



**Fire &
Rescue NSW**

Guidelines for built environment

Guideline for emergency plans at sites having hazardous chemicals



Version 03 – 10 October 2012

**Structural Fire Safety Unit
Community Safety Directorate**



© Copyright State Government of NSW (FRNSW) 2012

All rights reserved. The information contained in this report is provided to inform. Apart from any use as permitted under the Copyright Act 1968, no part of this report may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from Fire & Rescue NSW (FRNSW).

Produced by

Fire & Rescue NSW
Community Safety Directorate
Amarina Avenue
Greenacre NSW 2190

Document Control

Version 03 – Issued 10 October 2012

Version	Date	Reviewed by:	Authorised by:
03	10 Oct 12	MSFSU	ADBER
02	02 Feb 10	MSFSU	DCS
01	01 Aug 06	MFSD	DRM

Contact Us

Fire & Rescue NSW
Structural Fire Safety Unit
Locked Bag 12
Greenacre NSW 2190

Telephone: (02) 9742 7400
Facsimile: (02) 9742 7483
Hours: 9am to 5pm, Monday to Friday

Email: Firesafety.NSWFB@fire.nsw.gov.au
Web: www.fire.nsw.gov.au



Contents		Page
1	Scope	3
2	Application	3
3	Definitions	3
4	Scope of Emergency Plan	5
4.1	Basic Hazardous Chemicals Site	5
4.2	Mixed Class Hazardous Chemicals Site	6
4.3	Explosives Site	6
4.4	Major Hazard Facilities (MHF's)	6
5	Contents of an Emergency Plan	6
5.1	Emergency Services Information Package (ESIP)	6
5.2	Title Page and Authority	7
5.3	Structured Document Information	8
5.4	Introductory Matter	8
5.5	Aims and Objectives of the Plan	8
5.6	Emergencies and Responses	9
5.7	Compatibility with Incident Management Plans	11
5.8	Administrative Matters	11
5.9	Appendices	12
5.10	Contact List	12
5.11	Location Map and Site Layout Plan	12
6	Location of Emergency Plan	15
7	References	15
8	Further Assistance	15
Annex A	Emergency Plan Template	16



1 Scope

This document details Fire & Rescue NSW (FRNSW) minimum requirements for an emergency plan required to be developed for sites other than Major Hazard Facilities (refer to section 4.4) having 'manifest' quantities of hazardous materials or threshold quantities of explosives/security sensitive dangerous substances.

2 Application

This document should be used as a guide by occupiers of hazardous chemical sites and explosive sites to assist in developing an emergency plan for their site. The emergency plan is a critical component in implementing appropriate emergency management strategies.

The *Work Health and Safety Regulation 2011 (WHS Reg.)* places the onus upon employers, controllers of premises, occupiers/operators of hazardous chemical sites to carry out a comprehensive risk assessment to identify, eliminate or control hazards and risks at the site. This risk assessment must be used as the basis for developing the emergency plan.

The *WHS Reg.* also requires employers, controllers of premises, occupiers/operators of hazardous chemical sites to provide such information, instruction and training to employees and other persons as may be necessary to ensure their health and safety.

The emergency plan incorporates pre incident information regarding the facility and required actions to be undertaken in response to various emergency events. An emergency plan is a critical component of the overall site emergency management system which provides procedural and operational guidelines to the emergency controller, site manager, fire wardens and first aid officers. All personnel involved the implementation of the emergency plan need to be trained and involved in regular exercises to test assumptions made in the emergency plan.

The emergency plan also contains information which assists emergency services personnel in formulating appropriate incident management strategies and tactics.

An emergency plan must be developed and provided:

- (a) In accordance with Clause 361 of the *WHS Reg.* when 'manifest' quantities of hazardous chemicals are used, handled or stored;
- (b) In accordance with Clause 66 of the *Explosives Regulation 2005* when threshold quantities of explosives or security sensitive dangerous substances are stored; and
- (c) In accordance with Clause 557 of the *WHS Reg.* for Major Hazard Facilities.

3 Definitions

The following definitions apply in this document;

- (a) **Assembly area** — a safe pre designated open space where persons must assemble after evacuation.



- (b) **Basic hazardous chemicals site** — means:
- (i) a site that stores, uses or handles manifest quantities of a single class of hazardous chemical where any relevant risk assessment indicates there should be no off site impacts/effects; or
 - (ii) Petrol stations with 'manifest' quantities of Class 2.1 and 3 hazardous chemicals only.
- (c) **Emergency incident** — an emergency can be described as an abnormal and dangerous or potentially dangerous situation that harms or threatens to harm persons, property or the environment which requires urgent action to control, correct and return to a safe condition.
- (d) **Emergency plan** — a written plan which details the operational procedures required to be undertaken to deal with an emergency.
- (e) **Emergency Services Information Package (ESIP)** — a removable and laminated inclusion at the front of the Emergency Plan that contains concise relevant information to allow emergency services to commence initial combat operations.
- (f) **Fire Safety Equipment (FSE)** — equipment installed on site or within a building which provides fire safety through detection, monitoring and suppression systems (e.g. alarms, sprinklers, hydrants, fire hose reels, and Fire Indicator Panel (FIP), Emergency Warning and Intercommunication System (EWIS)).
- (g) **Hazardous chemical** — means a substance, mixture or article that satisfies the criteria for a hazard class in the GHS (including a classification referred to in Schedule 6), but does not include a substance, mixture or article that satisfies the criteria solely for one of the following hazard classes:
- (a) acute toxicity — oral — category 5,
 - (b) acute toxicity — dermal — category 5,
 - (c) acute toxicity — inhalation — category 5,
 - (d) skin corrosion/irritation — category 3,
 - (e) serious eye damage/eye irritation — category 2B,
 - (f) aspiration hazard — category 2,
 - (g) flammable gas — category 2,
 - (h) acute hazard to the aquatic environment — category 1, 2 or 3,
 - (i) chronic hazard to the aquatic environment — category 1, 2, 3 or 4,
 - (j) hazardous to the ozone layer.

Note: The Schedule 6 tables replace some tables in the GHS.



- (h) **Major Hazard Facility (MHF)** — means a facility:
- (a) at which Schedule 15 chemicals are present or likely to be present in a quantity that exceeds their threshold quantity, or
 - (b) that is determined by the regulator under Part 9.2 to be a major hazard facility.

Note: Schedule 15 and Part 9.2 are references to the *WHS Reg.*

- (i) **Manifest quantities** — in relation to a hazardous chemical, means the manifest quantity referred to in Schedule 11, table 11.1, column 5 of the *WHS Reg.* for that hazardous chemical.
- (j) **Mixed class hazardous chemical site** — a site that stores, uses or handles multiples classes of hazardous chemicals above placard quantity and/or consists of multiple hazardous chemical stores/depots where the total quantity of hazardous chemicals exceeds manifest quantity, and a site that does not qualify as a basic hazardous chemical site.
- (k) **Placard quantities** — in relation to a hazardous chemical, means the placard quantity referred to in Schedule 11, table 11.1 column 4 of the *WHS Reg.*
- (l) **Security sensitive dangerous substance** — includes security sensitive ammonium nitrate.
- (m) **Security sensitive ammonium nitrate** — means any of the following:
 - (i) ammonium nitrate that is not a dangerous good of Class 1,
 - (ii) ammonium nitrate emulsions, suspensions or gels containing greater than 45% ammonium nitrate,
 - (iii) ammonium nitrate mixtures containing greater than 45% ammonium nitrate, but does not include ammonium nitrate solutions.

4 Scope of Emergency Plan

Any emergency plan should be developed using the premises/sites risk assessment as a basis for determining what is required at the site, the emergency plan must be site specific and 'fit for purpose' e.g. for a small site the plan need not be overly complex.

As the size of the site, quantities and nature of hazardous chemicals/explosives increases, so too must the level of detailed inclusions in the emergency plan. All assumptions and response strategies developed in the emergency plan must be realistic and achievable. Emergency plans must be provided at locations in accordance with Section 6.

4.1 Basic Hazardous Chemicals Site

As a minimum for a basic hazardous chemicals site, the emergency plan should consist of an ESIP (refer to Section 5.1) with additional concise documentation that details personnel emergency training and their actions (emergency procedures) for any reasonably foreseeable emergency incident that may occur at the site (site specific emergency response training and



frequency etc.). These actions should include first aid fire fighting/containment (if safe to do so), alarm activation, plant shutdowns and evacuation procedures. A distribution list should also be included.

Note: This does not restrict occupiers from developing a more detailed emergency plan using section 5 of this document as a guide.

4.2 Mixed Class Hazardous Chemicals Site

For a mixed class hazardous chemicals site, the emergency plan should be developed following sections 5 and Annex A of this document as a guide.

4.3 Explosives Site

Sites that are required by Clause 66 of the *Explosives Regulation 2005* to prepare an emergency plan are required by that Regulation to liaise with the local fire service (FRNSW or New South Wales Rural Fire Service depending on location) and Local and District Emergency Management Committee during the preparation of the draft emergency plan to ensure compatibility with local resources and emergency management plans and capabilities.

Note: Contact the NSW Police Local Area Commander for liaison with the Local and District Emergency Management Committees.

The emergency plan should be developed using sections 5 and Annex A of this document as a guide.

Additional consideration must also be given to determining safe incident control locations for all reasonably foreseeable emergency scenarios.

4.4 Major Hazard Facilities (MHF's)

Due to the potential for significant off site impact, operators of a MHF should follow the national guidance material available from Safe Work Australia, *Guide for Major Hazard Facilities – Emergency Plans* for the preparation of emergency plans for their sites.

FRNSW recommends that operators of MHF's also refer to the WorkCover NSW website at www.workcover.nsw.gov.au when preparing their emergency plan.

5 Contents of an Emergency Plan

5.1 Emergency Services Information Package (ESIP)

The ESIP is a removable inclusion at the front of the emergency plan that contains concise relevant information to allow emergency services to commence initial combat operations. The ESIP must have all pages laminated so that it durable in harsh environments.

The ESIP should include:

- (a) A company letter head as a title page displaying business address, PO Box, Head Office address, two emergency contacts (names, corporate positions, business and after hours contact numbers), date prepared and the location of any manifests, emergency plans and Material Safety Data Sheets (MSDS) held on site.



- (b) Two (2) copies of a scaled site plan (A3 minimum size); FRNSW *Guideline for Tactical Plans* and *WorkCover Code of Practice - Storage and Handling of Dangerous Goods* should be used as a guide. In addition to the information required by those documents, the site plan should also include assembly points, any hazardous chemical ventilation points and details of containment (e.g. bunding), drain isolation and discharge points.
- (c) A copy of the sites hydrant system block plan (if applicable).
- (d) A current copy of the 'Acknowledgement of Notification of hazardous chemicals on premises' received from WorkCover (where applicable) or similar concise list detailing location, quantity, class, and name of materials.
- (e) Details of any hazardous chemicals manufactured or blended on site for which the emergency services may not have access to a MSDS (if applicable).
- (f) Highlight details of any Class 4.2 or 4.3 hazardous chemicals, or any other substances that are reactive to water, on site (if applicable).

Note: An ESIP as listed above can also satisfy the requirements of Clause 347 of the *WHS Reg.* in relation to the provision of a manifest.

5.2 Title Page and Authority

The front cover of the emergency plan (title page) must clearly identify that the document is the emergency plan for the nominated building of facility (refer to figure Figure 1 below).

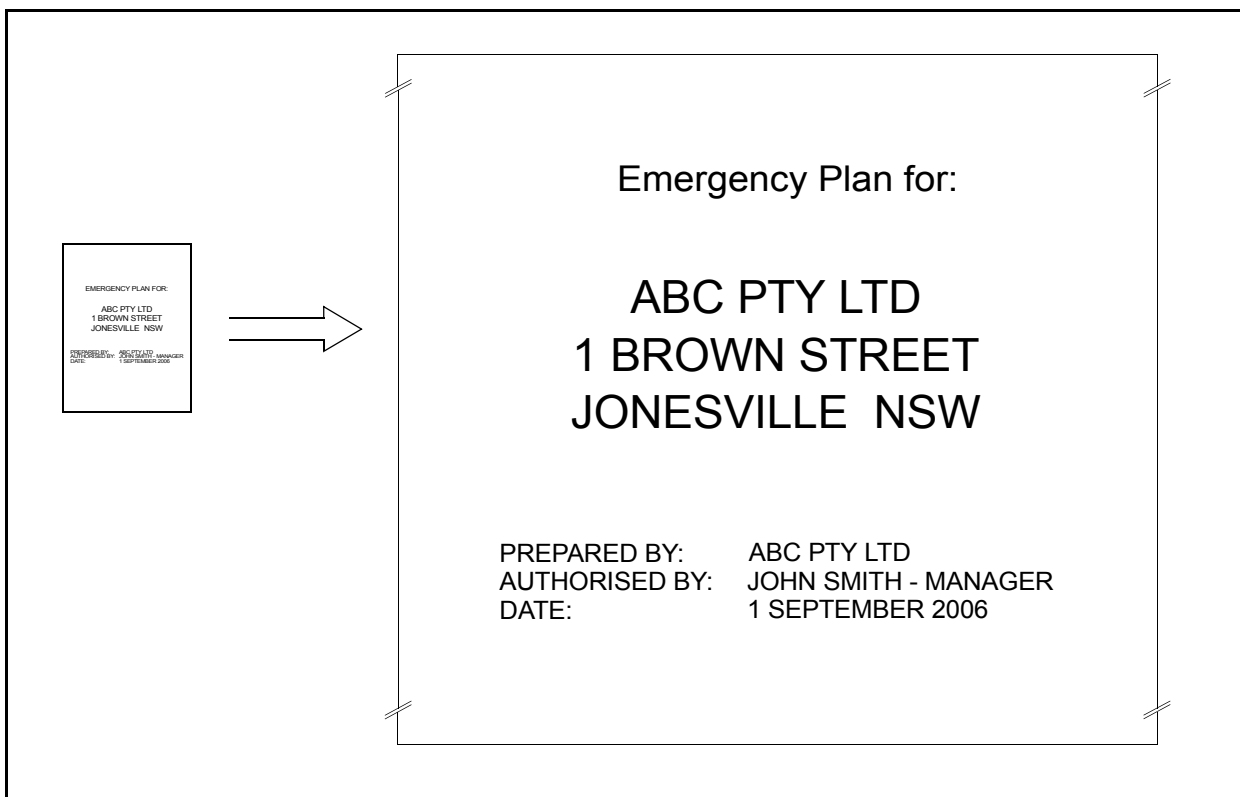


Figure 1 Sample Title Page of Emergency Plan

The plan should also indicate that it has been prepared and authorised by a responsible person such as an owner or manager, and that the plan is current as defined by the release date.

5.3 Structured Document Information

The emergency plan must be a structured document having a hierarchy of heading outlined by a table of contents at the beginning of the plan. All pages should also be numbered with the contents matching the appropriate pages for referencing.

The plan should include a distribution list of all positions or organisations supplied with a copy of the plan. The distribution list is used when promulgating updates and revisions of the plan.

The emergency plan must be reviewed in accordance with regulatory requirements. As a minimum, FRNSW recommends the emergency contact list be reviewed annually.

A record of plan amendments should be included in the plan. The plan should indicate the position responsible for revising the plan and applicable revision schedule (refer to section 5.8).

A glossary and abbreviations section should be added to define any special terminology, title or acronyms used within the plan.

5.4 Introductory Matter

The emergency plan should include an introduction which briefly describes the site covered by the plan including an outline of main functional areas.

A clear and simple definition of what constitutes an emergency incident on the site and various levels of possible emergencies should also be provided (e.g. refer to definition of 'emergency incident').

Note: Recommended levels of emergency incident are i) local alert, ii) site alert, and iii) external alert.

5.5 Aims and Objectives of the Plan

The emergency plan should include a broad statement outlining the aim or purpose of the plan.

The aim should be supplemented by statements which detail the end results expected to be achieved from applying the plan, such as the following:

- (1) Control or limit any effect of an emergency, or potential emergency, on or off site.
- (2) Facilitate emergency response and provide assistance on the site as is appropriate for the situation.
- (3) Ensure that all vital information is communicated to relevant persons and external agencies as soon as possible.
- (4) Facilitate the reorganisation and recovery operations so that normal operations can be resumed.
- (5) Provide relevant emergency training so that a high level of continuous emergency preparedness is maintained.
- (6) Provide a basis for the revision of emergency procedures.



5.6 Emergencies and Responses

The emergency plan must **identify** and **define** the types of emergency incidents that could occur and their **potential impacts** on and off site.

Note: The site risk assessment should be used as a guide for this purpose.

The following are typical emergency events that may be relevant to your site and should be included along with corresponding action guidelines:

- (a) fire;
- (b) explosion;
- (c) spills;
- (d) gas leak;
- (e) natural events (e.g. earthquake);
- (f) impact events;
- (g) civil disturbances;
- (h) any other type of incident specific to the site (as identified by a risk assessment).

5.6.1 Initial Response

The plan must identify a staff position who will assume the role of the site's emergency controller .

A hierarchy of positions should be nominated to assume the role of emergency controller when the first nominated person is unavailable, extending to a nominated person for when the site is not staffed (e.g. emergency contact person).

If the emergency incident escalates to a level requiring a response from emergency services, then the emergency controller must assume or appoint the role of emergency services liaison officer.

The plan must also nominate staff positions which will perform specific functions as required under the emergency plan (reference should be made to *Australian Standard 3745 - Emergency Control Organisation and Procedures for Buildings, Structures and Workplaces*).

The plan must provide site contact details (e.g. telephone extension numbers) for nominated staff. Functions should be addressed in priority specific to the site, and include the following principles:

- (a) containment of hazard e.g. fire or spill (specify actions to minimise any secondary damage, if safe to do so e.g. Plant shutdown, first aid fire fighting);
- (b) rescue (highlighting that rescuers should not place themselves in danger);
- (c) first aid; and
- (d) emergency procedures (must be clear, simple and achievable).

Some functions will be performed by all persons (e.g. evacuation) while others by nominated persons only (e.g. first aid).



Appropriate evacuation procedures should be included in the evacuation plan along with specific instructions applicable for the various sections/buildings and visitors to the site. The evacuation procedures should cater for both regular occupants and visitors to the site.

Note: Appendix 6 of the NSW WorkCover *Code of Practice for Storage and Handling of Dangerous Goods* provides a sample of a 'pocket emergency procedures' card that may be considered for larger sites.

Evacuation of people outside of the site boundaries is the responsibility of the NSW Police Force.

5.6.2 Initial Emergency Resources

The plan should list internal emergency resources that are available, including:

- Installed fire fighting equipment e.g. deluge, hydrant systems etc.,
- Fire suppression mediums eg. Foam stocks,
- First attack (first aid) fire fighting equipment e.g. portable fire extinguishers, hose reels,
- Emergency response or on site fire fighting teams, where staffing levels are appropriate,
- Medical first aid equipment,
- First aid officers/teams, and
- Specialist equipment that may be available eg. Backhoes, forklifts etc.

5.6.3 Raising the Alarm

The plan should detail the actions of person/s who first notice an emergency occurrence and how they are to activate or raise an alarm. An alarm is an act of communication which necessitates an appropriate response. Pre-planned responses to raised alarms need to be included in the plan.

The plan should detail procedures to ensure that the relevant emergency service is contacted. In most cases this will be the fire service. The contact number should always be identified as '000' triple zero. Instructions should also be provided on information to be given to the emergency service including:

- Location of the site,
- The type of emergency,
- Any casualties or injuries,
- What assistance is required,
- Any hazards that may be encountered, and
- Your name and telephone contact number.

Details of the types of alarm systems installed and how they are operated, tested and maintained should be included. Manual alerting instructions should be provided to initiate emergency procedures for the site (e.g. contact site's emergency controller, activate manual call points).

Contact numbers of adjacent facilities should be provided so that a nominated person can notify those facilities of an emergency which may have some impact upon them.



5.6.4 Terminating an Emergency

Once the emergency services have declared that their role is complete, control of the site will be handed back to the facility's emergency controller.

The plan should address how the site's emergency controller may deactivate the emergency plan and facilitate restoration and reconstruction activities to resume normal operations of the site.

5.7 Compatibility with Incident Management Plans

It is essential that the emergency plan is compatible with local emergency services operations (i.e. the plan should clearly articulate which emergency service agencies are responsible for the various types of emergencies).

The plan should clearly define when control of the emergency (and site) is required to be handed over to the relevant emergency service.

Consultation with the Local and District Emergency Management Committees to ensure consistency with State Emergency Disaster Plans (Displans) is recommended.

5.8 Administrative Matters

Emergency plans should include a consideration of procedures/requirements in the event of a failure or maintenance shutdown etc. of fire protection equipment.

In the event that any of the components of the fire protection or fire fighting equipment is rendered inoperative, the occupier must ensure the following:

- The implications of the inoperability are assessed,
- Alternative measures are taken to control, to the same level of effectiveness, those risks that were controlled when the equipment was functioning fully, and
- Action is taken to return this equipment to full operation.

Provisions should be made to conduct regular debriefs, responses to the media and public relations announcements.

Cooperation with statutory investigations must be ensured, particularly the need to preserve evidence for internal and/or external investigations.

The plan must specify procedures to produce a written report on the emergency incident. As part of the report, the performance of the emergency plan should be reviewed regarding the emergency incident that occurred.

A training syllabus and schedule should be provided within the plan. The training schedule should ensure that new members of staff receive appropriate training during induction.

The plan should be tested once finalised and then after each modification and at regular intervals. Simulated emergencies and other exercises should systematically attempt to involve all people likely to be involved in a serious incident or incident.

Irrespective of any post emergency review, the plan should be reviewed in accordance with legislative requirements and whenever changes that may affect the site occur, either on or off site to ensure that it remains current and effective.



5.9 Appendices

The appendices should detail information which is subject to regular change (e.g. contact lists etc.) so that they can be readily updated within the emergency plan.

The appendices should include relevant supplementary information which can be used by the emergency controller, site manager and emergency services during an emergency.

The appendices should include details of hazards posed by placard quantities of hazardous chemicals, explosives and security sensitive dangerous substances, and their associated control measures.

5.10 Contact List

All nominated persons should be listed including their corporate position, functional emergency role, telephone extension number, after hours and mobile numbers. Contact numbers should also be provided for adjacent facilities.

5.11 Location Map and Site Layout Plan

A clear location map should be provided showing the site location relative to local roads and other features, and should include the following;

- Clearly marked site boundaries and access points (entrances/exits),
- Map reference,
- Street name and number,
- North point indicator, and
- Discharge point/s of the site's storm water drains (indicate if discharge point is on the map or specify discharge point if off map).

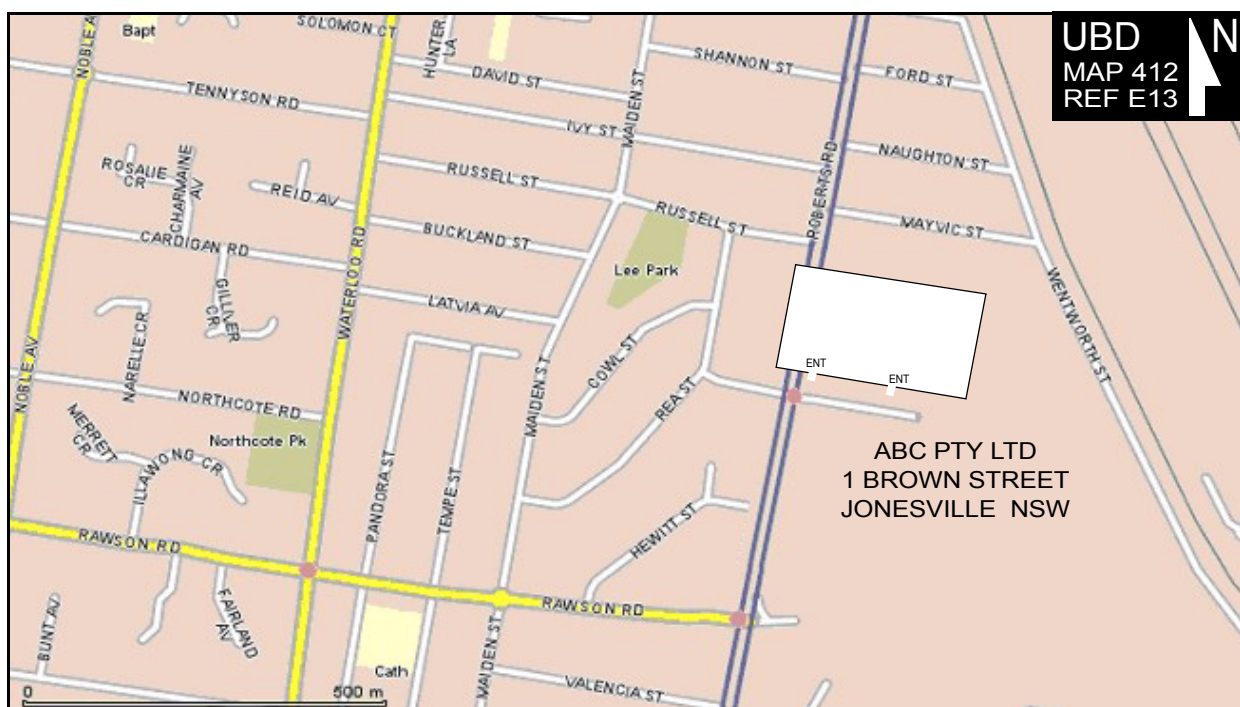


Figure 2 Sample Site Location Plan

A clear and unambiguous site layout plan, or series of plans, should be provided showing the layout and installed services of the site, and should include the following:

- Site boundaries,
- Normal entrances and exits to the site,
- Emergency entrances to the site,
- Internal roadways,
- Buildings and structures,
- Locations of placard quantities of hazardous chemicals, any amount of explosives and security sensitive dangerous substances (any ventilation points etc. should be indicated),
- Locations of other significant hazardous materials,
- Assembly and safe areas,
- Fire Safety Equipment (eg. boosters, hydrants, sprinklers, fire hose reels, fire/emergency control centres, PPE for site personnel etc.),
- Water supplies (e.g. street mains and hydrants, static water supply),
- Main electrical switchboards (isolation points),
- Main gas supply valve/s (isolation points),
- Other critical isolation valves (e.g. hazardous chemical pipes, stormwater and other containment systems such as bunds).

Note: Site plans for large sites should include a grid reference system similar to street directories.

To assist the emergency services, at least two additional separate laminated copies of the site layout plan/s should be kept with the emergency plan provided at the site's main entrance 'lock box' or in any 24 hour 7 day security gatehouse.



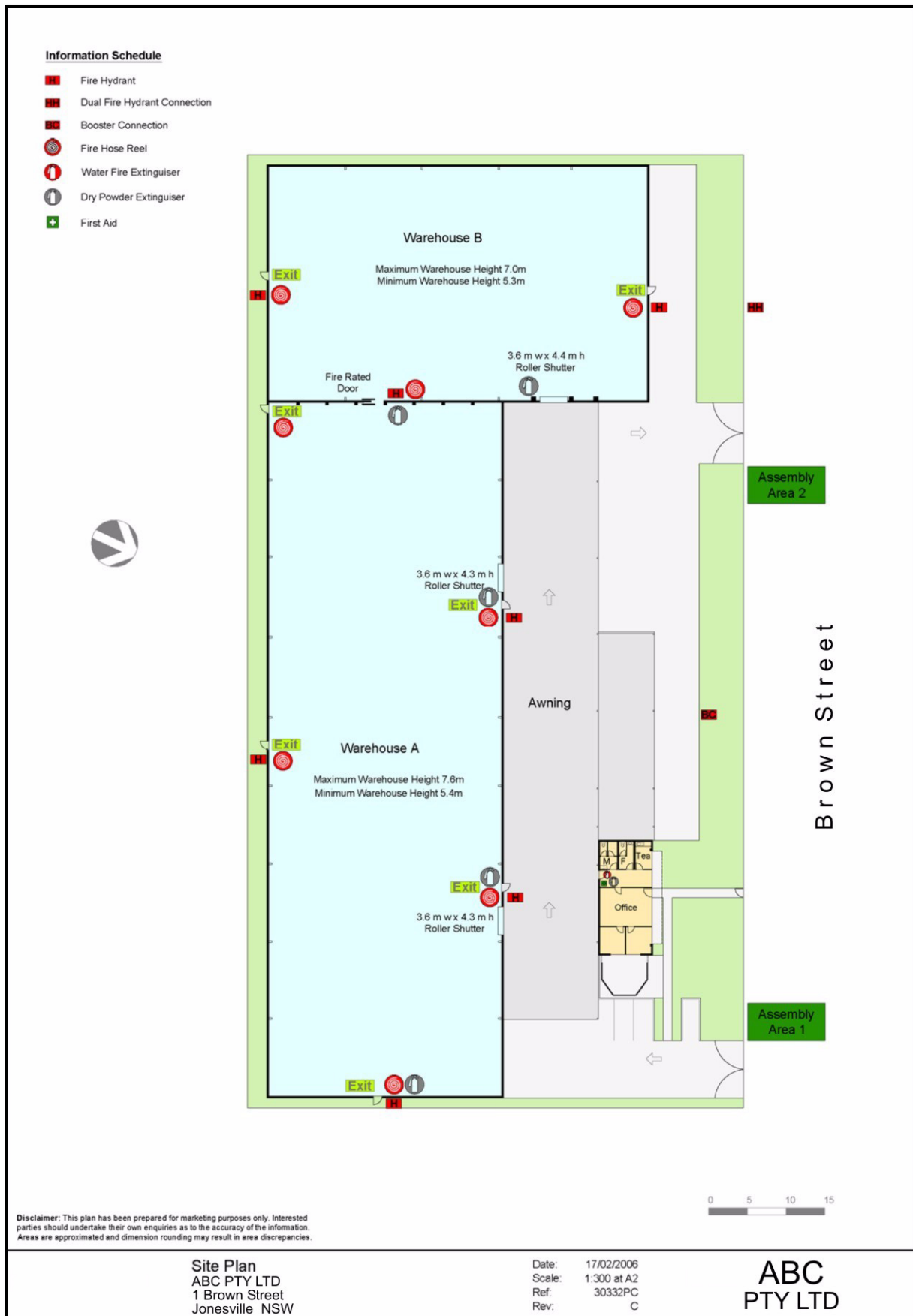


Figure 3 Sample Site Layout Plan



6 Location of Emergency Plan

A copy of the emergency plan and ESIP must be provided at the main entrance point of the site near the 'HAZCHEM' outer warning placard (with a copy of the manifest). The plans should be provided within a prominently labelled weather proofed container (e.g. a locked box), secured with a 003 lock if unauthorised access needs to be prevented.

If the site is staffed 24 hours 7 days, the plans can be located inside a security gatehouse or similar. Where alternative vehicular entrances are provided, additional plans within locked containers should be provided at these entrances near the 'HAZCHEM' outer warning placard.

FRNSW recommends that a copy of any hazardous materials register and MSDS are also readily accessible with the emergency plan and ESIP at the site's main entrance.

A full copy of the above documentation (emergency plan, ESIP, manifest, hazardous chemicals register and MSDS) should also be provided in any dedicated Emergency/Fire Control Centre.

At larger sites FRNSW also recommends that a copy of the ESIP is provided at appropriate locations throughout the site (e.g. within process control rooms or adjacent to locations where placards are required by Clause 350 of the *WHS Reg*).

Note: At sites where there may be security concerns regarding the provision of plans in a locked container on site (e.g. schools etc.), application can be made for alternative locations or means to provide responding emergency services with copies.

7 References

The following references have been used for this document:

- (a) *Storage and Handling of Dangerous Goods Code of Practice 2005*, WorkCover Authority, available from www.workcover.nsw.gov.au.
- (b) *Guide for Major Hazard Facilities – Emergency Plans*, Safe Work Australia, available from www.safeworkaustralia.gov.au.
- (c) *AS 3745 Emergency control organization and procedures for buildings, structures and workplaces*, Standards Australia, 2002, Sydney NSW, Australia

8 Further Assistance

The development of an emergency plan by persons not familiar with emergency planning, hazardous chemicals and their consequences, may result in a deficient emergency plan. This may not become apparent until an emergency incident occurs.

If you are unfamiliar with the process of assessing hazards and risks, or not sure that you will be able to develop a satisfactory plan, FRNSW recommends you engage the services of a suitably qualified dangerous goods consultant to assist with the development of your emergency plan.

Note: Dangerous goods consultants are listed in the yellow pages, and may also be members of the Australian Institute of Dangerous Good Consultants (see www.aidgc.com).



Annex A Emergency Plan Template

The following is an example of the template structure of an emergency plan:

- (a) Title page,
- (b) Table of Contents,
- (c) Distribution List,
- (d) Amendments,
- (e) Glossary and Abbreviations,
- (f) Introduction,
- (g) Aim and Objective of Plan,
- (h) Types of Emergencies,
- (i) Response Actions,
- (j) Raising Alarm,
- (k) Terminating an Emergency,
- (l) Compatibility with Incident Management Plans
- (m) Administration of Plan,
- (n) Appendices,
- (o) Hazardous Materials Manifest,
- (p) Nominated Persons and Contact Numbers
- (q) Location Map and Site Layout Plan.





Fire & Rescue NSW

Structural Fire Safety Unit

Amarina Avenue,
Greenacre NSW 2190

Ph: (02) 9742 7400

Fax: (02) 9742 7483

Firesafety.NSWFB@fire.nsw.gov.au



www.fire.nsw.gov.au

