Riskcon engineering

State Environmental Planning Policy (Resilience and Hazards)

Warehouse 1, 44 Clunies Ross Street, Prospect

Harris Farm Markets Pty Ltd
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Harris Farm Markets Pty Ltd

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Quality Management

Rev	Date	Remarks	Prepared By	Reviewed By
A	25 July 2022	Draft issue for comment	Renton Parker	Jason Costa
0	27 July 2022	Issue final		
1	18 August 2022	Incorproated diesel storage		

Executive Summary

Background

Harris Farm Markets Pty Ltd (HF) has proposed to lease Warehouse 1 at 44 Clunies Ross Street, Greystanes which will require freezer capacity which would require the installation of an anhydrous ammonia refrigeration system. Anhydrous ammonia is a Class 2.3 toxic gas and is subject to Chapter 3 of the State Environmental Planning Policy - Resilience and Hazards (SEPP-RH), formerly known as the State Environmental Planning Policy No. 33 (SEPP 33) which is a threshold-based risk assessment to determine whether the facility is acceptable for the land use.

ISPT Pty Ltd, on behalf of HF, has commissioned Riskcon Engineering Pty Ltd (Riskcon) to prepare a Chapter 3 assessment for the facility to determine whether the risk profile is acceptable for the location. This document represents the SEPP-RH assessment for Warehouse 1 at 44 Clunies Ross Street, Prospect.

Conclusions

A review of the quantities of DGs stored at the proposed facility and the associated vehicle movements was conducted and compared to the threshold quantities outlined in Applying SEPP 33. The results of this analysis indicates the threshold quantities for the DGs to be stored and transported are not exceeded; hence, the Chapter 3 of SEPP (Reslience and Hazards) does not apply to the project. Futhermore, a reivew of the potential to cause offense was conducted which indicated the site operations would be unlikely to result in noise or odour to occur at levels which would cause offense.

As the facility is not classified as potentially hazardous or offensive, it is not necessary to prepare a Preliminary Hazard Analysis for the facilty as Chapter 3 of SEPP (Reslience and Hazards) does not apply.

Recommendations

Notwithstanding the above, the following recommendations have been made:

- The Dangerous Goods (DG) shall be stored in accordance with the Work Health and Safety Regulation 2017 and any documentation required by the Regulation shall be prepared prior to occupying the space with DGs.

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Abbreviations

Abbreviation	Description
ADG	Australian Dangerous Goods Code
DA	Development Application
DGs	Dangerous Goods
DPE	Department of Planning and Environment
RH	Resilience & Hazards
SEPP	State Environmental Planning Policy

1.0 Introduction

1.1 Background

Harris Farm Markets Pty Ltd (HF) has proposed to lease Warehouse 1 at 44 Clunies Ross Street, Greystanes which will require freezer capacity which would require the installation of an anhydrous ammonia refrigeration system. Anhydrous ammonia is a Class 2.3 toxic gas and is subject to Chapter 3 of the State Environmental Planning Policy - Resilience and Hazards (SEPP-RH), formerly known as the State Environmental Planning Policy No. 33 (SEPP 33) which is a threshold-based risk assessment to determine whether the facility is acceptable for the land use.

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1.2 Scope of Services

The scope of work is to prepare a SEPP-RH assessment for the facility located at Warehouse 1 at 44 Clunies Ross Street, Prospect. The assessment does not include any other sites or the preparation of any additional planning studies should they be required.

2.0 Methodology

2.1 General Methodology

The methodology used in this assessment is as follows:

- Review the types and proposed quantities of DGs to be stored at the site.
- Compare the quantities of DGs the threshold quantities listed in “Applying SEPP 33 – Hazardous and Offensive Development” (Ref. [1]) to identify whether the storage location or quantity triggers SEPP 33.
- Review the likely vehicular movements involving DGs and compare against the applicable thresholds detailed in Applying SEPP 33 (Ref. [1]).
- Report on the findings of the SEPP-RH assessment.

2.2 Data taken from “Applying SEPP 33”

Figure 2-1, extracted from “Applying SEPP 33” provides details on the application of Figures or Tables from the same document to determine the applied screening Threshold (Ref. [1]).

Class	Method to Use/Minimum Quantity
1.1	Use graph at Figure 5 if greater than 100 kg
1.2-1.3	Table 3
2.1 — pressurised (excluding LPG)	Figure 6 graph if greater than 100 kg
2.1 — liquefied (pressure) (excluding LPG)	Figure 7 graph if greater than 500 kg
LPG (above ground)	table 3
LPG (underground)	table 3
2.3	table 3
3PGI	Figure 8 graph if greater than 2 tonne
3PGII	Figure 9 graph if greater than 5 tonne
3PGIII	Figure 9 graph if greater than 5 tonne
4	table 3
5	table 3
6	table 3
7	table 3
8	table 3

Figure 2-1: Screening Method to be Used

Table 3 from “Applying SEPP 33” has been extracted and is shown in **Figure 2-2**.

Class	Screening Threshold	Description
1.2	5 tonne	or are located within 100 m of a residential area
1.3	10 tonne	or are located within 100 m of a residential area
2.1	(LPG only — not including automotive retail outlets[1])	
	10 tonne or16 m^3	if stored above ground
	40 tonne or 64 m^3	if stored underground or mounded
2.3	5 tonne	anhydrous ammonia, kept in the same manner as for liquefied flammable gases and not kept for sale
	1 tonne	chlorine and sulfur dioxide stored as liquefied gas in containers <100 kg
	2.5 tonne	chlorine and sulphur dioxide stored as liquefied gas in containers >100 kg
	100 kg	liquefied gas kept in or on premises
	100 kg	other poisonous gases
4.1	5 tonne	
4.2	1 tonne	
4.3	1 tonne	
5.1	25 tonne	ammonium nitrate — high density fertiliser grade, kept on land zoned rural where rural industry is carried out, if the depot is at least 50 metres from the site boundary
	5 tonne	ammonium nitrate — elsewhere
	2.5 tonne	dry pool chlorine — if at a dedicated
		pool supply shop, in containers <30 kg
	1 tonne	dry pool chlorine — if at a dedicated pool supply shop, in containers >30 kg
	5 tonne	any other class 5.1
5.2	10 tonne	
6.1	0.5 tonne	packing group I
	2.5 tonne	packing groups II and III
6.2	0.5 tonne	includes clinical waste
7	all	should demonstrate compliance with Australian codes
8	5 tonne	packing group I
	25 tonne	packing group II
	50 tonne	packing group III

Figure 2-2: General Screening Threshold Quantities

Transportation screen thresholds have been provided in **Figure 2-3**.

	Vehicle Movements		Minimum quantity* per load (tonne)	
	Cumulative	Peak		
Class	Annual *or*	Weekly	Bulk	Packages
1	see note	see note	see note	
2.1	>500	>30	2	5
2.3	>100	>6	1	2
3PGI	>500	>30	1	1
3PGII	>750	>45	3	10
3PGIII	>1000	>60	10	no limit
4.1	>200	>12	1	2
4.2	>100	>3	2	5
4.3	>200	>12	5	10
5	>500	>30	2	5
6.1	all	all	1	3
6.2	see note	see note	see note	
7	see note	see note	see note	
8	>500	>30	2	5
9	>1000	>60	no limit	

Figure 2-3: Transportation Screening Thresholds

3.0 Project Description

3.1 Site Location and Layout

The proposed warehouse is located at Warehouse 1 at 44 Clunies Ross Street, Prospect which is approximately 31 km west of the Sydney Central Business District (CBD). **Figure 3-1** shows the regional location of the site in relation to the Sydney CBD.

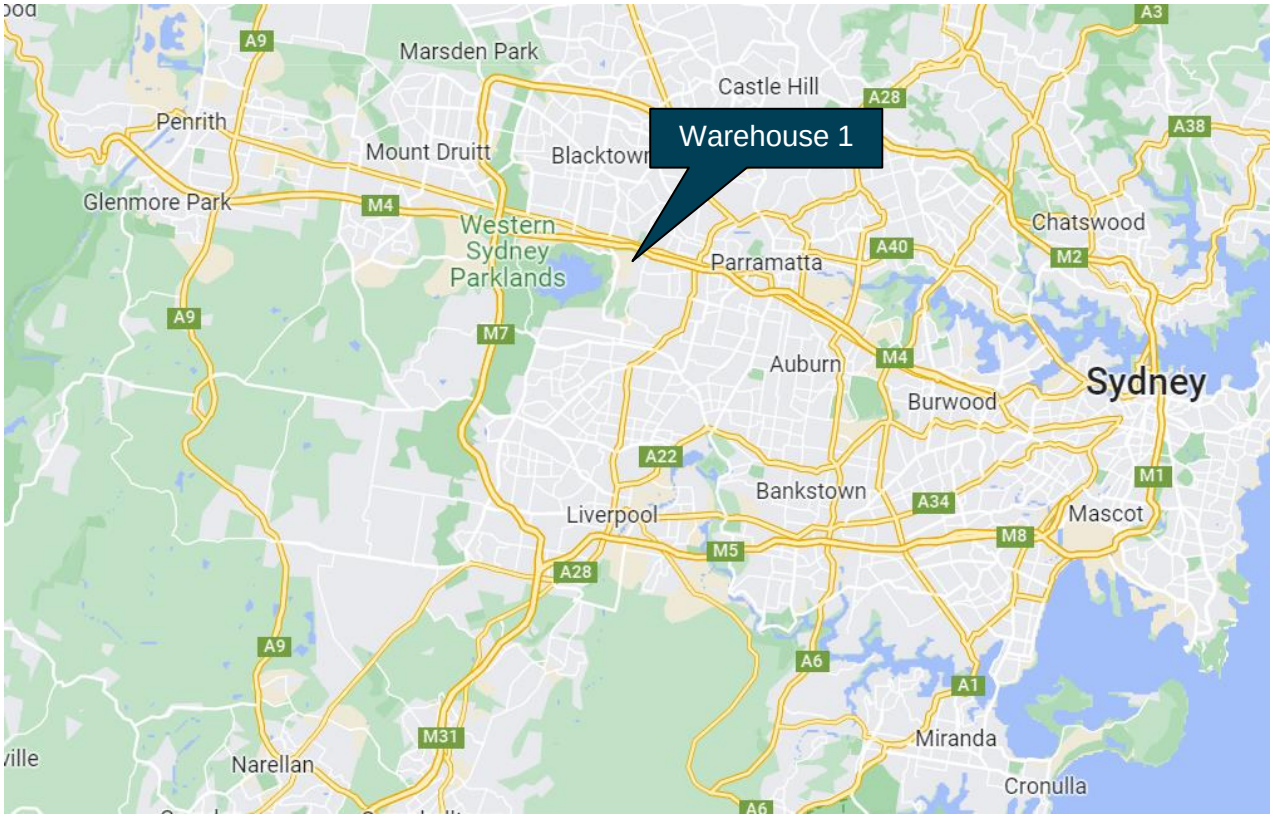

Figure 3-1: Site Location (source Google Maps)

3.2 General Description

The warehouse will function as a freezer for the purposes of cold chain logistics operations. The warehouse will be chilled using an anhydrous ammonia system to provide cooling down to -33ºC which will be used to cool the warehouse by chilling air inside penthouses within the warehouse which will circulate into the warehouse providing temperature control.

With the exception of the refrigeration system, the warehouse will function as a standard warehouse in terms of design and construction which will include the main warehouse and operations area, offices and amenities, car parking, fork, roller shutter doors and hardstand area.

The facility will house alcoholic beverages as part of the Harris Farm line and there will also be a chemical store containing chemicals used to clean the warehouse and storage areas as necessary.

A layout of the warehouse within the estate has been provided in **Figure 3-2**. A layout showing where the DGs and diesel generator will be stored is provided in **Figure 3-3**.

3.3 General Description

The quantities of good stored at the site have been summarised in **Table 3-1**.

Table 3-1: Quantities of DGs Stored and Handled

Location	Description	Class	PG	Quantity (kg)
Plant Room	Anhydrous Ammonia	2.3	n/a	500
Alcohol & Chocolate	Potable spirits	3	III	4,500
Chemical Store	Hand sanitiser	3	II & III	1,500
	Oxidising agents subrisk corrosive	5.1(8)	II & III	2,000
	Corrosive substances	8	II & III	4,000
Diesel generator	Diesel fuel	C1	n/a	15,000

Figure 3-2: Location within the Estate

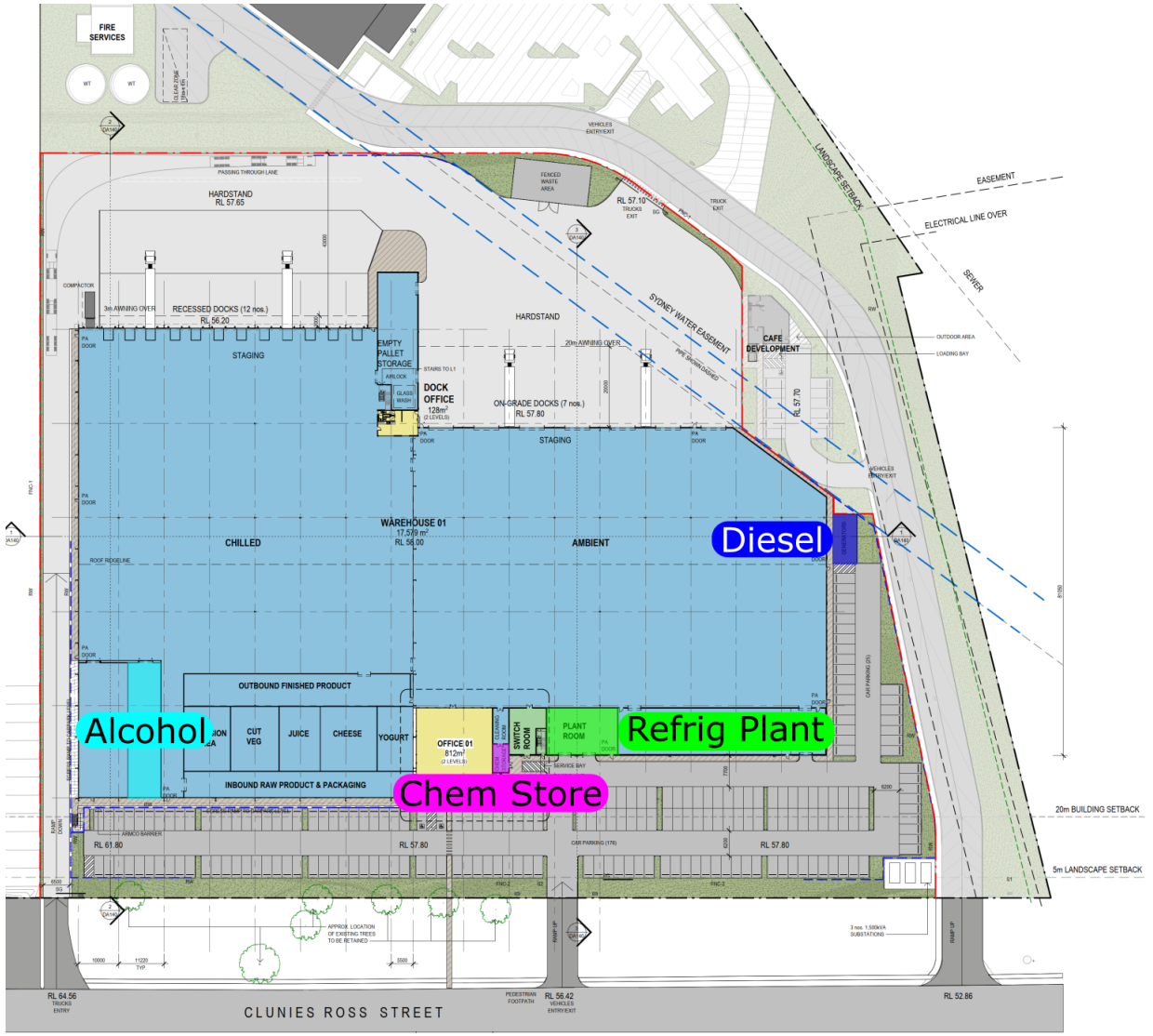

Figure 3-3: Site Layout

4.0 SEPP Review

4.1 Proposed Storage Details

The maximum quantities of products and DGs that are to be stored at the facility, are shown in **Table 4-1**. The data has been provided by ISPT for the site modification. Provided in **Table 4-1** is an assessment of whether the Class is subject to SEPP.

Table 4-1: DG Classes or Materials Stored and Maximum Quantities

Class	Description	PG	Quantity (kg)	Class Subject to SEPP 33 (Y/N)
2.3	Anhydrous ammonia	n/a	500	Y
3	Flammable liquids	II & III	6,000	Y
5.1(8)	Oxidising agents subrisk corrosive	II & III	2,000	Y
8	Corrosive substances	II & III	4,000	Y
C1	Diesel fuel	n/a	15,000	N

4.2 Application of Chapter 3 of the State Environmental Planning Policy – Resilience & Hazards

State Environmental Planning Policy (Resilience and Hazards) 2021 (which now includes the former SEPP 33) has been developed under the Environmental Planning and Assesment Act 1979 to control potentially hazardous and offensive developments and to ensure appropriate safety features are installed at a faclity to ensure the risks to surrounding land uses is minimised.

The policy includes a guideline that assists government and industry alike in determining whether SEPP-RH applies to a specific development. The guideline, “Applying SEPP 33 - Hazardous and Offensive Developments” (Ref. [1]) provides a list of threshold levels, for the storage of DGs, above which the regulator considers the DG storage to be potentially hazardous. In the event the threshold levels are exceeded, SEPP-RH applies and a Preliminary Hazard Analysis (PHA) is required, followed by a series of hazard analysis studies stipulated by the Department of Planning and Environment in the conditions of consent.

4.3 Assessment of Hazards

4.3.1 Storage

Threshold limits for the application of SEPP-RH are presented in **Table 4-2** along with maximum DG quantities that will be stored at the site. The results summarised in the table indicates the SEPP-RH criteria is not exceeded; hence, no further assessment would be required.

Table 4-2: Quantities Stored and SEPP-RH Threshold

Class	Description	PG	Quantity (kg)	SEPP Threshold (kg)	Does SEPP 33 Apply? (Y/N)
2.3	Anhydrous ammonia	n/a	2,000	5,000	N
3	Flammable liquids	II & III	6,000	3.5 m (**Figure 4-1**)	N

Class	Description	PG	Quantity (kg)	SEPP Threshold (kg)	Does SEPP 33 Apply? (Y/N)
5.1(8)	Oxidising agents sr corrosive	II & III	2,000	5,000	N
8	Corrosive substances	II & III	6,000	25,000	N

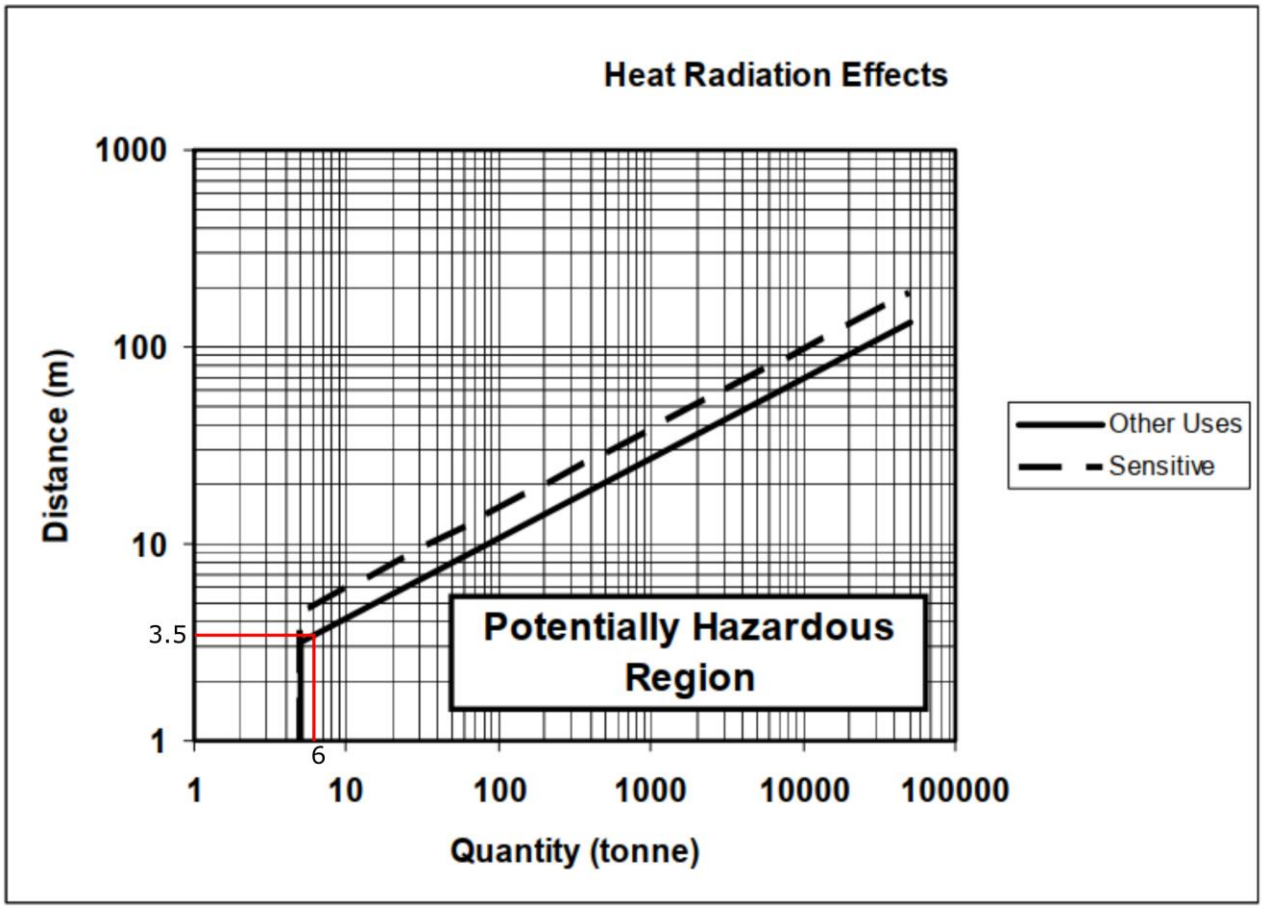

Figure 4-1: Flammable Liquid Distance

4.3.2 Transport

The DGs stored at the site will be based upon the refrigeration system which is a closed loop system and will not require regular top up of the system to maintain function. Therefore, other than the initial charging and commissioning of the system, additional anhydrous ammonia deliveries to the site are not expected to occur frequently.

With respect to other DGs stored, these are either for use in cleaning and would not have high turn over of product or are potable spirits in small packages which do not exceed the minimum package size for transport assessment. Diesel isn't subject to the policy and does not require assessment.

Therefore, the transport limits within SEPP 33 would not be exceeded; hence, with respect to transport, SEPP-RH does not apply.

4.3.3 Cumulative Hazards

A review of the estate indicates there are three other sites within the estate that store materials classified as DGs; HS Fresh Food, Bunzl, and ISPT as shown in **Figure 4-2**.

The HSFF and ISPT sites stores DGs at quantities less than the SEPP thresholds; however, the Bunzl warehouse exceeds the thresholds. A review of the Bunzl impact distances from a full warehouse fire indicate that the 4.7 kW/m^2 contour extends 54 m from the warehouse which would impact WH1; however, the PHA indicates the HIPAP No. 4 criteria are not exceeded. The 23 kW/m^2 contours do not impact WH1; hence, incident propagation would not be expected to occur. Furthermore, the DG storages would be unlikely to be affected by an incident occurring at Bunzl. As the WH1 site does not exceed SEPP 33, it is expected that the site would not significantly contribute to the site risk profile such that cumulative criteria would be exceeded and would therefore be considered acceptable.

Figure 4-2: Estate Layout

4.4 Assessment of Offense

SEPP-RH also contains a requirement for review of operations that may cause offense in the form of odour, environmental impact, nuisance (noise), etc. An indication of whether “offensiveness” may occur at the facility is whether an Environmental Protection Authority (EPA) licence is required for specific operations at the site (Ref. [2] and [3]).

A review of the facilities operations indicates that there are no processes that would result in the manufacture, production, or transfer of materials in a form that may result in the release of bulk materials at the site or that could result in odour generation or excessive noise. An EPA licence would not be required for this site.

Further, there would be no unusual operations that would cause potential odours, or excessive noise at the closest residential areas. Therefore, it is considered that noise generated from the site operations would not exceed the background noise already exposed at residential areas.

In summary, there is no potential for “offensive” operations at the site or noise that has been assessed as part of the estate DA and therefore SEPP-RH does not apply in this case.

5.0 Conclusion and Recommendations

5.1 Conclusions

A review of the quantities of DGs stored at the proposed facility and the associated vehicle movements was conducted and compared to the threshold quantities outlined in Applying SEPP 33. The results of this analysis indicates the threshold quantities for the DGs to be stored and transported are not exceeded; hence, the Chapter 3 of SEPP (Reslience and Hazards) does not apply to the project. Futhermore, a reivew of the potential to cause offense was conducted which indicated the site operations would be unlikely to result in noise or odour to occur at levels which would cause offense.

As the facility is not classified as potentially hazardous or offensive, it is not necessary to prepare a Preliminary Hazard Analysis for the facilty as Chapter 3 of SEPP (Reslience and Hazards) does not apply.

5.2 Recommendations

Notwithstanding the above, the following recommendations have been made:

- The Dangerous Goods (DG) shall be stored in accordance with the Work Health and Safety Regulation 2017 and any documentation required by the Regulation shall be prepared prior to occupying the space with DGs.

6.0 References

[1] Department of Planning, “Applying SEPP 33,” Department of Planning, Sydney, 2011.

[2] “Protection of the Environment Operations (General) Regulation,” 2009.

[3] “Protection of the Environment Operations Act,” 1997.