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S4

Preliminary Hazard Analysis

NEXTDC

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Definitions

Abbreviation	Definition
The Facility	The proposed S4 data centre development at 3-5 Johnston Crescent, Horsley Park
The PoEO Act	NSW Protection of Environment Operations Act 1997
The Project	The proposed S4 data centre development at 3-5 Johnston Crescent, Horsley Park
The Proponent	NEXTDC Limited
The Resilience and Hazards SEPP	A NSW planning policy that integrates risk management and resilience considerations into land use planning. It addresses natural and human-made hazards, including flooding, bushfires, and hazardous industries, to ensure safe and sustainable development
The WHS Regulation	NSW Work Health and Safety Regulation 2017

Abbreviations

Abbreviation	Definition
ADGC	Australian Dangerous Goods Code
CBD	Central Business District
CCTV	Closed-circuit television
DA	Development Application
DG	Dangerous Good
EIS	Environmental Impact Statement
FHA	Final Hazard Analysis
FRL	Fire resistance level
HIPAP	Hazardous Industry Planning Advisory Paper
HV	High-voltage
HVAC	Heating, ventilation and air conditioning
LEL	Lower explosive limit
PHA	Preliminary Hazard Assessment
SDS	Safety Data Sheet
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SFAIRP	So far as is reasonably practicable
SSD	State Significant Development
SSDA	State Significant Development Application
UN	United Nations

Executive Summary

This Preliminary Hazard Assessment (PHA) has been prepared by Aurecon on behalf of NEXTDC Limited to accompany a detailed State Significant Development Application (SSDA) for the S4 data centre development at 16 Johnston Crescent, Horsley Park. The site is legally described as Lot 305 in Deposited Plan 1275011.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-63741210).

As part of the development, a 330 kV high-voltage (HV) underground cable will be installed, connecting the on-site substation with the Transgrid Sydney West Transmission Substation. This HV connection is not considered a relevant source of hazardous risk under the SEPP (Resilience and Hazards) 2021, as it does not involve the storage or handling of dangerous goods or hazardous materials. Accordingly, it is not assessed in detail within this report. Should future interactions with existing hazardous infrastructure (e.g., gas pipelines) arise during the detailed design phase, these will be managed through the relevant stakeholder consultation processes.

This report concludes that the proposed data centre development is suitable and warrants approval, subject to the implementation of the following measures:

- The manifest quantity thresholds for diesel as set out by Schedule 11 of the NSW Work Health and Safety Regulation 2017 are exceeded. A manifest of all Schedule 11 chemicals must be prepared.
- The placard quantity thresholds for diesel as set out by Schedule 11 of the WHS Regulation are exceeded. Placards in accordance with Schedule 13 of the WHS Regulation will be required to be displayed.
- The criteria for an environment protection licence for chemical and petroleum product storage under the Protection of Environment Operations Act 1997 has been exceeded and so an environment protection licence is required for chemical storage.

Following the implementation of the above mitigation measures, the remaining impacts are considered tolerable.

1 Introduction

This report has been prepared to accompany a detailed State Significant Development Application (SSDA) for the proposed S4 data centre development at 3-5 Johnston Crescent, Horsley Park (SSD-63741210).

The application seeks consent for construction and operation of a data centre development and includes site preparation works, bulk earthworks and infrastructure, and construction of the buildings, ancillary facilities, and associated works.

The key features of the proposed development ("the Project") are summarised as follows:

- Site preparation works including bulk earthworks and tree removal.
- Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695 m^2 including 56,464 m^2 of technical data hall floor space and 5,231 m^2 of ancillary office floor space, including 'front of house' meeting and administrative spaces.
- Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769 m^2 of deep soil landscaping.
- Provision of a high-voltage (HV) power connection delivering 294 MW of power, including a 330 kV substation and a 33 kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.

The Project will be delivered in four construction stages as follows:

- Stage 1 = Building C, HV switching building, 330 kV substation, entrance to site, centralised security office, and water tanks
- Stage 2 = Building D
- Stage 3 = Building A
- Stage 4 = Building B.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 27 October 2023 issued for the SSDA (SSD-63168959). Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Table 1: SEARs Compliance

Item	Description of Requirements	Section Reference in this report
Hazards and Risks	■ Where there are dangerous goods and hazardous materials associated with the development, provide a preliminary risk screening in accordance with Chapter 3 of State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.	■ Section 4
	■ Where required by SEPP (Resilience and Hazards) 2021, provide a Preliminary Hazard Analysis (PHA) prepared in accordance with Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 *Hazard Analysis* and NSW Department of	■ Section 5

Item	Description of Requirements	Section Reference in this report
	Planning & Infrastructure *Multi-Level Risk Assessment* guideline. ■ If the development is adjacent to, or on, land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline and prepare a hazard analysis.	■ Section 8

In addition to the SEPP screening and evaluation to respond to SEARs, the Project has also been reviewed with respect to the NSW Work Health and Safety Regulation 2017 ("the WHS Regulation") and Protection of Environment Operations Act 1997 ("the PoEO Act") requirements.

1.1 Background

NEXTDC Limited ("the Proponent") proposes to develop a data centre ("the Facility") at Horsley Park, Western Sydney, 42 km west of the Sydney Central Business District (CBD). The Facility will have an IT data centre of 294 MW, a total gross floor area (GFA) of 61,695 m^2 including 56,464 m^2 of technical data hall floor space and 5,231 m^2 of ancillary office floor space, including 'front of house' meeting and administrative spaces. It aims to provide a range of valuable functions to the data centre market, including:

- Providing data centre services to hyperscale cloud providers that will create a new availability zone within the Sydney market
- Enable customers to scale their critical infrastructure platforms and have dual availability zone solutions
- Enable true cloud diversity and redundancy.

The Project is a State Significant Development (SSD) under SEPP (State and Regional Development) 2011 and requires an Environmental Impact Statement (EIS) to accompany the Development Application (DA) submission to the NSW Department of Planning, Industry and Environment, in accordance with the Environmental Planning and Assessment Regulation 2021 (Application number: SSD-63741210).

The Proponent engaged Aurecon to undertake a preliminary risk screening in accordance with SEPP (Resilience and Hazards) 2021 and, if required, a Preliminary Hazard Analysis (PHA) for input to the 'Hazards and Risks' section of the EIS.

1.2 Scope

The scope of work is limited to the following requirements under the 'Hazards and Risk' component of the SEARs:

- Where there are dangerous goods and hazardous materials associated with the development, provide a preliminary risk screening in accordance with Chapter 3 of SEPP (Resilience and Hazards) 2021.
- Where required by SEPP (Resilience and Hazards) 2021, provide a PHA prepared in accordance with *Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 – Guidelines for Hazard Analysis* and the NSW Department of Planning & Infrastructure *Multi-Level Risk Assessment* guideline.
- If the development is adjacent to, or on, land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline and prepare a hazard analysis.

This includes the following key project infrastructure elements:

- Lithium-ion batteries
- Diesel fuel tanks
- Jemena Pipeline.

1.3 Exclusions and Limitations

Study exclusions are as follows:

1. **Bushfire hazard assessment**. The 'Hazards and Risks' component of the SEARs also include a requirement to undertake a bushfire hazard assessment to demonstrate compliance with Planning for Bush Fire Protection 2019. This was excluded from this study. A bushfire hazard assessment will be completed separately for input to the EIS. Risk events associated with bushfire and the identified controls (i.e. asset protection zone requirement, fire management plan) have been included in this study to demonstrate that this event has been considered and assessed.
2. **Hazards associated with proposed operations**. The PHA identified and assessed credible hazards associated with proposed operations of the project and excluded specific hazards relating to construction, commissioning, and decommissioning. This approach is assumed appropriate for EIS assessment at the DA stage aimed to obtain approval for the project.
3. **Construction Safety Study.** The PHA does not constitute a Construction Safety Study. Requirement for a Construction Safety Study will be subject to the conditions of consent of the project approval. For more information, refer to HIPAP No. 7 *Construction Safety*.
4. **Fire Safety Study.** The PHA does not constitute a Fire Safety Study. Requirement for a Fire Safety Study will be subject to the conditions of consent of the Project's approval. For more information, refer to HIPAP No. 2 *Fire Safety Study Guidelines.*
5. **Transport route analysis**. The SEARs issued for this development does not include a requirement for a transport route analysis to be carried out.
6. **Final Hazard Analysis (FHA)**. An update of this PHA to FHA may be required as per HIPAP requirements and/or conditions of consent for the development. An update of this PHA to FHA (with design information that becomes available as the project progresses) is outside of the study scope.
7. **Other Hazards and Risks assessment** requirements under the SEARs are not included in this study (e.g. telecommunications, health, noise and vibration, flood risk assessment, hazardous material survey). These are addressed separately in the EIS.

1.4 Stakeholder Engagement

As outlined in the 'Hazards and Risks' component of the SEARs, if a development is adjacent to, or on, land in a pipeline corridor, it is a requirement that the operator of the pipeline be consulted, and outcomes be reported. Jemena operates natural gas pipelines adjacent to the site, making them a key stakeholder for this assessment.

Stakeholder engagement with Jemena was conducted in 2022. Based on their written response dated 12 August 2024 (refer to Appendix B), for secondary mains, Jemena does not require a Pipeline Hazard Analysis in accordance with AS 2885 – Pipelines: Gas and Liquid Petroleum – Operation and Maintenance.

Instead, Jemena requests that any non-standard encroachments be reported by submitting the relevant plan and section design to gas.networks.engineer@jemena.com.au.

Further consultation with Jemena will be undertaken following the detailed design phase to ensure any additional considerations are addressed, particularly for proposed utility services crossing or interacting with Jemena's assets.

As part of the development, a 330 kV high-voltage (HV) underground cable will be installed from the site boundary to the on-site substation. While the HV route itself does not represent a source of hazardous materials and is not subject to assessment under AS 2885, Jemena will be engaged as part of utility liaison processes to review and confirm any required protection or design provisions where the HV alignment intersects with, or crosses over, their existing infrastructure.

Other key utility stakeholders, including Sydney Water, will also be consulted as required to address potential interactions between the HV route and existing underground infrastructure, such as the pipeline beneath Old Wallgrove Road.

1.5 List of Relevant Documentation & Guidelines

This report demonstrates that the proposed development complies with the relevant legislation, regulations, policies, and standards outlined in the 'Hazards and Risks' component of the SEARs, including:

- SEPP (Resilience and Hazards) 2021 ("the Resilience and Hazards SEPP")
- Applying SEPP 33 Guidelines
- HIPAP No. 6 *Hazard Analysis*
- NSW Department of Planning, Housing and Infrastructure Multi-Level Risk Assessment Guidelines
- AS 1940:2017 The storage and handling of flammable and combustible liquids.

Additionally, separate to the 'Hazards and Risks' component of the SEARs requirements, the following Acts and Regulations are consulted to determine the additional recommendations necessary for hazardous substances stored on-site:

- PoEO Act
- Work Health and Safety (WHS) Regulation 2017 [1]. Part 7.1 of the WHS Regulation is applicable to the use, handling and storage of hazardous chemicals at a workplace.

1.6 Resilience and Hazards SEPP

The Resilience and Hazards SEPP commenced on 1 March 2022, Ref [2]. The Resilience and Hazards SEPP consolidates the following previous SEPPs:

- SEPP (Coastal Management) 2018
- SEPP 33 – Hazards and Offensive Development
- SEPP 55 – Remediation of Land.

SEPP 33 was previously used as the basis for assessing whether a development fell under the policy's definition of "potentially hazardous industry" or "potentially offensive industry".

No policy changes have been made in the Resilience and Hazards SEPP; all changes are administrative. The same screening process used to assess whether a development is "potentially hazardous" or "potentially offensive" is applicable. Thus, the Hazardous and Offensive Development Application Guidelines 'Applying SEPP 33' (2011), Ref [3], remain relevant.

The Applying SEPP 33 Guidelines outline the screening process used to assess whether the Resilience and Hazards SEPP applies (in the context of a potentially hazardous or potentially offensive industry). Any references to SEPP 33, particularly in extracts from the Applying SEPP 33 Guidelines, should be taken as references to the Resilience and Hazards SEPP.

2 Project Description

2.1 Site Location

The site is located at 16 Johnston Crescent, Horsley Park, within the Fairfield Local Government Area. The site is legally described as Lot 305 in Deposited Plan 1275011.

An aerial photograph of the site is provided in Figure 1. The site comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. Bulk earthworks approved under DA-893-201 are currently underway on the site.

The site will be well-serviced by infrastructure. The signalised intersection of Lenore Drive and Old Wallgrove Road at Eastern Creek is approximately 2 km to the north, providing access to Wallgrove Road and the Westlink M7 Motorway to the east and Erskine Park Road and Mamre Road to the west. Each of these roads provides access to the M4 Motorway to the north and M5 Motorway to the south. A utilities and site services report will accompany the EIS.

The site is located approximately 35 km west of the Sydney CBD, 17 km west of the Parramatta CBD and 10 km north-east of the future Western Sydney International airport.

Figure 1: Site Aerial Photograph (Proposed Lot 305 - Development Site). Source: Nearmap (2023)

2.2 Detailed Project Description

The key components of the Project are listed in the following table.

Table 2: Project Details

Descriptor	Project Details
Project Area	The site has a total area of approximately 8.2 hectares. The entire site will be disturbed by the Project.
Use and Activities	Data centre with ancillary office
Project Summary	■ Site preparation works including bulk earthworks including tree removal. ■ Staged construction and operation of two data centre buildings comprising a total gross floor area (GFA) of 61,695 m^2 including 56,464 m^2 of technical data hall floor space and 5,231 m^2 of ancillary office floor space, including 'front of house' meeting and administrative spaces. ■ Ancillary development including a centralised security office building at the main vehicle entrance, on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 12,769 m^2 of deep soil landscaping. ■ Provision of a HV power connection delivering 294 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water
Gross Floor Area	Total gross floor area of 61,695 m2 broken down as follows: ■ Data halls/technical: 56,464 m^2 ■ Ancillary office floor space, including 'front of house' meeting and administrative spaces: 5,231 m^2 ■ Total number of data houses: 24 data houses
Maximum Height	■ Building AB – 38.67 metres over four storeys ■ Building CD – 38.67 metres over four storeys
Floor Space Ratio	0.75:1
Deep Soil Area	12,769 m^2 (15.6% of site area)
Car Parking	200 car spaces including 6 disabled parking spaces and 10 electric vehicle spaces
Motorbike Parking	5 spaces
Bicycle Parking	24 spaces
Utilities	■ Building AB Utilities including: – Above ground diesel storage tanks (16 x 136 kL) – Above ground water tanks for industrial water (3 x 2,124 kL) ■ Building CD Utilities including: – Above ground diesel storage tanks (16 x 136 kL)

Descriptor	Project Details
	– Above ground water tanks for industrial water (3 x 2,124 kL) ■ Fire Water Storage Tanks: – Aboveground water tanks for fire water (4 x 198.5 kL) ■ Substation: – On-site 330 kV substation plus 33 kV switching station
Power Consumption	294 megawatts
Operations and Management	The Facility would be constructed and operated by the Proponent. The site would be operated on a 24-hour, 7 day per week basis.
Existing Services and Infrastructure	Existing services and infrastructures will be extended, adapted and augmented to meet the demands of the Project.
Staging/Phasing	The Project will be delivered in four construction stages as follows: ■ Stage 1 = Building C, HV switching building, 330 kV substation, entrance to site, centralised security office, and water tanks ■ Stage 2 = Building D ■ Stage 3 = Building A ■ Stage 4 = Building B

3 Methodology

This section outlines the methodology used for the preliminary risk screening. The preliminary screening is confined to the areas within the site boundary, defined as on-site. Areas outside of the site boundary have been defined as off-site for the purpose of this study.

3.1 Preliminary Risk Screening

The objective of the preliminary risk screening was to determine whether the proposed development is considered as 'potentially hazardous' in the context of the Resilience and Hazards SEPP, which defines potentially hazardous industry as follows:

> *'Potentially hazardous industry' means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
>
> *(a) to human health, life or property, or*
>
> *(b) to the biophysical environment,*
>
> *and includes a hazardous industry and a hazardous storage establishment*.

Development proposals that are classified as 'potentially hazardous' industry must undergo a PHA as per the requirements set out in HIPAP No. 6 *Hazard Analysis*, Ref [4], to determine the risk to people, property and the environment. If the residual risk exceeds the acceptability criteria, the development is considered as a 'hazardous industry' and may not be permissible within NSW.

To determine whether a proposed development is potentially hazardous, the NSW Department of Planning, Housing and Infrastructure Applying SEPP 33 guideline, Ref [3], is used to undertake the risk screening process. The risk screening process considers the type and quantity of hazardous materials to be stored on-site, distance of the storage area to the nearest site boundary, as well as the expected number of transport movements. 'Hazardous materials' are defined within the guideline as substances that fall within the classification of the Australian Dangerous Goods Code (ADGC) (i.e. have a Dangerous Goods (DG) classification). Detail of the DG classification is typically obtained from the materials' Safety Data Sheet (SDS).

The Applying SEPP 33 guideline is based on the 7th edition of ADGC, Ref [3], and refers to hazardous chemicals by their DG classification. Risk screening is undertaken by comparing the storage quantity and the number of road movements of the hazardous materials with the screening threshold specified in the guideline. The screening threshold presents the quantities below which it can be assumed that significant off-site risk is unlikely.

The methodology outlines that if a DA comprises DGs at quantities or transport frequencies that exceed the defined thresholds, a PHA must be completed as part of the SEPP process. An overview of the SEPP process is presented in Figure 2.

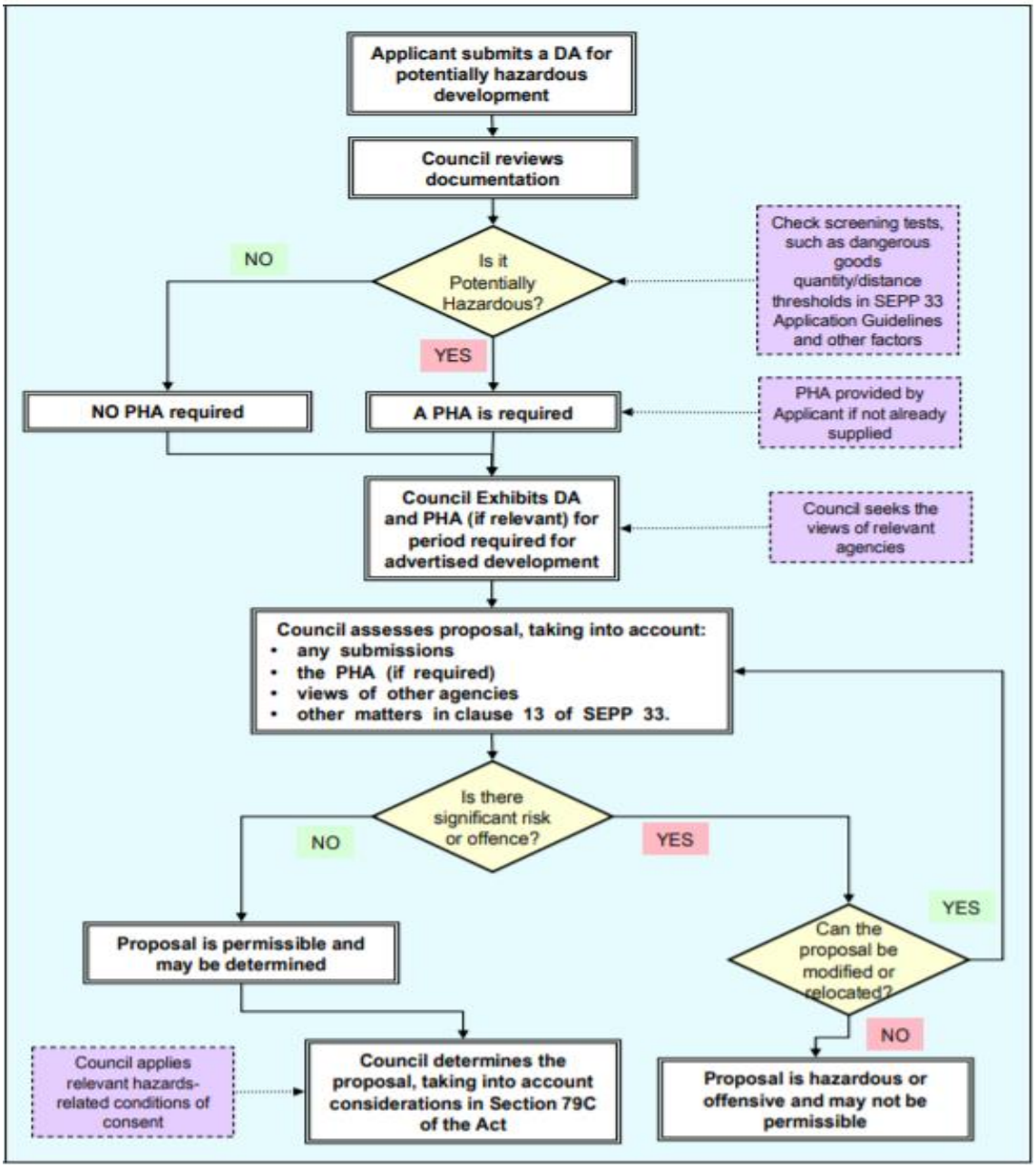

Figure 2: SEPP Process, Ref [5]

3.2 Preliminary Hazard Analysis

Following the preliminary screening assessment, a PHA may be required to identify any additional significant hazards that may pose an off-site risk. This is to be carried out in accordance with the requirements of HIPAP No. 6 *Hazard Analysis*, Ref [4]**,** and includes the following steps:

1. **Hazard Identification** and development of representative hazardous scenarios. This involves the systematic identification of possible hazards. Since there are usually numerous ways in which a hazardous incident may be initiated, it is necessary to define discrete failure scenarios which can be used to represent the range of possible initiating events. Having defined the representative initiating incidents to be analysed, it is then necessary to methodically consider the various ways in which incidents may develop, and to identify the possible final outcomes.

2. **Consequence Assessment**. This involves the analysis and quantification of the effect of the various incident outcomes.
3. **Frequency Assessment**. The frequency (i.e. likelihood per year of occurrence) of each of the release events is estimated.
4. **Risk Assessment and Evaluation**. This risk assessment is performed by combining the potential consequence for each hazardous event with the event frequency.

The hazard and risk assessment assessed the events associated with the proposed operation of the Facility. The development boundary was used to define and determine off-site impact (i.e. impact extending outside of the development footprint boundary).

3.3 Multi-Level Risk Assessment

The Multi-Level Risk Assessment approach shown in Figure 3 is a framework that sets out three levels of risk analysis (i.e. qualitative, semi-quantitative, full quantitative) that may be appropriate for a PHA should it be required. Criteria for determining the appropriate level of analysis is as follows, Ref [6]:

- Level 1 (qualitative): the activity does not pose a significant off-site risk.
- Level 2 (semi-quantitative): the likelihood of risk contributors resulting in off-site consequences is low and risk contributors can be quantified to demonstrated that the risk criteria will not be exceeded.
- Level 3 (quantitative): There are significant off-site risk contributors, and a Level 2 analysis is insufficient to demonstrate that the risk criteria will be met.

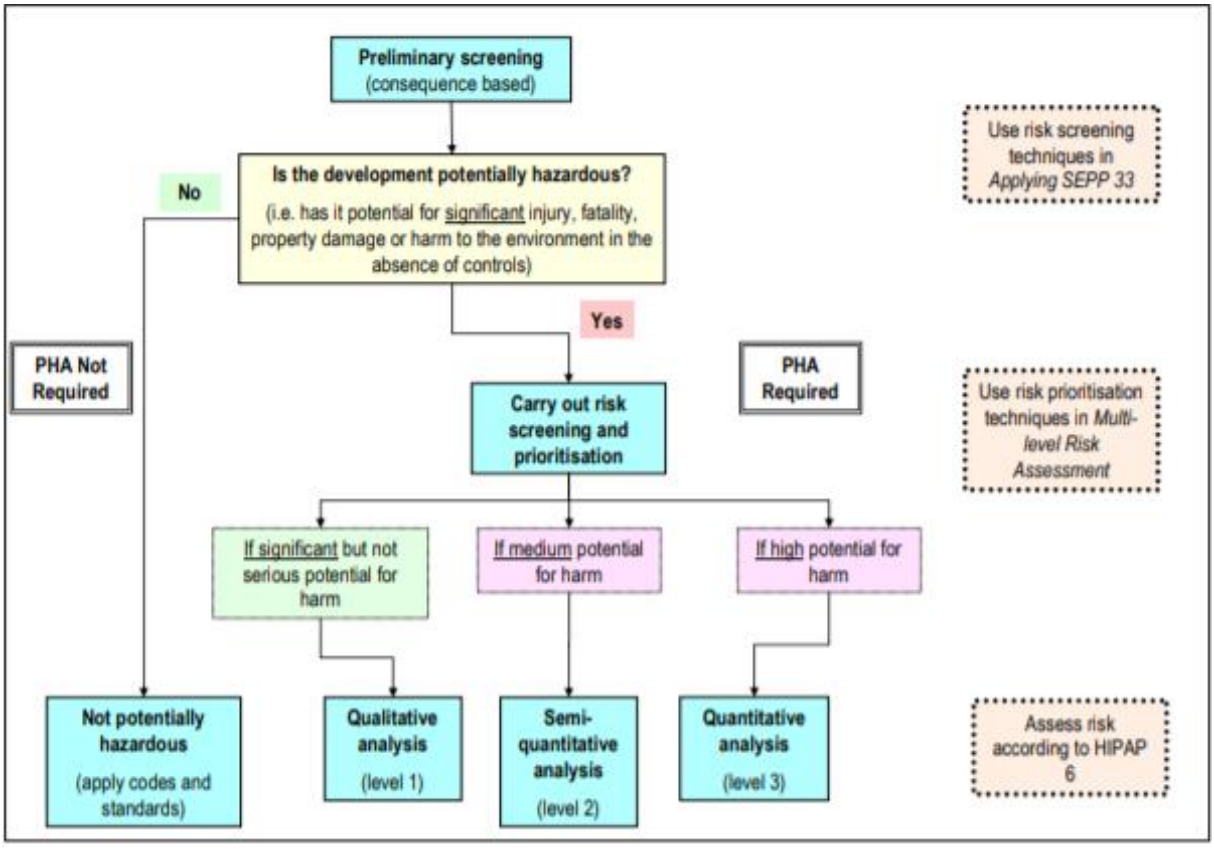

Figure 3: SEPP Multi-Level Risk Assessment Approach, Ref [6]

4 Preliminary Risk Screening

4.1 DG Storage and Transport Requirements

A summary of the expected hazardous materials to be stored and handled on-site for the Project, transport movements and the relevant Resilience and Hazards SEPP screening threshold is presented in Table 3 in Section 4.2. Where DGs are used or stored in volumes greater than these threshold quantities, SafeWork NSW must be notified, and manifests and emergency plans must be developed.

As per Section 3.2.4 of the Applying SEPP 33 Guidelines, Ref [3], each hazardous material item in the table contains the DG Class (per the ADGC) and United Nations (UN) Number – the 4-digit unique code assigned to the substance by the UN Committee of Experts on the Transport of Dangerous Goods. It also contains estimated power densities and quantities based on a 300 MWh system. Threshold quantities of each are also specified using the General Screening Threshold quantities described in Appendix 4 of the Applying SEPP 33 Guidelines.

The Resilience and Hazards SEPP states that the following classes of DGs are excluded from the risk screening:

- Class 1.4 - 1.6 — Explosives defined as having no significant hazard in storage, as any effects are largely contained within the packages.
- Class 2.2 — Non-flammable, non-toxic gases not considered to be potentially hazardous with respect to off-site risk.
- Class 7 — Radioactive substances which are adequately covered by national regulations and guidelines. The consent authority may wish to require details of compliance.
- Class 9 — Miscellaneous dangerous goods, which pose little threat to people or property. They may be substances which pose an environmental hazard, and the consent authority should consider whether or not a potential for environmental harm exists.

Additionally, C1 and C2 combustible liquids are not a DG under the ADGC – they are defined as hazardous chemicals under the NSW Work Health and Safety Act 2011. Hence, the Resilience and Hazards SEPP does not provide a general screening threshold for these.

4.1.1 Lithium-ion Battery

In assessing whether the Facility is a potentially hazardous industry by using the screening method, some classes of DGs are excluded from the risk screening. These DGs have been assigned ‘N/A’ for General Screening Thresholds as shown in Table 3.

Lithium-ion batteries are classified as Class 9 Miscellaneous DGs and are exempt from the threshold. The content of the battery (lithium) poses little threat to people or property. As such, the Resilience and Hazards SEPP deems lithium-ion batteries as not potentially hazardous. However, the potential for thermal runaway may lead to fire and explosion hazards, Ref [7]. The risks and mitigation measures for lithium-ion batteries are further discussed in Section 9.3.2.

4.1.2 Combustible Liquids

According to the Applying SEPP 33 Guidelines, if combustible liquids of class C1, such as diesel, are present on-site and are stored in a separate bund or within a storage area where there are no flammable materials stored, they are not considered to be potentially hazardous. If, however, they are stored with other flammable liquids (that is, DG Class 3 Packing Group (PG) I, II or III) then they are to

be treated as a DG Class 3 PG III material. Under these circumstances they may contribute fuel to a fire. Diesel is expected to be stored separately with no other materials on-site and, therefore, is not considered as potentially hazardous in this study.

However, as per the Resilience and Hazards SEPP, if the quantity stored exceeds the Manifest Threshold Quantity of 100 kL, SafeWork NSW must be notified. Refer to Section 6 for more details.

Diesel is not classified as a DG by the ADGC. Moreover, noticeable risk associated with diesel transportation is also not expected, Ref [8]. This is due to the low annual movements expected as diesel will only be used in generators when back-up power is required, and testing undertaken. The risks and mitigation measures for diesel are further discussed in Section 9.3.3.

4.1.3 Natural Gas

Natural gas is not to be stored on-site and is not transported in or out of the site boundary. Hence, the natural gas pipeline is not identified as a potential hazard based on the Resilience and Hazards SEPP risk screening. However, compressed natural gas (DG Class 2.1) can raise potential hazards during construction of the Facility and a pipeline assessment should be undertaken.

Stakeholder engagement with Jemena was conducted in 2022. Based on their response received on 12 August 2024 (refer to Appendix B) for secondary mains, Jemena does not require a Pipeline Hazard Analysis in accordance with AS 2885 – Pipelines: Gas and Liquid Petroleum – Operation and Maintenance.

4.2 Storage Details of Hazardous Goods

Table 3: Threshold Quantities for Hazardous Materials

Material	UN Number	DG Class	Category	Packing Group	Project storage quantities and movements	Storage Threshold	Transport Threshold		Exceed threshold?
							Movements	Quantities	
Lithium-ion Batteries	3480/3481	9	Miscellaneous dangerous goods and article	II	▪ Building AB: 600 Battery Racks ▪ Building CD: 600 Battery Racks Total stored on-site: **777,600 kg**[1] Replaced every 7 years. Estimated 1-2 trips per year	N/A	>1000 annually	no limit	No
Diesel Fuel	1202	N/A – Not a DG but it is a C1 combustible liquid		III	▪ Building AB: 16 x 136 kL ▪ Buildings CD: 16 x 136 kL ▪ 120 generators (60 each building) each with 1000 L day tanks: 120 kL Total stored on-site: **4,472 kL**	N/A[2]	N/A	N/A	No
Natural Gas	1971	2.1	Flammable gases	N/A	N/A (Jemena Pipeline)[4]	100 kg[3]	>500 annually	no limit	N/A (Jemena pipeline)

Notes:

1. As a base case, the Proponent will be using the CATL LFP racks or similar [9]. While some customers may require lower quantities, this PHA conservatively considers the maximum allowance designed for. There are 12 battery modules per rack, with each module mass being 54 kg. Total batteries stored on-site: 2 x 600 x 12 x 54 kg = 777,600 kg.
2. C1 combustible liquids do not have General Screening Threshold Quantities. See Section 6 for further details on Manifest and Placard Quantities.
3. As per the minimum quantity for Class 2.1 flammable gasses in Table 1 of the *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33*, Ref [5].
4. Stakeholder engagement with Jemena was conducted in 2022. Based on their response received on 12 August 2024 (refer to Appendix B), for secondary mains, Jemena does not require a Pipeline Hazard Analysis in accordance with AS 2885 – Pipelines: Gas and Liquid Petroleum – Operation and Maintenance.

4.3 Other Risk Factors

Appendix 2 of the Applying SEPP 33 Guidelines outlines other risk factors for consideration to identify hazards outside the scope of the risk screening method. A review of these risk factors was completed, and it was noted that the Project would not involve:

- Storage or transport of incompatible materials (i.e. hazardous and non-hazardous). Hazardous materials will be stored in dedicated areas and storage protocols in accordance with standards and guidelines will be followed.
- Generation of hazardous waste.
- Possible generation of dusts within confined areas.
- Activities, other than storage, involving hazardous materials with potential to cause significant off-site impacts (i.e. multiple fatalities off-site).
- Incompatible, reactive or unstable materials and process conditions that could lead to uncontrolled reaction or decomposition.
- Storage or processing operations involving high (or extremely low) temperature and/or pressures.
- Hazardous materials and processes with known past incidents (or near misses) that resulted in significant off-site impacts at similar data centre developments.

4.4 Preliminary Risk Screening Outcome

Neither the quantity screening threshold nor the transport screening threshold is exceeded as per the Resilience and Hazards SEPP. Therefore, a PHA is not required. However, a high-level risk assessment for lithium-ion batteries and diesel has been carried out in the following sections. Also, the requirements of the relevant acts and regulations (i.e. the WHS Regulation and the PoEO Act) have been reviewed.

5 Hazard and Risk Assessment

5.1 Hazard Identification

Hazard identification aims to identify all reasonably foreseeable hazards and associated events that may arise due to the operation of the Facility and defining the relevant controls through a systematic and structured approach.

All potential significant hazards that may pose a risk to the Project or an off-site risk were identified and documented in a Risk Register (refer to Appendix A). The consequences of each of the identified hazards were assessed to determine if such consequences may impact off-site adjacent facilities or sensitive receptors.

5.2 Risk Analysis: Level 1

In this study, risk is defined as the likelihood of a specified undesired event occurring within a specified period or in specified circumstances. It may be either a frequency (the number of specified events occurring in a unit of time) or a probability (the probability of a specified event following a prior event) depending on the circumstances.

The matrices set out in Table 4, Table 5 and Table 6 were used to complete a qualitative risk assessment of the identified hazards. Consistent with standard risk assessment methodology, the risk rating for a given hazard is a product of likelihood and consequence of its occurrence. As such, the potential consequence for each identified hazard carried forward due to posing significant off-site risk was first assessed (Table 4), followed by an assessment of its estimated likelihood of occurrence (Table 5). Finally, the overall current risk rating was then calculated by using likelihood and consequence as inputs per the risk matrix (Table 6).

Table 4: Hazard Consequence Assessment Matrix

Consequence	People	Property	Environment	Community
A – Catastrophic	Single or multiple fatality	Virtual complete loss of plant or system	Permanent / irreversible widespread ecological damage not able to be remediated	Outrage by a sizeable community or many communities. Riots.
B – Major	Disabling injury or illness, i.e. amputation and/or permanent loss of bodily function, or any kind of permanent health impact	Extensive damage to plant or system	Extensive ecological damage, lengthy remediation process	Community / non-government organisation legal actions. Pickets, demonstrations.
C – Moderate	Any Lost Time Incident, i.e. an illness or injury resulting in one or more consecutive days or shifts off work	Significant damage to plant or system	Substantial ecological damage but able to be remediated	Persistent formal community complaints. Formal complaints to politicians or comparable representatives.
D - Minor	A medical treatment case / or restricted work case	Damages impact on budget and program	Localised ecological damage, easily remediated	Formal complaints from local Community complaints locally
E – Incidental	First aid case, or an injury or illness not requiring treatment	Minor damage to plant or system	Negligible ecological damage, may not require remediation	No Informal community complaints and/or negative comments / views

Table 5: Hazard Likelihood Assessment Matrix

Likelihood	Descriptor	Likelihood	Industry Incidences
5 – Almost Certain	The threat is expected to be realised.	90% < Likelihood ≤ 100%	Common incident
4 – Likely	The threat is likely to be realised.	5% < Likelihood ≤ 90%	Several incidents nationally
3 – Possible	The threat may be realised.	1% < Likelihood ≤ 5%	One or a few incidents nationally
2 – Unlikely	The threat is not expected to be realised.	0.1% < Likelihood ≤ 1%	No known national incidents. One or a few incidents in comparable international operating regimes.
1 – Rare	The threat may be realised in reasonably foreseeable but exceptional circumstances.	0% < Likelihood ≤ 0.1%	No known incidents in comparable international operating regimes.

Table 6: Risk Rating Matrix

		Likelihood				
		1 – Rare	**2 – Unlikely**	**3 – Possible**	**4 – Likely**	**5 – Almost Certain**
Consequence	**A - Catastrophic**	High	Critical	Critical	Critical	Critical
	B – Major	High	High	Critical	Critical	Critical
	C – Moderate	Medium	Medium	High	High	Critical
	D – Minor	Low	Low	Medium	High	High
	E – Incidental	Low	Low	Low	Medium	Medium

5.3 Risk Register

The identified hazards and the associated causes, consequences and controls are summarised in the risk register provided in Appendix A.

A total of 10 hazardous events were identified during the risk assessment process. It is noteworthy that all identified hazards were categorised as “unlikely" to pose potential off-site risks. Despite being rated as high risk, this assessment may be influenced by a conservative risk ranking approach. Importantly, the consequences of these events are not anticipated to lead to significant off-site impacts, including serious injury or fatality to the public or off-site population. This expectation is also grounded in the Project's industrial location, where no residential dwellings are in close proximity to the site.

The risk assessment detailed above has shown that, whilst there is potential for major consequences, implementation of risk controls will make these consequences unlikely, particularly for off-site

effects. The current and recommended technical and management safeguards set out in Section 9.3 are intended to reduce the residual risk such that no identified hazards will pose a significant risk.

6 WHS Regulation

6.1 Overview

Section 7.1 of the WHS Regulation sets out the requirements for the use, handling, and storage of hazardous chemicals at a workplace. Specifically, this report assesses requirements for exceeding manifest and placard quantities found in Divisions 3 and 4 of Section 7.1, respectively.

Regulation 328(4) sets out the exclusions from Section 7.1 for hazardous chemicals in certain circumstances. Regulation 328(4)(a) excludes “hazardous chemicals in batteries when incorporated in plant”. As such, the use of lithium-ion batteries at the facility is considered to be excluded from the requirements of Section 7.1.

It should be noted that Regulation 328(4)(b) excludes “fuel, oils or coolants in a container fitted to a vehicle, vessel, aircraft, mobile plant, appliance or other device, if the fuel, oil or coolant is intended for use in the operation of the device”. This would also exclude diesel stored in the belly tanks of generators from the requirements of Section 7.1. However, due to the large total quantity of diesel to be stored at the Facility, it is considered best practice to follow the requirements of Section 7.1. Recommendations have therefore been made for the storage of diesel in line with Section 7.1 of the WHS Regulation in Section 9.3.3.

6.2 Manifest Quantities

Manifest Quantities Regulation 348 states that the “Regulator must be notified if manifest quantities to be exceeded”. The maximum allowable manifest quantity for diesel (category 4 flammable liquid) as per Schedule 11 of the WHS Regulation is 100 kL. The proposed quantity to be stored at site of 4,472 kL exceeds the maximum manifest quantity, therefore:

- A manifest of all Schedule 11 chemicals shall be prepared in accordance with Regulation 347 and Schedule 12 of the WHS Regulation.
- SafeWork NSW must be notified of diesel storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulation.
- An emergency plan shall be prepared for the Site and provided to the NSW Fire and Rescue as per the requirements of Regulation 361 and Division 4 of Part 3.2 of the WHS Regulation. Placard Quantities.

6.3 Placard Quantities

Placard Quantities Division 4 states that outer warning placards and placards are to be displayed if placard quantities are exceeded. The maximum allowable placard quantity of diesel as per Schedule 11 of the WHS Regulation is 10 kL. The proposed quantity of 4,472 kL to be stored at site exceeds the placard quantity, therefore:

- Outer warning placards shall be displayed at any entrance where emergency services may enter the workplace in accordance with Regulation 349 and Schedule 13 of the WHS Regulation.
- Placards shall be displayed on or near the containers of diesel in accordance with Regulation 350 and Schedule 13 of the WHS Regulation.

7 PoEO Act

The PoEO Act sets out the scheduled activities for which a licence is required. Table 7 below shows the threshold criteria for chemical storage to be declared a scheduled activity and therefore requiring a licence.

Table 7: Criteria for chemical storage under the PoEO Act

Activity	Criteria
General chemicals storage	Capacity to store more than 20 tonnes of pressurised gases, 200 tonnes of liquefied gases or 2,000 tonnes of chemicals in any other form
On-site generated chemical waste storage	Involves storing on-site at any time more than 5 tonnes of any chemical substance produced on-site that is prescribed waste, not including excluded material
Petroleum products storage	Capacity to store more than 200 tonnes of liquefied gases or 2,000 tonnes of chemicals in any other form

General chemical storage is defined to include all chemical substances classified as DGs by the ADGC. As lithium-ion batteries are classified as Class 9 DGs by the ADGC, a licence would be required if more than 2,000 tonnes of lithium-ion batteries are to be stored at the Facility.

There are approximately 778 tonnes of lithium-ion batteries proposed to be stored on-site. This is below the 2,000 tonne limit and so lithium-ion battery storage is not classified as a scheduled activity and a licence is not required.

There are approximately 4,472 tonnes of diesel proposed to be stored on-site. This is above the 2,000 tonne limit and so diesel storage is classified as a scheduled activity and a licence is required. A licence may also be required by the PoEO Act for other scheduled activities such as electricity generation, but this is out of the scope of this report.

8 Pipeline Hazard Analysis

Stakeholder engagement with Jemena was conducted in 2022 (refer to Appendix B), covered initial relevant considerations prior to detailed design.

Additionally, based on their response received on 12 August 2024 (refer to Appendix B) for secondary mains, Jemena does not require a Pipeline Hazard Analysis in accordance with AS 2885 – Pipelines: Gas and Liquid Petroleum – Operation and Maintenance.

Instead, they request that any non-standard encroachments be reported by sending the plan and section design to gas.networks.engineer@jemena.com.au. Further consultation will be undertaken following the detailed design phase to ensure any additional considerations are addressed.

9 Findings and Recommendations

9.1 Resilience and Hazards SEPP Screening

As neither the quantity screening threshold nor the transport screening threshold is exceeded as per the Resilience and Hazards SEPP, a PHA is not required. However, a high-level risk assessment for lithium-ion batteries and diesel has been carried out and is available in Appendix A. This report therefore satisfies the relevant requirements with respect to the Resilience and Hazards SEPP.

9.2 Other Findings

In addition to the requirements of the Resilience and Hazards SEPP, the legislative requirements of the WHS Regulation and the PoEO Act have been assessed. The findings from these assessments are:

- The manifest quantity thresholds for diesel as set out by Schedule 11 of the WHS Regulation are exceeded. A manifest of all Schedule 11 chemicals must be prepared.
- The placard quantity thresholds for diesel as set out by Schedule 11 of the WHS Regulation are exceeded. Placards in accordance with Schedule 13 of the WHS Regulation will be required to be displayed.
- The criteria for an environment protection licence for chemical and petroleum product storage under the PoEO Act has been exceeded and so an environment protection licence is required for chemical storage.

9.3 Proposed Mitigation Measures

There are several local and international standards which govern the best practice design and installation of the Facility. The following recommended technical safeguards are expected to reduce the residual risk such that no identified hazards pose a significant risk.

9.3.1 General

- The regulator shall be notified of diesel storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulation.
- Outer warning placards regarding quantities of diesel stored shall be displayed at any entrance where emergency services may enter the workplace in accordance with Regulation 349 and Schedule 13 of the WHS Regulation
- Placards shall be displayed on or near the containers of diesel in accordance with Regulation 350 and Schedule 13 of the WHS Regulation.
- An environment protection licence is required for chemical storage and shall be obtained.
- An emergency plan shall be prepared for the Site and provided to the NSW Fire and Rescue as per the requirements of Regulation 361 of the WHS Regulation.

9.3.2 Lithium-ion Battery Safeguards

Lithium-ion batteries have the potential for thermal runaway and the following controls are considered sufficient to mitigate this risk so far as is reasonably practicable (SFAIRP). Each battery storage room is to be installed with the following measures:

- A fire resistance level (FRL) of 120/120/120 separating the rooms with lithium-ion batteries from the rest of the building.
- Adequate ventilation to relieve the off gassing of combustible gases from thermal runaway or a gas detection system to ensure the combustible gas generated from a battery fire does not exceed the lower explosive limit (LEL).
- Smoke detection.
- Double knock pre-action sprinkler system.

In addition, the inclusion of lithium-ion batteries is to be incorporated into the overall fire safety strategy by the Project fire engineer.

9.3.3 Combustible Liquid Safeguards

While diesel is not classified as a DG by the ADGC, it is a C1 combustible liquid. A loss of control of the diesel has the potential to create a cascading event with each of the generators.

AS 1940:2017 "*The storage and handling of flammable and combustible liquids*" should be followed for safe management of combustible liquids on-site. The following key safeguards relevant to diesel storage at Facility were identified from this standard:

- The minimum required separation distances between diesel storage tanks and on-site protected places, which include *"…other dangerous goods stores where quantities exceed minor storage*", and to off-site protected places are defined by Tables 5.3 and 5.4 of AS 1940:2017, respectively. These separation distances should be followed.
- The diesel storage tanks should be designed and constructed to comply with AS 1692 or an equivalent Standard. Specifically, the tanks shall comply with the separation distances stated of AS 1940 (AS 1940 Clause 5.7.2)
- The design uses FRL 240/240/240 fire rated self-contained (double wall) tanks in accordance AS 1940 Clause 5.9.4. Such tanks halve the AS 1940 separation distances noted above.
- Except for generators with belly tanks, the generators will have day tanks not exceeding 1,000 L. These tanks are installed within the containerised generators, with secondary containment provided inside the enclosure. The containment will be provided with automated leak detection.
- In addition to containment of tanks, spill containment will be provided around tank fill connections, pumps, and filters; meeting and exceeding the requirements of AS 1940.
- A fire protection system should be designed and installed according to AS 1940, including measures for detection and suppression.
- Fusible link shut off valves, or an equivalent device, inside the generator enclosure will shut off the fuel to a generator when exposed to fire.

Given its classification as a C1 combustible liquid (rather than a DG) and the common place use of diesel in buildings, compliance with AS 1940 is considered sufficient to mitigate this risk.

10 References

[1] NSW Government, “Work Health and Safety Regulation 2017,” 2017.

[2] NSW Department of Planning and Environment, “State Environmental Planning Policy (Resilience and Hazards) 2021,” March 2022. [Online]. Available: https://www.planning.nsw.gov.au/sites/default/files/2023-03/resilience-and-hazards-sepp-fact-sheet.pdf.

[3] NSW Department of Planning & Infrastructure, “Hazardous and Offensive Development Application Guidelines: Applying SEPP 33,” State of NSW, 2011.

[4] NSW Department of Planning & Infrastructure, “Hazardous Industry Planning Advisory Paper No 6: Hazard Analysis,” State of NSW, 2011.

[5] NSW Department of Planning & Infrastructure, *Applying SEPP 33, Hazardous and Offensive Industry Development Application Guidelines,* 2011.

[6] NSW Department of Planning & Infrastructure, “Assessment Guideline: Multi-level Risk Assessment,” State of New South Wales, Sydney, 2011.

[7] DNV, Safety, operation and performance of grid-connected energy storage systems, 2017.

[8] National Transport Commission, Australian Code for the Transport of Dangerous Goods by Road & Rail, 2020.

[9] Eaton, “Eaton 93Li G2 Lithium Battery System,” 2024.

Appendix A: Risk Register

No.	Component	Hazard	Cause	Consequence	Current Risk			Does the Hazard Pose a Potential Off-site Significant Risk?	Proposed Controls – Technical / Design	Proposed Controls – Safety Management	Residual Risk			Does the Hazard Pose a Potential Off-site Significant Risk?
					Likelihood	Consequence	Risk Rating				Likelihood	Consequence	Risk Rating	
1	Lithium-ion Battery	Arcing or short-circuit	Cable or equipment fault	Electrocution resulting in injury or fatality	1 – Rare	A – Catastrophic	High	Unlikely (in terms of electrical shock hazard affecting public)	-	-	-	-	-	-
2	Lithium-ion Battery	Battery cell fire hazard	Fire hazard arising from combustible materials used in the storage system	Personnel injury due to burns or smoke/chemical inhalation. Damage/destruction of battery cell.	2 – Unlikely	B – Major	High	Potential	HVAC systems compliant to Australian Standards. Battery systems modular and compartmentalised to minimise damage. Adequate spacing of battery modules. Batteries and associated balance of plant certified and designed to Australian Standards. Battery Management System provides functional safety of electronic safety-related systems certified to IEC 61508. Battery module location sufficient distance from other infrastructure. Fire risk evaluation conducted as part of design to ensure fire radiation effects do not impact on adjacent infrastructure. Fire protection and suppression system included in system design. Infrastructure for batteries located to be directly accessible to emergency responders. Thermal overtemperature detection and prevention. Cell overpressure detection and protection. Remote monitoring. Access controls for HV areas (arc flash risk).	HVAC systems correctly installed and maintained. Safety system maintenance, testing and inspections. Safety Management Plans. Trained operators/maintainers. Plant operating and maintenance procedures. Remote isolation for non-manned facility.	E – Rare	B – Major	High	Unlikely
3	Lithium-ion Battery	Battery cell thermal hazard	Thermal hazard, due to thermal properties of the system or components. Thermal runaway hazard, causing propagation of increasing temperatures, pressure and fire towards neighbouring cells.	Personnel injury due to burns or smoke/chemical inhalation. Damage/destruction of battery cell.	2 – Unlikely	B – Major	High	Potential	HVAC systems compliant to Australian Standards. Battery systems modular and compartmentalised to minimise damage. Adequate spacing of battery modules. Batteries and associated balance of plant certified and designed to Australian Standards. Battery Management System provides functional safety of electronic safety-related systems certified to IEC 61508. Battery module location sufficient distance from other infrastructure. Fire risk evaluation conducted as part of design to ensure fire radiation effects do not impact on adjacent infrastructure. Fire protection and suppression system included in system design. Infrastructure for batteries located to be directly accessible to emergency responders. Thermal overtemperature detection and prevention. Cell overpressure detection and protection. Remote monitoring. Access controls for HV areas (arc flash risk).	HVAC systems correctly installed and maintained. Safety system maintenance, testing and inspections. Safety Management Plans. Trained operators/maintainers. Plant operating and maintenance procedures. Remote isolation for non-manned facility.	E – Rare	B – Major	High	Unlikely
4	Lithium-ion Battery	Chemical hazard	Chemical hazard caused by (unforeseen) contact between person and toxic, acid or corrosive	Personnel injury from burns or gas inhalation. Environmental damage.	2 – Unlikely	B – Major	High	Potential (biophysical damage)	Equipment designed to be compliant with applicable Australian/International Standards. Preferably modular design. Spill containment design.	Emergency Response Plan to be developed to define actions in unlikely event of potential hazards.	E – Rare	B – Major	High	Unlikely

No.	Component	Hazard	Cause	Consequence	Current Risk			Does the Hazard Pose a Potential Off-site Significant Risk?	Proposed Controls – Technical / Design	Proposed Controls – Safety Management	Residual Risk			Does the Hazard Pose a Potential Off-site Significant Risk?
					Likelihood	Consequence	Risk Rating				Likelihood	Consequence	Risk Rating	
			components leaking from the battery							Trained operators/maintainers. Plant operating and maintenance procedures.				
5	Lithium-ion Battery	Explosion hazard	HVAC failure and/or overcharging of battery causing rapid expansion and confinement of gases	Personnel injuries or fatalities. Damage/destruction of battery cell.	2 – Unlikely	A – Catastrophic	Critical	Potential	Batteries and associated balance of plant certified to relevant international standards (e.g. UL 1976, UL 9540). Battery cabinets installed sufficient distance from infrastructure and people. Explosion risk assessment to be undertaken on selected plant as part of the Fire Safety Study to ensure overpressure does not impact adjacent infrastructure. Infrastructure for batteries located to be directly accessible to emergency responders. Thermal overtemperature detection and prevention. Cell overpressure detection and protection. Remote monitoring.	HVAC systems correctly installed and maintained. Safety system maintenance, testing and inspections. Safety Management Plans. Trained operators/maintainers. Plant operating and maintenance procedures.	E – Rare	A – Catastrophic	High	Unlikely
6	Lithium-ion Battery	Dropping of battery cell(s) during installation	Faulty equipment or procedure during battery installation	Personnel injury. Damage to battery cell.	2 – Unlikely	B – Major	High	Unlikely (anticipated impact on single unit cell)	Job Safety Analysis. Construction Management Plan.	-	D – Unlikely	B – Major	High	Unlikely (anticipated impact on single unit cell)
7	Lithium-ion Battery	Vandalism damage	Unauthorised access, few staff on-site	Damage to battery cell and/or other infrastructure. Electrolyte emission. Electrocution resulting in injury or fatality.	2 – Unlikely	A – Catastrophic	Critical	Potential	Battery rooms and auxiliary equipment to be surrounded by fencing, locked gates and other security measures as necessary (e.g. CCTV, continuous remote monitoring).	Regular and appropriate operations and maintenance covering inspections of the facilities.	E – Rare	A – Catastrophic	High	Unlikely
8	Diesel fuel storage and handling	Fuel spill	Equipment failure, operational error during refuelling or structural damage to storage tanks.	Damage to infrastructure Personnel injury from chemical exposure. Environmental contamination	2 – Unlikely	B – Major	High	Potential	Installation of secondary containment systems to capture spills. Design to AS 1940.	HVAC systems correctly installed and maintained Implementation of regular inspection and maintenance schedules Trained personnel for fuel handling.	E – Rare	B – Major	High	Unlikely
9	Diesel fuel storage and handling	Fire hazard to combustible liquid properties.	Generator or other equipment malfunction, electrical malfunction, or spreading of external fires.	Loss of property Harm and injuries to personnel Operational disruption Environmental damage	2 – Unlikely	A – Catastrophic	High	Potential	Installation of fire suppression systems in diesel storage areas. Ensure proper grounding and bonding of equipment. Design to AS 1940.	HVAC systems correctly installed and maintained Conducting regular fire drills and providing fire safety and emergency response training for personnel.	1 – Rare	A – Catastrophic	High	Unlikely
10	Diesel fuel storage and handling	Inadequate ventilation for exhaust emissions	Inadequately designed ventilation system or system malfunction	Accumulation of hazardous emissions within the data centre, posing health and safety risks for personnel.	2 – Unlikely	B – Major	High	Unlikely	Adequate design of HVAC systems for generator exhaust. Vent external to building Design to AS 1940.	HVAC systems correctly installed and maintained Monitoring air quality to ensure safe levels.	1 – Rare	B – Major	High	Unlikely

Appendix B: Jemena Consultation

DISCLAIMER

From: gas networks engineer <gas.networks.engineer@jemena.com.au>
Sent: Friday, 3 June 2022 8:28 AM
To: Steven Sam <Steven.Sam@aurecongroup.com>
Cc: Infrastructure Protection <Infrastructureprotection@jemena.com.au>; gas networks engineer <gas.networks.engineer@jemena.com.au>
Subject: RE: DBYD - Job 31359964 - Referral 207939300 - 327 Burley Road

Hi Steven,

Please see the responses in red for your queries and below notes.

- Minimum clearances required to be adhered to from your pipeline for any new construction. It depends on what activity is proposed . Separation in most cases is 500mm; 1 meter for structures.
- Zones of influence. 3 meters around gas main. (Except vibration above 20mm/sec and HV activities)
- Guidelines when working in proximity to your assets. (There are guidelines for each of activity like excavation, tree planting, backfilling, piling works , electrical works etc)
- Are we able to create a roadway/site entrance over your pipeline? (Yes ; depending on depth of cover of gas main, load of vehicles and proposed design we provide approval for driveways etc)

You need to book a Jemena standby for any works within 3 meters of gas main including potholing works.
Please submit your detailed design mentioning position of gas main (obtained via potholing) and how these works are impacting the gas main.

Regards
Muhammad Umer Siddiqui
Engineer – Gas Distribution
Jemena
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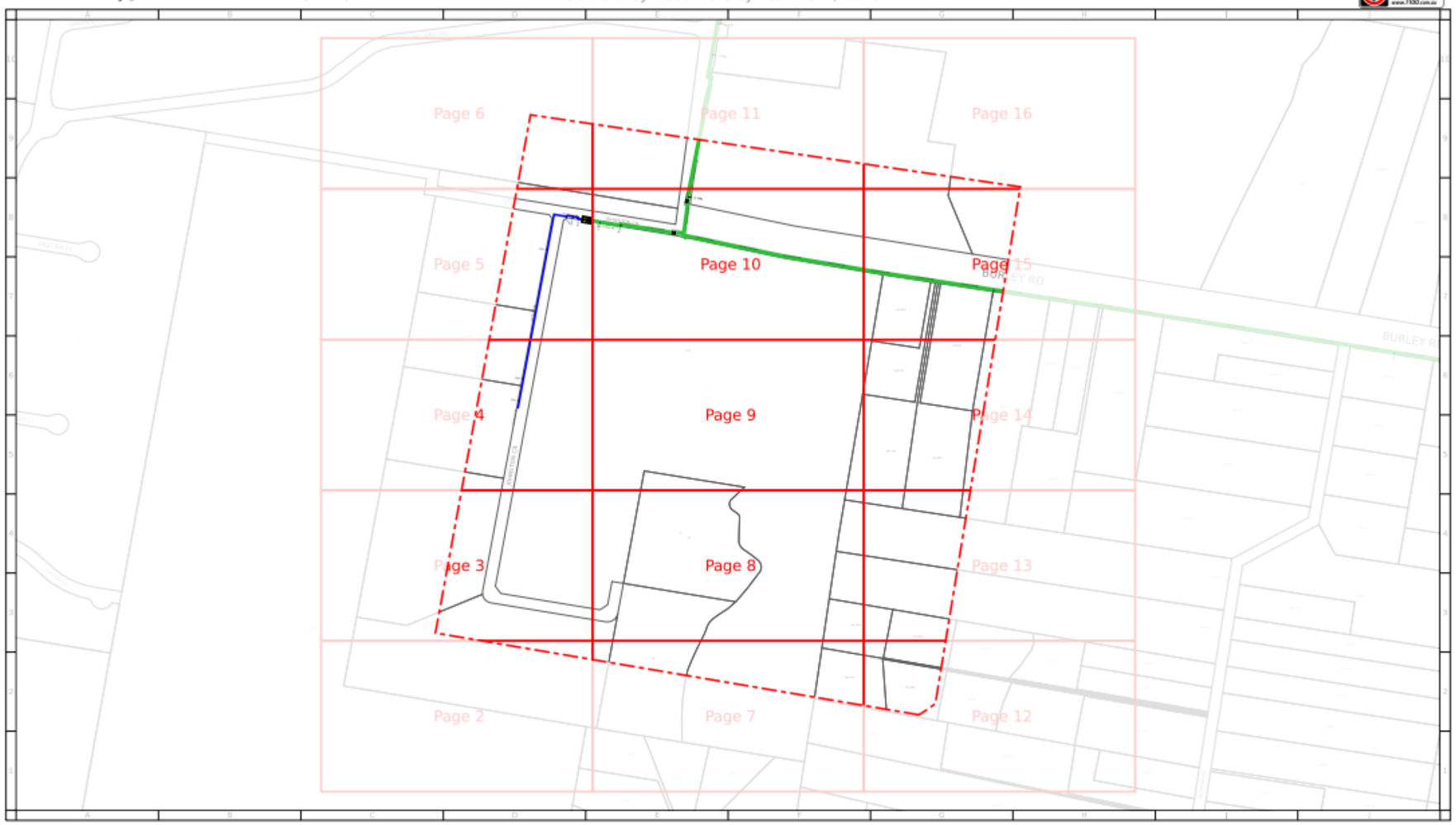
DBYD Authority: Jemena Gas Networks (NSW)

DBYD Location: 327 Burley Road Horsley Park NSW, 2175



Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this DBYD response.

Scale: 1:10501

Issue Date: 09/02/2022
DBYD Seq No: 207939300
DBYD Job No: 31359964
Overview Page:

From: gas networks engineer <gas.networks.engineer@jemena.com.au>
Sent: Monday, August 12, 2024 3:04 PM
To: Blake Morrow <Blake.Morrow@aurecongroup.com>
Cc: Infrastructure Protection <Infrastructureprotection@jemena.com.au>; Delene Kock <DeleneKate.Kock@aurecongroup.com>; Steven Sam <Steven.Sam@aurecongroup.com>; gas networks engineer <gas.networks.engineer@jemena.com.au>
Subject: RE: DBYD - Job 31359964 - Referral 207939300 - 327 Burley Road

---

Hi Blake,

Apologies for the delay in response.
For secondary mains, we do not ask for Pipeline Hazard Analyses, only that you provide details of any non-standard encroachments by sending the plan and section design to gas.networks.engineer@jemena.com.au
Muhammad has provided the necessary information in the email below, and the guidelines for working around AS4645 assets are attached as well.
I hope this helps,

Kind Regards,

Mel Church
FEED Project Manager
Jemena
0298678537

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bringing energy to life

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