



Planning

Hazardous and Offensive Development
Application Guidelines

Applying SEPP 33



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Applying SEPP 33
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Foreword

Since the 1980s, the New South Wales Department of Planning has promoted and implemented an integrated approach to the assessment and control of potentially hazardous development. The approach has been designed to ensure that safety issues are thoroughly assessed during the planning and design phases of a facility and that controls are put in place to give assurance that it can be operated safely throughout its life.

Over the years, a number of Hazardous Industry Advisory Papers and other guidelines have been issued by the Department to assist stakeholders in implementing this integrated assessment process. With the passing of time there have been a number of developments in risk assessment and management techniques, land use safety planning and industrial best practice.

In recognition of these changes, new guidelines have been introduced and all of the earlier guidelines have been updated and reissued in a common format.

I am pleased to be associated with the publication of this new series of Hazardous Industry Advisory Papers and associated guidelines. I am confident that the guidelines will be of value to developers, consultants, decision-makers and the community and that they will contribute to the protection of the people of New South Wales and their environment.

A handwritten signature in black ink that reads "S Haddad". The signature is written in a cursive style with a horizontal line underneath the name.

Director General

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Executive Summary

State Environmental Planning Policy No.33 (The Policy) Hazardous and Offensive Development sets out to:

- amend the definitions of hazardous and offensive industries where used in environmental planning instruments; and
- render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in the Policy; and
- ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account; and
- ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact.

Note: In these guidelines, references to 'consent authority' and 'development consent' should also be taken to apply to project approvals by the Minister under Part 3A of the Environmental Planning and Assessment Act (EP&A Act) 1979, where relevant. Similarly, where 'Council' is used the reference will usually apply more broadly.

Definitions of 'potentially hazardous industry' and 'potentially offensive industry' are included in the policy.

The Policy came into force in 1992 and an application guideline (*Applying SEPP33*) was first published in 1994. The guideline particularly focussed on the identification and assessment of potentially hazardous industry.

Applying SEPP 33 included a screening method, based on the quantities of Dangerous Goods on a site, to assist in determining if a development is likely to be potentially hazardous industry. However, the screening method was not intended to be applied in isolation.

The guidelines also indicated that potentially offensive development could effectively be regarded as development that would require a pollution control licence from the Department of Environment, Climate Change and Water (DECCW) or other public authority. If the licence conditions could not be met, the proposed development would be considered offensive and would not normally be permissible.

A review of the policy was initiated after several years experience in using *Applying SEPP 33*. The review indicated that, while the policy itself was still relevant, a number of areas in the guidelines required clarification.

This revised edition of *Applying SEPP 33* has been prepared in response to issues raised in the review.

What Has Changed in This Edition of the Guidelines?

The question and answer format of the early chapters of the original guidelines has been retained but answers have been updated. The technical content of the guidelines have been extensively reworked.

Significant changes are:

- updated references to legislative requirements and administrative procedures;
- clarification of the type of development to which the policy applies, particularly in respect to storage establishments;
- revision of the risk screening process to update screening thresholds and to provide a fuller discussion of factors that can cause a development to be potentially hazardous, even when screening thresholds are not exceeded;
- references to the Australian Dangerous Goods Code (ADG Code) have been updated to the 7th edition, which came into force in January 2009;
- expression of all screening threshold quantities by weight (kg or tonne), including liquefied and compressed gases. This avoids confusion in the case of compressed gases and is consistent with the way quantities are expressed in the *Multi-Level Risk Assessment* guidelines;
- where appropriate, specifying separate screening thresholds for residential/sensitive land uses and other less sensitive uses;
- removal of the former Figure 3 from the guideline. However, the numbering of Figure 5 onwards has been retained to maintain consistency with references in the earlier versions; and
- a glossary of terms and abbreviations has now been included.

1 Introduction

1.1 Purpose

State Environmental Planning Policy No. 33 — Hazardous and Offensive Development (SEPP 33) was gazetted on 13 March 1992. These guidelines have been prepared to provide advice on interpreting and implementing the policy.

They have been written principally for councils who must act as consent authorities for development affected by the policy. The guidelines are also likely to be useful to industry, consultants and other government agencies. The guidelines mainly assist in identifying developments which should be considered under SEPP 33, and on the broad assessment requirements of the policy.

Earlier versions of the guidelines were released in 1993 and 1997. Following a detailed review of the implementation of the policy since then, these revised guidelines have been prepared to respond to the implementation issues raised and suggestions made by stakeholders.

1.2 The Policy

SEPP 33 presents a systematic approach to planning and assessing proposals for potentially hazardous and offensive development for the purpose of industry or storage. Through the policy, the permissibility of a proposal to which the policy applies is linked to its safety and pollution control performance. While SEPP 33 is an enabling instrument (that is, it allows for the development of industry) it also aims to ensure that the merits of proposals are properly assessed (in relation to off-site risk and offence) before being determined.

By providing for merit-based assessment, the policy overcomes the limitations of previous definitions — in which a use was considered hazardous or offensive on the basis of a particular type of industry, in isolation. The merit-based approach ensures that locational and design considerations are an integral part of the assessment process.

SEPP 33 ensures that only those proposals which are suitably located, and able to demonstrate that they can be built and operated with an adequate level of safety and pollution control, can proceed.

1.3 Scope and Application

SEPP 33 applies to any proposals which fall under the policy's definition of 'potentially hazardous industry' or 'potentially offensive industry'. Certain activities may involve handling, storing or processing a range of substances which in the absence of locational, technical or operational controls may create an off-site risk or offence to people, property or the environment. Such activities would be defined as potentially hazardous or potentially offensive. These guidelines assist councils and proponents to establish whether a development proposal would fit into such definitions and hence, come under the provisions of the policy.

For development proposals classified as 'potentially hazardous industry' the policy establishes a comprehensive test by way of a preliminary hazard analysis (PHA) to

determine the risk to people, property and the environment at the proposed location and in the presence of controls. Should such risk exceed the criteria of acceptability, the development is classified as 'hazardous industry' and may not be permissible within most industrial zonings in NSW.

For developments identified as 'potentially offensive industry', the minimum test for such developments is meeting the requirements for licensing by the DECCW or other relevant authority. If a development cannot obtain the necessary pollution control licences or other permits, then it may be classified as 'offensive industry', and may not be permissible in most zonings.

These guidelines cover the following topics:

- knowing when SEPP 33 applies (section 2);
- SEPP 33 administrative requirements (section 3);
- assessing applications under SEPP 33 (sections 4 and 5);
- common queries about the policy (section 6); and
- identifying a potentially hazardous development (section 7).

Appendices provide additional information.

2 Application

2.1 Does SEPP 33 Apply?

This section provides advice to consent authorities on deciding whether SEPP 33 applies to a proposal and how to apply the new definitions the policy introduces.

Consent authorities should firstly consider whether the proposed use falls within the definition of 'industry' adopted by the planning instrument which applies or whether it is a 'storage establishment'.

Once a proposal is identified as an industry or storage establishment, consent authorities need to consider:

- Does the proposal require development consent or approval under Part 3A or Part 4 of the EP&A Act?
- Is the proposal 'potentially hazardous industry'?
- Is the proposal 'potentially offensive industry'?

Note: For the purposes of SEPP 33, a hazardous storage establishment is included in the definition of potentially hazardous industry. Similarly, an offensive storage establishment is included in the definition of potentially offensive industry.

This means that a storage development is considered 'industry' for the purposes of applying the SEPP 33 tests, even if the development is non-industrial. An example may be a storage facility associated with the reticulation of LPG within a housing development.

SEPP 33 will apply if a proposal for an industrial development requires consent, and it is either potentially hazardous industry or potentially offensive industry (or both). Figure 1 indicates the procedure for determining if SEPP 33 applies, while Figure 2 outlines the associated assessment process for a typical Part 4 local development.

Question 2.1 What supporting information should I seek in order to determine if a proposal is 'potentially hazardous industry' and therefore within SEPP 33?

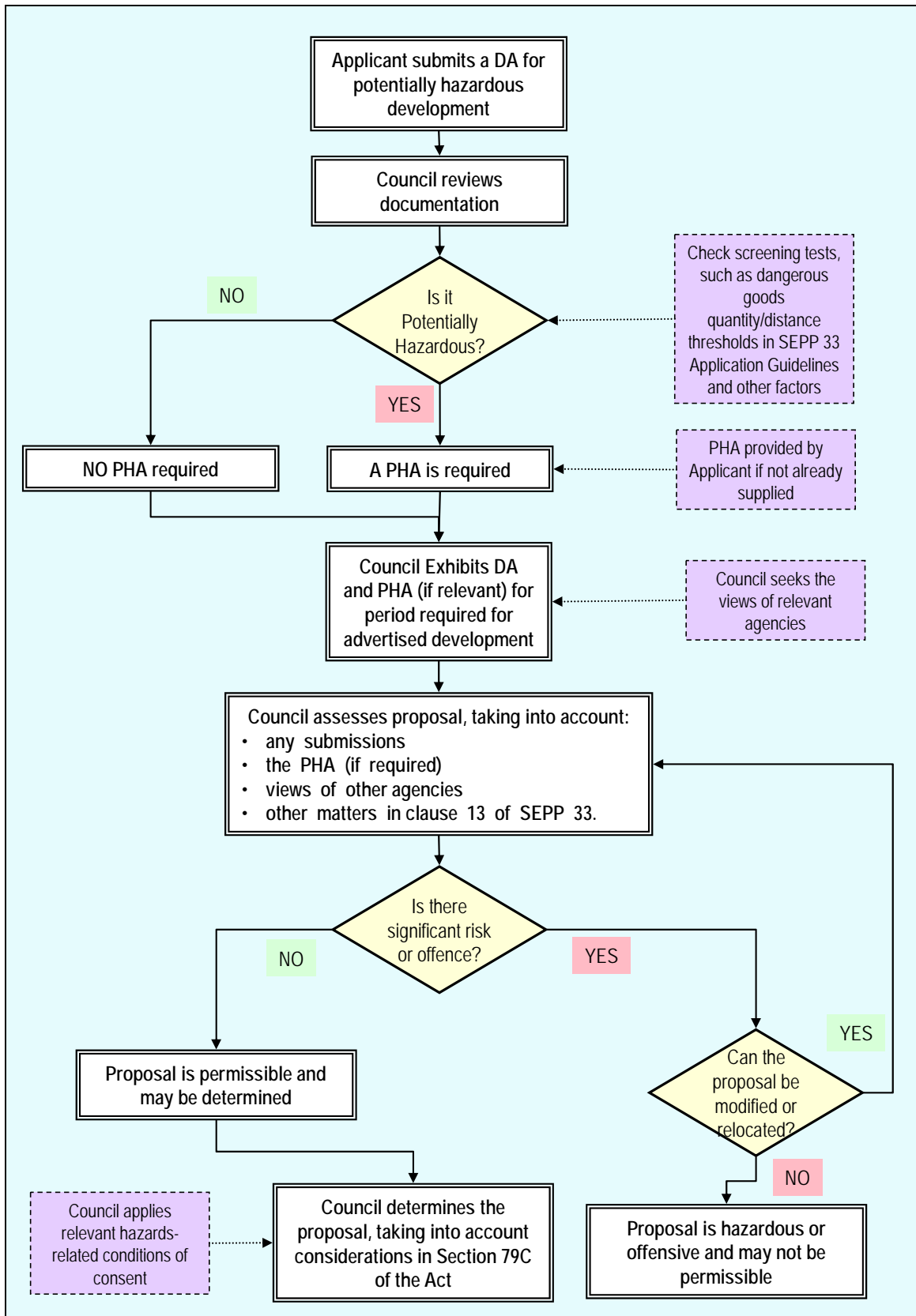
The Department of Planning has developed a checklist and a risk screening procedure to assist in determining whether a development proposal falls within the definition of potentially hazardous industry.

The information in Appendix 3 may also be helpful in identifying development that may be potentially hazardous.

The screening procedure is based on the quantity of dangerous goods involved in the proposal and, in some cases, the distance of these materials from the site boundary. The identification procedure for potentially hazardous industry is explained in section 7, with additional information in the appendices.

Some basic information about the proposal is required to apply the risk screening method. The information which should be obtained from the applicant (at the earliest opportunity) is shown in Appendix 2.

Figure 1: The SEPP 33 Process



Question 2.2 What is the difference between 'potentially hazardous industry' and 'hazardous industry'?

A 'hazardous industry' under SEPP 33 is one which, when all locational, technical, operational and organisational safeguards are employed continues to pose a significant risk. A proposal can not be considered a hazardous industry unless it is first identified as potentially hazardous industry and subjected to the assessment requirements of SEPP 33.

The requirements include an assessment of the preliminary hazard analysis (PHA) submitted with the development application. If the assessment of the PHA finds the proposal does not meet the relevant risk criteria as set out in *Hazardous Industry Planning Advisory Paper No 4* (see question 3.3, it is a hazardous industry unless it can be modified or relocated in a way that will enable the risk criteria to be met.

Question 2.3 What information do I need to determine if a proposal is 'potentially offensive industry' and therefore within SEPP 33?

In deciding if a proposal is 'potentially offensive industry' consent authorities need to determine whether, in the absence of safeguards, the proposal would emit a polluting discharge which would cause a significant level of offence.

It is recommended the following be considered:

- Does the proposal require a licence under any pollution control legislation administered by the DECCW or other public authority? If so, the proposal should be considered potentially offensive.
- If such a pollution control licence or approval is not required, does the proposal cause offence having regard to the sensitivity of the receiving environment? This will in many cases be a matter for judgement. Consent authorities are advised to consult with the DECCW and take into account their views.

The information in Appendix 3 may also be helpful.

Question 2.4 What is the difference between 'potentially offensive industry' and 'offensive industry'?

An 'offensive industry' is one which, even when controls are used, has emissions which result in a significant level of offence. Before a proposal is identified as offensive industry it must first be identified as potentially offensive industry and subjected to the assessment and exhibition requirements of SEPP 33.

The assessment should demonstrate that the offence can be controlled to a level which is not significant. Typically, the level of offence would not be considered significant if relevant DECCW (or any other relevant pollution control) licences can be obtained; that is, if the DECCW (or other licensing authority) is willing to issue a pollution control licence or permit. If the proposal does not require such a permit, the consent authority should use its own judgement as to whether the level of offence can be controlled to a level which is not significant. This is discussed further in section 5.1.

3 Procedures

3.1 What are the procedural requirements when SEPP 33 applies?

This section provides advice on the procedural requirements for SEPP 33 and on matters to be considered for developments affected by SEPP 33 as specified in clause 13 of the policy.

Question 3.1 *If SEPP 33 applies, what general procedures apply?*

General administrative procedures for developments affected by SEPP 33 are shown in Figure 2. There is some variation in the requirements for developments affected by SEPP 33 which are also designated (schedule 3, Environmental Planning and Assessment Regulation 2000) or which fall under Part 3A of the Act. Procedures for designated or Part 3A development are over and above those of SEPP 33.

Question 3.2 *What are the notification and consultation requirements under SEPP 33?*

In summary:

- As a minimum requirement, development falling within SEPP 33 is treated as advertised development;
- the DA and supporting documentation must be publicly exhibited in accordance with the requirements for advertised development (unless the development is designated development or falls under Part 3A of the Act, in which case the exhibition procedures for the latter prevail);
- during the period of exhibition the public is able to make submissions; and
- the consent authority must seek the views of relevant government authorities.

Question 3.3 *What circulars or guidelines published by the Department of Planning should be considered?*

For the purposes of SEPP 33 the publications regarded as relevant are:

- Hazardous Industry Planning Advisory Paper (HIPAP) series
 - HIPAP No. 1 — Industry Emergency Planning Guidelines;
 - HIPAP No. 2 — Fire Safety Study Guidelines;
 - HIPAP No. 3 — Environmental Risk Impact Assessment Guidelines;
 - HIPAP No. 4 — Risk Criteria for Land Use Safety Planning;
 - HIPAP No. 5 — Hazard Audit Guidelines
 - HIPAP No. 6 — Hazard Analysis;
 - HIPAP No. 7 — Construction Safety Study Guidelines;
 - HIPAP No. 8 — HAZOP Guidelines;
 - HIPAP No. 9 — Safety Management;

- HIPAP No 10 — Land Use Safety Planning
- HIPAP No 11 — Route Selection
- HIPAP No 12 — Hazards-Related Conditions of Consent
- LPG Automotive Retail Outlets — Locational Guidelines;
- Managing Land Contamination — Planning Guidelines SEPP 55 — Remediation of Land;
- Applying SEPP 33 — Hazardous and Offensive Development Application Guidelines (this document);
- Multi-Level Risk Assessment.

The publications are further described in Appendix 1. Not all of these guidelines will be relevant in every case.

Question 3.4 What government authorities should be consulted?

Generally, consent authorities should consult with the DECCW (for potentially offensive development and where significant quantities of dangerous goods will be transported) and Fire and Rescue NSW. Consultation with other authorities, such as WorkCover NSW and the Roads and Traffic Authority (where dangerous goods are proposed to be transported in tunnels), may also be required depending upon the specific circumstances of a proposal.

Question 3.5 How should the issue of 'alternatives' be considered?

The matter should be considered in much the same way as for designated development. Alternatives could include:

- sites;
- processes;
- sources of materials;
- site layouts; and
- transport routes and modes.

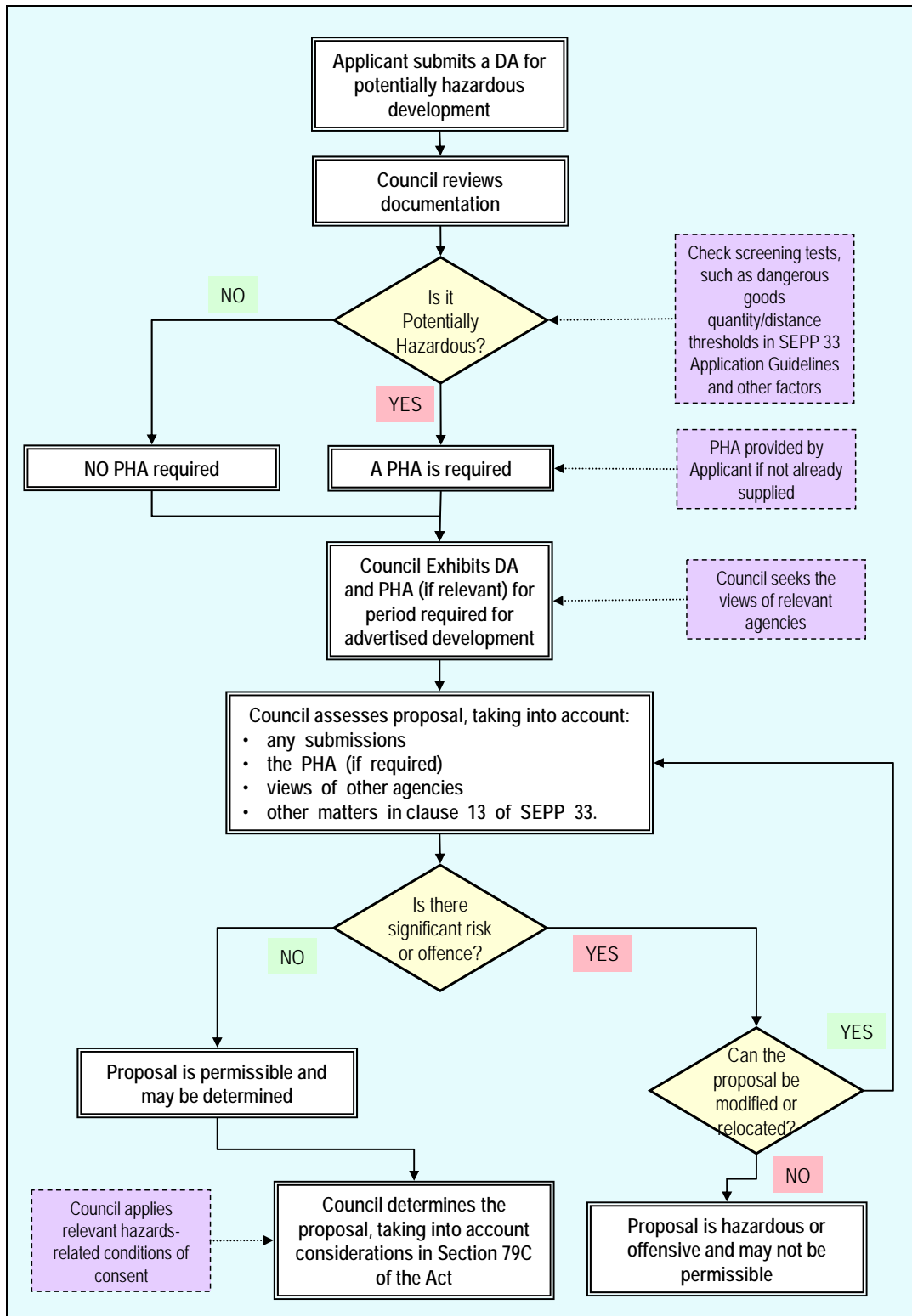
The extent to which other options should be considered depends on factors such as the feasibility of the alternatives and the level of impact involved with the preferred alternative. Consent authorities should ensure there is some locational justification of the preferred alternative.

Question 3.6 How should the issue of the likely future use of the land surrounding the development be considered?

Consent authorities should consider the matter in the same way as they would an application for designated development. Particular issues to note are:

- any intensification of cumulative risk;
- the likelihood of land sterilisation;
- the suitability of adjoining land zonings; and
- the likely future use of adjoining land.

Figure 2: SEPP 33 Procedural Requirements for Non-Designated Development



* Note: It is recommended that council give preliminary consideration to section 79C matters at an early stage in the process, so that the proposal can be determined as quickly as is possible. Refer also to question 6.13 for further discussion on this matter.

4 Assessing Hazard

4.1 How to Assess a Potentially Hazardous Industry

SEPP 33 requires the preparation of a preliminary hazard analysis (PHA) for potentially hazardous industry. This section includes specific guidance on the policy's requirements.

Question 4.1 What matters must be considered when assessing an application for a potentially hazardous industry?

The assessment of an application for a potentially hazardous industry should consider:

- the findings of a preliminary hazard analysis;
- relevant circulars or guidelines published by the Department of Planning;
- alternatives and justification for the alternative chosen; and
- any likely future use of the land surrounding the development.

Question 4.2 What should the PHA do? Do the requirements vary according to the circumstances of the proposal?

The PHA should enable the consent authority to make a judgement about the level of risk involved in a proposal, and its acceptability. It should allow the consent authority to decide if the level of risk exceeds criteria for acceptability (thus indicating that the proposal is a hazardous industry) or whether the level of risk can be managed (so that the proposal is acceptable on hazard grounds).

The PHA may be done *qualitatively* and/or *quantitatively*, depending on the circumstances of the proposal and its location. The level and extent of qualitative or quantitative assessment will depend on the nature and scale of the development and, as importantly, its proposed location in relation to surrounding land uses and the natural environment.

It would be expected that a significant number of PHAs could be done either qualitatively or semi-quantitatively.

A qualitative PHA may be sufficient in the following circumstances:

- where the materials are relatively non-hazardous (for example, corrosive substances and some classes of flammables);
- where there are no major worst-case consequences;
- where the technical and management safeguards are self-evident and readily implemented; and
- where the surrounding land uses are relatively non-sensitive.

Appendix 5 provides guidance on the requirements and assessment of PHAs. The department's *Multi-Level Risk Assessment* guidelines provide further advice on this issue.

Question 4.3 How does a consent authority determine if the risk from a proposal is acceptable?

The risks need to be assessed against the criteria which have been developed by the department (as set out in *Hazardous Industry Planning Advisory Paper No 4 – Risk Criteria for Land Use Safety Planning* – see Appendix 1).

If the PHA has been done on a *qualitative* basis, the consent authority must judge whether the level of risk is being managed appropriately, with reference to the proposed safeguards.

If the PHA includes a *quantified* risk assessment and the risk posed by the development exceeds those criteria, the level of risk is not acceptable, and the development is a hazardous industry.

For proposals involving risk to the biophysical environment, qualitative judgements must be made taking into account such matters as:

- the particular qualities of the environment;
- the nature of the hazards; and
- the reversibility of any impact.

Appendix 5 provides further information on assessing risk to the biophysical environment.

Question 4.4 What can a consent authority do to ensure the ongoing acceptability of a potentially hazardous industry?

If, following the assessment of a PHA and other considerations, council considers that the proposal can proceed, it should consider imposing relevant hazards-related conditions as recommended by the department. These conditions will help ensure the ongoing safety of a potentially development. They are explained in more detail in Appendix 6.

5 Assessing Offence

5.1 How to Assess a Potentially Offensive Industry

This section provides specific information on the implications of SEPP 33 to a potentially offensive industry.

Question 5.1 What supporting information should be supplied with a development application for a potentially offensive industry?

Consent authorities should seek information from the applicant on the quantity and nature of any discharges, and the significance of the offence likely to be caused by the development, having regard to the nature of the surrounding land use and the proposed controls. The need for any licences from the DECCW or other public authority should also be ascertained.

Question 5.2 Do any specific considerations apply in the assessment of a potentially offensive industry?

The key consideration in the assessment of a potentially offensive industry is that the consent authority is satisfied there are adequate safeguards to ensure emissions from a facility can be controlled to a level at which they are not significant. An important factor in making this judgement is the view of the DECCW (for those proposals requiring a pollution control licence under DECCW legislation). If the DECCW considers that its licence requirements can be met, then the proposal is not likely to be 'offensive industry'.

Question 5.3 Is compliance with DECCW licence requirements sufficient to demonstrate that a proposal is not 'offensive industry'?

In most cases, compliance with DECCW requirements should be sufficient to demonstrate that a proposal is not an offensive industry. In some cases depending on surrounding land uses, and

particularly for proposals which do not require a DECCW licence, consent authorities should also consider:

- Do any other authorities need to license the proposal? For example, for some proposals the Department of Health or the local water authority may be required to license emissions. Some pollution control approval may also be required under legislation or bylaws administered by council; and
- Can conditions be attached to further reduce the level of offence? Conditions which might be appropriate could include (depending upon circumstances):
 - restricting hours of operation; and
 - ensuring adequate separation distances to surrounding land uses.

If, after considering these matters, the consent authority considers that the level of offence will not be significant, then the proposal should not be refused for reasons due to offence.

6 Common Queries

6.1 Responses to Common Queries about the Policy

Question 6.1 What are the implications of SEPP 33 for an existing development?

SEPP 33 does not apply to existing developments unless a new development application (DA) is required for the site. Such a DA could involve the modification of the existing facilities, the construction of new facilities or the commencement of new uses.

If the proposed use or modifications are considered potentially hazardous or potentially offensive in their own right, then SEPP 33 applies.

For potentially hazardous developments, hazards relating to external causes as well as those from the development itself must be addressed. Any preliminary hazard analysis would therefore need to consider hazards from the existing facility.

SEPP 33 would also apply if the proposed modifications are not potentially hazardous in themselves, but interact with the existing facility in such a way that cumulative hazards (or offence) from the existing facility may be significantly increased. This may in many cases be a matter for judgement by the consent authority.

Question 6.2 In which land use zones are potentially hazardous industry and potentially offensive industry permitted?

Potentially hazardous industry and potentially offensive industry are permitted in zones where industry or storage establishments are permitted. (Where industry or storage establishments are, as a class of development, prohibited by the land use table, potentially hazardous industry or potentially offensive industry is not permitted.)

The implication of SEPP 33 in situations where industrial development is permissible is that a merit-based assessment is required for DAs for potentially hazardous or potentially offensive industry. It does not necessarily mean that a use can be located in the zone, but that the merits of the particular proposal must be assessed. This assessment must occur before it can be refused or approved on public safety or environmental impact grounds; or for any other matter included in section 79C of the EP&A Act.

Question 6.3 What are the implications of the policy for zones which presently permit hazardous or offensive industry?

The SEPP 33 assessment principles should apply to all proposals for potentially hazardous industry or potentially offensive industry, irrespective of whether hazardous or offensive industry is permitted or prohibited under a planning instrument.

Where consent is required, a DA must be lodged with the consent authority for its consideration. If after assessment, the risk level is determined as not significant (or the level of offence is found to be acceptable), then the development is neither hazardous nor offensive (and hence permissible and acceptable on safety or environmental grounds).

If the level of risk or offence is found to be significant, then the proposal may be neither permissible nor acceptable. In making its final decision on the DA a consent authority will have to take into account all matters under section 79C of the EP&A Act.

Question 6.4 What are the implications of SEPP 33 for development subject to Part 5 of the EP&A Act?

SEPP 33 strictly applies only to proposals which fall within Part 3A or Part 4 of the EP&A Act (that is, those proposals which require development consent or project approval). However, if a Part 5 determining authority considers that an assessment of hazard or offence is relevant to its environmental considerations of a proposal, it could follow the assessment principles set out in these guidelines.

Question 6.5 Does SEPP 33 apply to rural industry, such as cattle feedlots and similar development?

Whether SEPP 33 applies to a particular proposal depends upon whether the proposal falls within the definition of 'industry' as defined in the planning instrument which applies.

Developments such as cattle feedlots may not fit within this definition (for example, where they are separately defined as 'animal establishments', 'rural industry' or something similar). It is, however, a matter for the consent authority to interpret its own planning instruments in deciding whether any proposal is affected by SEPP 33.

Should the consent authority decide that SEPP 33 does not apply to a development because it is not an 'industry' or 'storage establishment', the degree of hazard or offence should still be considered as a matter under section 79C of the EP&A Act. In such cases, the SEPP 33 methodology may still be applicable, even if the policy itself does not strictly apply.

Question 6.6 Should the policy be referred to on section 149 certificates?

The Minister for Planning has not specifically directed that the SEPP 33 be referred to on section 149 certificates. This is because the policy refers to types of development rather than specific parcels of land. The advertising requirements of SEPP 33 have been included to ensure that the public receives adequate notification of developments affected by the policy.

Question 6.7 Can a schedule of industries and types of development affected by SEPP 33 be provided?

It is not appropriate to provide a schedule of uses. SEPP 33 is a move away from a prescriptive approach, which designates proposals as hazardous or offensive based upon particular types of industry, towards a merit-based assessment based upon the performance of a proposal at its particular location.

Consent authorities need to consider the details and merits of each proposal in deciding if a particular use should be subject to the policy.

Some guidance is provided in Appendix 3.

Question 6.8 Should the terms 'potentially hazardous industry' and 'potentially offensive industry' be included in land use tables in planning instruments?

These terms should not be included in planning instruments because:

- if such uses are prohibited (in industrial zones), then this avoids the merit-based assessment principle; and
- if such a use is specifically permitted, it could lead to a hazardous industry being permitted (because the definition of 'potentially hazardous industry' also includes hazardous industry).

Question 6.9 Should the consent authority refuse applications for potentially hazardous industry or potentially offensive industry?

If the zoning of the land permits development for industry, an application should not be refused by council simply because it is identified as potentially hazardous or potentially offensive. Such an application should be assessed in accordance with SEPP 33. If, after assessment, it is shown to be hazardous industry or offensive industry, the development may not be permissible within the zoning unless specifically stated.

Whether or not the development is acceptable on risk grounds, councils will also have to consider other factors in making their decisions.

Question 6.10 How are existing or continuing use rights affected by SEPP 33?

SEPP 33 could apply in situations where an operation is being carried out under existing use rights and a development application has been lodged to vary the existing use. Other provisions relating to existing use would still apply.

Question 6.11 For what purpose should the risk screening method described in section 7.1 and Appendix 4 be used?

The risk screening method is suggested simply as part of the process for deciding if a proposal is 'potentially hazardous industry' under SEPP 33. It should not be used in isolation (other factors are discussed in Appendix 3) or for:

- making decisions about the suitability of a proposal;
- making a comparison against any criteria or standard relating to risk acceptability; or
- risk management.

Question 6.12 Does the term 'potentially hazardous industry' mean that such an industry is hazardous?

If an industry is identified as a potentially hazardous industry, it does not necessarily mean that it is actually hazardous. It simply means that the merits of the proposal are required to be assessed, taking into account a preliminary hazard analysis.

Question 6.13 How can delays in processing applications under SEPP 33 be avoided?

The assessment of development applications need not be delayed because of the additional requirements of SEPP 33. To assist in the prompt processing of applications subject to the policy, consent authorities are advised to:

- ascertain at an early stage whether SEPP 33 applies. It is recommended consent authorities obtain from the applicant the information listed in Appendix 2, as soon as practicable, and apply the screening procedure outlined in section 7.1 and Appendix 4;
- obtain the views of relevant public authorities as early as possible; and
- use parallel processing— that is, while the DA (and accompanying preliminary hazard analysis, if necessary) is on exhibition, ensure that other relevant section 79C matters are addressed. In this way, consent authorities need then only assess the PHA and the matters raised in the submissions when the exhibition is complete.

7 Risk Screening

7.1 How to Identify Potentially Hazardous Industry

This section provides a risk screening method to assist consent authorities in determining whether a proposed development is potentially hazardous and thus affected by SEPP 33. The procedure is outlined in Figure 4. A worked example is included in Appendix 8 to help in understanding and applying risk screening.

Definitions

The following definitions are used throughout this section:

class — means the classification number assigned to a dangerous good to indicate its most significant type of risk

hazardous materials — are substances falling within the classification of the Australian Code for Transportation of Dangerous Goods by Road and Rail (Dangerous Goods Code). The classifications are summarised in Appendix 7

intermediate — means a partly processed substance formed during a manufacturing process which is neither unconverted raw material nor a finished product

LPG — is Liquefied Petroleum Gas as defined in Australian Standard AS1596

subsidiary risk — the classification number(s) indicating other significant types of risk(s) in addition to the primary classification of a substance.

The following steps explain how to determine if a proposed facility is potentially hazardous using the risk screening method. Further details of the method are provided in Appendix 4.

Collate Information

The following information should be obtained from the proponent:

- a list of all the hazardous materials used in the proposed development and the quantity of each present. If the proposed development is an addition or modification to an existing operation, the proponent should list all hazardous materials on the site which are in proximity to the proposed development;
- dangerous goods classification for each material, including subsidiary class(es);
- the mode of storage used (that is, bulk or packages/containers) and the maximum quantity stored or held on site;
- the distance of the stored material from the site boundary for any of the materials in dangerous goods classes 1.1, 2.1 and 3; and

Note: Where liquids are contained in a bunded area, the distance is measured from the bund wall rather than from the tank. For materials stored in underground tanks, the distance is measured from the above ground filling/dispensing point.

- the average number of annual and weekly road movements of hazardous material to and from the facility, and the typical quantity in each load.

The following information must also be taken into account:

- LPG, as defined in AS1596 — LP Gas Storage and Handling, though classified as a flammable gas (2.1), is treated separately for screening purposes and should not be grouped with the other class 2.1 flammable gases; and

Note: LPG automotive retail outlets fall within SEPP 33 but procedures for dealing with them are not covered in these guidelines. The required PHA should demonstrate to the consent authority compliance with the Department of Planning publication Hazardous Industry Locational Guidelines No 1 —Liquefied Petroleum Gas Automotive Retail Outlets.

- If combustible liquids of class C1 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, class 3PGI, II or III, then they are to be treated as class 3PGIII, because under these circumstances they may contribute fuel to a fire.

Identify Hazardous Materials and the Type of Hazard

Determine the quantities of all classes of hazardous materials listed in the development application and, if the proposed development is part of an existing plant, any adjacent inventory. Ensure that both the main class and any subsidiary classes obtained from the Dangerous Goods Code or from information provided in the Material Safety Data Sheets are noted so that all relevant hazards are considered.

Group and Total by Class, Activity and Location

Where several hazardous materials of the same class are kept on site in the same general location, total the quantities by class and activity (that is, total all quantities of each class stored in bulk then separately total the quantities of each class stored in packages/containers).

Table 1 provides the basis for the grouping. Do not add underground and above ground storage together — these must always be treated separately. If the proposed development is an extension to an existing site, include those inventories on the existing site that are adjacent to the proposed development.

If dangerous goods of a given class but varying packing groups are stored in the same general area, assume the total of that class is present as the most hazardous packing group (for example, if 3PGI and 3PGII are present, add these together and assume the equivalent total is of 3PGI).

Measure the distance of the material group to the nearest boundary. The distance is to be measured from those materials in the group located closest to the boundary.

Compare with Screening Threshold

Provided on the following page and in Appendix 4 is a series of tables and graphs which can be used to determine screening thresholds — quantities below which it can be assumed there is unlikely to be a significant off-site risk.

Table 1 indicates the graph and/or table to be used. Hazardous materials with more than one possible classification should be considered under each classification.

Table 1: Screening Method to be Used

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

Note: *Classes 1.4, 1.5, 1.6, 2.2, 7 and 9 are excluded from the risk screening. Classes used are those referred to in the Dangerous Goods Code and are explained in appendix 6.*

If Table 1 indicates that a graph is to be used: If the quantity is below the minimum quantity in Table 1, then it is not potentially hazardous and there is no need to use the graph.

Using the appropriate graph, plot the group total quantity against the distance from the nearest boundary. If the point lies below the screening threshold line, the proposed development is potentially hazardous.

For class 3 materials only, if storage is underground, the capacity of the tank should be divided by five prior to assessing it against the screening threshold.

If Table 1 indicates that Table 3 is to be used: If the quantity is in excess of the quantity listed in Table 3, the development is potentially hazardous.

Repeat this procedure until all hazardous materials have been assessed.

Consider Transportation Issues

The proposed development may be potentially hazardous if the number of generated traffic movements (for significant quantities of hazardous materials entering or leaving the site) is above the annual or weekly cumulative vehicle movements shown in Table 2.

If the proposal is found to be potentially hazardous with respect to transportation, a route evaluation study should be completed in accordance with the Department of Planning's *HIPAP 11: Route Selection*.

Table 2: Transportation Screening Thresholds

Class	Vehicle Movements		Minimum quantity*	
	Cumulative Annual	Peak or Weekly	per load (tonne) 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	

Note: Where proposals include materials of class 1, 6.2 or 7, the Department of Planning should be contacted for advice. Classes used are those referred to in the Dangerous Goods Code and are explained in Appendix 7.

* If quantities are below this level, the potential risk is unlikely to be significant unless the number of traffic movements is high.

Determine Whether SEPP 33 Applies

If any of the above tests result in a screening threshold being exceeded, the proposed development should be considered potentially hazardous and SEPP 33 will apply. In such cases, a preliminary hazard analysis (PHA) must be submitted with the development application. The PHA should be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 — Hazard Analysis*. An outline of the requirements for the preparation and assessment of a PHA is given in Appendix 5.

Appendix 1

Selected Publications Relevant to the Application of SEPP 33

Department of Planning Publications

Clause 13(a) of SEPP 33 requires the consent authority to consider 'current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development'. In accordance with this clause, the following publications should be considered in the consent authority's determination:

HIPAP No. 1 — Industry Emergency Planning Guidelines

This document provides guidance in preparing emergency plans for premises which process, store or transport hazardous substances. All such activities must have such plans, and they should be tailored to the specific needs and hazards managed at each premise.

HIPAP No. 2 — Fire Safety Study Guidelines

This document provides advice on carrying out fire safety studies, which are required as part of an overall safety assessment.

HIPAP No. 3 — Environmental Risk Impact Assessment Guidelines

HIPAP No. 3 outlines the safety planning requirements for industrial development including land use safety requirements for siting hazardous industry. It also describes the studies required as part of the department's seven stage approval process, which was described earlier in these guidelines.

HIPAP No. 4 — Risk Criteria for Land Use Safety Planning

HIPAP No. 4 will be particularly relevant to consent authorities when assessing the level of risk of proposed developments, and in determining their significance. The guidelines suggest risk assessment criteria to consider when assessing the land use safety implications of potentially hazardous development.

HIPAP No. 5 — Hazard Audit Guidelines

Hazard audits are an integral part of the environmental risk assessment process for potentially hazardous development. They are required to be carried out routinely for the life of a development. HIPAP No. 5 provides guidance on the nature and content of hazard audits and the requirements for audit reports.

HIPAP No. 6 — Hazard Analysis

HIPAP No. 6 will be particularly useful in preparing and assessing the preliminary hazard analysis required to support development applications for potentially hazardous industry. HIPAP No. 6 provides information on hazard analysis principles and methods.

HIPAP No. 7 — Construction Safety Study Guidelines

Construction safety is an important element of the department's seven stage approval process. HIPAP No. 7 has two main purposes:

- to ensure that risk levels during the construction period of an affected development are acceptable; and

- to ensure the plant operates safely during commissioning and throughout its life.

HIPAP No. 8 — HAZOP Guidelines

A Hazard and Operability study (HAZOP) identifies potential hazards and operational problems in terms of plant design and human error by the comprehensive and systematic scrutiny of the facility. The procedure uses flow/ process and instrumentation diagrams (P&IDs) and in most cases 'guide words'.

HIPAP No. 9 — Safety Management

Assurance of the ongoing safety of process plants and storage facilities is provided through a well documented and thoroughly implemented Safety Management System (SMS). HIPAP No. 9 describes safety management principles and their implementation in formal SMS.

HIPAP No. 10 — Land Use Safety Planning

Land use safety planning is essentially a mechanism for dealing with actual or potential conflicts between sources of risk, such as potentially hazardous industrial developments, and surrounding land uses.

These guidelines provide advice to planning authorities and other stakeholders on strategic land use safety planning and development assessment and control. They also discuss risk criteria and emergency planning in the context of development in the vicinity of potentially hazardous development.

HIPAP No. 11 — Route Selection

These guidelines provide an overall integrated framework for the assessment of road transport routes for the transportation of hazardous materials. The basic principles are that optimum transportation decisions can only be made when all relevant aspects of environmental/land use safety, traffic and economic elements are exposed and integrated into the decision making process.

HIPAP No. 12 — Hazards-Related Conditions of Consent

These guidelines are intended mainly for consent authorities. They describe a process for setting 'fit-for-purpose' conditions of consent commensurate with the hazards and risks associated with a proposed development.

LPG Automotive Retail Outlets — Locational Guidelines

This document specifies locational criteria and technical controls for automotive LPG retail outlets. The locational criteria are determined in reference to nearby land uses, and the quantity of LPG involved.

Managing Land Contamination — Planning Guidelines SEPP 55 — Remediation of Land

These guidelines alert consent authorities to the need to consider the possibility of contamination of land in its planning and development control process, and provides guidance to planning authorities and other stakeholders.

Multi-Level Risk Assessment

These guidelines provide a graded or multi-level risk assessment framework to ensure an appropriate level of analysis and assessment

Other Publications

Australian Code for the Transport of Dangerous Goods by Road and Rail

These guidelines are based on the 7th Edition of the Code, which came into force in January 2009.

Appendix 2

Checklist of Information Required to Identify SEPP 33 Development

In some cases, the applicability of SEPP 33 is not immediately apparent. In such instances, applicants should be requested to address the matters listed below, to provide Councils with adequate information to base a judgement as to whether or not SEPP 33 applies,

(a) Information required in relation to the risk screening method of *Applying SEPP 33*:

Applicants should carry out the risk screening shown in the Department's *Applying SEPP 33 Application Guidelines*. Details of the background information and the calculations should be provided, such as:

- all dangerous goods and otherwise hazardous materials involved in the proposed development - include raw materials, intermediates, and products;
- Dangerous Goods classifications (including all subsidiary classes) for all Dangerous Goods held on site;
- quantities of dangerous goods and otherwise hazardous materials involved in the proposed development;
- if developing an existing site, all existing dangerous goods and otherwise hazardous materials and their quantities;
- distance from the boundary for each hazardous substance;
- weekly and annual number of deliveries (and the quantities) of dangerous goods and otherwise hazardous materials to and from the facility;
- site layout plan showing proposed development and any existing development on site;
- local layout plan showing immediate neighbours and their activities; and
- a locality plan showing the nearest residential property.

(b) Information required to identify other risk factors:

In order to identify hazards outside of the scope of the risk screening method, applicants should provide details of:

- any incompatible materials (hazardous and non hazardous materials);
- any wastes that could be hazardous;
- the possible existence of dusts within confined areas;
- types of activities the dangerous goods and otherwise hazardous materials are associated with (storage, processing, reaction, etc.);
- 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) temperatures and/or pressures; and

- details of known past incidents (and near misses) involving hazardous materials and processes in similar industries.

(c) Information required to identify potentially offensive industry:

The Applicant should provide information relating to pollution potential, including:

- A listing of any materials or processes that could produce air, noise, water or other emissions with a potential for pollution; and
- Details of known requirements for pollution control licenses, permits or agreements.

Appendix 3

Industries that may fall within SEPP 33

INDUSTRIES THAT MAY BE POTENTIALLY HAZARDOUS

Industry	Sources of Hazard	Possible Impacts
Aluminium dross processing	Emissions	Exposure to toxic hydrogen fluoride gas
Chemical, including resins, fertilisers and pesticides	Raw materials, Products, Process conditions	Fire, explosion, toxic exposure
Coal handling	Coal dust	Dust explosion
Food processing	Refrigerant leaks(Ammonia)	Toxic and explosive gas
Grain handling	Grain dust	Dust explosion
Industrial gas processing, storage and handling	Toxic, flammable or pressurised gases	Fire, explosion, toxic exposure
LPG storage and handling facilities	Gas leaks	Fire, explosion
Metal foundries	Water trapped in scrap	Steam explosion with spray of molten metal
Oil and gas extraction and processing	Pressurised gas in wells, processing conditions	Fire, explosion
Paint and surface coatings	Solvents	Fire, explosion, emissions of toxic gases
Petrochemical	Various petrochemicals, Process conditions	Fire, explosion, exposure to toxic gases & liquids
Petrol stations	Liquid fuel leaks/spills	Fire, explosion
Petroleum refining	Liquid Fuels, Gas, Process conditions	Fire, explosion
Pool chemicals	Mixing of incompatible chemicals	Fire, toxic gas release
Pulp and paper manufacture	Processing chemicals	Toxic exposure, environmental damage
Smelting (e.g. Copper, Aluminium, Zinc)	Emissions	Sulphur dioxide, acid mist emissions
Starch	Dust	Dust explosions
Vegetable oil extraction and processing	Oil, Seedcake, Spent bleaching earth, Solvent	Spontaneous combustion, Fire, explosion
Waste lubricating oil recycling	Dissolved fuels.	Fire, explosion
Water/Sewage treatment	Chemical spills, Mixing of incompatibles	Exposure to toxic liquids and gases

The above list is illustrative and is not exhaustive. Consent authorities should refer to the *IAEA Table II Checklist* in the Department's *Multi-Level Risk Assessment Guidelines* for additional industry types and an indication of some potentially hazardous substances that are typically associated with such industries.

Schedule 3 of the *Environmental Planning and Assessment Regulation* provides a further description of a number of categories of industry with a potential for significant environmental impact. For these industries, consent authorities may need to seek further information from applicants in order to form a view as to whether or not SEPP 33 would apply.

EXAMPLES OF RISK FACTORS BEYOND THOSE COVERED BY THE RISK SCREENING METHOD OF *APPLYING SEPP 33*

In several of the following examples, the quantities of Dangerous Goods are below those which the risk screening method would identify as representing a potentially significant risk that would make the development potentially hazardous and thus require the application of SEPP 33. In other examples, the hazard arises from factors other than the presence of dangerous goods that are covered in the risk screening method.

The examples illustrate factors which Councils should consider in deciding whether or not the policy applies.

Example 1: Material Incompatibility

Documentation associated with a proposed development shows a stored quantity of 10 tonne of Sodium Hypochlorite (liquid pool chlorine) and 10 tonne of Hydrochloric Acid. Both are Dangerous Goods Class 8 PGII. Reference to the risk screening tables (Table 3) indicates that the threshold for Class 8 PG II Dangerous Goods is 25 tonnes. Total quantity is below the SEPP 33 threshold.

However, in the event of the two chemicals mixing, such as from a spill or inadvertent delivery into the wrong tank, a large chlorine cloud could result with major off site consequences. The proposed development may be potentially hazardous if there is a possibility that incompatible materials could be brought together.

Example 2: Material Incompatibility

A warehousing proposal includes the storage of up to 1 tonne of Calcium Hypochlorite (dry pool chlorine, which is a Class 5.1 Dangerous Good) and up to 25 tonne of Hydrochloric Acid, a Class 8 Dangerous Good. Table 3 (of the screening method) shows these quantities to be below the screening thresholds.

An accidental spill, resulting in mixing of these materials, will release toxic chlorine gas with potential off site impacts. Therefore the development may be potentially hazardous.

These first two examples highlight the need to ensure that applicants provide comprehensive information in relation to possible hazards (see Appendix 2)

Example 3: Problems in Identifying Dangerous Goods

At an Oilseed processing plant, the 'seed cake' (oilseed meal) by-product was being sold as animal feed and 'spent bleaching earth' residue was initially disposed of externally. Subsequently, due to spontaneous combustion problems associated with the spent bleaching earth, it could no longer be externally disposed of and was, instead, added to the seed cake. 'Seed cake' and 'spent bleaching earth' are class 4.2 Dangerous Goods, since they are spontaneous combustible.

These materials were not identified as Dangerous Goods in the documentation supporting the development application, since descriptions such as 'seed cake' and 'spent bleaching earth' were considered innocuous. The development was not recognised as being potentially hazardous and SEPP 33 was not applied. Hence, a Preliminary Hazard Analysis was not carried out. The Silo containing the feed subsequently exploded resulting in the deaths of three people.

This example highlights the importance of ensuring that applicants provide the consent authority with all relevant information, including the classification of, and hazards associated with, dangerous goods or other materials that are proposed to be handled, processed or stored.

Example 4: Dust Explosions

Some combustible dusts that are not Dangerous Goods can cause explosions if there is a combination of a dust concentration within the explosive range and the presence of an ignition source. Static electricity is the most common source of ignition, due to the dry conditions typically prevailing within a dusty atmosphere. Coal dust and grain/flour dust are two examples of such materials.

Proposals for the storage and handling of dusts and other finely divided materials should be carefully scrutinised to consider whether they should be considered potentially hazardous industry due to dust explosion factors.

Example 5: Molten Metal Processing

Molten metal processing such as reprocessing of Aluminium scrap may be potentially hazardous due to the high temperature of the molten metal and the possibility of accidents arising from impurities in the feed.

For example, if a scrap aluminium can containing water is added to the melt, the liquid in the can is converted to high pressure steam, which could cause the violent expulsion of molten metal, steam and toxic vapours.

Proposals for metal processing, involving molten metal and scrap processing should be considered as potentially hazardous.

Example 6: Dangerous Goods in Systems and Equipment

Some industrial equipment may contain quantities of Dangerous Goods that over and above those accounted for in considering materials in storage (for example, ammonia held in refrigeration systems or chemicals in process plant, equipment and piping). Furthermore, the way in which the systems and equipment are operated may mean that the potential hazard is greater than if the same quantity of Dangerous Goods is held in static storage.

An example of such a situation would be a chemical process reactor in which there are relatively small quantities of reactive chemicals being held, but under conditions of elevated temperature and pressure.

Applicants should be asked to account for all such materials and for possible hazards associated with their use.

INDUSTRIES THAT MAY BE POTENTIALLY OFFENSIVE

Industry	Sources of Offence	Possible Impacts
Agricultural produce processing	Process, waste	Air, water
Bitumen pre-mix and hot-mix industries	Hot bituminous materials	Air
Cement works, crushing grinding and separating works generally	Grinding and crushing	Air, noise
Chemical industries and works	Raw materials, process, waste	Air, water
Drum reconditioning	Drums	Noise
Food & beverage processing (including breweries and distilleries)	Raw materials, products, waste	Air, water
Livestock operations	Waste	Air, water
Metal processing	Process	Noise
Metal recycling	Process	Noise
Petrochemical	Process, raw material, waste,	Air, water
Petroleum refining	Process	Air, water
Sewage treatment	Process	Air, water
Starch	Process	Air, water
Timber/pulp/paper	Process, waste	Air, water
Waste (grease trap)	Waste	Air, water
Waste (landfilling/processing)	Waste	Air, water

The above list is illustrative and is not exhaustive. Schedule 3 of the *Environmental Planning and Assessment Regulation* provides a further description of a number of categories of industry with a potential for significant environmental impact. For these industries, consent authorities may need to seek further information from applicants in order for to form a view as to whether or not SEPP 33 would apply.

Appendix 4

Applying Risk Screening for Potentially Hazardous Industry

Provided below is a more detailed explanation of the risk screening method outlined in section 7 of the main document.

Introduction

Potential risk typically depends on five main factors:

- the properties of the substance(s) being handled or stored;
- the conditions of storage or use;
- the quantity involved;
- the location with respect to the site boundary; and
- the surrounding land use.

The procedure for considering whether a proposed development is potentially hazardous using the risk screening method is outlined in Figure 4. It primarily considers the first four of the above factors.

Risk screening is based on an estimate of the consequences of fire, explosion or toxic release from material(s) being handled. It takes into account information from the proponent on the properties of the materials), quantity, type of storage or use, and location. A series of graphs and tables are provided to assist in this estimation.

Conservative assumptions are used throughout to simplify the assessment process. For this reason, the results from an evaluation should not be used beyond the purpose of these guidelines. In particular, as risk levels are indicative only, they should not be used as a basis for withholding development consent. Development consent would need to be refused on hazards grounds only where the subsequent risk assessment was unable to demonstrate that there was no significant risk.

While the concept of potential hazard within SEPP 33 covers risks to the biophysical environment as well as to the public, the approach contained in this section only applies to atypical risks to the public, since assessment of possible risk to the biophysical environment is a complex issue not readily lending itself to a screening procedure.

Examples are included throughout this section to help in understanding and applying the procedure.

A fully worked example is contained in Appendix 8.

Appendix 2 contains a check list of information that the consent authority should obtain from the proponent in order to assess whether or not the proposed development is potentially hazardous. The checklist also considers factors additional to those covered in the risk screening procedure.

HOW TO DETERMINE IF A PROPOSED FACILITY IS POTENTIALLY HAZARDOUS

The first step is to determine the type and quantity of hazardous materials present and how they are used or stored on site. The materials should be classified in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (Dangerous Goods Code). The classification is summarised in Appendix 7. If SEPP 33

does apply, the development application should be accompanied by a preliminary hazard analysis (PHA).

Example 1: How to Read the Australian Dangerous Goods Code

The extract on the following page shows a selection of four substances from the Code.

Once this information has been collated, quantities of materials of similar risk and activity are grouped and totalled. A graph and/or table is then used to determine whether the quantities represent a potential hazard and thus require further assessment. Table 1 indicates which graph and/or table is to be used to consider a particular class. These steps in the procedure are outlined in Figure 4 and are detailed below.

Collate Information

The proponent should provide the following information:

- a list of all the hazardous materials used in the proposed development and the quantity of each present. This should include all hazardous materials relating to the development which are stored on site, including any raw materials, intermediates and products. The proponent should also indicate if the proposed development is an addition or modification to an existing operation. If it is, the proponent should list all hazardous materials on the site which are in proximity to the proposed development;
- dangerous goods classification for each material;
- the mode of storage used (bulk or packages/ containers) and the maximum quantity stored or held on site;
- the distance of the stored material from the site boundary for any of the materials in dangerous goods classes 1.1, 2.1 and 3; and

Note: Where liquids are contained in a bunded area, distance should be measured from the bund wall rather than from the tank. For materials stored in underground tanks, the distance from the above ground filling/dispensing point is measured.

- the average number of annual and weekly road movements of hazardous material to and from the facility, and the typical quantity in each load.

In collating information the following additional considerations apply:

- LPG as defined in Australian Standard AS1596 — LP Gas Storage and Handling may be a combination of propane, butane, propylene and/or butylene. Though a member of dangerous goods class 2.1, LPG is treated separately for screening purposes and should not be grouped with the other class 2.1 flammable gases; and

Note: LPG automotive retail outlets fall within SEPP 33 but procedures for dealing with them are not covered in these guidelines. Consent authorities are referred to the NSW Department of Planning publication *Hazardous Industry Locational Guidelines No 1 — Liquefied Petroleum Gas Automotive Retail Outlets*.

- If class C1 liquids are present on site and stored in a separate bund (or within a storage area where they are the only flammable liquid present), they are not considered to be potentially hazardous. If, however, they are stored with other flammable liquids (that is, class 3PGI, II or III) then they are to be treated as class 3PGIII — because under these circumstances they may contribute fuel to a fire.

Extract from ADG Code

Each page of the Code is headed by a series of columns, as explained below

Anhydrous ammonia should be treated as a class 2.3 toxic gas AND a class 8 corrosive substance.

Thresholds for three classes should be considered: class 8 corrosive substances, class 3PGI flammable liquids and class 6.1 toxic substances. Since no packing group has been assigned to the subsidiary risk, the same packing group as the primary classification should conservatively be used (i.e. PGI)

This is a Class 3PGI flammable liquid. No subsidiary risk need be considered

This is a Class 5.1PGIII oxidising agent. No subsidiary risk need be considered

UN No. (1)	Name and Description (2)	Class (3)	Subsidiary Risk (4)	Pack- ing Group (5)	Special Pro- visions (6)	Limited Quantities (7)	Packaging & IBC's		Portable Tanks & Bulk Containers	
							Packing Instructions (8)	Special Packing Provisions (9)	Instruc- tions (10)	Special Provisions (11)
1005	AMMONIA, ANHYDROUS	2.3	8		23	0	P200			T50
2029	HYDRAZINE, ANHYDROUS	8	3 6.1	I		0	P001			
1280	PROPYLENE OXIDE	3		I		0	P001		T11	
1505	SODIUM PERSULPHATE	5.1		III		5 kg	P002 IBC08 LP02	B3	T1	TP33

Note: For the purposes of the SEPP 33 screening method, columns 6 to 11 are not relevant. The Dangerous Goods Code is summarised in Appendix 7.

Identify Hazardous Materials and the Type of Hazard

Determine the quantities of all classes of hazardous materials listed in the development application and, if the proposed development is part of an existing plant, any adjacent inventory. Ensure that both the main class and any subsidiary classes obtained from the Dangerous Goods Code or from information provided in the Material Safety Data Sheets are noted so that all relevant hazards are considered.

Example 2: Identify the Type of Hazard

DoP Chemicals has submitted a development application in which one of the chemicals to be held on-site is 5 tonne hydrazine.

From the Dangerous Goods Code, as detailed in example 1, hydrazine has the following dangerous goods classifications:

Hydrazine	8	3PGI	6.1 PGI
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Hydrazine is classified as a flammable liquid with packing group I (class 3PGI), a toxic substance (class 6.1 PGI) and a corrosive substance (class 8). Therefore the possible risk from hydrazine may be manifested in any of these three ways. In order to account for this in the risk screening method the consent authority should assume that the development application actually contains the following for 5 tonne hydrazine:

5 tonne class 3PGI

5 tonne class 6.1PGI

5 tonne class 8

In this example a risk could arise out of either flammability, toxicity or corrosiveness, depending on the location.

Group and Total by Class, Activity and Location

Where several hazardous materials of the same class are kept on site in the same general location, *total the quantities by class and activity* (that is, total all quantities of each class stored in bulk then separately total the quantities of each class stored in packages/containers).

Table 1 provided the basis for the grouping. *Do not add underground and above ground storage together* — these must always be treated separately. If the proposed development is an extension to an existing site, include those inventories on the existing site that are adjacent to the proposed development.

If more than one subsidiary class of a given class is stored in the same general area, assume the total of that class present is the most hazardous subclass present (for example, if 3PGI and 3PGII are present, add these together and assume the equivalent total is of 3PGI).

Measure the distance of the material group to the nearest boundary. The distance is to be measured from those materials in the group located closest to the boundary.

Example 3: Group and Total by Class

The full development application for DoP Chemicals actually contains the following materials:

Quantity	Material	Classifications
<i>Above ground and stored in the same general area:</i>		
5 tonne	hydrazine	3PGI 6.1 PGI 8
5 tonne	anhydrous ammonia	2.3 8
10 tonne	methyl formate	3PGI
2.5 tonne	LPG	2.1
<i>and stored below ground:</i>		
30 tonne	LPG	2.1

The class 3 materials are all 3PGI, the most highly flammable subclass. The LPG storages can not be added together as one facility is located above ground, the other underground. This leads to the following grouping:

Classification	Quantity	
2.1 LPG	2.5 tonne	(above ground)
2.1 LPG	30 tonne	(underground)
2.3	5 tonne	
3PGI	15 tonne	
6.1 PGI	5 tonne	
8	10 tonne	

Compare with Screening Threshold

The series of tables and graphs provided in section 7 and in this appendix are used to determine screening thresholds — quantities below which it can be assumed there is unlikely to be a significant off-site risk, in the absence of other risk factors (see Appendix 3).

Table 1 indicates the graph and/or table to be used. The table is based on the dangerous goods classification assigned to each material. As noted in the previous step, hazardous materials with more than one possible classification should be considered under each classification.

For materials where the effect of distance is not clearly defined (for example class 8 corrosives) the screening threshold quantity is included in a table. For those materials which have a predominant fire and/or explosive risk, graphs indicating quantity versus distance relationships are used to calculate the threshold.

If Table 1 indicates that a graph is to be used:

If the quantity is below the minimum quantity in Table 1, then the amount is unlikely to represent a significant risk and therefore, is not potentially hazardous.

Using the appropriate graph, plot the group total quantity against the distance from the nearest boundary. If the point lies below the screening threshold line, the proposed development is potentially hazardous.

For class 3 materials only, *if storage is underground*, the capacity of the tank should be divided by five prior to assessing against the screening threshold. This

adjustment takes into account the generally lower fire and explosion risk of flammable liquids posed by underground installations.

If Table 1 indicates that Table 3 is to be used:

Using Table 3, if the quantity is in excess of the quantity listed in the table, the proposal is potentially hazardous.

Repeat screening threshold comparisons until all hazardous materials have been assessed.

In using the screening method some classes of dangerous goods are excluded from the risk screening. The classes, and the reason for their exclusion are listed below

Class 1.4—1.6 — are explosives defined as having no significant hazard in storage, as any effects are largely contained within the packages. Their manufacture is designated development as defined in schedule 3 of the Environmental Planning and Assessment Regulation 1994.

Class 2.2 — are non-flammable, non-toxic gases and are not considered to be potentially hazardous with respect to off-site risk.

Class 7 — covers radioactive substances which are adequately covered by national regulations and guidelines. The consent authority may wish to require details of compliance.

Class 9 — are 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.

Example 4: Compare with Screening Threshold

The DoP Chemicals development application (from the previous example), contained the following classifications located in the same general area at a minimum of 20 m from the site boundary. From Table 1 the following information is obtained:

Classification	Quantity	Table 1 refers to
2.1 LPG (above ground)	2.5 tonne	table 3
2.1 LPG (underground)	30 tonne	table 3
2.3	5 tonne	table 3
3PGI	15 tonne	Figure 8 (as greater than 1 tonne)
6.1 PGI	5 tonne	table 3
8	10 tonne	table 3

Class 2.1 LPG (above ground):

The development application indicates that the proposal involves 2.5 tonne of LPG stored above ground. From Table 3, if there is less than a total of 10 tonne stored above ground, the development *is not potentially hazardous* on the basis of that material, alone.

Class 2.1 LPG (underground):

The development application indicates that the proposal involves 30 m³ of LPG stored underground. From table 3, if there is less than 64 m³ stored underground or mounded, the development *is not potentially hazardous* on the basis of that material, alone.

Class 2.3:

The development application indicates that the proposal involves 5 m³ of class 2.3. From table 3, above 20 m³ of 'other' class 2.3 material is potentially hazardous. Therefore the development *is not potentially hazardous* on the basis of that material, alone.

Class 3PGI:

The development application indicates that the proposal involves 15 tonne of class 3PGI. From Figure 8, as there was more than 1 tonne on site, the 'screening distance' for 15 m³ was determined to be approximately 12 m from the boundary. The development application indicates that the storage area is a minimum of 20 m from the site boundary. Therefore the development *is not potentially hazardous* on the basis of that material, alone.

Class 6.1 PGI:

The development application indicates that the proposal involves 5 tonne of class 6.1 PGI. From Table 3, above 1 m³ is considered potentially hazardous. Therefore the development *is potentially hazardous*.

Class 8:

The development application indicates that the proposal involves 10 m³ of corrosive materials (class 8). From the Dangerous Goods Code, as this was a subsidiary risk for both materials, assume conservatively the most severe case (therefore assume class 8PGI). From table 3, above 5 m³ is considered potentially hazardous. Therefore the development *is potentially hazardous* on the basis of this material, also.

The development is potentially hazardous and a PHA is required.

Consider Transportation Issues

The proposed development may also be potentially hazardous if the number of generated traffic movements for significant quantities of hazardous materials entering or leaving the site is above the cumulative annual or peak weekly vehicle movements in table 2 (p. 21).

If the proposed development is found to be potentially hazardous with respect to transportation, a route evaluation study should be completed in accordance with *Hazardous Industry Planning Advisory Paper No. 6— Route Selection*.

Determine Whether SEPP 33 Applies

If any of the above tests results in a screening threshold being exceeded, the proposed development should be considered potentially hazardous and SEPP 33 will apply.

In such cases, a preliminary hazard analysis (PHA) is required to be submitted with the development application. The PHA should be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6— Hazard Analysis*. An outline of the preparation and assessment of a PHA is given in appendix 4.

It should be noted that the screening procedure is conservative and should not lead to the conclusion that the development is hazardous. Rather, it indicates there may be significant potential for harm, so, further analysis of the risk is required (as provided in the PHA).

Figure 4: Risk Screening Procedure

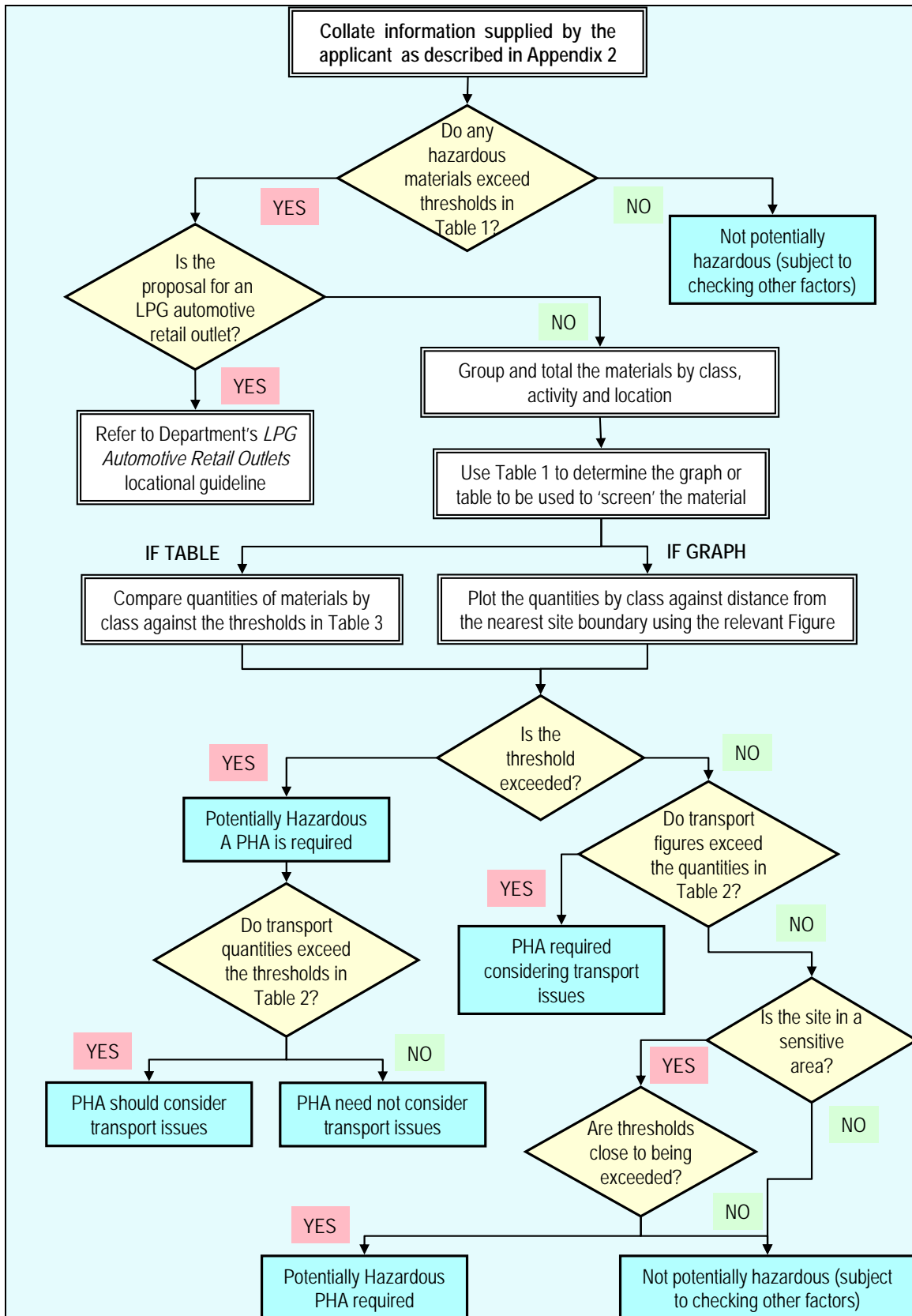


Table 3: General Screening Threshold Quantities

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 or 16 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

Note: The classes used are those referred to in the Australian Dangerous Goods Code and are explained in Appendix 7.

¹ These are covered by the department's *Locational Guidelines No 1 – LPG Automotive Retail Outlets*.

Note: In the following figures, the term 'sensitive' refers to residential or other more sensitive land uses. 'Other' applies to all other land uses (e.g. commercial or industrial).

Figure 5: Class 1.1 Explosives

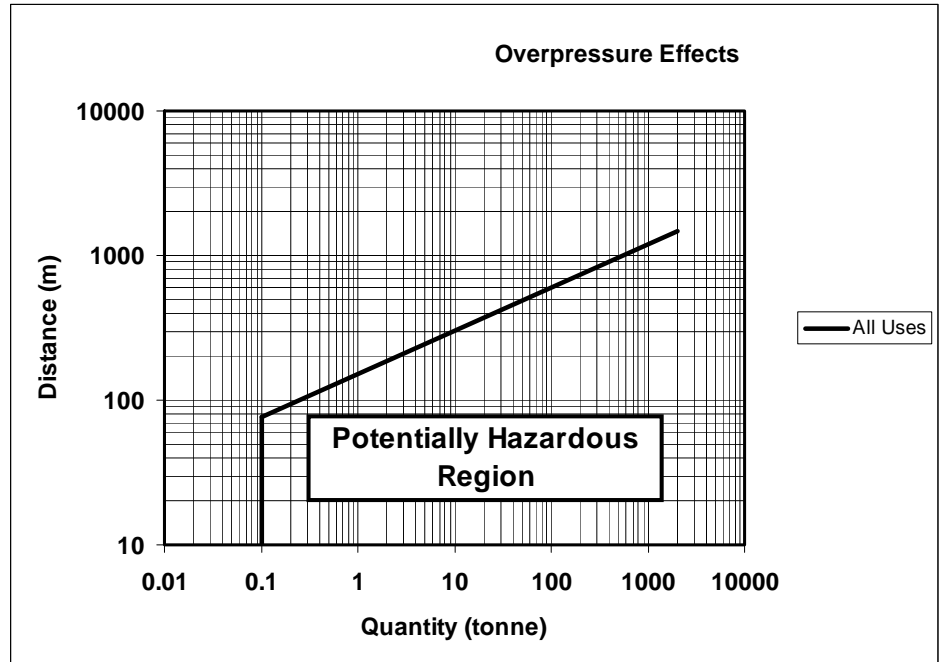


Figure 6: Class 2.1 Flammable Gases Pressurised (Excluding LPG)

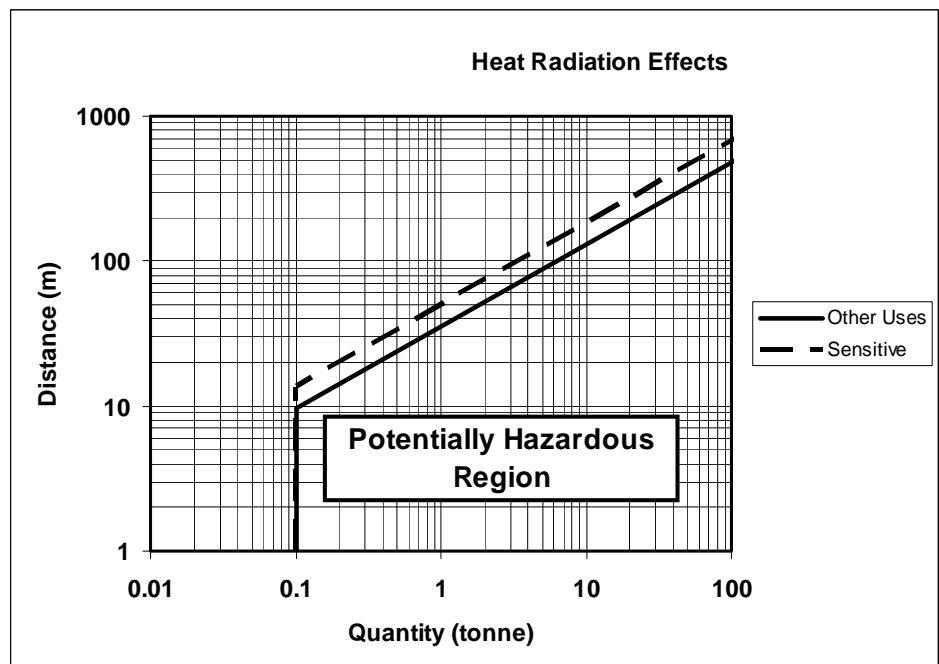


Figure 7: Class 2.1 Flammable Gases Liquefied Under Pressure (Excluding LPG)

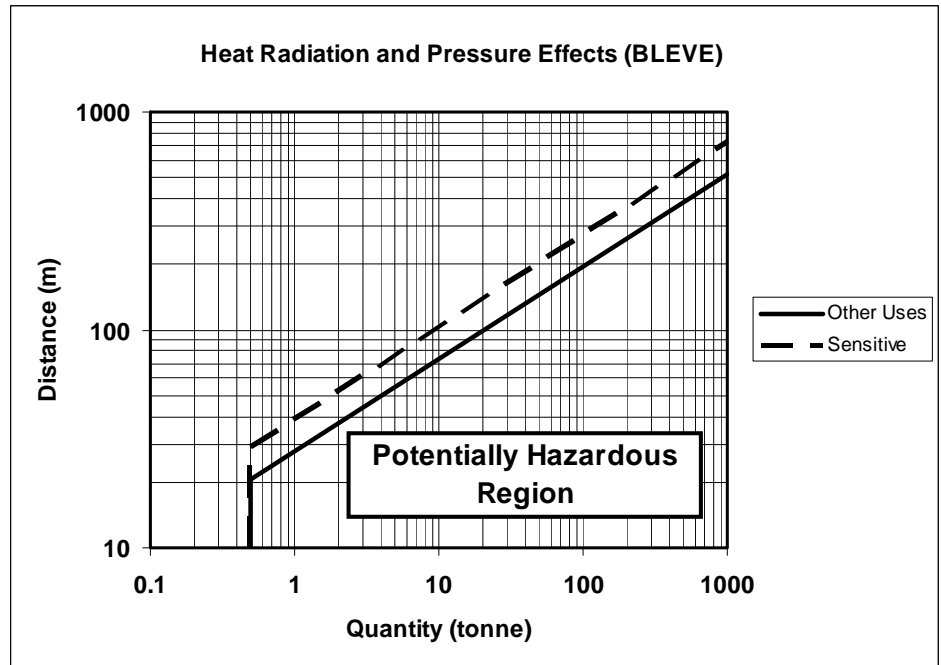


Figure 8: Class 3PGI Flammable Liquids

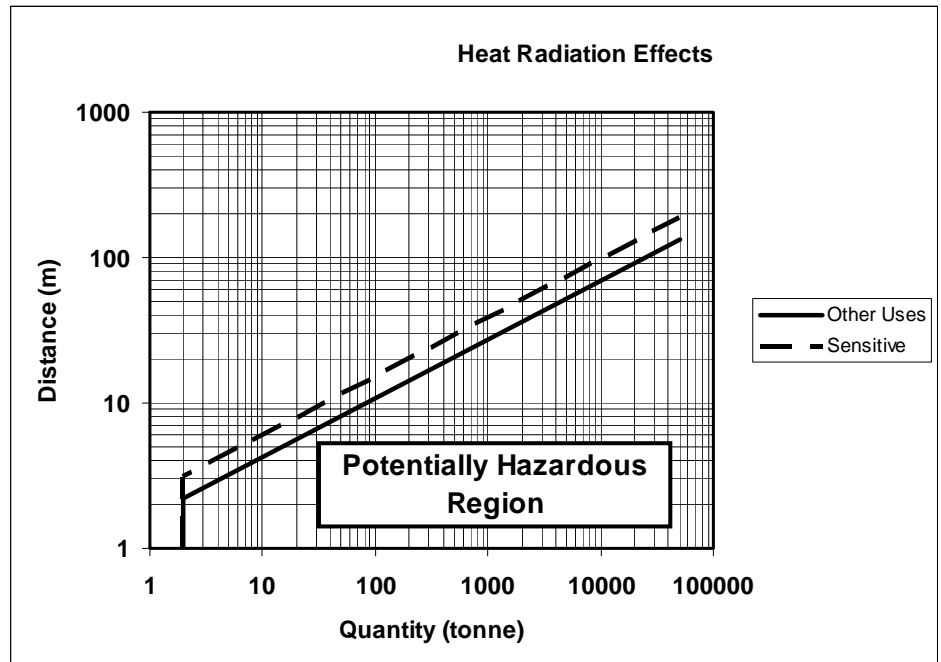
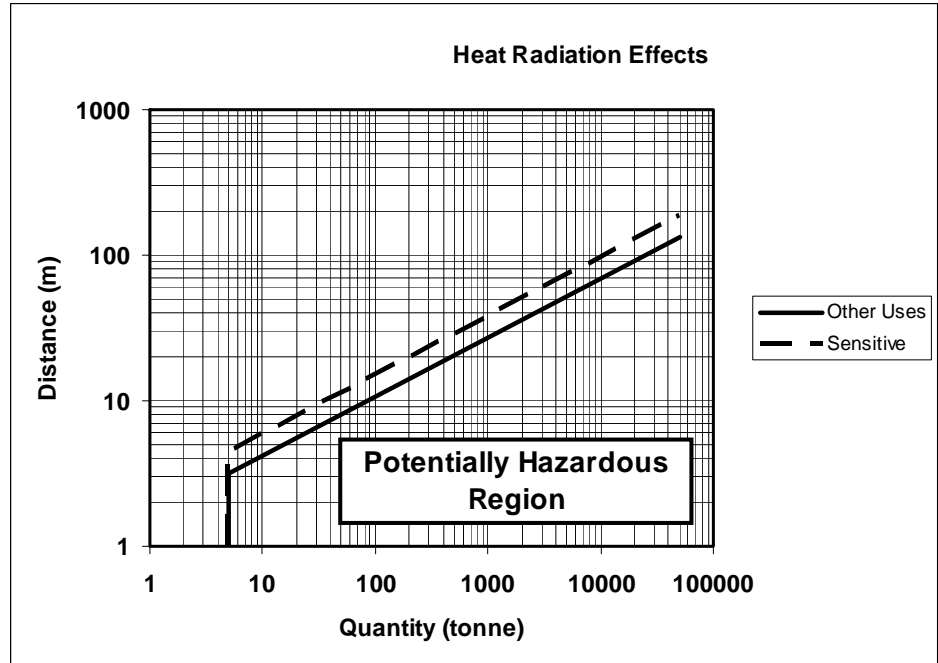


Figure 9: Class 3PGII and 3PGIII Flammable Liquids



Appendix 5

Guidance on the Preliminary Hazard Analysis

This appendix provides guidance on the scope of a preliminary hazard analysis (PHA), and how it should be assessed.

Clause 12 of SEPP 33 specifies that a PHA must be prepared for development applications for 'potentially hazardous industry'. The PHA should be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 6 — Hazard Analysis* published by the Department of Planning. The Department's *Multi-Level Risk Assessment* guideline is also of particular relevance.

The purpose of the PHA is to:

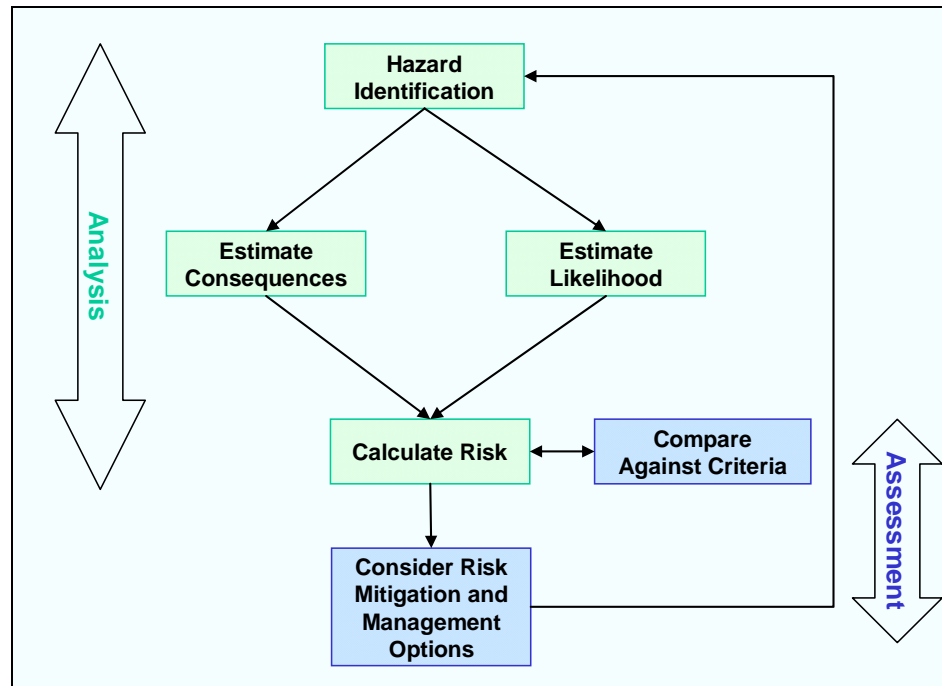
- identify all potential hazards associated with the proposal;
- analyse all hazards in terms of their consequences (effects) to people and the biophysical environment and their likelihood of occurrence;
- quantify the analysis and estimate the resultant risks to surrounding land uses and the environment; and
- assess the risks in terms of the location, land use planning implications and existing criteria and ensure that the proposed safeguards are adequate and thus demonstrate that the operation will not impose an unacceptable level of risk.

The term "preliminary hazard analysis" is sometimes mistakenly interpreted as representing a shallow or sketchy analysis. Rather, the PHA is an in-depth risk investigation which is preliminary only in the sense that it is based on the preliminary information available at the time the analysis is carried out (typically prior to detailed design). The approach needs to be consistent with that outlined in Figure 11. A need for a further in-depth analysis may arise depending on any substantial changes that occur during design.

The process of risk analysis and risk assessment is shown in Figure 10. Criteria for land use safety planning are discussed in *Hazardous Industry Planning Advisory Paper (HIPAP) No. 4*.

The techniques used in carrying out a hazard analysis are described in greater detail in *Hazardous Industry Planning Advisory Paper (HIPAP) No. 6*.

Figure 10: The Risk Analysis and Assessment Process



Multi-Level Approaches to Risk Assessment

As shown in Figure 11, the level and extent of a risk analysis should reflect the nature, scale and location of each development.

DoP has developed Multi-Level Risk Assessment Guidelines, which provide a graded or multi-level framework aimed at providing consistency and an appropriate level of analysis and assessment. In each case, the objective is to progress the analysis and its assessment only as far as is needed to demonstrate that the operation being studied does not or will not pose a significant risk to surrounding land uses. This may be achieved by using a combination of qualitative and quantitative approaches.

The multi-level approach is built around a consequence-based screening method set out in these guidelines and a rapid risk classification technique described in the United Nations *Manual for the classification and prioritization of risks due to major accidents in process and related industries* (the IAEA method)

The guidelines set out criteria for using the results of the screening, classification and prioritisation steps to determine which of the three levels of analysis is appropriate.

Level 1 is an essentially qualitative approach based on comprehensive hazard identification to demonstrate that the activity does not pose a significant risk.

Level 2 supplements the qualitative analysis by sufficiently quantifying the main risk contributors to show that risk criteria will not be exceeded.

Level 3 is a full quantitative analysis.

A **qualitative** assessment may suffice provided all or most of the following conditions are met:

- screening and risk classification and prioritisation indicate there are no major off-site consequences and societal risk is negligible;
- the necessary technical and management safeguards are well understood and readily implemented; and

- there are no sensitive surrounding land uses.

If the qualitative analysis cannot demonstrate there will be no significant risk, a further level of analysis will be required.

Partial quantification would normally be applied to developments where screening, hazard identification and/or risk classification and prioritisation has identified one or more risk contributors with consequences beyond the site boundaries but with a low frequency of occurrence. Otherwise, a full **quantitative analysis** should be carried out.

Figure 11 illustrates the multi-level approach.

On a large site, it is likely that the risk assessment will employ a combination of techniques. This ensures that analysis effort is concentrated on areas of greatest hazard.

Some of the elements that need to be considered at each level, and the tests of adequacy that may be applied by a planning authority in assessing the adequacy of a PHA and the acceptability of the risks, are outlined in Table 4.

Figure 11: Multi-Level Risk Assessment Approach

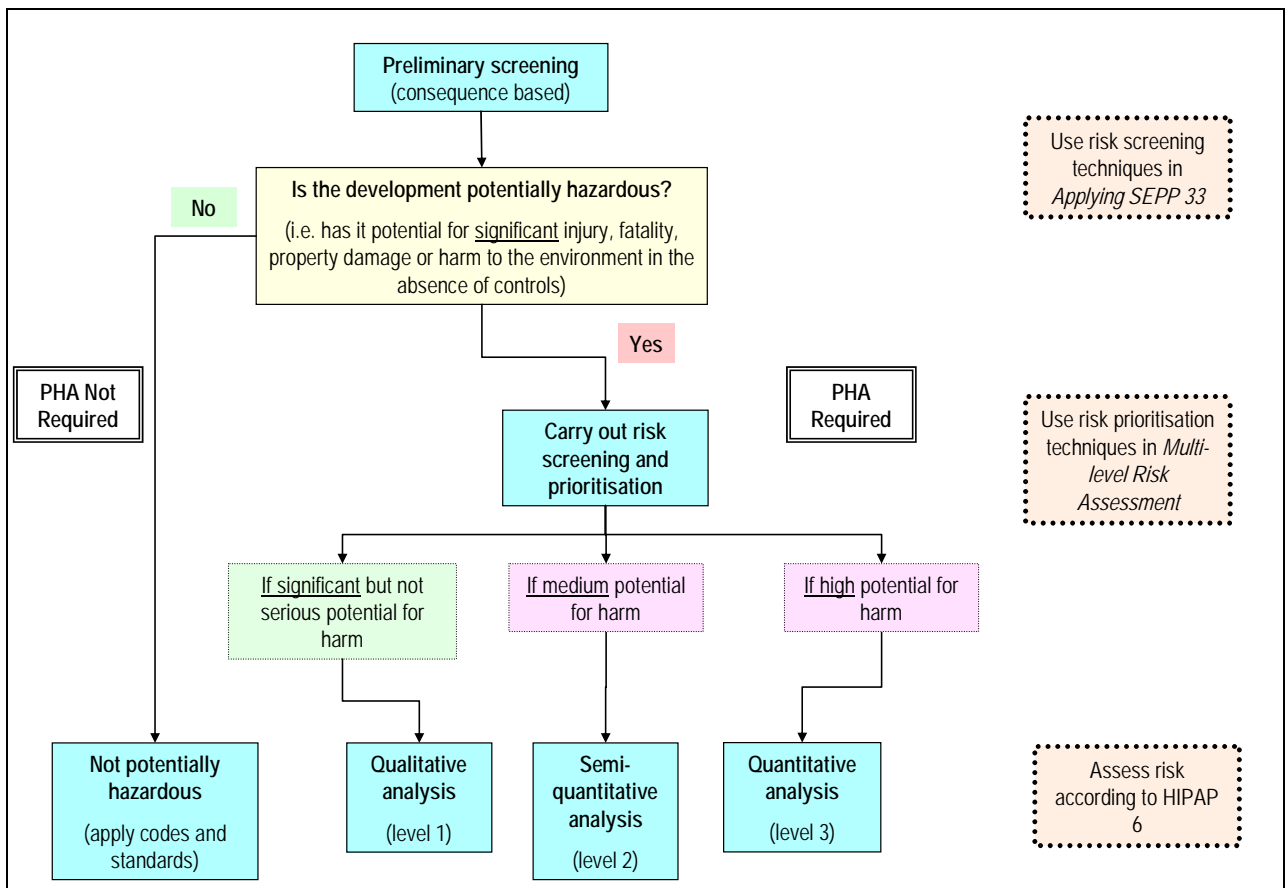


Table 4: Levels of Analysis and Assessment

Key Elements	Assessment Basis
Level 1 – Essentially Qualitative	
<ul style="list-style-type: none"> hazard identification using summary diagram, FMEA, fault and event trees, HAZOP etc. identification of key scenarios and qualitative estimate of risks comparisons with qualitative criteria. thorough discussion of protective technical and management measures, including codes and standards 	<ul style="list-style-type: none"> appropriate methods used for identification all key scenarios thoroughly examined realistic estimates of risk relevant qualitative criteria met proposed measures appropriate and sufficient compliance with all relevant codes and standards
Level 2 – Partially Quantitative	
<ul style="list-style-type: none"> qualitative elements as for level 1 rigorous quantification of consequences of all events with significant off-site effects quantification of the likelihood of events with significant off-site' consequences indicative estimate of risk vs. criteria thorough discussion of technical controls, risk reduction and management measures 	<ul style="list-style-type: none"> qualitative elements as for level 1 sound consequence methodology used and appropriate failure data used technical methods and results appropriately documented relevant criteria shown to be met appropriate controls and safeguards
Level 3 – Fully Quantitative	
<ul style="list-style-type: none"> qualitative elements as for level 1 comprehensive quantification of significant consequences and their likelihood evaluation of risk against all relevant criteria thorough discussion of technical controls, risk reduction and management measures 	<ul style="list-style-type: none"> qualitative elements as for level 1 sound consequence methodology used appropriate failure data used technical methods and results well-documented all relevant criteria met ALARP principles followed appropriate technical and procedural controls and safety management system

These assessment bases may be used when considering risks from new facilities and additions and/or modifications to existing facilities. They may also be used in the analysis and assessment of the risk from existing facilities and in making comparative studies of alternate processes and locations.

Some other factors that a consent authority should consider include:

- how far the proposed distance to the site boundary falls below the required separation distance. The difference between the required and intended separation distance represents the distance that the consequences of a hazardous incident may impinge on adjoining land. The greater this distance, then the more safeguards are usually needed to control the consequences to these exposed areas;
- the nature of the hazards involved, and how predictable they are. There are three main types of hazards: fire, explosion and toxic release. Generally the

consequences from fire and explosion hazards are more predictable than hazards involving toxic substances;

- the safeguards (both technical and management) available to mitigate the hazards, and if such safeguards are reasonably evident, do they appear likely to work? For example, bunding is all that is generally required to mitigate the hazards involved in storage of corrosive substances. Fire protection or prevention systems (such as an adequate fire fighting system, or the construction of a fire wall) are generally effective in reducing the consequence distance (and hence the hazard caused by fire);
- the surrounding land uses, and whether an incident will result in significant consequences, or whether there is anything that might require special precautions or further hazard mitigation measures;
- whether there are existing codes, standards or guidelines that apply, and whether the proposal complies with these standards; and
- whether conditions of consent can be included to mitigate the hazard potential of a proposal.

For some of the proposals affected by SEPP 33, it is possible that after considering the above matters, the consent authority could reasonably form a view as to whether the proposal can proceed on hazard grounds.

Assessment of Risk to the Biophysical Environment

The procedure for identifying a potentially hazardous development outlined in section 4 does not explicitly include an assessment of its risk to the biophysical environment. The consent authority should judge the level of potential risk to the environment based on such factors as:

- the particular qualities of the environment (for example, the likely presence of rare or threatened species, water courses, etc.);
- the nature of the hazards that the environment will be exposed to, and the likely consequences should such hazards occur; and
- the likely response of the environment to such a hazard, and the reversibility of any hazardous impact.

In the case of the biophysical environment, fire and explosion hazards are of less relevance when compared to the effect of these hazards on people. Acute and chronic toxicity impacts are those which must be chiefly addressed. There is, generally, less concern over the effect on individual plants or animals. Here, the main concern is about whole systems or populations.

The assessment of the ultimate effects from toxic releases into the natural ecosystem is difficult, particularly in the case of atypical accidental releases. Data are limited and factors influencing the outcome are variable and complex. There may be no immediate loss of plants or animals or other observable effects from single releases, but there may be cumulative and synergistic effects. It is therefore appropriate to ensure that a thorough review of available data is undertaken and the best available information is used in the assessment process.

In many cases, it may not be possible or practicable to establish the final impact of any particular release. It may be appropriate in such circumstances to assess the likelihood of identified concentrations occurring in the air, water or soil. Where such intermediate criteria are used, the assessment should err on the conservative side.

Because of the complexities of such assessment and case-to-case differences, it is inappropriate to specify hard and fast criteria. The acceptability of the risk will ultimately depend on the value of the potentially affected area or system to the local community and wider society. For example, where a rare or endangered ecosystem or species is

involved, a much lower risk level is necessary than where the potentially exposed area or system is degraded and/or common.

Relevant factors in the capacity of a population or ecosystem to recover include the extent of other stresses and the possibility of re-population of affected areas.

In assessing the significance of any risk to the environment, it should also be borne in mind that in most cases where there is an environmental risk, there will also be an individual risk (to people). As higher importance is attached to public risk, and because the risk criteria are in any case conservative, it is likely that, if the risk to people is found to be acceptable, then the environmental risk could also be tolerated.

For those rare cases in which the environmental risk is judged to be more important than public risk (as in areas isolated from people or areas of environmental significance) the consent authority may wish to obtain more information about the significance of the environment. It would also be necessary to consider safeguards that could be applied to reduce risk. For example, environmental risk due to a leak of corrosive liquids could be significantly reduced by appropriate bunding.

For environmentally sensitive areas, the suggested criteria for assessing risk relates to the potential effects of an accidental emission on the long-term viability of the ecosystem or any species within it. The criteria may be expressed as follows:

- Industrial developments should not be sited in proximity to sensitive natural environments where the effects (consequences) of the more likely accidental emissions may threaten the long-term viability of the ecosystem or any species within it.
- Industrial developments should not be sited in proximity to sensitive natural environments where the likelihood (probability) of impacts which may threaten the long-term viability of the ecosystem (or any species within it) is not substantially lower than the background level of threat to the ecosystem.

Appendix 6

Conditions of Consent for Potentially Hazardous Development

Note: The following standard conditions of consent are taken from *HIPAP 12: Hazards-Related Conditions of Consent*. They should be applied in accordance with those guidelines. In particular, Table 2 of HIPAP 12 should be consulted in deciding which of the following conditions should be imposed.

HIPAP 12 includes suggested conditions of consent for three categories of development:

1. Low Hazard
2. Medium Hazard
3. High Hazard

Section 2.3 of HIPAP 12 sets out principles for deciding into which category a particular project falls. Conditions of consent should be tailored to be “fit-for-purpose” in addressing both the category of development and its hazards and risks. The following conditions of consent are for a medium hazard development determined by Council.

Pre-construction

1. At least one month prior to the commencement of construction of the proposed development (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as Council may agree, the Applicant shall prepare and submit for the approval of Council the studies set out under subsections 1(a) to 1(d) (the pre-construction studies). Construction, other than of preliminary works, shall not commence until approval has been given by Council and, with respect to the Fire Safety Study, approval has also been given by Fire and Rescue NSW.

(a) FIRE SAFETY STUDY

A Fire Safety Study for the proposed development. This study shall cover the relevant aspects of the Department of Planning’s Hazardous Industry Planning Advisory Paper No. 2, ‘Fire Safety Study Guidelines’ and the New South Wales Government’s ‘Best Practice Guidelines for Contaminated Water Retention and Treatment Systems’. The study shall also be submitted for approval to Fire and Rescue NSW.

(b) HAZARD AND OPERABILITY STUDY

A Hazard and Operability Study for the proposed development, chaired by an independent qualified person approved by Council prior to the commencement of the study. The study shall be carried out in accordance with the Department of Planning’s Hazardous Industry Planning Advisory Paper No. 8, ‘HAZOP Guidelines’. The study report must be accompanied by a program for the implementation of all recommendations made in the report. If the Applicant intends to defer the implementation of a recommendation, justification must be included.

(c) FINAL HAZARD ANALYSIS

A Final Hazard Analysis of the proposed development prepared in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'.

(d) CONSTRUCTION SAFETY STUDY

A Construction Safety Study prepared in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety Study Guidelines'. For developments in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.

Pre-commissioning

2. The Applicant shall develop and implement the plans and systems set out under subsections (e) to (g). No later than two months prior to the commencement of commissioning of the proposed development, or within such further period as Council may agree, the Applicant shall submit for the approval of Council documentation describing those plans and systems. Commissioning shall not commence until approval has been given by Council.

(e) TRANSPORT OF HAZARDOUS MATERIALS

Arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the proposed development. The routes shall be selected in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No 11, 'Route Selection'. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.

(f) EMERGENCY PLAN

A comprehensive Emergency Plan and detailed emergency procedures for the proposed development. This plan shall include detailed procedures for the safety of all people outside of the development who may be at risk from the development. The plan shall be in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 1, 'Industry Emergency Planning Guidelines'.

(g) SAFETY MANAGEMENT SYSTEM

A document setting out a comprehensive Safety Management System, covering all on-site operations and associated transport activities involving hazardous materials. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on-site and shall be available for inspection by Council upon request. The Safety Management System shall be developed in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'.

Pre-startup2. PRE-STARTUP COMPLIANCE REPORT

One month prior to the commencement of operation of the development, the Applicant shall submit to Council, a report detailing compliance with conditions 1 and 2, including:

- (a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
- (b) actions taken or proposed, to implement recommendations made in the studies/plans/systems; and
- (c) responses to each requirement imposed by Council under condition 6.

Post-startup

3. POST-STARTUP COMPLIANCE REPORT

Three months after the commencement of operation of the development, the Applicant shall submit to Council, a report verifying that:

- (a) transport routes specified under condition 1(e) are being followed;
- (b) the Emergency Plan required under condition 1(f) is effectively in place and that at least one emergency exercise has been conducted; and
- (c) the Safety Management System required under condition 1(g) has been fully implemented and that records required by the system are being kept.

Ongoing

4. INCIDENT REPORT

Within 24 hours of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Department outlining the basic facts. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. That report must be submitted to Council no later than 14 days after the incident or potential incident.

The Applicant shall maintain a register of accidents, incidents and potential incidents. The register shall be made available for inspection at any time by the independent Hazard Auditor and Council.

5. HAZARD AUDIT

Twelve months after the commencement of operations of the proposed development or within such further period as Council may agree, the Applicant shall carry out a comprehensive Hazard Audit of the proposed development and within one month of the audit submit a report to Council.

The audit shall be carried out at the Applicant's expense by a duly qualified independent person or team approved by Council prior to commencement of the audit. Further audits shall be carried out every three years or as determined by Council and a report of each audit shall within a month of the audit be submitted to Council. Hazard Audits shall be carried out in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines'.

The audit shall include a review of the site Safety Management System and a review of all entries made in the incident register since the previous audit.

The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, justification must be included.

6. FURTHER REQUIREMENTS

The Applicant shall comply with all reasonable requirements of Council in respect of the implementation of any measures arising from the reports submitted in respect of conditions 1 to 5 inclusive, within such time as Council may agree.

Appendix 7

Summary of the ADG Code Classifications

Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their chemical or physical properties. Dangerous goods are usually classified with reference to the immediate hazard they pose rather than the long-term health effects.

In Australia, dangerous goods are defined by the Australian Dangerous Goods Code (ADG). Classifications in *Applying SEPP 33* are based on the 7th Edition of the ADG.

Packing groups are used to indicate the degree of danger associated with the transport of dangerous goods of a given class:

packing group I	Substances presenting high danger
packing group II	Substances presenting medium danger
packing group III	Substances presenting low danger

It should be noted that packing groups are not assigned to classes 1, 2 and 7 or to Divisions 5.2, 6.2 or self reactive substances of Division 4.1

Readers are referred to the ADG Code for a more detailed explanation of the classes.

Table 5: Summary Classification of Dangerous Goods

Class/ Division	Packing Group	Description
1.1	N/A	Substances and articles which have a mass explosion hazard.
1.2	N/A	Substances and articles which have a projection hazard but not a mass explosion hazard.
1.3	N/A	Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both but not a mass explosion hazard
1.4	N/A	Substances and articles which present no significant hazard.
1.5	N/A	Very insensitive substances which have a mass explosion hazard.
1.6	N/A	Extremely insensitive articles which do not have a mass explosion hazard.
2.1	N/A	Flammable gases
2.2	N/A	Non-flammable, non-toxic gases
2.3	N/A	Toxic gases
3	I, II or III	Flammable liquids
4.1	I, II or III	Flammable solids, self-reactive substances and solid desensitised explosives
4.2	I, II or III	Substances liable to spontaneous combustion

Class/ Division	Packing Group	Description
4.3	I, II or III	Substances which in contact with water emit flammable gases
5.1	I, II or III	Oxidising Substances
5.2	I, II or III	Organic peroxides
6.1	I, II or III	Toxic substances
6.2	I, II or III	Infectious substances
7	N/A	Radioactive material
8	I, II or III	Corrosive substances
9	I, II or III	Miscellaneous dangerous goods and articles

Note that C1 combustible liquids are not a dangerous good under UN (United Nations) classification. They are defined as dangerous goods under workplace legislation. This also applies to goods too dangerous to be transported.

WorkCover NSW Notification

Where dangerous goods are used or stored in volumes greater than the threshold quantities detailed below, WorkCover NSW must be notified, and manifests and emergency plans must be developed. Table 1 shows the thresholds applying at the time of writing.

Table 6: WorkCover Notification Thresholds

Dangerous Goods	Packing Group	Manifest Threshold Quantities
Class 2.1	N/A	5000 L
Class 2.2	N/A	10,000 L
Class 2.2/5.1	N/A	10,000 L
Class 2.3	N/A	500L
Aerosols	N/A	10,000 L
Cryogenic Fluids	N/A	10,000 L
Class 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, or 8	I	500 kg or L
	II	2,500 kg or L
	III	10,000 kg or L
	Mixed Packing Groups in a single Class, with each below the relevant threshold	10,000 kg or L
Class 9	II	10,000 kg or L
	III	10,000 kg or L
	Mixed Packing Groups in Class 9, with each below the relevant threshold	10,000 kg or L

Dangerous Goods	Packing Group	Manifest Threshold Quantities
C1 Combustible Liquids stored with other fire risk dangerous goods	Stored with other fire risk dangerous goods	10,000 kg or L
C1 Combustible Liquids stored separately	N/A	100,000 kg or L
Goods too dangerous to be transported that are not kept in a laboratory.	N/A	Any quantity

Appendix 8

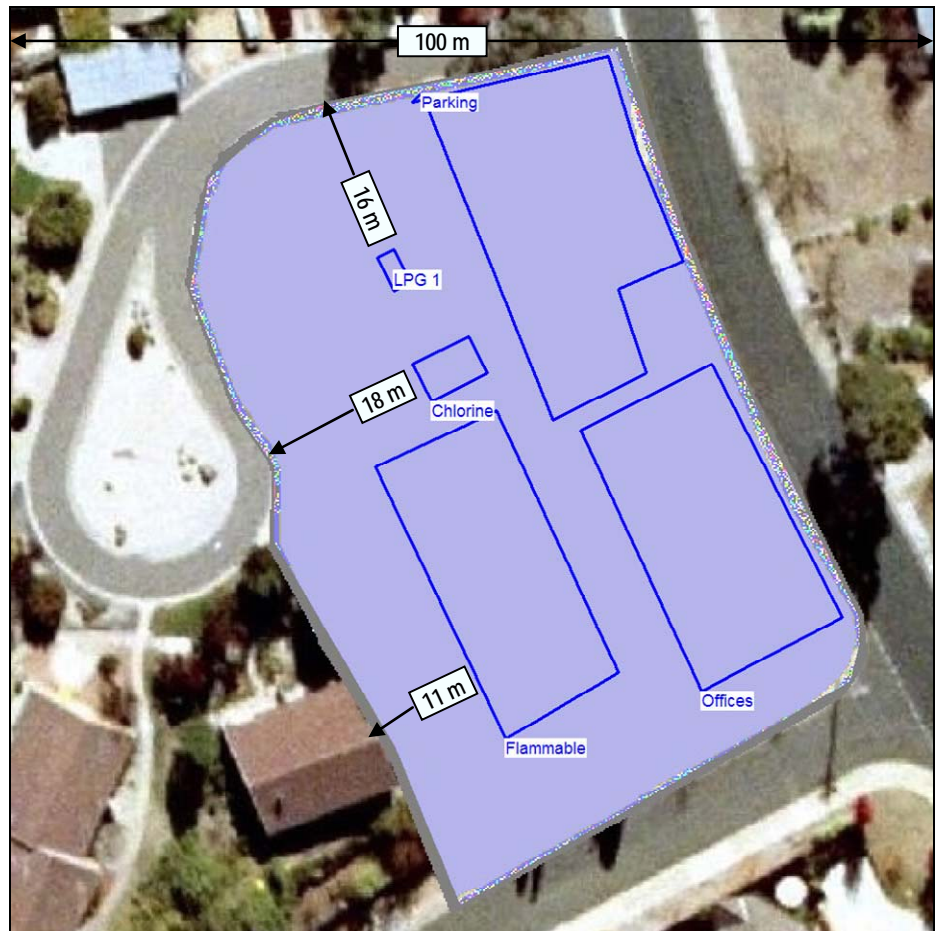
Is it Potentially Hazardous? A Worked Example

The example facility shown in Figure 12 demonstrates the use of the risk screening process.

Note: The example is solely for illustrative purposes. It does not reflect real-life statutory provisions relating to dangerous goods storage or zoning provisions, which would make it unlikely that such a facility could be located in a predominantly residential area.

DoP Chemicals proposes a facility on a small industrial estate. Surrounding land use is residential.

Figure 12: Example Facility Layout



The facility consists of five main areas:

1. Parking
2. Offices
3. LPG Storage (above ground horizontal tank)
4. Chlorine cylinder storage (200 kg cylinders in enclosed building)
5. Flammable liquids compound (open, bunded area). These are all dangerous goods class 3PGII, stored in 205 litre drums.

Details of the various materials stored are shown in Table 7. The screening method to be used in each case is read from Table 1.

Table 7: Example Facility - Material Details

Area No	Material	DG Class	Qty (tonne)	Screening Method	Threshold (tonne)	Notes
3	LPG	2.1	15	Table 3	10	Above the threshold
4	Chlorine	2.3	2	Table 3	2.5	Below the threshold
5	Various	3PGII	200	Figure 9	40 (approx)	Above the "sensitive" threshold at 11 m from the closest residential boundary

On the basis of this information, the proposed development is potentially hazardous and a PHA is required.

It should be noted that the PHA required by SEPP 33 should to cover all materials that may present a hazard and not just those where the quantities are above the screening threshold.

Appendix 9

Glossary of Terms and Abbreviations

Term/Abbreviation	Meaning
ADG Code	Australian Dangerous Goods Code
Consent Authority	The body with the responsibility for determining a development application (this is typically a local council or the Minister for Planning)
CSS	Construction Safety Study (typically required as one of the conditions of consent for a potentially hazardous development)
DECCW	The Department of Environment, Conservation, Climate Change and Water
Designated development	A Development falling into one or more of the definitions in Schedule 3 of the EP&A Regulation 2000. Such developments require an EIS to be submitted with the Development Application. Prior to preparation of the EIS, the applicant must consult the Director General of planning for advice on the matters to be addressed in the EIS. SEPP 33 may apply, whether or not a development is designated.
Development Application (DA)	If a development requires consent under Part 4 of the EP&A Act, an application for development consent must be submitted to the relevant consent authority)
DoP	The Department of Planning
EIS	Environmental Impact Statement. An EIS is required for a designated development.
EP&A Act	Environmental Planning and Assessment Act 1979 (as amended)
EPA	Environment Protection Authority. The EPA is now incorporated into DECCW
FHA	Final Hazard Analysis (typically required as one of the conditions of consent for a potentially hazardous development)
FSS	Fire Safety Study (typically required as one of the conditions of consent for a potentially hazardous development)
HAZOP	Hazard and Operability Study (typically required as one of the conditions of consent for a potentially hazardous development)
HIPAP	Hazardous Industry Planning Advisory Paper
IAEA	International Atomic Energy Agency
Industry	This is defined in the Schedule to the <i>Standard Instrument (Local Environmental Plans) Order 2006</i> , which sets out the standard provisions for a local environmental plan. 'Industry' means the manufacturing, production, assembling, altering, formulating, repairing, renovating, ornamenting, finishing, cleaning, washing, dismantling, transforming, processing or adapting, or the research and development of

	any goods, chemical substances, food, agricultural or beverage products, or articles for commercial purposes, but does not include extractive industry or a mine.
LEP	Local Environmental Plan. The LEP sets out what types of development are permissible in a given locality and whether or not development consent is required.
Major Project	A Project determined by the Minister for Planning in accordance with Part 3A of the EP&A Act.
PG	Packing Group, as defined in the ADG Code
PHA	Preliminary Hazard Analysis (SEPP 33 requires a PHA to be prepared and submitted with any DA for a potentially hazardous industry)
SEPP	State Environmental Planning Policy. A SEPP sets out planning policies which apply to the whole State or such part of the State as is described in the policy. SEPP 33 applies to the whole State.
SMS	Safety Management System (typically required as one of the conditions of consent for a potentially hazardous development)

Additional Information

Relevant DoP Publications

Hazardous Industry Planning Advisory Papers (HIPAPs):

- No. 1 - Emergency Planning
- No. 2 - Fire Safety Study Guidelines
- No. 3 - Risk Assessment Guidelines
- No. 4 - Risk Criteria for Land Use Planning
- No. 5 - Hazard Audit Guidelines
- No. 6 - Hazard Analysis
- No. 7 - Construction Safety Studies
- No. 8 - HAZOP Guidelines
- No. 9 - Safety Management
- No. 10 - Land Use Safety Planning
- No. 11 - Route Selection
- No. 12 - Hazards-Related Conditions of Consent

Other Publications:

Applying SEPP 33: Hazardous and Offensive Development Application Guidelines

Multi-level Risk Assessment

Locational Guideline: Liquefied Petroleum Gas Automotive Retail Outlets

Locational Guideline: Development in the Vicinity of Operating Coal Seam Methane Wells

Electronic copies of some of these publications are available at:

www.planning.nsw.gov.au