APA.

2.4.6 Lube and Hydraulic Oil Supply

Each gas turbine generator is fitted with a lubricating oil tank with a capacity of approximately 35,000 litres. The tank has been installed within the Oil enclosure and is fitted within a bund to contain spills or discharge from the fire water spray system.

A fin-fan cooler has been installed on the South Western area of each turbine. The fin fan utilises a water circuit that circulates cooling water through the fin fan coolers and heat exchanger in the lube oil system and Control Oil. Cooling water from the fin fan cooler is also circulated to the generator coolers and High Pressure Air Compressors.

2.4.7 Control Systems

Each of the gas turbines can be started, stopped or operated using the following systems:

- Local – from the Administration Building Control Room;
- Local – (Auxiliary Electrical Switch Room);
- Remotely – by Gen Ops (SMCC) personnel; or
- Remotely – by KKPS Production Technicians using secure SHL laptop computers.

The Gas Turbine facility is equipped with an overall plant process control system based on a distributed control system (DCS) technology. This system enables safe and reliable operation, control and supervision of the process with a high degree of automation.

The DCS system provides functions including:

- Signal conditioning;
- Operation, monitoring and control;
- Open and closed loop control, sequence logic, protection; and
- Data communication, plant management applications.

The control system architecture comprises the following:

- Unit control of generators, switchgear, auxiliaries and other plant;
- Power system and station supervisory control;
- Operator control via Human Machine Interface (HMI) when required; and
- Remote control

These four levels of control and their respective hardware elements are interconnected via data highways or networks operating at speeds appropriate to the functional requirements.

2.4.8 Electrical Generating Equipment

A two-pole, three-phase synchronous Hydrogen cooled electrical generator is directly coupled to each of the gas turbines at the compressor (cold) end.

Field current for the rotor winding is obtained from a static excitation system via slip rings. A static frequency converter enables the gas turbine set to start without an additional rotating prime mover. In the converter mode the generator operates as a motor. The converter is separate from the exciter unit.

The electrical plant is designed to ensure sufficient reliability of the plant's auxiliary power supply in all modes of operation using proven and reliable standardised equipment complying to Australian and international design codes and standards.

Electrical equipment for the gas turbine generators are arranged in multiple enclosures (MHI Control Room, Unit LV room, Unit MV room, SFC room, Excitation room) which are pre-assembled and factory tested. Single-phase isolated bus ducts connect the generator transformers to the turbine generators. The bus duct also has tee-offs to the auxiliary transformer housing, which supplies power for start-up, excitation, and low voltage (LV) auxiliary consumers.

2.4.9 Generator Transformers

Each of the generating units are equipped with a dedicated transformer located to the east of the turbines. Each of the primary transformers are located within an oil containment bund and contains 88,000 litres of transformer oil.

A reinforced concrete explosion/firewall is installed between the transformer and other critical apparatus to mitigate the outcomes if a fire/explosion were to occur. The walls are rated for two hour fire protection (FRL 120/120/120).

The transformers are fitted with a water deluge system that operates automatically on the detection of fire by thermal detectors installed around the transformer units. The transformers are also fitted with oil level switches (internal) that will automatically shut down transformer operations (power) and raise an alarm to Genops and local control room.

2.4.10 Station Staffing and Remote Operations

Normal staffing arrangements for Kurri is day work undertaken Monday to Friday. Callout provisions are in place to meet potential after-hours operational requirements.

Note: The station is capable of being remotely operated and accordingly may commence operation at times when personnel are not present at the site. Monitoring of station status and alarms can also be undertaken remotely by the on-call Operator In Charge and the Generation Operations (Gen Ops/SMCC) team.

3.0 EMERGENCY PLANNING AND PRINCIPLES

3.1 Emergency Documentation

3.1.1 Document System Links

This Handbook provides specific emergency response information, processes and plans for KKPS, in conjunction with [SM23 - Crisis and Emergency Management System](#), that provides the principle control framework for emergency response activity across all Snowy Hydro generation sites.

In addition to this Emergency Response Handbook and [SM23 - Crisis and Emergency Management System](#), the emergency and crisis response activity is supported by a range of ancillary documents that include:

- [QP14-07 Incident Management](#) (incorporating the Incident Classification Matrix), and
- Kurri Kurri Power Station Operational Environmental Management Plan (OEMP).

3.1.2 Document Audit and Review

The KKPS Plant Manager is responsible for ensuring a system is in place for maintaining local emergency plans and procedures. An audit and / or review of the applicability and currency of the Kurri Kurri Emergency Response Handbook and supporting documentation should be undertaken in the following circumstances:

- Subsequent to an actual emergency
- Subsequent to a simulated emergency
- Subsequent to audits / inspections that have identified Corrective actions in the emergency response system
- At least every one year.

3.1.3 Hardcopy Emergency Handbook Locations

Hardcopy Kurri Kurri Emergency Response Handbooks will be maintained in key locations throughout the site to enable rapid access to emergency response procedures and to provide a measure of redundancy in the event of electrical failure.

As indicated in [Figure 3.1](#), Emergency Response Handbooks will be located at:

1. Administration Building – Control Room;
2. "Emergency Information/HAZMAT" box located adjacent to the North Western emergency access gate;
3. "Emergency Information/HAZMAT" box located adjacent to the main access gate.
4. "Emergency Information/HAZMAT" box located within the Fire Control Room adjacent to the Site Heavy Vehicle entrance

The Kurri Kurri Plant Manager is responsible for ensuring that the Emergency Response Handbook is periodically checked for accuracy and currency, and the copies located at key locations are in good order and reflect the current approved versions.



Figure 3.1: KKPS Emergency Response Handbook, and Emergency Assembly Point locations

3.2 Key Emergency Risks

The key emergency risks for the Kurri Kurri facility include:

- Structural Fire;
- Gas Turbine failure;
- Generator Fire
- Flammable Gas fire/explosion, including Hydrogen;
- Electrical Transformer fire/explosion;
- Combustible Liquid fire;
- Spill on Land or into Waterways (e.g. hydrocarbon, chemical spill);
- Heatwaves;
- Bushfire
- Severe Storm (including flooding);
- Earthquakes.

3.3 Emergency Roles and Responsibilities

There are three primary roles that are activated locally in response to an emergency at KKPS. These roles are described in [Table 3.1](#).

Table 3.1: KKPS Emergency Response Roles

Role	Who (primary)	Who (secondary)	Function
Kurri Kurri Plant Manager	Kurri Kurri Plant Manager	Production Technician - Engineering or Manager Planning and Scheduling	Maintains overall responsibility for the management of the Power Station during the emergency. Provides communication link between Kurri Kurri Power Station and Snowy Hydro executive management.
Emergency Coordinator	Operator In Charge	Production Technician	Focal point for the management of the emergency response. Coordinates site resources and liaises with external Emergency Services (e.g. Police, Fire). Initiates internal communication and notifications
Site Recorder	Administrative Officer	Appointed by Emergency Coordinator or Kurri Kurri Plant Manager	Maintains a record of the emergency including movement of personnel, movement of vehicles and communications.

Specific details for each of the roles listed in [Table 3.1](#) in relation to particular types of emergency scenarios (fire, casualty, pollution and evacuation) are provided in the relevant sections of this handbook.

Refer to [SM23 - Crisis and Emergency Management System](#) for details regarding the emergency and crisis roles within Snowy Hydro and the relationship between Snowy Hydro emergency roles and the local emergency roles at KKPS. Refer [Section 3.7](#) for more information.

3.4 Emergency Exercises

A training exercise designed to test the adequacy of emergency preparedness and response shall be undertaken at least once each year. The training exercise, as a minimum, shall involve all available site personnel (including contractors) responding to a simulated on-site emergency.

Every 3-years, a simulated emergency shall be expanded to include the Snowy Hydro Crisis Management Team and external response agencies (e.g. Ambulance, Fire, Police etc) with a scenario that incorporates a form of Major Accident Event (MAE). Refer [Section 3.7](#) for Crisis and Emergency Management.

By incorporating an MAE into an emergency training exercise, this will also test those mitigative controls implemented as part of the Major Accident Prevention (MAP) strategy. Refer [Section 4.5](#) for information on MAP.

The KKPS Plant Manager is responsible for ensuring that the annual emergency exercises are undertaken each year. The (on-shift) Operator In Charge is responsible for coordinating simulated emergency exercises and ensuring that a record of these exercises is maintained.

Specific environmental pollution emergency training and key risks are discussed further in [Section 6](#).

3.4.1 Raising the Alarm – Initiating Emergency Response

Depending upon the nature of the emergency, raising the alarm and the initiation of an emergency response may be undertaken using several methods. These methods include automated activation of alarms in response to fire or gas leak, manual activation of alarms using a “break glass” manual call point, witnessed pollution events with subsequent notifications and witnessed casualty events with subsequent notifications.

Irrespective of which method is used to initiate an emergency response, the internal and external communications provided in [Table 3.2](#) must be undertaken:

Table 3.2: Initial communication when initiating an emergency response

Communication Type	To Whom
Initial Internal Communications	Contact Kurri Kurri Power Station Plant Manager or Operator In Charge
Initial External Communications	000 Emergency Call – when external emergency resources are required

Note: For an emergency involving external response agencies, the declaration and decision will primarily be made by the 'on-shift' **Operator In Charge** who also undertakes the role of **Fire Warden**.

3.5 Cessation of Emergency Response

3.5.1 Declaration of Cessation of Emergency Response

The declaration that an emergency has concluded must only be given in circumstances where:

- i) the emergency situation has been contained, and
- ii) the site is sufficiently safe for personnel to return to their normal duties.

The declaration of the conclusion of an emergency that was not a crisis situation may be made either by the KKPS Plant Manager or person acting in the role of Emergency Coordinator.

The declaration of the conclusion of an emergency that involves activation of the Snowy Hydro Crisis Management Team (CMT) should be made by a representative of the CMT.

For an emergency involving external response agencies, the declaration and decision will be made by the combat agency and/or external agency control centre.

3.5.2 Neighbouring Asset Owners and Local Community – Communicated Information during Incidents and Emergencies

In the event of an incident or emergency that requires notification to neighbouring asset owners and/or the local community, Snowy Hydro will ensure that the communication protocols outlined in [Section 9.2](#) (incident), and [Section 9.3](#) (emergency) are followed.

3.5.3 Post-Response Debrief

Debrief meetings should be conducted as soon as practicable subsequent to every actual or simulated emergency. The governing principle associated with the debrief meeting is to identify opportunities for improvement. Apportioning of blame is not an appropriate function of the emergency debrief.

The purpose of the de-brief is to:

- identify what happened;
- review the adequacy of the emergency equipment and facilities, actual response, response plans and training;
- identify deficits, strengths and opportunities for improvement; and
- make recommendations for future improvement.

Debriefing following an emergency requiring minimal response, or small numbers of responding personnel, should be attended by all involved personnel. Debriefing following a large emergency response should be attended by all involved personnel if possible, but as a minimum should include representation from each group of personnel involved in the emergency. These groups may include external emergency response agencies and Snowy Hydro departmental / executive management.

Where possible, de-briefing meetings should be organised, attended and facilitated by the KKPS Plant Manager. Records of the debrief meeting should be undertaken using the Snowy Hydro form [F23-D Emergency Response Training Plan & Evaluation](#) and maintained in accordance with [QP24-56 Work Health Safety Records Management](#).

3.5.4 Counselling

Counselling services should be made available, and offered to all persons (victims, responders, witnesses etc) who have been involved in an emergency at KKPS and who may be suffering stress in response to the emergency experience. Counselling should be initiated as soon as possible after the emergency and costs associated with the provision of these services should be borne by Snowy Hydro Limited (SHL).

3.5.5 Incident Investigation

Incident investigations subsequent to an emergency must be undertaken in accordance with [QP14-07 Incident Management](#) procedure.

3.6 Unserviceable Fire and Emergency Equipment

Personnel who become aware of emergency response equipment that is unserviceable, damaged, or discharged should report the situation to their supervisor or the KKPS Plant Manager as soon as practicable.

The KKPS Plant Manager is responsible for ensuring that arrangements are made for repair and / or replacement as required.

Impairments to the operation of fire detection and suppression systems should be managed in accordance with [SP24-40 Fire Protection Systems Impairment and Notification](#).

3.7 Crisis and Emergency Management

For Gas & Diesel sites, the Snowy Hydro Emergency Management Framework consists of two layers: Crisis Management Team (CMT) and the Regional Response Team (RRT).

During a crisis/emergency event (e.g. accident, bushfire etc) the CMT will be activated in accordance with [SM23 - Crisis and Emergency Management System](#) procedures in conjunction with local emergency response activity per the procedures contained within this manual (G23-D).

Upon activation, the CMT members will convene at a nominated [Crisis Control Centre](#) (CCC) as part of their ability to provide control, coordination and communication during a crisis/emergency event.

The Classification Assessment Tool (see [Figure 3.2](#)) will be used by local RRT's and the CMT to determine both the classification of an event and associated responses.

All major crisis/emergency events will be coordinated between the local RRT and CMT personnel.

Determine if the situation is:		
Local Emergency	Emergency	Crisis
Indicators to determine the type of incident		
Event has clearly defined circumstances	Event is emerging and not clearly defined	Event requires strategic management
Incident response may be required. Incident controllable by local ERT	External emergency response agencies involved or likely to be so	Major external emergency response agency involvement
Minor threat or injury to people, environment, assets.	Medium threat or injury to people, environment, assets.	Significant threat or injury to people, environment, assets.
Adverse reputational impact is not likely	There is a possibility of adverse reputational impact	There is serious adverse business and reputational impact
Disruptions affect part or parts of one business unit only	Medium disruption/ significant material risks affecting business operations	Extensive shutdowns or extended disruptions with business wide effects. Multiple material risks impacted
Determine the response based on type of incident		
Activate local Emergency Response Plans	Activate Emergency Response Plans	Activate the Crisis Management Plan
CMT may be informed if required	Notify CMT Standing Team Leader who will determine if CMT will convene	Convene CMT immediately
Manage through BAU operations	Manage event at regional level with CMT Standing Team Leader updated as required	Manage event at SHL CMT level

Figure 3.2: Classification Assessment Tool

4.0 FIRE

4.1 Fire Prevention and Preparedness

4.1.1 Fire Prevention, Detection and Suppression Systems - Overview

KKPS is equipped with an extensive system of fire prevention, detection and suppression systems. These systems include the following:

- Passive fire protection (hazard separation and installed fire walls and fire doors);
- Dedicated site fire water, pumps and ring main;
- Gas detection automated response systems;
- Automated fire detection systems – smoke, flame, thermal detectors etc;
- Automated fire suppression systems – sprinkler, water deluge, CO² gas deluge, gas (NOVAK) suppression etc; and
- Manual suppression facilities – portable extinguishers, hydrants, hoses and hose reels.

Further details in relation to each of the listed fire protection facilities are provided in subsequent sections. The arrangement of key components of the fire system is shown in [Figure 4.1](#).

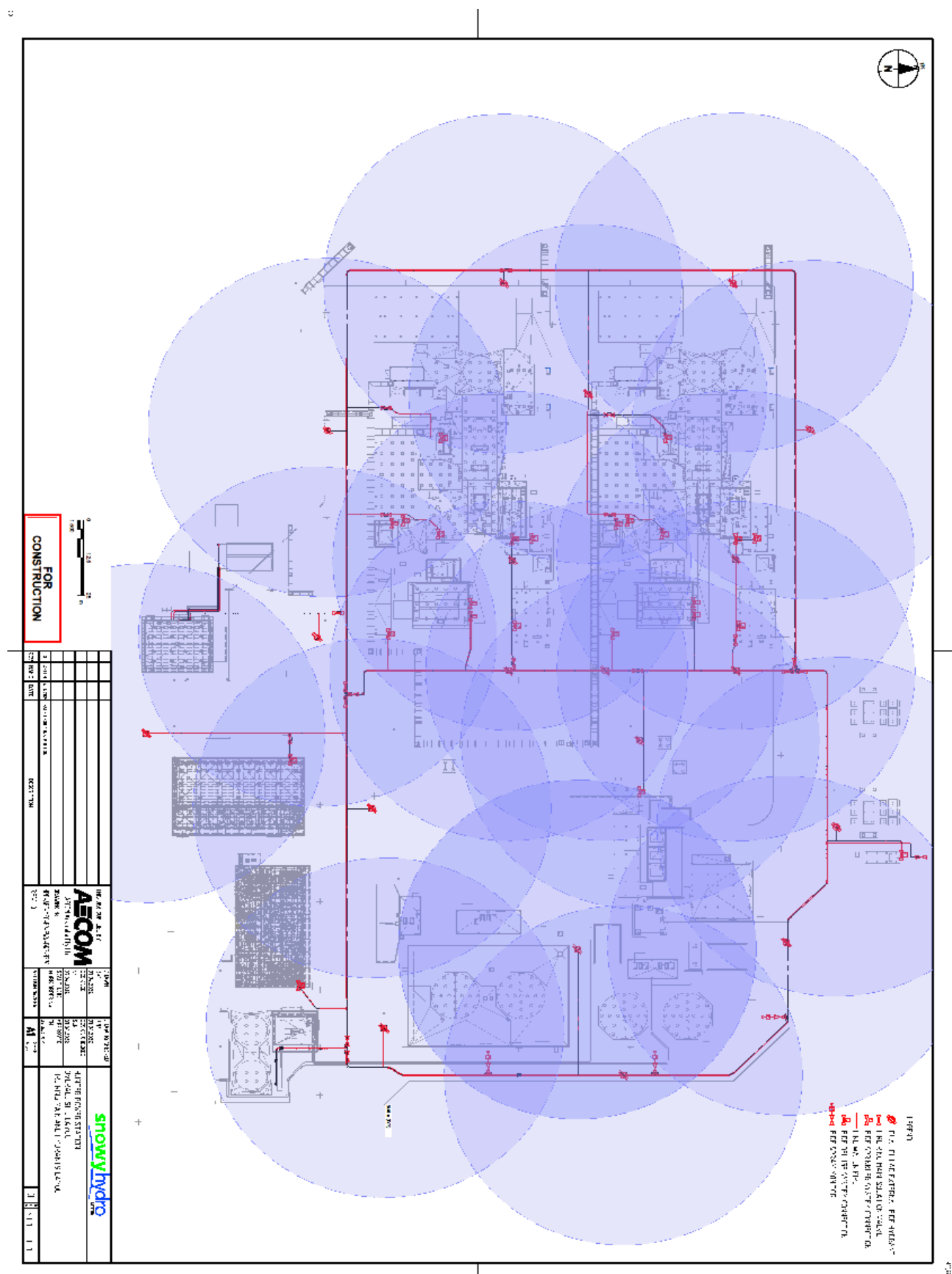


Figure 4.1: KKPS Fire Hydrant Ring Main

4.1.2 Passive Fire Protection

Passive fire protection is provided by designed separation and fire walls. Firewalls are installed to prevent the potential for fire growth from a fire hazard area to an adjacent hazardous area or sensitive section of the facility. Details of installed fire protection walls are provided in **Table 4.1**.

Table 4.1: Firewall locations and ratings

Area Protected by Firewalls	Fire Wall Rating
Power Transformers to Gas Turbine area and adjacent buildings	FRL 120/120/120
Facilities building	FRL 120/120/120
Electronics and Store Rooms	FRL 120/120/120
Amenities (lunch & locker rooms)	FRL 60/60/60

4.1.3 Fire Water Supply, Hydrants and Hoses

The site is fitted with a dedicated fire water supply system consisting of two 560kL tanks (1,120kL total), two 100% supply diesel driven fire pumps and a fire main with hydrants located throughout the site. The fire water system supplies a maximum flow of 700 cubic meters/hr at a differential head pressure of 110m.

Fire water tanks and pumps have been installed in accordance with the requirements of NFPA20 and the fire main installed in accordance with the requirements of AS2419. Hoses equipped with storz couplings compatible with hydrant outlets are located throughout the site. In addition to hydrant outlets, the fire main also supplies water to the deluge and sprinkler systems.

4.1.4 Gas Detection Systems

Gas detection systems are installed and monitor the following

- Natural gas detection is by sensors in each ventilation (x3) on each Gas Turbine enclosure
- Hydrogen detection at each Generator 1el%
- Hydrogen detection at balance of plant hydrogen store, acoustic type

4.1.5 Automated Fire Detection and Automated Suppression Systems

Fire detection systems linked to automatic fire suppression systems have been installed at critical locations throughout the KKPS site. These are indicated in [Table 4.2](#).

Table 4.2: KKPS Fire detection and automatic fire suppression systems

Area	Fire Detection	Automatic Protection
Gas Turbine Enclosure	Thermal Detection	Automatic CO ₂ extinguishing system
Gas Turbine Oil Enclosures: • Main Lube Oil Tank • Control Valve Block	Thermal Detection	Automatic water deluge system
Gas Turbine Generator Seal Oil	Glass Bulb Sprinkler Heads	Automatic water sprinkler system
Fuel Oil Control Enclosure	Thermal Detection	Automatic water deluge system
Gas Turbine Transformers	Glass Bulb Sensing line	Automatic water deluge system
Gas Turbine Electrical Enclosures	Smoke and Thermal Detectors	Automatic NOVAK Gas suppression
BOP Electrical Enclosures	Smoke and Heat Detectors	Automatic NOVAK Gas suppression
Fire Fighting Pump Station	Glass Bulb	Automatic water sprinkler system
SFC and Excitation Enclosure	Smoke and Heat Detectors	Automatic NOVAK Gas suppression
132kV Switchyard Enclosure	Smoke and Heat Detectors	Automatic NOVAK Gas suppression
Administration Building • Control Room • Communications Room	Smoke Detectors	Automatic water sprinkler system
Administration Building • DCS Electronics Room	Smoke and Heat Detectors	Automatic NOVAK Gas suppression

4.1.6 Automated Fire Detection and Manual Suppression

Site areas that are equipped with automated fire detection systems and manual suppression systems are summarised in [Table 4.3](#). Maintenance of manual suppression devices such as portable extinguishers and hose reels is in accordance with relevant Australian Standards.

Table 4.3: Areas equipped with automated fire detection and manual fire suppression systems

Area	Fire Detection	Manual Protection
Gas Turbine Enclosure	Smoke Detectors and Alarms	Manual extinguishers, Fire main and hydrants
Gas Turbine Generator Circuit Breakers	NIL	Manual extinguishers, Fire main and hydrants
Emergency Diesel Generator	Heat Detectors and Alarms	Manual extinguishers, Fire main and hydrants with foam cabinet
Administration Building • Kitchen • Toilets • Meeting Room • Admin Office	Smoke and Heat Detectors and Alarms	Manual extinguishers, Hose Reels, Wet Deluge Fire main and hydrants

4.2 Fire Response

The procedure and responsibilities described in [Table 4.4](#) should be implemented in the event of a fire, gas or explosion emergency.

Table 4.4: *Fire Response Responsibilities*

Who	Responsibility
Personnel at the Scene	Personnel who discover a fire should: ☐ Immediately attempt to extinguish the fire if safe to do so. ☐ Approach fire from upwind (avoid exposure to smoke and fumes). ☐ Quickly assess the type of fire and choose the appropriate extinguisher. ☐ The preservation of life takes precedence over protection of property. ☐ Summon emergency assistance. ☐ Respond to instructions from the Emergency Coordinator or external fire response agencies.
Emergency Coordinator	The Emergency Coordinator is the focal point for the management of the emergency response and should: ☐ Ensure that a 000 emergency telephone call has been initiated with a request for fire assistance in the event that the fire is uncontrolled. ☐ Arrange for the provision of additional resources if requested by personnel at the scene. ☐ Appoint an escort driver to meet and guide incoming external fire response agencies. ☐ Consider whether evacuation of the site is required. ☐ Notify the KKPS Plant Manager.
Site Recorder	The Site Recorder should maintain a record of the emergency including: ☐ Status of fire emergency. ☐ Time and summary of relevant communications. ☐ Time and summary of the movement of personnel and vehicles.
KKPS Plant Manager	The KKPS Plant Manager maintains overall responsibility for the management of the Power Station during the emergency, including: ☐ Evaluate whether or not the KKPS plant is available for continued operation and proceed accordingly. ☐ Evaluate whether or not additional resources or personnel are required for continued plant operation. ☐ Notification to the Gas and Diesel Area Manager or General Manager Production (if Area Manager is not available).
Escort Driver	☐ Proceed to the main entrance gate and meet incoming external fire response personnel. ☐ Escort fire response vehicles to and from the scene of the fire.

Note: For the purpose of those designated personnel responding to a fire emergency, the **Emergency Coordinator** is the 'on-shift' **Operator In Charge**.

4.3 Bushfire Preparedness

4.3.1 Fire Danger Ratings

The SHL-specific bushfire preparedness criteria for each category of fire danger rating (moderate, high, extreme, catastrophic) is illustrated in [Figure 4.2](#).

Preparedness responsibilities are primarily allocated to Plant Managers and the Operator In Charge. Refer to the additional SHL procedures:

- [G23-11-A](#) - SHL Response Activity Matrix to Fire Danger Ratings
- [OI F1.2](#) - Response to Fire Alarms in Stations or Buildings

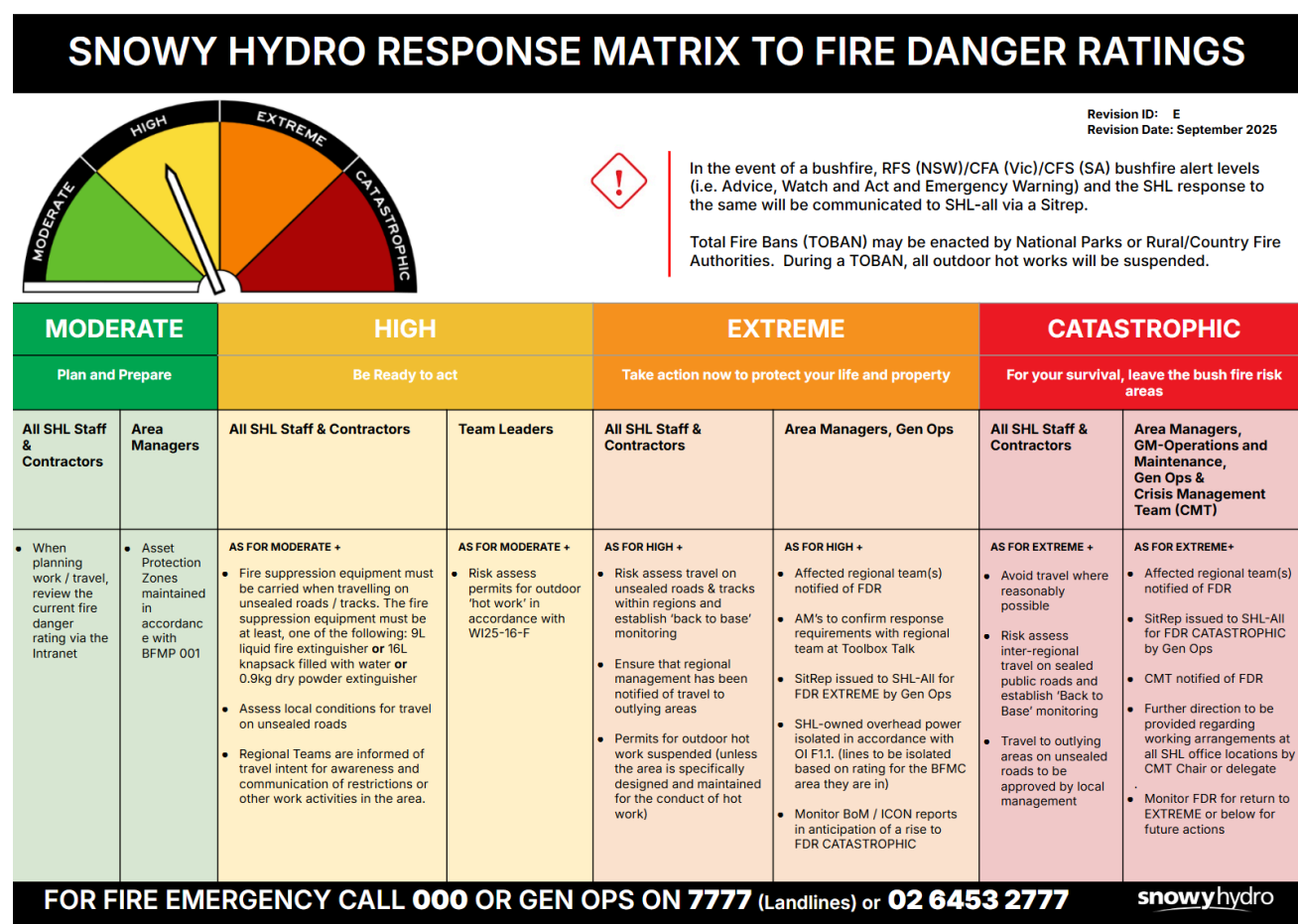


Figure 4.2: SHL Response Activity Matrix to Fire Danger Ratings ([G23-11-A](#))



Figure 4.3: KKPS proximity to bushland

There is a threat of bushfires in the local area, however, the assessment of it impacting KKPS assets is rare, but it may introduce other issues via intensive smoke that renders some of the fire/smoke detection systems inoperative that could restrict electrical generation.

During such times the KKPS Plant Manager and Gas & Diesel Area Manager will monitor the local situation and risk assess whether the power station shall be 'forced-out' of operation and/or whether personnel remain on site.

4.4 Specific Fire Risks for Kurri Kurri Power Station

The following specific fire risks need to be considered at the KKPS facilities:

- Oil stores;
- Diesel fuel stored in large (2x 1.8ML) tanks;
- Diesel fuel in fuel unloading area;
- Natural gas pipework and valves

- GT gas turbine generator units; Hydrogen Cooling System
- Hydrogen in Hydrogen Storage area;
- GT local natural gas skids;
- GT local fuel oil (diesel) skids;
- GT lubrication oil skids and cooling units;
- GT Step-up and Auxiliary Transformers; and
- Auxiliary Transformers

4.5 Major Accident Prevention

The KKPS 'Major Accident Prevention' risk assessment bowtie analysis, has considered the following four Major Accident Event scenarios:

1. Uncontrolled release of flammable gas from gas line or in gas turbine enclosure
2. Uncontrolled release of electrical energy from above-ground transformers leading to fire or explosion
3. Uncontrolled release of kinetic energy from generator motor equipment leading to fire, explosion or catastrophic failure and
4. Uncontrolled release of rotating parts or projectiles from the gas turbine

Within these four Major Accident Event risk bowtie scenarios, there are numerous mitigative controls that identify fire detection, fire prevention, fire suppression, fire fighting and fire control systems to be in-place, and effective.

It is essential that any degradation or deterioration of those systems that prevent fire or explosion are appropriately managed to ensure such systems are regularly maintained and tested. This includes the periodic training of site personnel and their ability to monitor, respond and (in some cases) attempt to extinguish the fire.

[QM19-04 - Major Accident Prevention manual](#), along with [QP19-04 - Major Accident Event Risk Management](#), provide the framework for the identification of the processes used for risk assessment and critical control management to provide assurance in the effective management of those risks associated with Major Accident Events (MAEs) at Snowy Hydro production facilities.

5.0 CASUALTY MANAGEMENT

5.1 First-Aid Preparedness

5.1.1 Facilities and Equipment

KKPS holds on site the first-aid equipment listed in [Table 5.1](#). The selection and use of first-aid kits will be in accordance with [SP24-20 First Aid Management](#).

It is the responsibility of the KKPS Plant Manager to ensure the implementation of a system of regular checks of the first aid equipment with the aim of ensuring the equipment is complete, current and ready for immediate use.

Table 5.1: *First Aid equipment and locations*

Item	Location/s and Quantity
First Aid Kit	Site Compound Administration Building Snowy Hydro Vehicles
Defibrillator	Administration Building first aid room Unit 1 Auxilliary Switchroom Fire Control Room
EpiPen	First-Aid Room
Rescue Stretcher	First-Aid Room
Safety Shower & eyewash station	Various locations across Power Station (7)

5.1.2 First-Aid Training

First-aid training should be provided to selected personnel, using a recognised syllabus and delivered by a suitably qualified trainer in accordance with [SP24-20 First Aid Management](#). As a general guide, the KKPS personnel and first aid training requirements are indicated in [Table 5.2](#)

Table 5.2: First aid training requirements for KKPS personnel

Role	Training Standard	Frequency
Production Technician	Senior First Aid	Sufficient to maintain currency (generally every 3 years)
Electrical Worker	Senior First Aid	Sufficient to maintain currency (generally every 3 years)
	CPR	Sufficient to maintain currency (generally annual)
	Low Voltage Rescue	Sufficient to maintain currency (generally annual)

5.2 Casualty Response

5.2.1 Injured Casualty – Ambulance Transfer

The procedure described in [Table 5.3](#) should be implemented in circumstances where a person is injured or ill, treatment is likely to be beyond minor first-aid and ambulance assistance is required.

The transfer of a casualty from the work site to a receiving medical facility must be undertaken by professional responders using specialist transport (e.g. ambulance). Private vehicles must not be used for the transfer of a casualty.

Table 5.3: Injured worker responsibilities

Who	Responsibility
Personnel at the Scene	Personnel at the scene of an incident where emergency first-aid is required will: ☐ Summon emergency assistance ☐ Administer first-aid within the bounds of safety, competency and available equipment ☐ Stay with the casualty until further assistance arrives (if safe and possible)
Emergency Coordinator	The Emergency Coordinator is the focal point for the management of the casualty emergency response and should: ☐ Ensure that that a 000 emergency telephone call has been initiated with a request for ambulance assistance ☐ Arrange for the provision of additional resources at the scene of the casualty if requested by first-aiders. ☐ Appoint an escort driver to meet and guide incoming ambulance. ☐ Notify the KKPS Plant Manager
Site Recorder	The Site Recorder should maintain a record of the emergency including: ☐ Condition of the casualty ☐ Time and summary of relevant communications ☐ Time and summary of the movement of personnel and vehicles.
Kurri Kurri Power Station Plant Manager	The KKPS Plant Manager maintains overall responsibility for the management of the Power Station during the emergency, including: ☐ Evaluate whether or not the KKPS plant is available for continued operation and proceed accordingly ☐ Evaluate whether or not additional resources or personnel are required for continued plant operation ☐ Notify the Snowy Hydro Gas & Diesel Area Manager.
Escort Driver	☐ Proceed to the main entrance gate and meet the incoming ambulance ☐ Escort ambulance vehicle to and from the scene of the casualty

Note: For the purpose of those designated personnel responding to an injured person emergency, the **Emergency Coordinator** is the 'on-shift' **Operator In Charge**.

5.2.2 Injured Casualty – Helicopter Transfer

This section must be read in conjunction with the previous section [5.2.1 Injured Casualty – Ambulance Transfer](#).

If there has been a major incident on-site, with seriously injured personnel, the decision to transfer a casualty by helicopter will be made by ambulance coordination and emergency services dispatch personnel. In these situations, a road ambulance will (normally) be dispatched to the site first and the ambulance coordination team will await further instructions from the attending paramedics, before any request is made regarding the dispatch of the Air Ambulance helicopter.

If an Air Ambulance helicopter is dispatched to the KKPS site, a suitable landing area will be determined by responding emergency services. In instances where consultation is required with the Operator In Charge or KKPS Plant Manager, the below table can be used to provide coordinates and site obstruction information.

Note: Coordinates are provided in latitude / longitude and elevation is provided in feet in accordance with the conventions used by pilots.

Table 5.4: Helicopter transfer landing area information

Item	Description
Coordinates	DMS: -32°47'15"S 151°28'48"E GDA2020: -32.787546, 151.480270
Elevation	AHD (feet): 46 AHD (metres): 14
Obstructions	• KKPS exhaust stacks x2 - height: 60m, or approx 200 feet, above ground level • Gas Vent Tower - approx 100m west of landing area (height: 30M, or approx 100 feet above ground level) • 132kV transmission lines (north & west of exhaust stacks) (height: 10m, or approx 32 feet above ground level)
Wind Sock	APA KKSS Wind Sock Unit 2

Whilst the proposed helicopter landing area in the vacant land to the south east of the KKPS site can be used as a potential emergency helicopter landing site, the decision to use this area will be determined by the on-site Police or Ambulance personnel and ultimately, the decision to use this site will be determined by the Air Ambulance Pilot in command.

6.0 ENVIRONMENTAL POLLUTION INCIDENT RESPONSE

6.1 Overview and Intent

This section sets out the response to a pollution incident causing or threatening material environmental harm, and forms the the KKPS Pollution Incident Response Management Plan (PIRMP) required to be prepared Part 5.7A of the *Protection of the Environment Operations Act 1997* (POEO Act), and in accordance with the KKPS Environment Protection Licence (EPL21627).

Chapter 4 of the *Protection of the Environment Operations (General) Regulation 2022* sets out the specific information that must be included in a PIRMP. In summary:

- All licensees must prepare a PIRMP (section 153A).
- A PIRMP must be in the form required by the regulations and must include the information detailed in the POEO Act (section 153C) and the General Regulation (section 72 and section 73).
- Licensees must keep the PIRMP at the premises the environment protection licence relates to, or where the relevant activity takes place (in the case of trackable waste transporters and mobile plant) (section 153D of the POEO Act) and make certain parts of the PIRMP available on a publicly accessible website of the licensee, or alternatively provide a copy upon written request (section 74 of the General Regulation).
- Licensees must test their PIRMP in accordance with the regulations (section 153E of the POEO Act and section 75 of the General Regulation).
- Licensees must implement their PIRMP immediately if a pollution incident occurs that causes or threatens material harm to the environment (as defined in section 147 of the POEO Act) (section 153F of the POEO Act).

[Section 6](#) of the ERH forms the PIRMP for KKPS, and been developed utilising the [NSW EPA's Guideline: Pollution Incident Response Management Plans \(NSW EPA, 2022\)](#)

[Section 6.7](#) includes [Table 6.6](#), which describes all legislative obligations relating to a PIRMP, and indicates how/where these requirements are being addressed.

6.2 Environmental Pollution Incident – Immediate Actions

6.2.1 Responsibilities

Responsibilities of KKPS personnel during a pollution incident are outlined in [Section 3.3](#). Emergency Roles and Responsibilities.

In addition to the Roles and Responsibilities outlined in Section 3.3, [Table 6.1](#) below highlights the responsibilities for determining whether the PIRMP shall be activated following a pollution incident that has caused or is threatening material harm to the environment.

Table 6.1: Snowy Hydro Personnel with responsibility for activating the PIRMP

Position	Role in activating PIRMP
Employees and Contractors	Alerting OIC of any pollution incidents
Production Technician - Operator In Charge	- Incident Controller - Initial assessment, and if required, escalation to the Plant Manager, and Area Manager if required - Responsibility for managing response to pollution incident
Plant Manager - Hunter Power Station	- Notification to Senior Environmental Advisor - Responsibility for managing response to pollution incident
Area Manager - Northern Gas & Diesels	Secondary contact for Plant Manager responsibilities
Senior Environmental Advisor	- Determination of activating PIRMP - Notification to relevant authorities - Providing advice on responding to the pollution incident
General Manager - Environment, Lands and Water	Secondary contact for the determination of PIRMP activation and notification to authorities

6.2.2 Incident Identification and Communication

Snowy Hydro workers who discover an actual or potential pollution incident must immediately notify the Operator in Charge of the incident. The Operator in Charge will act as the Emergency Coordinator and immediately inform the Plant Manager. The nominated Environment team member will be advised as soon as immediate actions to manage the pollution incident have been undertaken.

The communication process during a pollution incident is shown in [Figure 6.1](#).

If safe to do so, Snowy Hydro workers should initiate First Response Actions ([Section 6.2.3](#))

Where known, the following information should be communicated and recorded:

1. When the incident started to occur (if known),
2. When the incident was first identified,
3. The duration of any leaks/spills/discharges/emissions that have occurred, and whether they are still occurring,
4. The pollution source, direction the pollution is being released, and whether it has or is expected to move outside the KKPS premises;
5. The nature, the estimated quantity or volume and the concentration of any pollutants involved,
6. The circumstances in which the incident occurred (including the cause of the incident);
7. Whether there been any observed impact to the environment, such as pollutants entering waterways, visible emissions or odour affecting areas outside the site boundary,
8. Any actions that have been taken or are underway to contain/manage the incident including any ongoing impacts; and
9. The name and contact details of any witnesses to the incident.

Escalation of communications to internal stakeholders will be undertaken as set out in the Snowy Hydro Incident Classification Matrix (Refer Appendix A within [QP14-07 Incident Management](#))

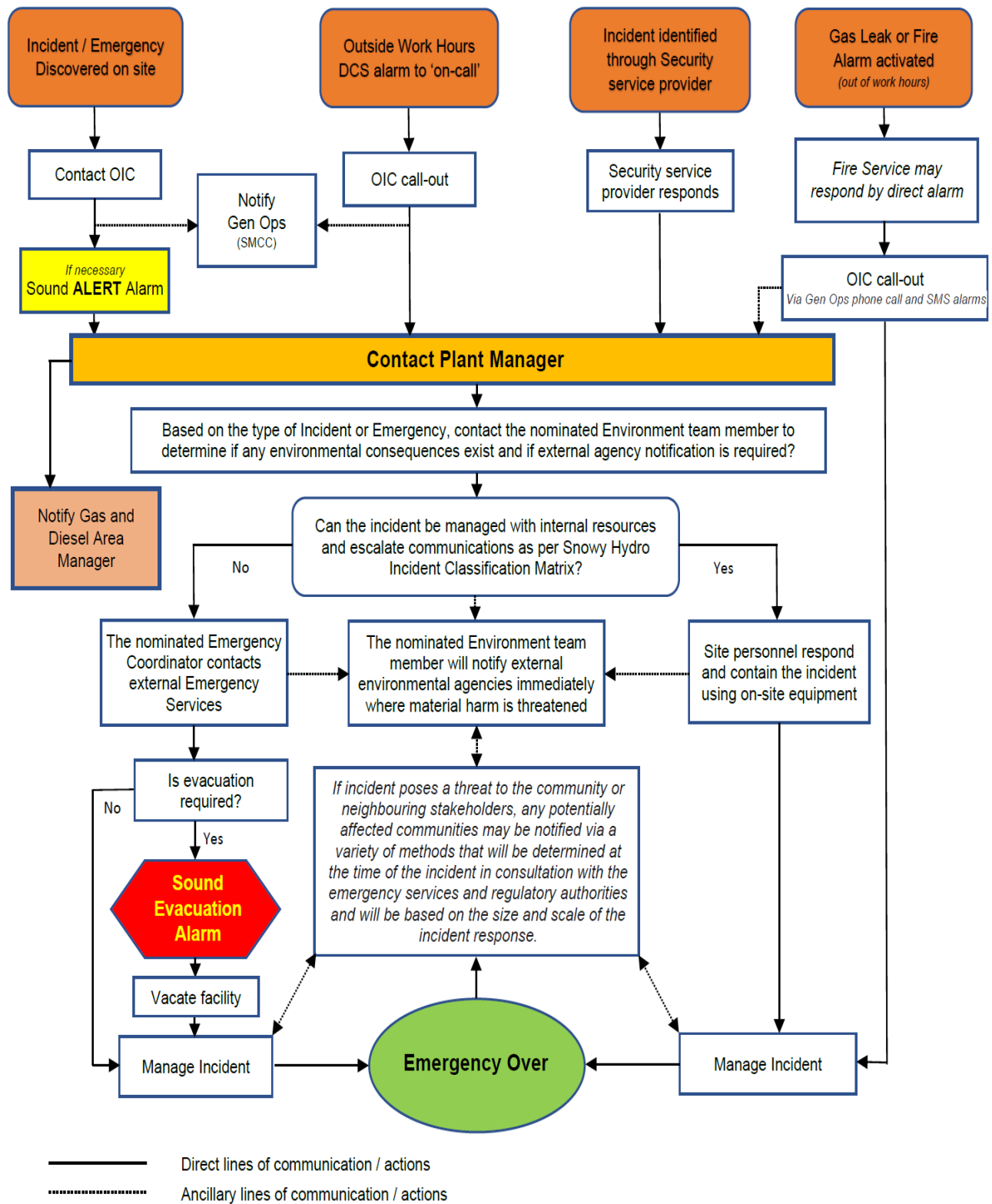


Figure 6.1: Communication flow chart for an environmental pollution incident

6.2.3 First Response Actions

First response action should include closing the penstock valve, located on the northern boundary of KKPS.

The penstock valve is a valve installed on the outflow of the stormwater discharge drain that can be used to stop any runoff from the process or stormwater drainage systems from leaving the site. The valve is operated manually, either locally at the valve, or remotely via the site control system (DCS)

This action will ensure all pollutants within the process and stormwater drainage systems will be contained onsite.

See [Figure 6.2a](#) and [Figure 6.2b](#) below.

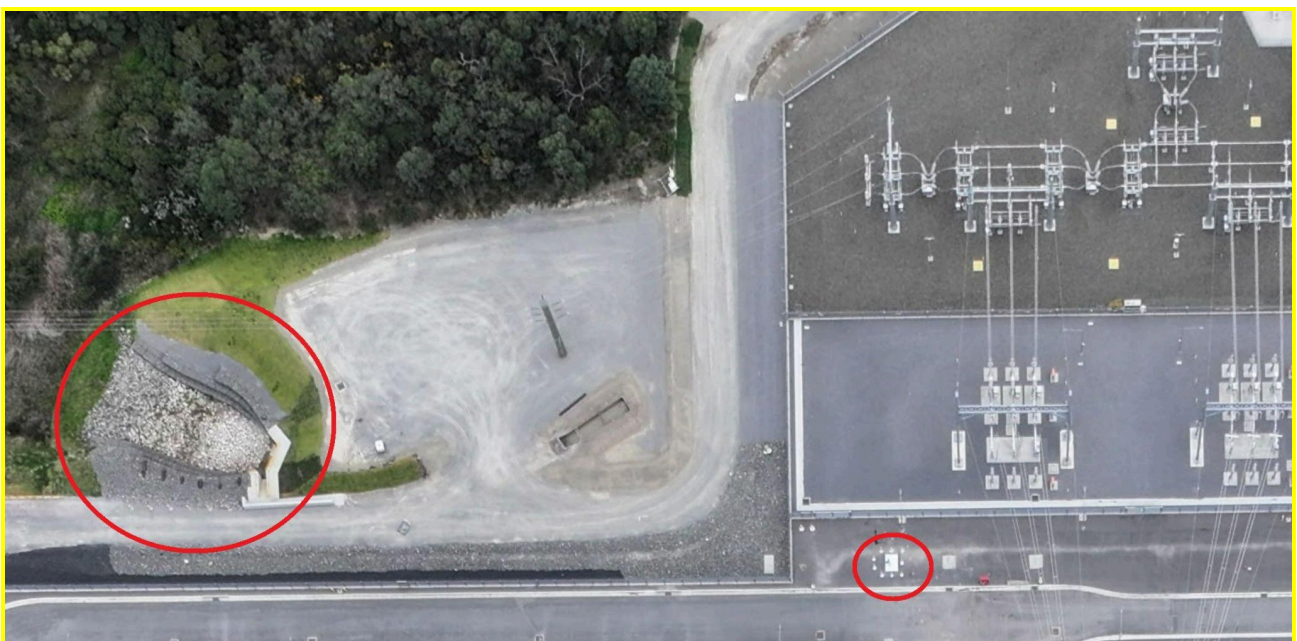


Figure 6.2a: Location of KKPS penstock valve and stormwater discharge outlet



Figure 6.2b: Location of KKPS penstock valve and stormwater discharge outlet

If a pollutant enters the KKPS site drainage network, the First Response Actions must also ensure that site personnel actively monitor the stormwater discharge outlet (see [Figure 6.2a](#) and [Figure 6.2b](#)) and any water flows within the unnamed tributary to Black Waterholes Creek (the creek flowing southwest to northeast, immediately adjacent to the western and northern boundary of KKPS). This monitoring is to assess whether there is any evidence of pollutants leaving site and impacting receiving waters.

First Response Actions, determined by the Emergency Coordinator and implemented by the KKPS Site Team, are aimed at isolating and containing pollutant discharges (emission to air, or spill to ground or water) to prevent any ongoing potential harm to the environment.

If the spill is minor, clean-up procedures will be implemented as required.

6.2.4 Alert and Evacuation Alarms

Alert and/or evacuation alarms may be initiated in response to a pollution incident in order to minimise the risk of harm to site personnel. Refer to [Section 8 - Evacuation](#) for further details.

6.2.5 Environmental Pollution Incident Clean-Up

Procedures for the clean-up of pollution incidents will depend on the type and extent of the pollution incident. Clean-up procedures will take into account the following:

- Type of pollutant;
- Pollutant Safety Data Sheet (SDS);
- Extent/area of pollution;
- Medium in which pollution has occurred (land, air, water);
- Requirements for specialist advice in relation to removal and remediation;
- Potential additional environmental impacts by the proposed clean-up processes; and
- Costs to remove the polluted material to a waste facility licensed to accept the waste.

The Emergency Coordinator is responsible for determining the method of clean-up, in consultation with the Plant Manager and the nominated Environment team member, who will liaise with the EPA as required.

SHL has a number of prequalified cleanup specialists who can be contacted to provide assistance if/as required.

6.2.6 Spill Kits

KKPS has multiple Spill Kit stations located at strategic locations around the site. The types of Spill Kits found at the KKPS include:

- General Purpose 240-litre wheelie bin;
- Hydrocarbon 240-litre wheelie bin;
- Marine 240-litre wheelie bin (including floating booms);
- Flood Sacks for damming the storm water discharge
- Alternate General Purpose 120 or 240-litre wheelie bins containing:
 - Absorbent material (kitty litter);
 - Additional absorbent pads;
 - Cleanup bags.

The contents of each Spill Kit are based on the type of kit and its particular function.

The site mostly utilises General Purpose Spill Kits as these kits are suitable for the containment and cleanup of a large variety of liquids, including oils, and other hydrocarbons.

Refer to [Figure 6.3](#) for examples of the spill response equipment available at KKPS.

Each Spill Kit contains an information sheet identifying the specific contents of the kits and basic instructions on their use.

Further information on spill response is contained in the KKPS Operations Environmental Management Plan (Section 5.2.1: Spill Response Plan), and in the following instructional videos:

- [How to use a Spill Kit](#)
- [Spill Kit response](#)



Figure 6.3: Spill response equipment at KKPS

6.3 Environmental Pollution Incident - Notification to Relevant Authorities

For major pollution incidents that are presenting an immediate threat to human health or property, 000 will be contacted in the first instance. As first responders, Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are responsible for controlling and containing incidents.

[Section 148 of the Protection of the Environment Operations Act 1997](#) specifies that **Snowy Hydro has the duty to immediately notify the relevant authorities of pollution incidents** that has/is causing or threatening material harm to the environment.

For KKPS the 'relevant authorities' and their 24 hour contact details are detailed in [Table 6.2](#):

Table 6.2: Regulatory Authority 24 Hour Contact Details

Regulatory Authority	24 Hour Contact Details
NSW Environment Protection Authority (NSW EPA)	131 555
NSW Health (Newcastle Public Health Unit)	1300 066 055 A/H: 02 4924 6477 (ask for Public Health Officer on call)
Fire and Rescue NSW	1300 729 579
Cessnock City Council	02 4993 4100
ComCare	1300 366 979
SafeWork NSW	131 050
NSW Department of Planning, Housing and Infrastructure (DPHI)	Online via Major Projects Portal
Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW)	within two business days via email to environment.compliance@dcceew.gov.au

As Snowy Hydro is a Commonwealth entity, ComCare is included as a regulatory authority to be notified in addition to SafeWork NSW. SafeWork NSW remains a regulatory authority to be notified as this is specified in the POEO Act.

DPHI is nominated as a regulatory authority to be notified as per the requirement of condition C6 of the KKPS State Significant Infrastructure Approval (SSI-12590060)

The Commonwealth DCCEEW has been included as a regulatory authority to be notified as per the requirements specified in condition 8 of the KKPS Federal EPBC Approval (EPBC No. 2021/8888)

These contact details are also contained in [Appendix A](#).

Notification to an external authority is to be undertaken as per [QP14-07 Incident Management](#) procedure.

The nominated Environment team member will be contacted to determine if the pollution incident has or has the potential to cause material environmental harm. Where it has been determined that the incident is causing or threatening material harm to the environment (actual, or potential), the PIRMP shall be enacted and the nominated Environment team member will commence the notification process to the relevant authorities.

If the nominated Environment team member is not contactable, the General Manager Environment, Lands and Water should be contacted for determination, and to commence the notification process.

In the instance of the nominated Environment team member, and the General Manager Environment, Lands and Water are contactable, the Plant Manager and/or Area Manager shall make the determination and commence the notification process.

[Appendix A](#) provides a printable form, and additional detail that may be used to record the details of each notification made

6.3.1 Details to be Provided for an External Pollution Incident Notification

Where a decision is made to notify authorities, the information provided should include the following:

- the time, date, nature, duration and location of the incident, and if different, the place where pollution is occurring, or likely to occur;
- the nature, estimated quantity or volume, and the concentration of any pollutants (if known);
- the circumstances in which the incident occurred (including the cause, if known); and
- the action taken to deal with the incident and any resulting pollution.

Unless the information listed above is known as fact, the answers should not be speculated, and the regulatory authority respectfully advised the information is not known at the time. Lack of any of the above information should not prevent external notifications being made.

As additional information becomes available, it should be communicated with all the relevant agencies

To ensure consistent and accurate information is provided to the authorities, it is highly recommended to record the relevant information to be shared prior to making the notifications. See [Appendix A](#) for an example script/template.

Notification to DPHI via the Major Projects Portal requires the following detail to be provided in the written notification

- **Application No.:** SSI-12590060
- **Development Name:** Snowy Hydro's Kurri Kurri Power Station
- **Location of Incident:** 1 Hart Road Loxford, NSW 2326
- **Nature of Incident:** *Consistent with the information at the start of [Section 6.3.1](#)*

Note: You require a Major Projects Account linked to Snowy Hydro to make the DPHI report

Notification to the Commonwealth DCCEEW requires the following detail to be provided in the written notification

- **EPBC No.:** 2021/8888
- **Location:** Kurri Kurri Power Station, 1 Hart Road, Loxford, NSW 2326
- **Coordinates:** Lat -32.786, Long 151.479
- **Date & Time of Incident:** *Consistent with the information at the start of [Section 6.3.1](#)*
- **Details of Event:** *Consistent with the information at the start of [Section 6.3.1](#)*

6.3.2 Record of External Notifications

Ensure all details of external notifications have been recorded. [Appendix A](#) provides a template that may be printed and utilised to record notification details that may be required for future reference, such as providing additional information regarding the incident if/when it becomes available.

6.4 Incident Reporting and Investigation

An incident report is to be lodged on Snowy Hydro's event management system before the end of the shift. This should be lodged only after the incident has been controlled and internal stakeholders are informed.

Incident investigations for a pollution incident should be undertaken in accordance with [QP14-07 Incident Management Procedure](#).

6.4.1 Environmental Pollution Incident Reporting

Reporting of an environmental pollution incident/event at KKPS is covered by two processes:

1. For all unplanned events that have an environmental impact, an internal Snowy Hydro [Enablon Event](#) report (e.g. event or hazard report) must be submitted;
2. Upon being advised of the environmental pollution event, the nominated Environment team member will review and determine if external notification is required. See [Section 6.3](#).

6.5 Environmental Pollution Incident - Communications with Local Community

Please refer to [Section 9 - INCIDENT and EMERGENCY COMMUNICATIONS](#) for the processes associated with communication to the Local Community in the event of a pollution incident.

Refer to [Figure 6.1](#), for the communication process used during an environmental pollution incident.

6.6 Environmental Pollution Incident Response Planning

6.6.1 PIRMP Testing

This section ([Section 6](#)) must be tested at least once every 12 months and reviewed as part of the investigation process within one (1) month of a significant pollution incident occurring.

The testing is to be carried out in such a manner as to ensure that the information included in the plan is accurate and up to date, and that it is capable of being implemented in a workable and effective manner. This includes testing of the PIRMP following a pollution incident.

The test may include a desktop review, simulation and/or practical exercises or drills, and must cover all components of the plan, including the effectiveness of training. Where possible this is incorporated into site general emergency response exercises (Refer to [Section 3.4](#) for further details).

When applicable, consideration should be given to the inclusion of neighbouring asset owners and operators, including APA, Nepean Longwall, Ausgrid and McCloy Group.

The KKPS Plant Manager is responsible for ensuring the site's environmental response capability is tested to meet environmental regulatory requirements. The nominated Environmental Representative shall provide the necessary support.

6.6.2 Environmental Pollution Emergency Response Exercises

Each year a pollution emergency response training exercise will be undertaken to test the effectiveness of the relevant environmental controls, processes and documentation in place at the KKPS.

To ensure each of the site's key Environmental Pollution Risks (refer [Section 6.6.5](#)) are periodically tested, each year a different environmental risk will be tested so that all key environmental risks relating to emergency events have been tested over a periodic cycle (nominally 5-years).

This is carried out by (in some cases) grouping a number of separate risks together and incorporating them into a single environmental emergency exercise event, that allows a more efficient and effective means of confirming the adequacy of the environmental emergency response process. The environmental emergency training events to be carried out each successive year provided in [Table 6.3](#).

Table 6.3: KKPS Environmental Emergency Training Events/Scenarios

Exercise Event	Environmental Risk	Event Description
Spill during refilling of diesel tanks and a diesel fuel tank failure, in conjunction with an oily water system failure	Diesel fuel entering storm water system or adjacent land.	During diesel (fuel oil) refilling operation from a road tanker, a failure of the diesel fuel unloading plumbing occurs with a failure of the storage tank and a corresponding diesel spill in the fuel forwarding area. With a defective oily water system, this threat poses a risk of diesel fuel being discharged into the storm water system and local waterways.
Transformer oil spill due to Transformer failure	Transformer oil entering the stormwater system or adjacent land.	During GT operation and generation, a faulty Buchholz Relay has allowed the transformer to overheat, with one of the transformer air-cooling segments explosively splitting open, causing significant discharge of oil both inside and outside of the bunded area
Fuel Gas (Natural Gas) leak	Localised air pollution with potential for fire or explosion.	During site walkaround, a strong smell of gas was very noticeable near the gas supply plumbing, where it enters the KKPS site. On close inspection, one of the gas pipe flange seals appears to have failed, venting large amounts of gas into the atmosphere.
Lube oil spill due to Turbine failure	Lube oil entering the storm water system or adjacent land.	During GT operation and generation, a failure of the Gas Turbine unit has caused ancillary damage to lubrication oil lines (inlet/return) discharging high pressure lubrication fluid extensively throughout the turbine building.
Fire (Fuel Gas, LPG gas, Diesel Fuel, Lube Oil, Transformer Oil)	Localised air pollution with potential release of toxic/harmful chemicals to the atmosphere.	A fire has been detected in one (or more) of the combustible liquid/flammable gas systems on-site, requiring the immediate actions of personnel to extinguish the fire in conjunction with the request for assistance from the local emergency services. Note: any exercise involving 'Fire' shall be carried out in conjunction with Section 3.4 and Section 8.2 as such an incident may involve an emergency evacuation of site and use of the local Rural Fire Services

6.6.3 Environmental Training

Environmental training is delivered to all KKPS staff with records maintained in the Snowy Hydro Learning Management System (Success Factors). The training packages include:

- Site specific online training including key PIRMP obligations;
- Environmental compliance training;
- Environmental awareness and standards;
- Emergency spill sampling requirements;
- Operational risk training;
- Incident management training;
- Spill Response training; and
- Oil Management training.

6.6.4 Inventory of Pollutants

A number of potential pollutants are stored, used and disposed of at KKPS. These include fuels, chemicals, oils, lubricants, oily water and demineralised water. A list of potential pollutants is provided in [Table 6.4](#).

Table 6.4: Potential Pollutants at KKPS

Location/Area	Pollutant	Maximum Quantity
Diesel Fuel Tanks	Diesel	2x 1.8ML Tanks 3.6ML total
Turbines	Lubricating Oil	32kL per Turbine (2x Turbines)
Transformer Yard	Generator Transformer Oil - Mineral Oil	Step Up Transformer (2x Transformers): 88kL per Transformer
	Generator Transformer Oil - Synthetic Oil	Auxiliary HV Transformer (2x Transformers): 88kL per Transformer
	Generator Transformer Oil - Synthetic Oil	Auxiliary LV transformers (5x Transformers): 1.9kL per Transformer
	Generator Transformer Oil - Synthetic Oil	SFC Transformer (2x Transformers): 4.4kL per Transformer
Gas Receival Facility (APA Group)	Natural Gas	Maximum 153.6 bar at main gas pipeline 44 bar at turbine feed
Oily Water Pit	Oily Water/ Hydrocarbons	650kL capacity of Oily Water Pit
Generator Circuit Breaker	Sulphur Hexafluoride (SF6)	1x 60kg per unit (120kg)
132kV Circuit Breaker	Sulphur Hexafluoride (SF6)	3x 8kg per unit (48kg)
11kV Circuit Breaker	Sulphur Hexafluoride (SF6)	3.2kg
Demineralised Water Tank	Demineralised Water	2.0 ML

6.6.5 Primary Environmental Pollution Hazards

A site-wide hazard assessment was undertaken at KKPS to identify the key environmental hazards that pose a risk of causing actual or potential material harm to the environment (human beings and ecosystems).

The key hazards identified in the assessment are detailed in **Table 6.5**.

Table 6.5: Key environmental risks at KKPS

Hazard	Description	Likelihood	Consequence	Management Measure	Circumstances that may increase likelihood of environmental harm
Fuel Gas leak	Gas leak in pipeline	Low	Localised air pollution	Flow metres and alarms Emergency Response equipment	Plant and/or alarm failure leading to prolonged uncontrolled gas leak
Fuel Gas fire/explosion	Ignition of fuel gas in pipeline	Low	Localised air pollution	Fire equipment on site	Plant and/or alarm failure leading to fire or explosion in surrounding area
SF6 gas release	SF6 leak in circuit breakers or 11kV kiosk	Low	Ozone depleting	Maintenance and Pressure Monitoring	Adjacent Fire or Degradation of sealing materials
Hydrogen Gas fire/explosion	Gas Leak	Low	Local	Unit Generator Hydrogen module alarms and leak detection	Alarms and automated evacuation of Hydrogen System
Diesel fuel tank failure	Failure of diesel tank causing fuel to leak into bunded area	Low	Diesel fuel entering oily water separator. Potential overflow of oily water separator causing offsite discharge waterways	Tanks are bunded. Emergency valve on bund outlet Alarm in bunded area	Plant, alarm or bund failure leading to discharge of diesel to environment (waterways or land)
Diesel fuel unloading system failure	Incorrect positioning of a fuel valve causing fuel system failure with leak onto the ground.	Med	Discharge of diesel fuel onto the ground beside the diesel fuel unloading skids causing discharge into local soil and stormwater drain system	Emergency shutoff buttons in area to immediately shut-off all pumps	System, plant failure leading to discharge of diesel to environment (storm water or land)
Diesel fuel tank fire	Ignition of diesel fuel in storage tank area	Low	Localised air pollution (and possible water pollution)	Fire equipment on site	Uncontrolled fire leading to excessive smoke and odour. Plant and/or bund failure leading to discharge of diesel or oily water to environment (waterways)
Spill during refilling of diesel tanks	Spill of diesel fuel during refilling activities	Low	Diesel fuel entering stormwater drains	Drains within the immediate vicinity of the storage area are directed to the oily water separator	Plant failure leading to discharge of diesel to environment (waterways)

Hazard	Description	Likelihood	Consequence	Management Measure	Circumstances that may increase likelihood of environmental harm
Transformer oil spill due to Transformer failure	Spill of transformer oil	Low	Transformer oil entering stormwater drains	Drains within the immediate vicinity of the transformer area are directed to the oily water separator	Plant and/or alarm failure leading to discharge of diesel to environment (waterways)
Transformer oil fire	Ignition of transformer oil within transformer area	Low	Localised air pollution	Fire suppression system available on transformers	Uncontrolled fire leading to excessive smoke and odour
Hydraulic/ Lube oil spill due to Turbine failure	Spill of turbine oil	Low	Turbine oil entering stormwater drains.	Drains within the immediate vicinity of the turbine area are directed to the oily water separator	Plant and/or alarm failure leading to discharge of oil to environment (waterways)
Turbine oil fire	Ignition of turbine oil within turbine turbines or storage area	Low	Localised air pollution	Fire equipment on site	Plant failure and uncontrolled fire leading to excessive smoke and odour
Oily water separator failure	Overflow from oily water separator into canal	Low	Discharge of oil contaminated water	Separator maintained at low level and alarmed. Separator alarmed	Storm event leading to discharge of excessive oily water to environment (waterways)
Demin Water tank failure	Demin water escaping into the adjacent land and/or stormwater drain	Low	Discharge of demineralised water	Demin tank is inspected 1Y external (only) and 10Y for internal and external	Catastrophic failure of of the tank leading to 2ML of demin water leaving site and flowing into adjacent areas and waterways

6.6.6 Environmental Pollution Incident Response Maps

Environmental pollution incident response maps have been prepared to facilitate planning for incident response and provide readily accessible and accurate information to support the assessment of an incident and assist in the implementation of incident response procedures and clean-up.

The following maps are provided:

- General site layout identifying key locations for pollutants ([Figure 6.4](#))
- The area surrounding KKPS that may be affected by a pollution incident ([Figure 6.5](#))
- Operational discharge points ([Figure 6.6](#));
- Stormwater (clean water) Drainage System ([Figure 6.7](#));
- Process (oily) Water Drainage System ([Figure 6.8](#));

Note: Process water discharges occur via the oil water separator, whilst stormwater discharges occur directly via the Humeceptor to the discharge outlet.

- Tradewaste Drainage System ([Figure 6.9](#))

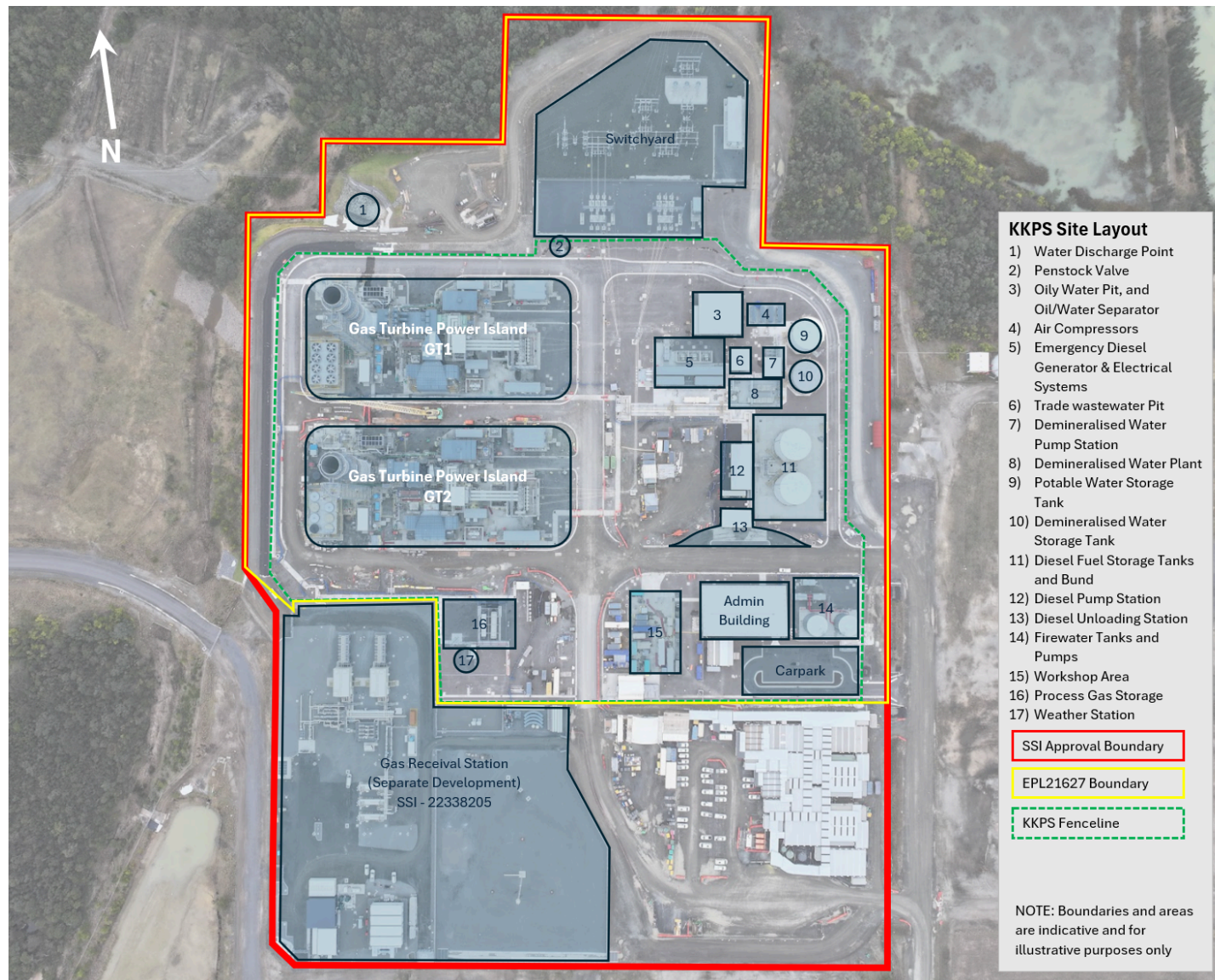


Figure 6.4: KKPS site layout

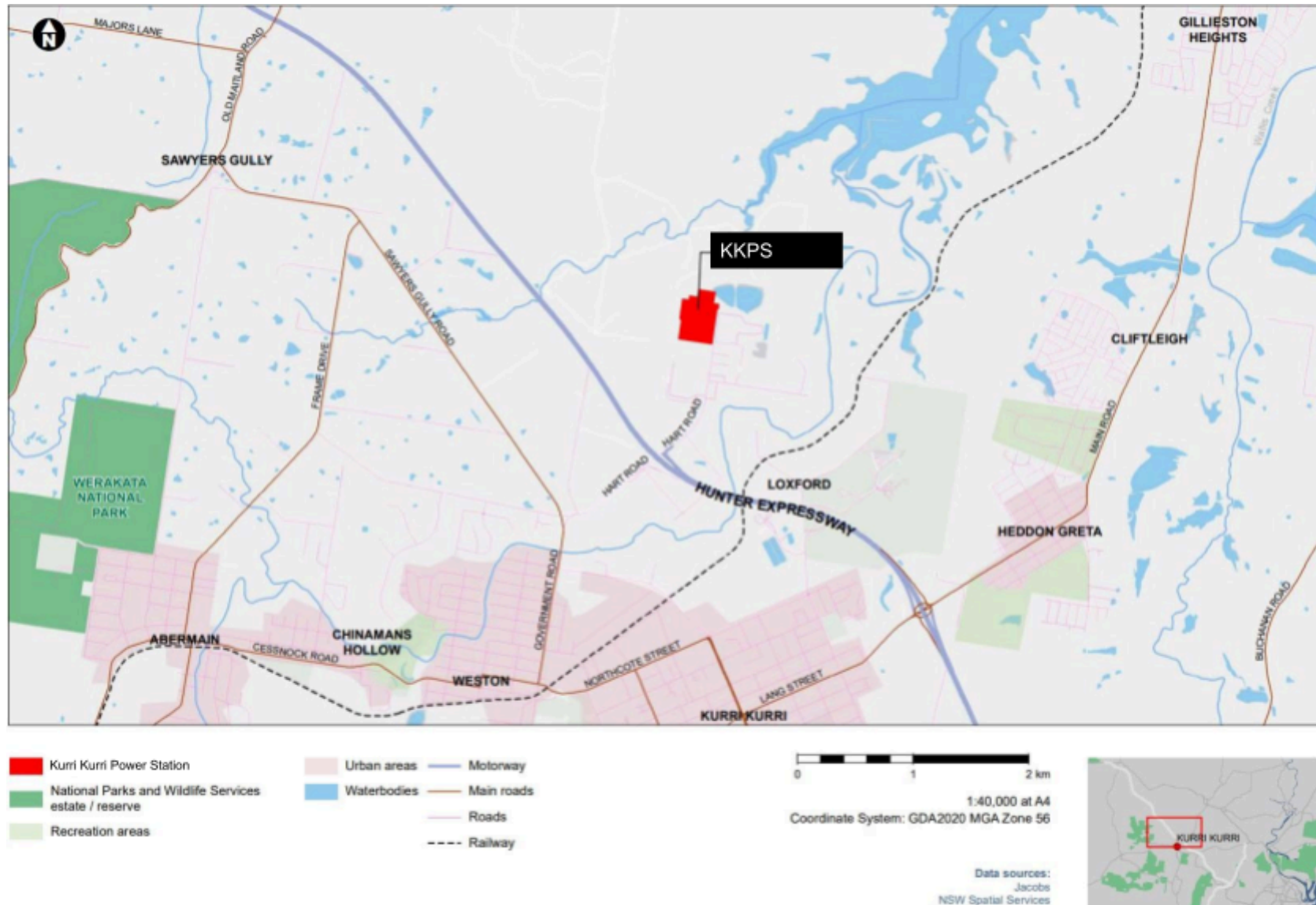


Figure 6.5: KKPS regional setting

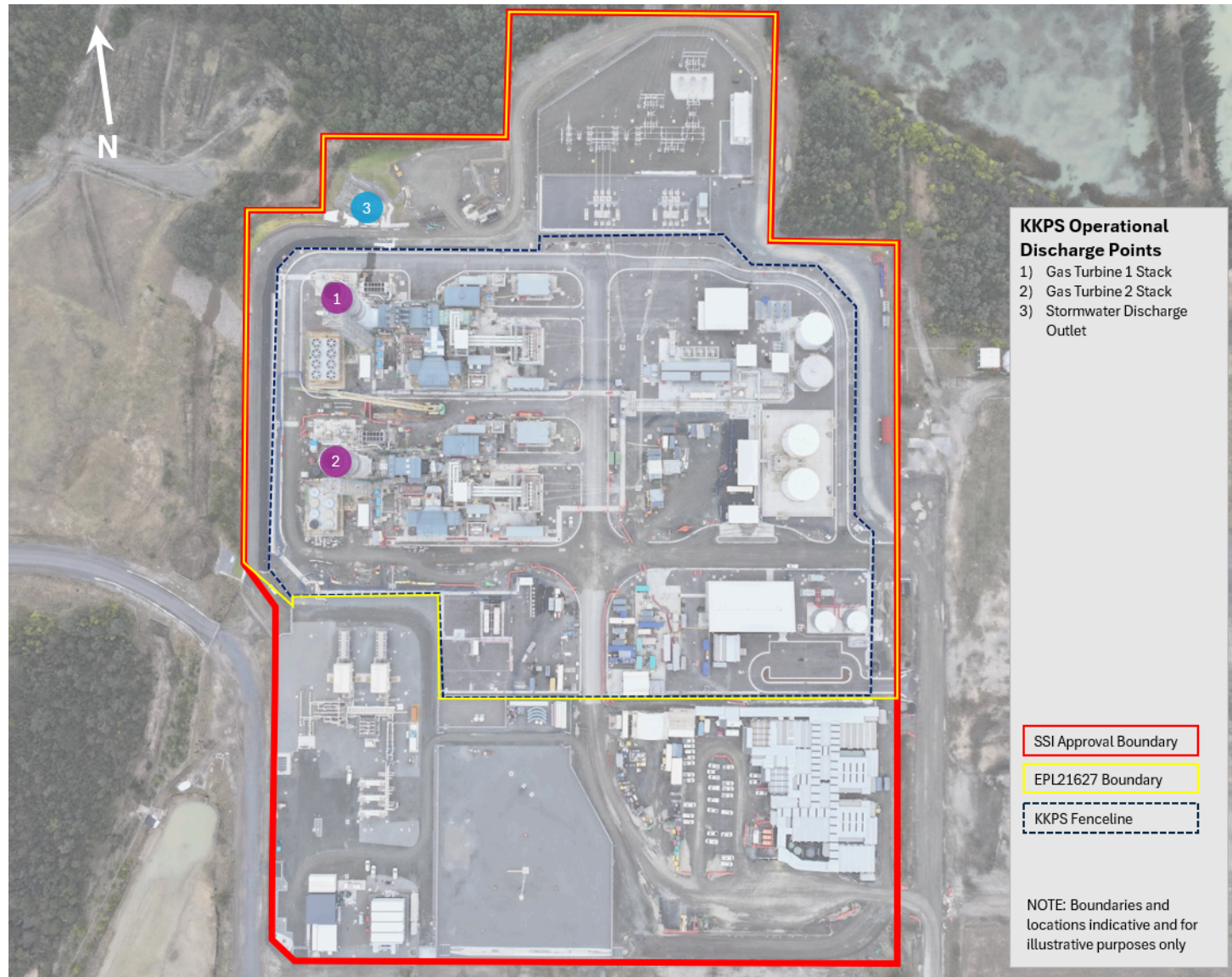


Figure 6.6: KKPS operational discharge points

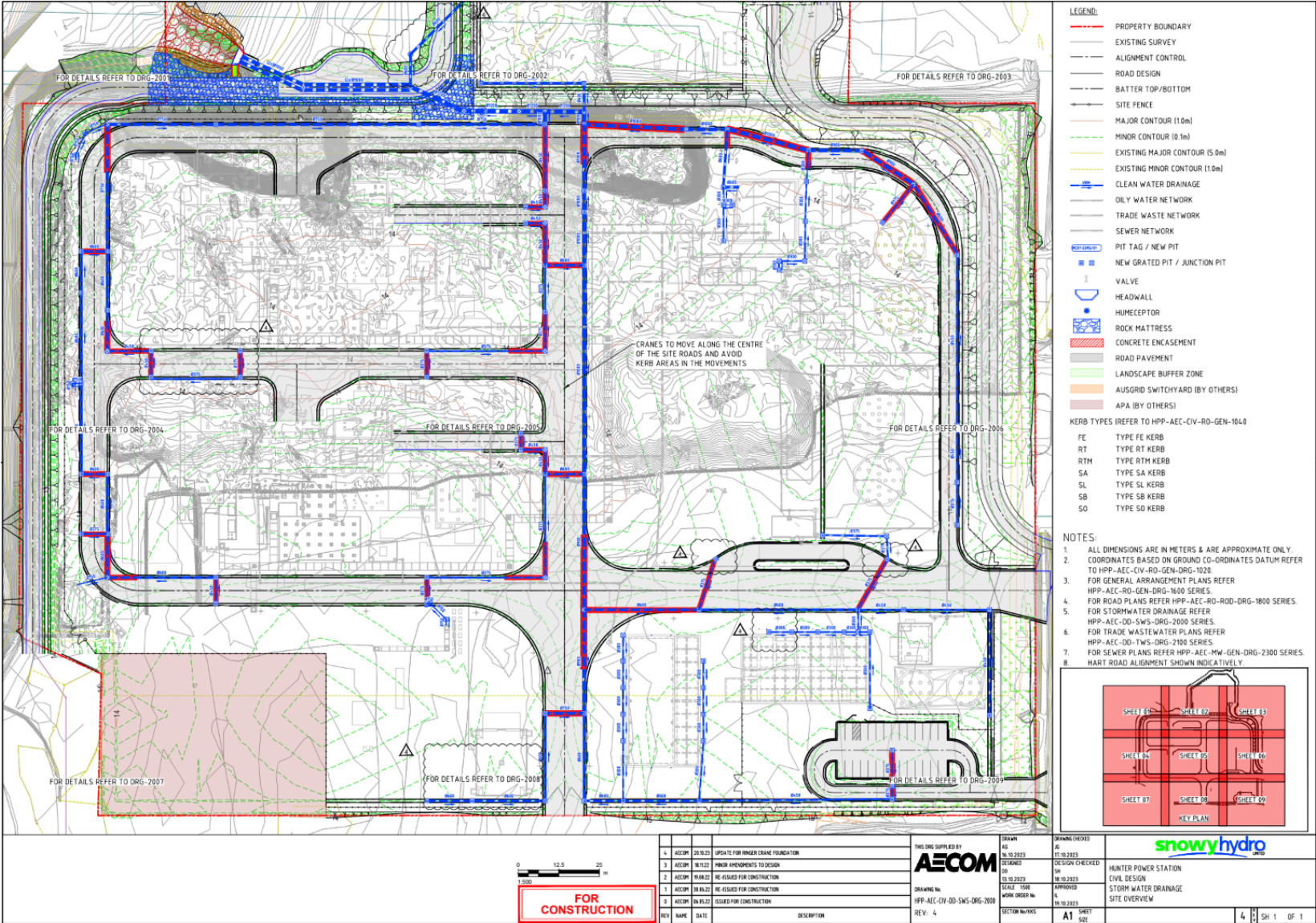


Figure 6.7: KKPS Stormwater (clean water) Drainage System

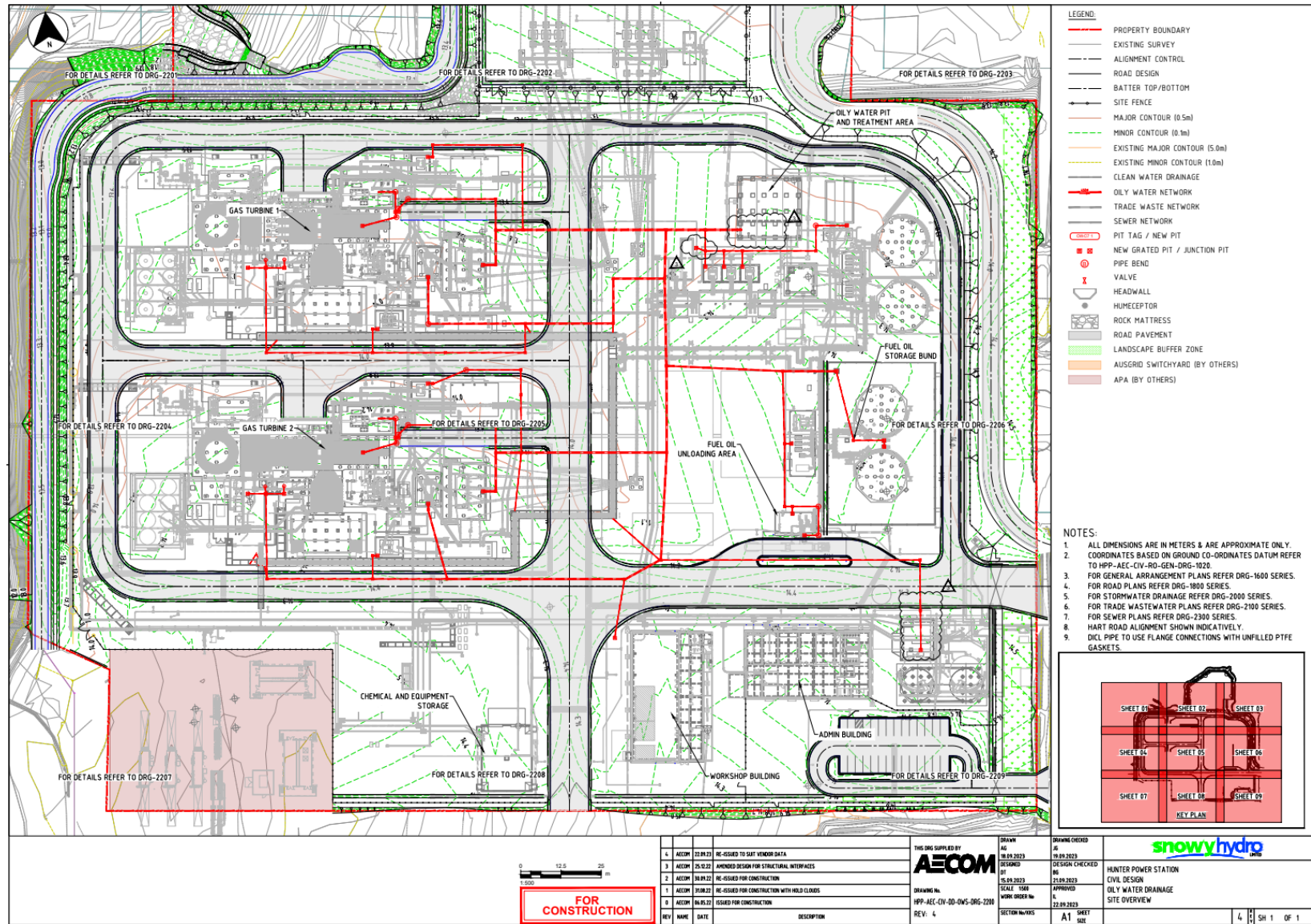


Figure 6.8: KKPS Process (oily) Water Drainage System

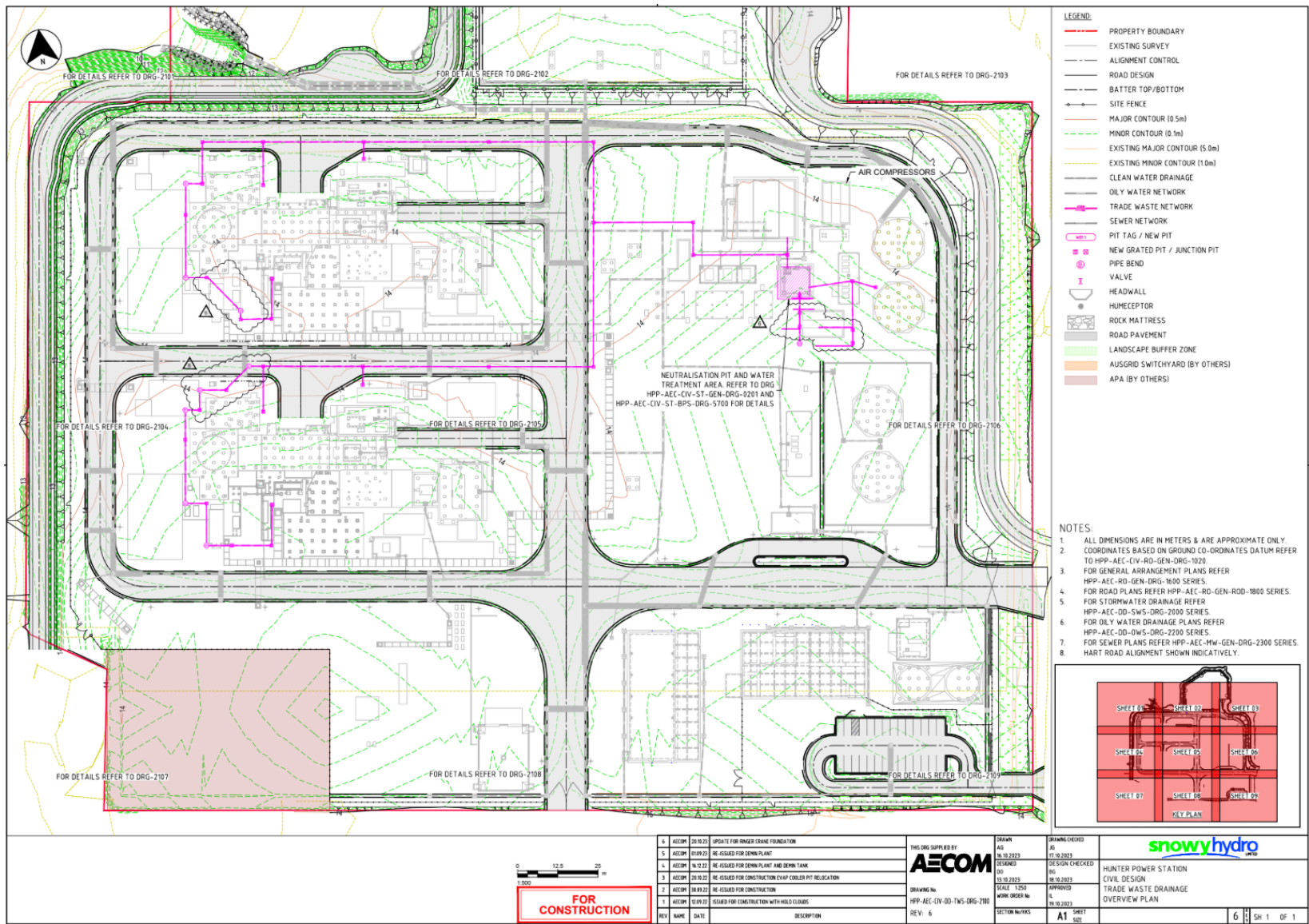


Figure 6.9: KKPS tradewaste Drainage System

6.6.7 Existing Environmental Site Controls to Minimise Risk

There are numerous controls and procedures in place at KKPS to pre-emptively minimise risks to human health and the environment, which are established in the the KKPS Operational Environmental Management Plan, and associated sub-plans. Collectively, they are referred to as the OEMP suite. The OEMP suite consists of the following documents:

- Operations Environmental Management Plan
- Air Quality Management Plan
- Biodiversity Management Plan
- Cultural Heritage Management Plan
- Noise Management Plan
- Traffic Management Plan
- Waste Management Plan
- Water Management Plan

The all documents in the KKPS OEMP suite are available on Snowy Hydro's document management system (AODocs) and on the Snowy Hydro website.

6.7 PIRMP Requirements

[Table 6.6](#) details the requirements to be addressed in a PIRMP, as defined by [Chapter 4 of the POEO \(General\) Regulation 2022](#), and identifies how/where each requirement has been addressed in the KKPS ERH, and/or other prepared emergency response documentation.

Table 6.6: PIRMP legislative requirements.

Clause	How/Where Addressed
Protection of the Environment Operations (General) Regulation 2022, Chapter 4 Pollution incident response management plans	
70 Definition In this Chapter— PIRM plan means a pollution incident response management plan required to be prepared under the Act, Part 5.7A.	This ERH, and KKPS PIRMP (Website version)
71 Form of plan—the Act, s 153C A PIRM plan— (a) must be in written form, and (b) may form part of another document required to be prepared under or in accordance with another law if the information required to be included in the PIRM plan is readily identifiable as that information in that other document.	This ERH, and Table 6.6
72 General licences—additional matters to be included in PIRM plan—the Act, s 153C For the Act, section 153C(d), the following matters must be included in a PIRM plan—	N/A
(a) a description of the hazards to human health or the environment associated with the activity to which the licence relates (the relevant activity),	Section 6.7.5: Primary Environmental Pollution Hazards
(b) the likelihood of the hazards occurring, including details of conditions or events that could, or would, increase the likelihood,	Section 6.7.5: Primary Environmental Pollution Hazards
(c) details of the pre-emptive action to be taken to minimise or prevent a risk of harm to human health or the environment arising out of the relevant activity,	Section 6.7.7: Existing Environmental Site Controls to Minimise Risk
(d) an inventory of potential pollutants on the premises or used in carrying out the relevant activity,	Section 6.7.4: Inventory of Pollutants
(e) the maximum quantity of a pollutant likely to be stored or held at particular locations, including underground tanks, at or on the premises to which the licence relates,	Section 6.7.4: Inventory of Pollutants
(f) a description of the safety equipment or other devices used to minimise the risks to human health or the environment and to contain or control a pollution incident,	Section 4.1: Fire Prevention and Preparedness Section 5.1: First Aid Preparedness

Clause	How/Where Addressed
Protection of the Environment Operations (General) Regulation 2022, Chapter 4 Pollution incident response management plans	
(g) the names, positions and 24-hour contact details of individuals who— (i) are responsible for activating the PIRM plan, and (ii) are authorised to notify relevant authorities under the Act, section 148, and (iii) are responsible for managing the response to a pollution incident,	Section 1.4: Contact Details KKPS PIRMP (Website version), Section 2.0
(h) the contact details of each relevant authority referred to in the Act, section 148,	Section 1.4: Contact Details Section 6.3: Environmental Pollution Incident - Notification to Relevant Authorities KKPS PIRMP (Website version), Section 2.0 Appendix A: External Notification Requirements for a Pollution Incident
(i) details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises near the premises to which the licence relates or where the scheduled activity is carried on,	Section 6.5: Environmental Pollution Incident - Communications with Local Community Section 9.0: Incident and Emergency Communications
(j) the arrangements for minimising the risk of harm to persons who are on the premises or who are present where the scheduled activity is being carried on,	Section 8.0: Evacuation
(k) a detailed map, or set of maps, showing the location of the premises to which the licence relates, the surrounding area likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of stormwater drains on the premises,	Section 6.7.6: Environmental Pollution Incident Response Maps
(l) a detailed description of how an identified risk of harm to human health will be reduced, including, as a minimum, by early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce the risk,	Section 6.2: Environmental Pollution Incident – Immediate Actions
(m) the nature and objectives of a staff training program in relation to the PIRM plan,	Section 3.4: Emergency Exercises , and Section 6.7.3: Environmental Training
(n) the dates on which the PIRM plan has been tested and the name of the person who carried out the test,	Section 6.6.1: PIRMP Testing

Clause	How/Where Addressed
Protection of the Environment Operations (General) Regulation 2022, Chapter 4 Pollution incident response management plans	
(o) the dates on which the PIRM plan is updated,	Section 6.6.1: PIRMP Testing
(p) the way in which the PIRM plan must be tested and maintained.	Section 6.6.1: PIRMP Testing
74 Availability of PIRM plan—the Act, s 153D (1) A PIRM plan must be made readily available— (a) to an authorised officer on request, and (b) to a person who is responsible for implementing the PIRM plan at the premises— (i) to which the relevant licence relates, or (ii) where the activity takes place.	The KKPS ERH is available on the Snowy Hydro Intranet, and in hardcopy at the premises. See Section 3.1.3
(2) A PIRM plan must be made publicly available in the following way within 14 days after it is prepared— (a) in a prominent position on a publicly accessible website of the person who is required to prepare the PIRM plan, (b) if the person does not have a website—by providing a copy of the PIRM plan, without charge, to a person who makes a written request for a copy.	The KKPS PIRMP (website version) is publicly available on the Snowy Hydro website.
(3) Subsection (2) applies only in relation to a part of a PIRM plan that includes the information required under— (a) the Act, section 153C(a), and (b) this Regulation, section 72(h) and (i) or 73(b)(ii) and (iii).	KKPS PIRMP (website version)
(4) Personal information, within the meaning of the Privacy and Personal Information Protection Act 1998, is not required to be included in a PIRM plan made available to a person other than an authorised officer.	Noted.
75 Testing of PIRM plan—the Act, s 153E (1) A PIRM plan must be tested— (a) routinely at least once every 12 months, and (b) if a pollution incident occurred during an activity to which an environment protection licence relates, which caused or threatened material harm to the environment, within the meaning of the Act, section 147—within 1 month of the incident occurring.	Section 6.6.1: PIRMP Testing
(2) The test must be carried out in a way to ensure the following— (a) the information included in the PIRM plan is accurate and up to date, (b) the PIRM plan is capable of being implemented in a workable and effective way.	Section 6.6.1: PIRMP Testing
(3) A test carried out under subsection (1)(b) must assess the matters specified in subsection (2) in light of the incident.	Section 6.6.1: PIRMP Testing

7.0 NATURAL DISASTERS

7.1 Types of Natural Disasters experienced at Kurri Kurri Power Station

Australia is a unique country that experiences a large variety of Natural Disasters. The typical Natural Disasters more-specifically and more-likely to be experienced at the KKPS facility include:

- Heatwaves,
- Floods,
- Severe storms, and
- Earthquakes.

Each of the Natural Disasters listed above need to be managed effectively to ensure the safety of all personnel and to protect the Snowy Hydro Gas Turbine Generation and other facility assets.

The following sub-chapters will identify key risks associated with a particular Natural Disaster and the proposed action to be taken throughout the disaster activity and provide a link to the relevant emergency response actions.

For emergency assistance associated with any Natural Disaster, personnel can contact the [NSW State Emergency Services](#) (SES) by phone on **132 500**.

7.2 Heatwave

A 'heatwave' occurs when the maximum and the minimum temperatures are unusually hot over a three-day period.

For more information, refer the video link from Bureau of Meteorology - [Heatwaves in Australia](#)

When unusually high night and daytime temperatures persist, heat stress becomes a critical factor in human health and infrastructure functionality and reliability. In heatwaves, hot nights make it harder to recover from the heat of the day, which puts greater stress on the human body.

Heatwaves are classified into three types, based on intensity:

- **Low-intensity heatwaves** are more frequent during summer. Most people can cope during these heatwaves.
- **Severe heatwaves** are less frequent and are likely to be more challenging for vulnerable people such as the elderly, particularly those with medical conditions.
- **Extreme heatwaves** are rare. They are a problem for people who don't take precautions to keep cool – even for people who are healthy. People who work or exercise outdoors are also at greater risk of being affected.

Heatwaves affect our people and our equipment via a drop in operational performance. During a heatwave there is a greater risk of failure in our utilities (electricity, telephone etc) and as such, we need to take special precautions.

7.2.1 Heatwave Preparation

When the [Bureau of Meteorology](#) predicts a heatwave, prepare for the event as per the following guidelines:

Before a Heatwave

- Get the office / work-area ready
 - Have curtains/blinds with pale linings in rooms that get a lot of sunlight, to help reflect the heat.
 - Consider putting additional shading such as external blinds or shutters on windows in rooms that face west.
 - Create a specified 'cool area' to go to during the heatwave. Ideally the area can be cooled using indoor and outdoor shading or has a fan or air-conditioning.
 - Check that your office can be properly ventilated without compromising security.
- Emergency kit
 - In case of a power outage, have an alternative source of power for radios and torches, and to keep mobile phones fully charged.
- Looking after others
 - Identify work colleagues who may be particularly at risk during the extreme heat. If they are working around the power station site, make a plan to check on them regularly.
 - Reduce any site servicing or maintenance activity that involves extended periods in the extreme heat. Keep any necessary work outside to a bare minimum and ensure personnel have access to cool water to keep hydrated.

During a Heatwave

- Plan ahead and ensure any essential activities are carried out prior to the forecast heatwave, to minimise the time spent outdoors during the heatwave.
- Keep the office cool on extreme hot days:
 - set your air-conditioner to cool
 - draw curtains and pull down blinds and awnings.
- Keep informed
 - Maintain a listening watch to keep up-to-date with information associated with the heatwave and any subsequent service disruptions (especially public transport and

traffic delays on roads, freeways/motorways)

- local weather forecast (seven-day forecast) - refer www.bom.gov.au
- [heatwave forecast](#) (activated during Australian summer).
- For power outages - If the outage is affecting your work location, check with the electrical network provider to ascertain what impact the electricity disruption will have on your business activity. (Note: standby generators will be able to maintain essential power at the KKPS site)
- Stay hydrated
 - Adults should drink two to three litres of water a day even if you don't feel thirsty.
 - Avoid fizzy, alcoholic and caffeinated drinks.
 - Don't take salt tablets, unless instructed by your doctor.
- Minimise sun exposure
 - Stay out of the sun as much as possible, especially during the hottest parts of the day.
 - If you do have to go out outside, wear a hard hat with additional sun protection, sunglasses and apply sunscreen.
- Keep cool inside the home or the office
 - Use air-conditioning, coolers and fans (where available).
 - Refrain the use of any oven or stove. Instead, use a microwave.
 - Unplug gadgets and small appliances when you are not using them, as they generate heat even when turned off.
 - Take cool baths and showers.
 - Use cool packs and wet towels on your body.
- Monitor the performance of your power station equipment during a heatwave.
 - High temperatures have an adverse impact on the performance of diesel or gas turbine powered equipment.
 - Monitor engine (diesel or gas turbine) cooling and lubrication systems as these will be under great stress whilst operating in extreme prolonged temperatures.
 - Monitor electrical generation equipment and transformers for performance degradation. There is a greater chance of such equipment 'tripping' off-line during such extreme heat conditions.

7.3 Floods

The effects of flooding at the KKPS is only considerate of flooding from heavy rain, rather than a major leak of either the raw water or demineralised water storage tanks. If a significant amount of rain has caused localised flooding, there are two main issues for the KKPS.

The first key risk is the amount of water around the power station facility that may impact on the drainage of water via the storm water drain system. The drain system may not cope with such a high volume of rain in a short period of time, therefore, there may be standing water around the site.

Even though the power station equipment (e.g. electrical underground cabling etc) is well insulated and protected from such rain events, it may be hazardous for personnel to move around the facility with extensive standing water. There may also be traces of hydrocarbons and other chemicals with the standing water that could make surfaces slippery and difficult to walk on.

The second key risk is associated with the existing 'bunds' on site, used to prevent the discharge of chemicals, hydrocarbons, oils etc, into the storm water drain system. Even though the design and construction of such bunds will contain (approximately) 120 percent of the volume of the storage tank liquid, consistent heavy rain may reduce the overall effectiveness of a bund.

Other problems associated with extensive rainfall is with the oily water separator, whereby the storage tank may reach capacity, especially if collected rain water from the diesel storage tank bund and transformer bunds are discharged into the oil water separator system. In extreme circumstances, there could be a discharge of hydrocarbons into the storm water system.

In such events, the KKPS team members should refer to the KKPS site drains and water discharge drawings (refer to [Section 6.6.6](#)) as this information will help KKPS team members manage any excessive rainwater in the bunded areas and the connection of these bunded areas with the oily water system.

7.4 Severe Storms

This section will focus on those aspects of a severe storm that have not been covered by other topics (e.g. flooding), and will focus on the damage that can be caused by high winds and lightning.

Severe Storms in the context of this procedure include:

- wind storms,
- dust storms,
- hail storms and
- severe thunderstorms

Such severe weather events affecting the KKPS assets are generally divided into two broad categories: thunderstorm events, and other severe weather events (not directly associated with severe thunderstorms).

Severe weather events In Australia, are defined by the [Bureau of Meteorology](#) as one that produces any of the following:

- Sustained winds of gale force (63 km/h) or more
- Wind gusts of 90 km/h or more (100 km/h or more in Tasmania)
- Very heavy rain that may lead to flash flooding
- Widespread blizzards in Alpine areas

Whilst some of these events are not relevant to the KKPS site, the effects of high winds on the Gas Turbine Generation buildings and support structures around the power station site are mostly at risk for structural damage during high winds.

7.4.1 Notification of Severe Weather Warning

Following the release of a severe weather warning via the [Bureau of Meteorology](#) or local media services, the KKPS team members shall carry out a detailed inspection of the power station grounds to ensure there are no loose objects or debris that may become a hazard (e.g. flying object) that could injure personnel at the power station or in adjoining properties.

In addition, all portable (unsecured) equipment (e.g. industrial rubbish bins, spill kits etc) located around the power station site, need to be appropriately secured (restrained) or placed into a suitable storage area for protection. All access doors and gates must be checked to confirm they are closed and secured.

In some cases (e.g. roller doors) it may be necessary to install additional hardware or bracing to prevent equipment, buildings or portable structures from being damaged during high winds.

Following any severe weather event involving high winds (including dust storms), the power

station team members will again need to carry out a detailed inspection of the power station and store facility to determine if there is evidence of structural damage, in particular, roofing materials and building wall panelling and elevated structure (e.g. gas turbine inlet structure and exhaust structure).

Another major safety factor following high wind events is the potential for fallen (above-ground) powerlines. With 132kV high voltage power lines transiting the centre of the site and extending beyond the KKPS HV Switchyard, there is a possibility these power lines could have fallen and potentially be tangled in fallen trees or other debris. Personnel must remain clear of any fallen power lines and always treat them as 'LIVE'.

Any damage will need to be reported to the KKPS Plant Manager and to the Gas and Diesel Area Manager as such damage may restrict plant operation and electrical power generation.

7.4.2 Thunderstorms

One of the most hazardous of the severe weather events is the thunderstorm. The damage that results from thunderstorms is mainly inflicted by downburst winds, lightning, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorm cells are even capable of producing tornadoes, however, these are not frequent in the Hunter Valley, NSW area.

During thunderstorms, one of the major risks to human life is the potential for severe electric shock from lightning. There are numerous ways that a person can receive an electric shock from lightning. The most common are:

- Direct Strike
- Side Flash
- Ground Strike

Whilst the physical method that a person receives an electric shock from lightning, the outcome is nearly always the same, whereby the person can incur injuries to:

- The nervous system
- Cardiovascular system
- Skin

Most lightning strike victims will suffer a cardiac arrest, therefore, prompt medical intervention via CPR (and the use of a Defib AED) will greatly assist in restoring partial flow of oxygenated blood to the brain and heart and extend the window of opportunity for survivability of such an injury.

As with [Section 7.4.1](#), a thunderstorm warning notification requires personnel to monitor the approach of the thunderstorm and the intensity of the storm cell (via [Bureau of Meteorology - Newcastle Radar](#)) to ensure that team members are not working in the open or near electrical transformers and other electrical power generation equipment with an approaching electrical storm.

Whilst the KKPS has large (tall) building structures and lightning rod poles near the electrical transformers, lightning is indiscriminate and can strike any person working out in the open.

To ensure site personnel are not fatally injured from an electrical thunderstorm, workers must limit their outdoor work activity when the storm cell is approximately **10-kms** away from the KKPS facility.

All personnel must remain indoors and away from any metal/conductive building material (e.g. metal sheeting or metal frames) when the storm cell is within **5-kms** of the facility.

It is also recommended to temporarily place vehicles or other mobile plant equipment undercover to restrict any damage from hailstones that normally accompany severe thunderstorms.

7.5 Earthquakes

One of the most infrequent but potentially devastating natural disasters is an earthquake. The KKPS is located in an area that has a number of earthquake fault lines with evidence of historical earthquakes, including the most notable in the region with a magnitude 5.6 Richter-scale earthquake occurring in Newcastle on 28 December 1989.

The unpredictable nature of an earthquake demands a significant amount of care, especially following an earthquake, where a high potential of structural failure can be evident in buildings and other company assets.

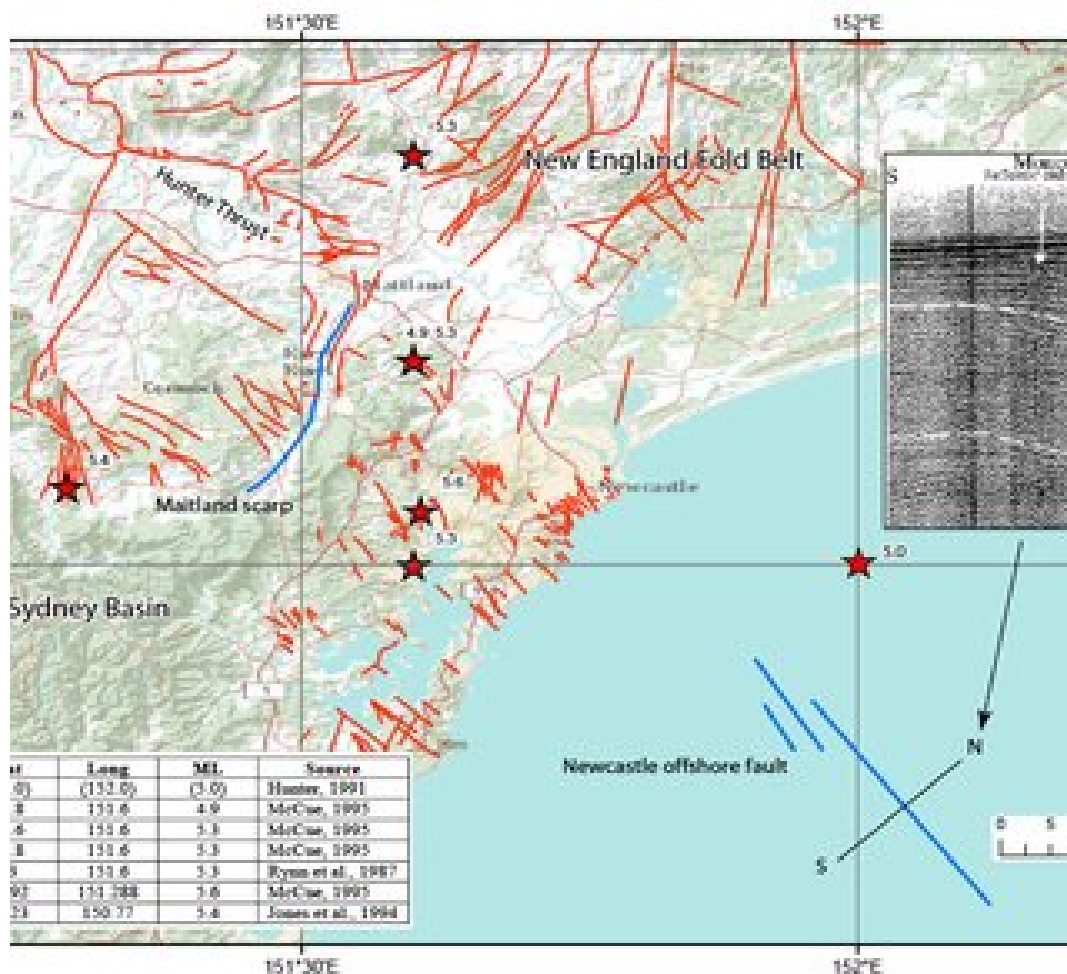


Figure 7.1: Image - NSW Sydney Basin and Newcastle Seismic Fault planes

Should an earthquake be experienced at the Kurri Kurri Power Station Power Station, personnel must respond as per the following instructions:

IF INDOORS

- DROP to the ground; take COVER by getting under a sturdy table or other piece of furniture; and HOLD ON until the shaking stops. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture.
- Do not use a doorway except if you know it is a strongly supported, load-bearing doorway and it is close to you. Many inside doorways are lightly constructed and do not offer protection.
- Stay inside until the shaking stops and it is safe to go outside. Do not exit a building during the shaking. Note: most injuries occur when people inside buildings attempt to move to a different location inside the building or try to leave. Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.

IF OUTDOORS

- Stay where you are
- Move away from any buildings, streetlights and utility (e.g. electrical) wires.
- Once in the open, stay there until the shaking stops. The greatest danger exists directly outside buildings, at exits and alongside exterior walls.

If either Unit is in operation (including any other auxiliary systems) at the time of the earthquake, unless the earthquake has triggered the Unit (GT) protection system to trip electrical power generation and initiate shutdown of the turbine, it will be the decision of the Operator In Charge to determine if the earthquake was significant enough to necessitate manual shut down of the unit/s so that inspections of the equipment and civil structure at the power station site can be carried out.

7.5.1 Post Earthquake Response

For the KKPS site, it is important for personnel to refer to the STANDARD RESPONSE PRACTICE - [COL-ERQ-001 - Earthquake Incident](#) document, as this provides the criteria for the inspections of critical operational equipment following the observation or report of an earthquake.

Personnel shall also refer to SHL Operating Instruction [OI S2.5 - Earthquake Alert and Response](#), as this procedure will be used by the Gen Ops (SMCC) team to determine the correct Alert Level and the relevant follow-up reporting, communication and actions.

The relevant Alert Level defines the response required to manage the risk associated with an asset in a post-seismic event and what Emergency Response actions must be activated.

Team members must refer to [G23-09-A - Earthquake Response Guidelines](#) to ensure that a uniform approach is applied to earthquake response across the SHL Production sites and Gen Ops (SMCC).

For more information, in particular any required coordination with the NSW State Emergency Response teams (e.g. SES, Police, Ambulance, Fire etc), KKPS team members can review the [NSW State Emergency Management Plan \(EMPLAN\)](#).

For other information associated with earthquake emergency response, team members can also refer to the [Victorian State Emergency Response Plan for Earthquakes](#) as this provides valuable information in post-earthquake recovery.

8.0 EVACUATION

8.1 Emergencies Requiring Evacuation

Evacuation of buildings, structures or the whole site should be undertaken in circumstances where actual or perceived hazards are present and failure to remove personnel from the hazard increases the risk to those personnel.

Evacuation is most likely to be in response to a fire emergency. However, the decision to evacuate may also be the result of uncontrolled release of a hazardous material, bomb threat, structural damage or environmental disaster.

8.2 Evacuation Preparedness and Training

Preparedness for evacuation will be maintained in accordance with [Table 8.1](#).

Table 8.1: Evacuation Training and Preparedness

Item	Description
Evacuation information and training	Site induction contains information on evacuation procedures, audible alarms and muster location. Delivered to all site personnel and contractors.
Evacuation Drill	Undertaken at least annually. May be incorporated as a part of broader emergency response exercises.
Signage	Evacuation route and muster area signage installed in such a way that the route and muster areas are self-evident.
Emergency exit lights	Installed in various buildings and plant areas in accordance with relevant Australian Standards. Tested quarterly.

8.3 Initiation of Evacuation

Evacuation of buildings / structures may be initiated:

- At the direction of the KKPS Plant Manager or Emergency Coordinator;
- By any person in response to a significant hazard; and
- In response to an automated or manually activated alarm.

Evacuation of the entire site may be initiated:

- At the direction of the KKPS Plant Manager or Emergency Coordinator; and
- At the direction of a representative of the Snowy Hydro Crisis Management Team

8.4 Alert and Evacuation Alarms

KKPS has been equipped with two levels of general alarm. These are detailed in [Table 8.2](#).

Table 8.2: Emergency Alarms at KKPS

Alarm Type	Tone	Intent	Activation
Alert			
Evacuation	Rising tone	Evacuation of site	Manual activation from facilities building control room

8.5 Evacuation Route

Evacuation of the KKPS site is to the East of the Administration building if working in the South Eastern or South Western portion of site. If working in the North West or North East, personnel will muster and evacuate via the Northern pedestrian evacuation route located to the West of the Switchyard as outlined [Figure 8.1](#). This evacuation route, marked in '**RED**', has been chosen to maximise the distance between personnel and the Kurri Kurri Power Station gas receival facility in case of severe fire or explosion.

The alternate muster point to be used if it is unsafe to remain onsite, is located on Hart Road in the parking bay prior to Scales Road, as indicated in [Figure 8.2](#). The evacuation route, marked in '**RED**', from KKPS to the alternate muster point is via Hart Road.

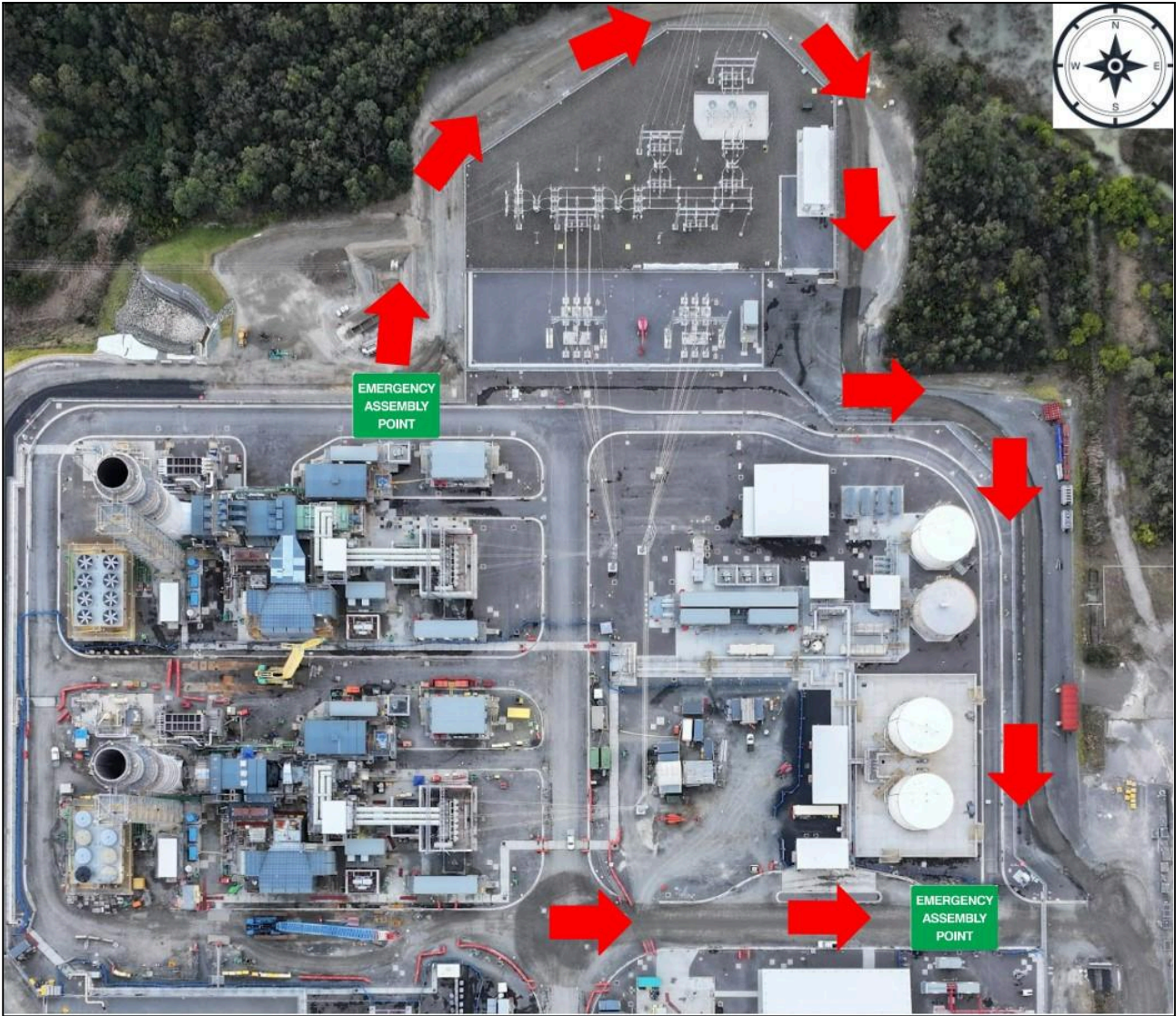


Figure 8.1: KKPS Muster Points - North and East, and Evacuation Route



Figure 8.2: KKPS Alternate Muster Point, and Evacuation Route

8.6 Alert Alarm - Procedure and Responsibilities

The procedure provided in [Table 8.3](#), should be undertaken in the event that an “**alert**” alarm has been activated:

Table 8.3: KKPS Alert Alarm response responsibilities

Who	Responsibility
Emergency Coordinator / Plant Manager / Operator in Charge	☐ Assess situation ☐ Determine whether evacuation is required
Production Technicians	☐ Assemble at Administration Building
All remaining personnel	☐ Report to respective team leaders ☐ Await further instructions

Note: For the purpose of those designated personnel responding to an ‘Alert Alarm’ emergency, the **Emergency Coordinator** is the ‘on-shift’ **Operator In Charge**.

8.7 Evacuation Alarm – Procedure and Responsibilities

The procedure provided in [Table 8.4](#), should be activated in the event that an “**evacuation**” alarm has been activated:

Table 8.4: KKPS Evacuation Alarm response responsibilities

Who	Responsibility
General personnel	☐ Proceed to emergency muster point (by vehicle if possible) ☐ Report to Site Recorder ☐ Stay at the muster point until directed otherwise
Emergency Coordinator	☐ Evaluate the nature of the emergency. Determine whether secondary evacuation from the muster point to an off-site location is required (Alternatively, determine whether a return to return to site is safe). ☐ Ensure that a 000 emergency telephone call has been initiated if required. ☐ Appoint an escort driver to meet and guide incoming emergency responders if required. ☐ Determine what (if any) immediate notifications to external stakeholders are required (eg. Other personnel working in neighbouring areas controlled by APA, Ausgrid, Nepean Longwall, McCloy Group) ☐ Coordinate emergency response. ☐ Liaise with external emergency response personnel as required.
Site Recorder	☐ Activate muster report(s) and develop full list of personnel on site or in the area ☐ Formulate list of evacuated personnel located at muster point. ☐ Determine whether any persons are missing ☐ Notify the Emergency Coordinator in the event that persons are missing. ☐ Record time and summary of relevant communications ☐ Record time and summary of the movement of personnel and vehicles.
Plant Manager	☐ Evaluate whether or not the station is available for continued operation and proceed accordingly. ☐ Evaluate whether or not additional resources or personnel are required for continued plant operation. ☐ Notify the Northern Gas and Diesel Area Manager
Escort Driver	☐ Proceed to the main entrance gate and meet the incoming emergency responders ☐ Escort emergency response vehicles as directed by the Emergency Coordinator.

9.0 INCIDENT and EMERGENCY COMMUNICATIONS

9.1 Overview

This section includes details of the mechanisms that will be used for providing early warnings and regular updates to the owners and occupiers of premises (local communities) and neighbouring asset owners who may be affected by an incident or emergency occurring at KKPS.

9.2 Incident Communications with the Local Community and Neighbouring Asset Owners

As soon as practicable after a pollution incident occurring at KKPS, and where there is no immediate threat to human health or property, Snowy Hydro will take all reasonable steps to provide the local community and neighbouring asset owners with relevant information about the incident.

The communities that will be considered in post incident communications include those that:

- adjoin Snowy Hydro property boundaries, which include neighbouring asset owners;
- are located adjacent to a downstream to a waterway that KKPS may potentially discharge into
- have a direct line of sight to KKPS; and
- are sensitive receivers, such as schools, nursing homes etc.

The suburbs in the vicinity of the KKPS that may receive direct communications include:

- Bishops Bridge
- Cliftleigh
- Heddon Greta
- Kurri Kurri
- Loxford
- Sawyers Gully
- Weston

Additional communities may be considered for direct communications dependent on the nature, extent and impact of the pollution incident.

Where a decision is made to communicate with the local community and/or neighbouring asset owners, the information provided should include the following:

- the time, date, nature, duration and location of the incident;
- the nature, estimated quantity or volume, and the concentration of any pollutants;
- the circumstances in which the incident occurred (including the cause, if known); and
- the action taken to deal with the incident and any resulting pollution

Unless the information listed above is known as fact, the information communicated must not be speculated, with the communication to advise the information is not known at the time

Potentially affected communities may be notified via a variety of methods that will be determined at the time of the incident in consultation with the emergency services, and regulatory authorities and will be based on the size and scale of the incident response.

In all circumstances these communications will be conducted jointly with regulatory authorities. These methods may include:

- information available on the Snowy Hydro Internet site www.snowyhydro.com.au;
- announcements via social media, local radio, and local television stations; and
- letter box drops.

Information will be continually updated based on changing conditions or directions from regulatory authorities. Alternative methods of communications may also be utilised at the discretion of Snowy Hydro representatives and in consultation with the emergency services, and regulatory authorities.

The KKPS Plant Manager or Operator In Charge will act as the nominated person to communicate with neighbouring asset owners regarding any incident at the power station

Refer to the Incident Communication Flowchart ([Figure 6.1](#)) in [Section 6.2.2](#) for more information.

In some circumstances these communications will be conducted jointly with regulatory authorities.

9.3 Emergency Communications with Local Communities and Neighbouring Asset Owners

In circumstances which present an immediate threat to human health or property, emergency services will be contacted via **000**.

A multi-agency response will be coordinated by emergency services and regulatory authorities, and advice to local communities and neighbouring asset owners will be conducted by these agencies.

These communications may include orders to evacuate KKPS and surrounding neighbourhoods.

Whilst a Snowy Hydro representative should be situated with the emergency services site control, at no time should Snowy Hydro employees contradict communicated instructions received by emergency services.

Under these circumstances, and as required, Snowy Hydro may make contact with local communities and neighbouring asset owners. This information will be based on the advice from the emergency services & regulatory authorities.

Appendix A: External Notification Requirements for a Pollution Incident

Pollution Incident Response Management Plan

Contact 000 for major pollution incidents that are presenting an immediate threat to human health or property.

What must be notified?

Pollution incidents causing or threatening material harm to the environment must be notified.

A '**pollution incident**' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur.

'**Material harm to the environment**' involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (*includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment*).

Example Script Template for Notification

"Good Morning/Afternoon, my name is _____, and I am calling from Snowy Hydro.

In accordance with the requirements of Part 5.7 of the Protection of the Environment Operations Act 1997, I am notifying of a potential pollution incident that has occurred at the Kurri Kurri Power Station, located at Hart Road Loxford, NSW 2326. The environment protection licence number for the facility is 21627.

< Details of the incident as per the information requirements specified in Section 6.3 of KKPS ERH >

Record of Notification

Authority	24 Hour Contact Details	Notification Details
NSW Environment Protection Authority (NSW EPA)	131 555	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____
NSW Health (Newcastle Public Health Unit)	1300 066 055 A/H: 02 4924 6477 (ask for Public Health Officer on call)	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____
Fire and Rescue NSW	1300 729 579	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____
Cessnock City Council	02 4993 4100	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____
SafeWork NSW	131 050	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____
ComCare	1300 366 979	Date/Time Notified: _____ Who Notified: _____ Received By: _____ Reference No.: _____

SSI Approval

Incident Notification Requirements

Condition C6 of the SSI Approval

- C6 *"The Secretary must be notified in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 4"*

Detail to be notified

Application No.: 12590060

Development Name: Snowy Hydro's Kurri Kurri Power Station

Location of Incident: 1 Hart Road Loxford, NSW 2326

Nature of Incident: < Details of the incident as per the information requirements specified in Section 6.3 of KKPS ERH >

Method of Notification: [Major Projects Portal](#)

Note: You require a Major Projects Account linked to Snowy Hydro to make the report

EPBC Approval

Incident Notification Requirements

Condition 8 of the EPBC Approval

8 "The **approval holder** must notify the **Department** in writing of any: **incident**; non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than 2 **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:

- a) Any condition which is or may be in breach
- b) A short description of the **incident** and/or non-compliance
- c) The location (including coordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available."

Approval holder: means Snowy Hydro

Department: means the Australian Government Agency responsible for administering the EPBC Act. At present this is the federal Department of Department of Climate Change, Energy, the Environment and Water

Incident: means any event which has the potential to, or does, impact on the environment, other than as authorised by this approval

Email Template/Detail to be Notified

Good **morning/afternoon**,

I refer to EPBC Referral Number 2021/8888, for Snowy Hydro's Kurri Kurri Power Station.

In accordance with Condition 8 of EPBC Referral No. 2021/8888, Snowy Hydro is providing written notification to the Department of a potential incident that occurred at the Kurri Kurri Power Station, located at 1 Hart Road, Loxford, NSW 2326.

<Remove if not factual> For clarity, Snowy Hydro does not believe there has been a breach to a condition of EPBC Referral No. 2021/8888. <Remove if not factual>

The relevant details according to the requirements of Condition 8 are as follows:

EPBC No.:	2021/8888
Location:	Hunter Power Station, located at 1 Hart Road, Loxford, NSW 2326
Coordinates:	Lat -32.786, Long 151.479
Date & Time:	< Details of the incident as per the information requirements specified in Section 6.3 of KKPS ERH >
Details of Event:	< Details of the incident as per the information requirements specified in Section 6.3 of KKPS ERH >

Should you require further details regarding this matter, please contact the undersigned.

Kind Regards

Method of Notification: Via email to: environment.compliance@dcceew.gov.au