



WHS-04A Chemical Management

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1 Purpose

The purpose of this procedure is to ensure that processes are in place to minimise the risk of adverse health affects due to the exposure to hazardous substances and dangerous goods used as part of Territory Generation's day to day operations.

This includes:

- Controlling the entry of chemicals into Territory Generation maintained sites,
- Providing information and guidelines for the safe use, handling and storage of chemicals,
- Providing information on the use of the Territory Generation subscribed *Chemalert* database and Material Safety Data Sheets.

2 Scope

This work instruction applies to all personnel and contractors working on Territory Generation maintained sites.

3 References

- NT Work Health and Safety (NUL) Act 2011
- NT Work Health and Safety (NUL) Regulations 2013
- NT Dangerous Goods Act and Regulations 2012
- Code of Practice: *Managing Risks of Hazardous Chemicals in the Workplace*, July 2012
- Code of Practice: *Labelling of Workplace Hazardous Chemicals*, Dec 2011
- *Hydrocarbon Spill Response Work Instruction BDOC2014/292*
- *Chemalert Training Workbook QDOC2009/362*
- *Chemical Inspection Work Instruction BDOC2013/97*
- Territory Generation site specific emergency plans – Various.

4 Roles and Responsibilities

Role / Title	Responsibility
Chief Executive Officer	Shall ensure that : <ul style="list-style-type: none"> • All personnel are aware of requirements of this procedure and its management in sites under Territory Generation control. • Initiates procedure review as required.
All Managers/Site Coordinators	Shall ensure that: <ul style="list-style-type: none"> • This procedure is put in place at all Territory Generation controlled power stations sites. • Personnel are advised and trained as necessary in

	<p>the procedure to be followed.</p> <ul style="list-style-type: none"> Contractors are informed of and follow the procedure, where applicable. Contribute to procedure reviews Initiate reporting of notifiable spills to NT EPA, where applicable
Project Officers/Contract Managers	<p>Shall ensure that:</p> <ul style="list-style-type: none"> Contractors under their control are informed of and follow the procedure, where applicable. Contribute to procedure reviews
Assets Managers	<p>Shall ensure that:</p> <ul style="list-style-type: none"> Schedule 11 Hazardous Chemicals Manifest requirements are monitored and met as per section 10.9 of this procedure.
All Personnel	<p>Shall ensure that:</p> <ul style="list-style-type: none"> This procedure is followed personally and by contractors/visitors under their control, where applicable Contribute to procedure reviews
Chemalert Site Administrator	<ul style="list-style-type: none"> An authorised person that has been trained in the use of the Chemalert database and has been given administration rights to this system.
Document Owner	<ul style="list-style-type: none"> The position responsible for the preparation, review and accuracy of this document.
Document Sponsor	<ul style="list-style-type: none"> The position responsible for the approval and use of this document

5 Definitions

Article	Means a manufactured item other than a fluid or particles that is formed into a particular shape during manufacture and has hazard properties and a function that are wholly or partly dependent on the shape or design.
Chemicals	<p>Means substances, solutions, mixtures or articles that present a risk to health and safety. These are divided into two major subgroups- hazardous chemicals and dangerous goods.</p> <p>NOTE: Chemicals and other substances may be classified as both dangerous goods and hazardous chemicals. For example: a solvent may be classified as a dangerous good because it is flammable and a hazardous chemical because it has health effects such as causing skin damage.</p>
Chemalert	Means the intranet chemical database administered by Risk Management Technologies (RMT) which is subscribed to by Territory Generation Corporation.
Dangerous Goods	Means substances and/or articles that are potentially

	hazardous to people and property. They may be corrosive, flammable, explosive, oxidising or reactive with water and are divided into 9 classes according to their dangerous properties:
Hazardous Chemicals	Means a substance, mixture or article that that can affect your health, by causing illness or disease or through hazards associated with their use e.g.: flammable, explosive properties. They may be solvents, pesticides, paints, adhesives, petroleum products, heavy metals or any other substance that is hazardous to health and is used or produced at work.
Hazardous Chemicals Manifest	Means list of hazardous chemicals including the hazard classes, categories and details of the type, size and locations of containers present in the workplace. This list is intended primarily for emergency services personnel to use where they are required to respond to an emergency situation in the workplace.
Hazardous Chemicals Register	Means a list of hazardous chemicals used, handled or stored in the workplace, accompanied by the current Safety Date Sheet (SDS) for each of those chemicals. This list is intended primarily for workers to use in order to easily find information about chemicals stored in the workplace. (Refer to Chemalert)
Safety Data Sheet (SDS)	Formerly Material Safety Data Sheet or MSDS, an SDS is a document that provides detailed information about a hazardous chemical. Information provided includes: <ul style="list-style-type: none"> • The identity of the chemical product and its ingredients • The hazards of the chemical including health hazards, physical hazards and environmental hazards • Physical properties of the chemical, like boiling point, flash point and incompatibilities with other chemicals • Workplace exposure standards for airborne contaminants • Safe handling and storage procedures for the chemical • What to do in the case of an emergency or spill • First aid information, • Transport information and • Personal Protective Equipment requirements.
Globally Harmonised System of Classification and labelling Chemicals (GHS)	Means the criteria now used to classify hazardous chemicals under the Work Health and Safety National Uniform Regulations. The GHS classification describes the nature of physical, health and environmental hazards associated with the chemical.
Shall	Means a mandatory requirement
Should	Means an advisory requirement

6 Records

- The Chemalert database provides an on line record of all chemicals stored on Territory Generation maintained sites.
- Completed *New Chemical Request Forms* shall be saved in TRIM F2012/6809 (Power Generation – Compliance - Records – Generation Chemical management documentation)
- All Schedule 11 Hazardous Chemical Manifest records shall be saved in TRIM. (North sites TRIM F2006/9756 and South sites TRIMF2012/5409)

7 Chemalert Database

- a) The *Chemalert* database is linked to the intranet and is accessible to all workers.
- b) Chemical stock holdings at each Territory Generation maintained site can be viewed on a site by site basis and by specific site location.
- c) This database provides access to on line SDS's for workers to access and print as well as other various reports.
- d) Chemalert classifies all chemicals into three hazard ratings indicated by colour. These ratings are designed as a quick guide to gauge the level of risk from a chemical. The detailed information contained in the chemical's SDS must be consulted to determine the accurate level of risk posed.

GREEN = Low Hazard This product presents a low hazard with normal use. Examples: Salt, grease and oils, barrier cream, hand cleaner

AMBER = Medium Hazard This product presents a moderate hazard with normal use Examples: Diesel, Kerosene, bleach, silicone spray, acetylene

RED = High Hazard This product presents a high hazard with normal use Examples: Ammonia, Hydrochloric acid, sulphuric acid, caustic soda

- e) The Chemalert produced "product report" is an acceptable Safety Data Sheet (SDS) equivalent meeting all legislative requirements.
- f) Only Chemalert SDS reports are to be used on Territory Generation maintained sites.
- g) In the event that a chemical is not registered on Chemalert the manufacturers SDS is to be used until such time as the product can be added to the database by Territory Generation Chemalert site administrators.
- h) Site stock holdings on Chemalert are updated at annual site chemical audits coordinated by Territory Generation Chemalert site administrators.
- i) Quantities entered into Chemalert are based on the maximum quantity held at any one time. This database is not a stock management system.
- j) Chemicals with a Chemalert hazard colour coding of red are to be restricted (minimum quantity only to be held) and eliminated from all sites where possible.
- k) Hardcopy SDS folders are to be held on each site and stored in a central location that is readily accessible to emergency services.
- l) Territory Generation maintained sites that are manned on a 24 hour basis are to locate a Hazardous Chemical Manifest with Security and/or in the Control room for access by emergency personnel.
- m) Territory Generation maintained sites that are not manned on a 24 hour basis are to locate a Hazardous Chemical Manifest in a sealed weatherproof container near the main entrance, which is clearly signed; for access by emergency personnel.

8 Hazardous Chemicals

- a) Hazardous chemicals are any substance, mixture or article that may cause adverse health effects such as illness or disease or cause harm through their handling or use.
- b) Exposure usually occurs through inhalation, skin contact or ingestions. Adverse health effects can be acute (short term) or chronic (long term). Typical acute health effects may include headaches, nausea or vomiting and skin corrosion. Chronic health effects may include asthma, dermatitis, nerve damage or cancer.
- c) Physical harm may also be caused by the chemical being flammable, explosive and chemically reactive or oxidising.
- d) To ensure associated hazards are identified and risks controlled, a task based risk assessment (Job Safety and Environmental Analysis {JSEA} or equivalent) is to be conducted when assessing job tasks associated with hazardous chemicals
- e) The product SDS is to be referred to and appropriate precautions taken. The SDS is to be printed and attached to the JSEA for reference where appropriate.
- f) All persons are to be aware of the potential health effects, precautions for use and the emergency first aid requirements when using such products.

9 Dangerous Goods

- a) Dangerous goods are usually chemicals which have the potential to present an immediate threat to people, property or the environment if not properly contained or controlled. Dangerous Goods are classified according to the nature of the hazard into nine classes, some of which are divided into sub-classes. These classes are denoted by specific labels (or diamonds). Compliance signs and placards that comply with NOHSC: 1015(2001) shall be displayed where dangerous goods are stored.

1. Explosives	4.1 Flammable solid	6.1 Toxic
2.1 Flammable gas	4.2 Spontaneously combustible	6.2 Infectious
2.2 Non-flammable gas	4.3 Dangerous when wet	7. Radioactive
2.3 Toxic gas	5.1 Oxidising agent	8. Corrosive
3. Flammable liquid	5.2 Organic peroxide	9. Miscellaneous

- b) To ensure associated hazards are identified and risks controlled, the JSEA process is to be conducted when assessing job tasks associated with Dangerous Goods.
- c) The Dangerous Goods product SDS is to be referred to and appropriate precautions taken. The SDS is to be printed and attached to the JSEA for reference where appropriate.

10 Chemical Management Process

In order to manage the risks associated with using, handling, generating and storing chemicals the following process shall be followed on Territory Generation maintained sites:

10.1 Selection

- a) Where practicable, new chemical products shall be researched and a risk assessment process conducted to ensure an appropriate product is selected.
- b) Prior to purchasing or introducing new chemicals onto Territory Generation sites a *New Chemical Request Form* (see Appendix 2) shall be completed.
- c) All new chemicals shall be selected with consideration of safer alternatives.
- d) Current chemical holdings shall be reviewed to avoid duplication of like products on site.

- e) Before new products are introduced the correct storage, handling and spill clean-up requirements shall be investigated to ensure these requirements are in place
- f) The *New Chemical Checklist* (see Appendix 1) can be used to track all the process step requirements for the implementation of a new chemical to site.

10.2 Approval

Where appropriate chemicals entering Territory Generation sites shall be approved by the following process:

- a) A written request for the product including quantity and reasons for acquisition shall be completed (See New Chemical Request Form Appendix 2)
- b) An SDS for the product is printed off from Chemalert database or requested from the supplier
- c) The written request and attached SDS is given to a Senior Coordinator or Line Manager for approval
- d) On approval the request will then be signed off by the Manager Generation North or South respectively, authorising the products acquisition
- e) The product can then be ordered or purchased.

10.3 Delivery to Site

On receipt of a chemical:

- a) A copy of the SDS shall be added to all site SDS Master Folders
- b) The Chemalert database shall be updated
- c) If the chemical is to be kept on site for ongoing use the product shall be submitted as a permanent inventory item at Stores.
- d) Contractors bringing in chemicals on Territory Generation maintained sites shall provide a current manufacturers SDS for each product.

10.4 Use

Chemicals shall not be used until an SDS is received and has been read and understood by all persons who will be using the product.

- a) When chemical use is identified as part of the JSEA process, the product SDS is to be referred to and appropriate precautions taken.
- b) The SDS shall be printed and attached to the JSEA for reference where appropriate.

10.5 Storage

Storage requirements shall be planned for in advance of purchase/acquisition. Appropriate storage location, bunding and segregation requirements are essential and must be in place.

- a) Refer to product SDS for specific information on safe storage requirements.
- b) If contractor provided chemicals are to remain on site for future use they are to be stored in an appropriate location and added to Chemalert site stock holdings register by the relevant Chemalert site administrator.

10.6 Disposal

Disposal of chemicals shall meet safety, regulatory and environmental requirements. Old, obsolete or unwanted chemicals are not to be retained on Territory Generation maintained sites.

- a) All drums are to be cleaned in an appropriate area before disposal.

- b) Chemicals brought in by contractors and left over at the end of a job are to be removed by the contractor unless arrangements to the contrary are made with the site coordinator.
- c) Contractors engaged to remove and dispose of unwanted chemicals shall be approved Contractors. Listed waste may only be disposed of by a licensed waste handler.
- d) Refer to product SDS for specific information on safe removal and disposal requirements.

10.6 Spill Management

Site specific chemical and hydrocarbon response emergency plans are in place at all Territory Generation maintained sites. All workers are to be aware of the required emergency response process in the event of a spill or incident.

- a) Chemical and hydrocarbon spill kits are available at all sites and shall be used in accordance with supplier's instructions.
- b) The *Hydrocarbon Spill Response Work Instruction* (BDOC2014/292) provides additional information on the correct management of hydrocarbon spills and is to be referred to in the event of an incident.
- c) All significant chemical spills shall be recorded into GRACE as an environmental incident.
- d) Where a chemical spill incident causes or threatens to cause pollution resulting in material environmental harm or serious environmental harm it shall be reported to the NT EPA within 24 hours
- e) Refer to product SDS for specific information on emergency spill response.

10.7 First Aid

All workers shall be aware of the required first aid response process in the event of an incident involving chemical exposure/contact.

- a) Emergency eyewash and showers are available at all sites and shall be used as first response in the event of accidental chemical contact.
- b) Site specific medical response emergency plans are in place at all Territory Generation maintained sites and shall be referred to in the event of a chemical incident.
- c) All first aid incidents involving chemicals shall be recorded in GRACE
- d) Refer to product SDS for specific information on first aid response in relation to the chemical involved.

10.8 Container Labelling & Decanting

All chemicals shall have clear and correct labelling in accordance with legislative requirements.

- a) Unidentifiable chemicals with perished, illegible or no labels shall be disposed of. If accurate identification of contents is assured the container may be relabelled with a Chemalert printed label.
- b) Manual decanting should be avoided where possible due to the increased risk of contact and spills. Where possible mechanical decanting processes such as pumps should be used.
- c) Only appropriate containers shall be used for decanting. Old drink bottles etc shall not be used.
- d) If a chemical product is decanted and used immediately the container used does not require labelling. The container used shall be thoroughly cleaned immediately after the product is used.
- e) If a chemical product is decanted and remains are left in the container for use at another time then the container shall be correctly labelled. See example of minimum labelling requirements below using a Chemalert generated label:

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AMBER

 CAUTION
DO NOT SWALLOW
KEEP OUT OF REACH OF CHILDREN

ChemAlert

DIESEL

 Supplier CALTEX AUSTRALIA (CALTEX & AMPOL PRODUCTS)
Ph:(02) 9250 5000 Emerg. Ph:1800 033 111

Stock Number 1231

HAZARDS

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No. N/A DG Class N/A Subsidiary Risk(s) N/A

Pkg Group N/A Hazchem Code N/A

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

R45 May cause cancer; R46 May cause heritable genetic damage; R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed; R51/53 Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment; R65 Harmful: May cause lung damage if swallowed; R66 Repeated exposure may cause skin dryness or cracking; S2 Keep out of reach of children; S9 Keep container in a well ventilated place; S16 Keep away from sources of ignition - No smoking; S24 Avoid contact with skin; S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible); S53 Avoid exposure - obtain special instructions before use; S61 Avoid release to the environment; Refer to special instructions/safety data sheets; S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

FIRST AID PROCEDURES

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

See Chem Alert report or MSDS for further information.

10.9 Schedule 11 Hazardous Chemicals

The Work Health and Safety National Uniform Legislation 2011 require the notification of Schedule 11 hazardous chemicals where the hazardous chemical exceeds the manifest quantity for use, handling or storage at the workplace. The process replaces the requirements for Dangerous Goods (DG) Licensing.

- a) All Territory Generation sites shall review Schedule 11 Manifest requirements and notify the Regulator (NT WorkSafe) should holdings exceed manifest limits.
- b) All Territory Generation sites shall be aware that if it is known that there will be a significant change in the risk of using, handling or strong Schedule 11 hazardous chemicals, that the Regular (NT WorkSafe) shall be notified immediately.
- c) If the Schedule 11 quantity is exceeded a manifest of hazardous chemicals shall be prepared complying with Schedule 12 and outer warning placards shall be displayed in a prominent place indicating the total quantity of the Schedule 11 hazardous chemical stored.
- d) For more information on Schedule 11 Hazardous Chemicals: Contact NT WorkSafe

Appendix 1: New Chemical Checklist

TERRITORY GENERATION – NEW CHEMICAL CHECK LIST		
Action	Action Officer	Completed
• Written request form completed	Requesting person	
• SDS obtained	Requesting person	
• Written request and SDS submitted to Senior Coordinators/Manager	Requesting person	
• Product reviewed and recommended for approved	Senior Coordinator or Line Manager	
• Request signed off and approved	Manager Generation North/South	
• Product ordered or purchased	Requesting person	
• Product received	Requesting person	
• Copy of new SDS placed at product location, if required	Requesting person	
• Copy of new SDS in placed in SDS Folders	Requesting person	
• <i>Chemalert</i> database updated	<i>Chemalert</i> Site Administrator	
• Product stored appropriately	Requesting person	
• Staff education attended before product use	Requesting person	
• Product submitted to Stores as inventory item, if appropriate	Requesting person	
• Products being replaced have been removed from use	Requesting person	
• Products being replaced have been correctly disposed of	Requesting person	
• Obsolete SDS removed from old product location	Requesting person	
• Obsolete SDS removed from SDS Folders	Requesting person	
• Obsolete stock holding item deleted from <i>Chemalert</i> database	<i>Chemalert</i> Site Administrator	
Comments/Notes:		

Appendix 2:

TERRITORY GENERATION - NEW CHEMICAL REQUEST FORM			
Site:			
Requesting person:		Date:	
Product name:		Quantity required:	
Is the product Hazardous? Yes / No	Is the product a Dangerous Goods Yes / No	Chemalert colour code: Green / Amber / Red	SDS attached Yes / No
Reason for request:			
Is this product replacing another? Yes / No If Yes - Give details of product being replaced including SDS, current stock holding and location stored.			
Indicate plan for removal of old stock from use, including time line		Indicate plan for disposal of old stock, including time line:	
Recommending Officer:			
Product recommended:		Product not recommended:	
Comments:			
Signed:		Date:	
Final Approving Officer:			
Product approved:		Product not approved:	
Comments:			
Signed:		Date:	