



October 2014

INTERNATIONAL CYANIDE MANAGEMENT CODE

Toll Customised Solutions, Cyanide Production Audit (Laverton Major Hazardous Facility), Laverton Victoria, Summary Audit Report

Submitted to:

International Cyanide Management Institute
1400 I Street, NW, Suite 550
Washington, DC 20005
UNITED STATES OF AMERICA

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REPORT

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APPENDICES

APPENDIX A

Limitations



1.0 INTRODUCTION

1.1 Operational Information

Name of Facility:	Laverton Facility 180 Fitzgerald Road Laverton North, Victoria Australia
Name of Facility Owner:	Toll Customised Solutions
Name of Facility Operator:	Toll Customised Solutions
Name of Responsible Manager:	C/o David Ellison, ICMC Compliance Coordinator, Orica Australia Pty Ltd
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1.2 Orica Australia Pty Ltd

Orica Australia Pty Ltd (Orica) is an Australian-owned, publicly listed company with global operations. Orica is managed as discrete business units that produce a wide variety of products and services. The Mining Chemicals unit is based in Australia and exports products to Asia, Africa and the Americas, as well as supplying the local Australian industry. This unit's main product is sodium cyanide, which is manufactured at Orica's Yarwun Production Facility (Yarwun Facility) in Queensland, Australia. Orica Mining Chemicals is the world's second largest producer of cyanide.

1.3 Yarwun Production Facility

Orica's Yarwun Facility, which is located approximately 8 km by road from Gladstone, Queensland, commenced operations in 1989 and is engaged in the manufacture of cyanide (both solid and liquid forms), ammonium nitrate, nitric acid, chlorine, sodium hydroxide, sodium hypochlorite, hydrochloric acid and expanded polystyrene balls. The Yarwun Facility was recertified by the International Cyanide Management Institute (ICMI) as being compliant with the International Cyanide Management Code (ICMC or the Code) on 29 October 2013. Cyanide product that exceeds the licensed storage limit at the Yarwun Facility is transferred to Toll Customised Solutions' (TCS) Laverton Major Hazardous Facility (the Facility), Victoria.

1.4 TCS Laverton Facility

TCS, part of the Toll Global Resources Group, is one of Australia's largest suppliers of outsourced logistics services to the chemical and plastics sector. TCS has a network of dangerous goods warehouses, operating in mainland capitals and selected regional centres with specialised warehousing and distribution capabilities.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



TOLL CUSTOMISED SOLUTIONS, CYANIDE PRODUCTION AUDIT, LAVERTON FACILITY, SUMMARY AUDIT REPORT

The TCS Laverton Facility at 180 Fitzgerald Road, Laverton North, is a dangerous goods warehousing and distribution facility. The primary function of the Facility is the storage and handling of packaged and intermediate bulk chemical products in eight on-site warehouses and in a number of external storage locations. A proportion of the products stored and handled on site are dangerous goods, with food grade materials and non-dangerous goods also being stored and handled on the site. Storage of goods on-site is controlled by an electronic management system (PWMS).

The Laverton Facility provides interim storage of cyanide under a contract arrangement for Orica. Shipping containers arriving at the Facility from Orica's Yarwun Facility are destuffed and stored in warehouses until they are required for end use customers, typically located in West Africa and Tasmania, Australia.

1.5 Auditors Findings and Attestation

in full compliance with

**The International
Cyanide Management
Code**

Orica is:

in substantial compliance with

not in compliance with

Audit Company:

Golder Associates

Audit Team Leader:

Edward Clerk, CEnvP (112), Exemplar Global (020778)

Email:

eclerk@golder.com.au

Name and Signatures of Other Auditors

Name	Position	Signature	Date
Edward Clerk	Lead Auditor & Technical Specialist		3 October 2014
Mike Woods	Auditor		3 October 2014

Dates of Audit

The field component of the Certification Production Audit was undertaken over two days (four person days), concluding on 25 September 2013.

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Production Operations and using standard and accepted practices for health, safety and environmental audits.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



PRINCIPLE 1 – OPERATIONS

Design, construct and operate cyanide production facilities to prevent release of cyanide.

Production Practice 1.1

Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.

The operation is in full compliance with **Production Practice 1.1**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 1.1 requiring cyanide production facilities to be designed, constructed and operated to prevent releases of cyanide.

Limited records are available to show that quality control and quality assurance programmes have been implemented during construction of cyanide production and storage facilities due to the change in ownership history. The Facility was built as a dedicated dangerous goods storage facility in the 1980s and was extended in 2000 (Stage 6). TCS purchased the Facility in 2007.

Regulation 6.1.3 of the *Occupational Health and Safety Regulations 2007*, requires operators of major hazardous facilities (MHF) obtain a *Licence to Operate a Major Hazard Facility*.

Schedule 12 of the *Occupational Health and Safety Regulations 2007* details matters to be included in a Safety Case. Such Safety Cases include a description and assessment of the steps taken to ensure safety and reliability are incorporated into the design and construction of all aspects of the MHF. The Victorian Director Workplace Hazards and Hazardous Industries Group issued TCS with a *Licence to Operate a Major Hazard Facility* for the period 24 June 2013 to 23 June 2018. The issuing of a *Licence to Operate a Major Hazard Facility* by the regulatory authority, which followed an assessment of the safety and reliability aspects of the design and construction of the Facility, implies that the continued operation of the Facility within established parameters will protect against cyanide releases and exposures.

Materials used for the construction of the Facility are compatible with cyanide. The warehousing facilities are constructed with materials that are compatible with the storage of wooden composite IBCs. Appendix H of the Safety Case Review and Revision noted that Warehouses 1, 5 and 6 were steel framed and steel clad warehouses with concrete floors.

An Improvement Notice was issued to TCS under the *Occupation Health and Safety Act 2004* requesting a review be conducted on the fire suppression system in Warehouse 1 following concerns by the Melbourne Fire Brigade (MFB) Risk Engineer that the system is incapable of extinguishing a fire. Following the review, the foam suppression systems were isolated and replaced with water suppression systems at the direction of the MFB Risk Engineer. Orica discussed their concerns regarding the possible incompatibility of water fire suppression, particularly in regards to the potential evolution of hydrogen cyanide (HCN) gas. However, in order for continued compliance with the MHF compliance requirements, the MFB Risk Engineer directions are required to be implemented.

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The Orica ICMC Compliance Coordinator also advised that the cyanide is packed in an intermediate bulk container (IBC) consisting of a flexible container made of non-reactive poly propylene contained within a polyethylene plastics liner (which is heat sealed during the filling process to prevent moisture ingress) and contained within a wooden outer with an integral pallet base and secured lid strapped horizontally and vertically. The design of the IBC will prevent water ingress, thus in the event of the fire suppression system being activated, water cannot come into contact with the cyanide. Despite the potential incompatibility with cyanide, this was accepted by the Auditor.

Cyanide was observed to be stored on a concrete surface that was likely to minimise seepage to the subsurface. Floors within the warehouses are constructed from concrete that appeared to be in good condition. The floors are bounded by a containment bund, thus preventing stormwater ingress and releases from the warehouse. The floors grade to internal concrete sumps that flow to external concrete sumps.

The Facility does not produce cyanide or directly handle cyanide product. The Facility is a warehousing operation that removes IBCs from shipping containers and stores the IBCs within warehouses and then repacks shipping containers for export. As such:

- The requirement for automatic systems or “interlocks” to shut down production systems and prevent releases due to power outages or equipment failures is not applicable.
- The requirement for methods to prevent the overfilling of cyanide process and storage vessels is not applicable.
- The secondary containment requirement for process and storage tanks and containers is not applicable.
- The requirement for spill prevention or containment for cyanide solution pipelines is not applicable.

Production Practice 1.2

Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

in full compliance with

The operation is in substantial compliance with **Production Practice 1.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Production Practice 1.2 requiring the development and implementation of plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

The Facility has developed formal procedures that describe the standard practices necessary for its safe and environmentally sound operation. The Facility is a MHF and there is a Safety Case that provides the basis for the safe operation of the Facility. The Facility has procedures for unpacking and loading of shipping containers, which is the primary function of the Facility. There are also emergency response and inspection procedures in place. The Facility does not handle raw materials or unpackaged cyanide.

<u>TCS Laverton Facility</u>	 _____ Signature of Lead Auditor	<u>3 October 2014</u> Date
Name of Facility		



TOLL CUSTOMISED SOLUTIONS, CYANIDE PRODUCTION AUDIT, LAVERTON FACILITY, SUMMARY AUDIT REPORT

The Facility has developed formal procedures for contingencies during upsets in its activities that may result in cyanide exposures or releases. The *Emergency Planning Manual* does consider potential failure scenarios appropriate for its site-specific environmental and operating circumstances. The Facility stores cyanide within IBCs within dedicated warehouse buildings. At no time is the cyanide product handled or mixed at the site.

The Facility has a procedure to identify when site operating practices have or will be changed from those on which the initial design and operating practices were predicated. The Facility has a Management of Change procedure that outlines the assessment of change. The scope of the procedure covers:

...all proposed changes to compliance and process, plant equipment & building, human resources and new customers or products or any proposed change that will or may have impact upon health and safety, the environment, security or compliance to regulatory requirements, policy or procedure.

Three risk assessments have been completed for the introduction of cyanide storage at the Facility.

Preventative maintenance programmes required under this Production Practice are only relevant for forklift operations and racking systems. Forklift operators are required to conduct pre-operational checks on all lifting equipment each morning prior to use. The daily checks, along with engine hours are recorded on a weekly check sheet. Any deficiencies noted are required to be signed off as completed by the mechanic and the repair date also noted. Forklifts are also serviced by external mechanics as part of a preventative maintenance programme based on engine hours.

The Facility does not produce cyanide or directly handle cyanide product. The Facility is a warehousing operation that removes IBCs from shipping containers and stores the IBCs within warehouses and then repacks shipping containers for export. As such, the requirement for monitoring process parameters with necessary instrumentation is not applicable.

The design of the warehousing drainage system prevents unauthorised/unregulated discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area. Warehouses at the Facility are enclosed to prevent stormwater ingress. Each warehouse has concrete floors bounded by a containment bund preventing stormwater ingress and releases from the warehouse. The floors grade to internal concrete sumps that flow to external concrete sumps.

The Facility has environmentally sound procedures for disposal of cyanide or cyanide-contaminated solids. Cyanide waste streams are typically limited to damaged IBC strapping during normal warehousing operations. Damaged packaging, contaminated solids and effluents require disposal during upset conditions and this is described in the *Safety Procedure for Cyanide Products*.

Cyanide is stored with adequate ventilation to prevent the build-up of hydrogen cyanide gas, avoid the potential for exposure to moisture, and in a secure area. The Facility stores cyanide in IBCs within passively ventilated warehouses, with grated gaps at the base of the warehouse walls and whirlybird style roof vents. Ad hoc HCN monitoring has indicated that there is no buildup of gas.

The storage of cyanide within IBCs within enclosed warehouses minimises the potential for exposure of cyanide to moisture.

The Facility is a secured MHF Facility, with strictly controlled public access. The warehouses containing cyanide are also locked.

There are procedural arrangements to ensure that the cyanide produced by Orica is packaged and labelled as required by the political jurisdictions through which loads will pass. The Orica ICMC Compliance Coordinator advised that Orica monitors international legislation applicable to its supply of cyanide throughout the world. TCS also has procedures to ensure IBCs are correctly placed into containers and the containers are labelled in accordance with recognised dangerous goods guidelines.

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Name of Facility

Signature of Lead Auditor

3 October 2014

Date



Production Practice 1.3

Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 1.3 requiring the inspection of cyanide production facilities to ensure their integrity and prevent accidental releases.

The Facility does not produce cyanide or directly handle cyanide product. The Facility is a warehousing operation that removes IBCs from shipping containers and stores the IBCs within warehouses and then repacks shipping containers for export.

The requirement for routine inspections of tanks holding cyanide solutions and pipelines, pumps and valves for structural integrity and signs of corrosion and leakage is not applicable.

Secondary containments are inspected for their integrity and sumps are check for the presence of fluids.

Racking facilities are inspected on a six monthly basis by an external service provider.

Inspection frequencies for the racking systems, secondary containments and sump collection systems appear sufficient to assure that equipment is functioning within design parameters.

The inspections observed were documented. The documentation identifies specific items to be observed and includes the date of the inspection, the name of the inspector, and observed deficiencies. The nature and date of corrective actions were noted as being documented, and records are retained.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



PRINCIPLE 2 – WORKER SAFETY

Protect workers’ health and safety from exposure to cyanide.

Production Practice 2.1

Develop and implement procedures to protect plant personnel from exposure to cyanide.

in full compliance with

The operation is

in substantial compliance with

Production Practice 2.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 2.1 requiring the Facility to develop and implement procedures to protect plant personnel from exposure to cyanide.

The Facility has developed formal procedures to minimise worker exposure. The Facility is a MHF and there is a Safety Case that provides the basis for the safe operation of the Facility. The Facility has procedures for unpacking and loading of shipping containers, which is the primary function of the Facility. There are also emergency response and inspection procedures in place. The Facility does not handle raw materials or unpackaged cyanide.

The Facility has a procedure to identify when site operating practices have or will be changed from those on which the initial design and operating practices were predicated. The Facility has a Management of Change procedure that outlines the assessment of change. The scope of the procedure covers:

...all proposed changes to compliance and process, plant equipment & building, human resources and new customers or products or any proposed change that will or may have impact upon health and safety, the environment, security or compliance to regulatory requirements, policy or procedure.

Three risk assessments have been completed for the introduction of cyanide storage at the Facility.

The Facility does solicit and considers worker input in developing and evaluating health and safety procedures. The Facility has established a health and safety committee that meets monthly on site and there is a formalised agenda and minutes for this meeting that includes consideration of safety matters. The agenda for the meeting includes Management of Change, Training, Procedures and Audits.

The Facility does not produce cyanide or directly handle cyanide product. As such, HCN gas is not produced under normal operating conditions. Therefore, the Facility does not utilise monitoring devices under normal conditions due to the nature of the task and conditions of storage. However, the Facility has undertaken initial measurements for HCN within the warehouses by monitoring for HCN four times a day over a period of one month to confirm that under normal operating conditions controls are adequate to limit worker exposure. Additional ad hoc monitoring conducted by Orica’s ICMC Compliance Coordinator over a four hour period also did not identify the presence of HCN gas.

The HCN monitoring equipment is maintained, tested and calibrated as directed by the manufacturer. The Facility has a Drager X-am 7000 mutligas meter that has been configured to include a HCN sensor. Calibration records are retained for at least one year.

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The Facility has identified areas and activities where workers may be exposed to HCN gas or sodium cyanide dust and requires the use of personal protective equipment, as necessary, in these areas when these activities are being performed. Monitoring has indicated that HCN gas is not produced under normal operating conditions, As such, HCN monitoring equipment is only required when dealing with a spilt product or where it is suspected that the product/package may be wet.

The Facility does require personal protective equipment (PPE) within the Facility. Additional PPE is required for abnormal operating conditions, such as spillage.

The Facility has provisions to ensure that a buddy system is used, or workers can otherwise notify or communicate with other personnel for assistance, help or aid where deemed necessary. The Facility has an intrinsically safe radio communication system in operation.

The Facility does assess the health of employees to determine their fitness to perform their specified tasks. The Facility has a pre-employment medical process to assess worker capability and check that they are medically fit to undertake the inherent requirements of their role. The Facility also has a drug and alcohol testing procedures.

The Facility does not require personnel to change clothing for accessing the cyanide storage areas. The warehousing of cyanide contained within IBCs does not present a risk to employees that require managing through a clothing change policy. As cyanide is contained within IBCs and contact with cyanide would not occur under normal operating circumstances, and given the controls the site has implemented as a MHF, the Auditor is satisfied with this approach.

Warning signs advising workers that cyanide is present and that, if necessary, suitable PPE must be worn, are located around the Facility. Warning signs are located on the outside of the warehouse buildings at entrance points and within the warehouse on the outside of the IBCs.

Personnel are prohibited from smoking, eating and drinking, and having open flames within the site, including the facilities used to warehouse Orica's cyanide product. Signage is displayed at the main gate and at the access point to the site office to communicate these prohibitions. These messages are reinforced in the Site Induction and in the training materials for the various warehouses.

Production Practice 2.2

Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

in full compliance with

The operation is

in substantial compliance with

Production Practice 2.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Production Practice 2.2 requiring the development and implementation of plans and procedures for rapid and effective response to cyanide exposure.

The Facility has developed specific written emergency response plans for cyanide exposures at the warehouse Facility. The *Emergency Planning Manual* for the site outlines the emergency management framework and includes basic instructions on responding to cyanide related incidents. The *Safety Procedure for Cyanide Products* provides more detailed response actions for the medical treatment.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



TOLL CUSTOMISED SOLUTIONS, CYANIDE PRODUCTION AUDIT, LAVERTON FACILITY, SUMMARY AUDIT REPORT

Showers, low-pressure eye wash stations and non-acidic fire extinguishers are located at strategic locations throughout the Facility. They are maintained and inspected on a regular basis. The Facility has a six monthly preventative maintenance inspection and servicing programme. Dry powder fire extinguishers were observed throughout the Facility. No carbon dioxide fire extinguishers were observed.

The Facility has oxygen, a resuscitator, antidote and a means of communication or emergency notification readily available for use in the plant. Emergency showers and eye wash stations are located strategically throughout the Facility and a shower is located at the entrance to Warehouse 5. The Facility has six cyanide antidote kits (dicobalt ededate). An oxygen resuscitator is stored in the First Aid room in the main office.

The Facility inspects its first aid equipment regularly to assure that it is available when needed. The first aid and emergency response equipment is stored and tested as directed by their manufacturer and replaced on a schedule that assures they will be effective when used. An inspection of the first aid equipment found the equipment listed to be present and in serviceable condition.

SDS' and first aid procedures on cyanide safety are in the language of the workforce (English) and are available to workers at the site. All the signs and procedures are in English, which is the official language. The IBC external packaging also provides information on cyanide hazards.

Cyanide is only present on site in solid form within IBCs. There are no tanks, pipes or other infrastructure that contains cyanide. The IBCs are labelled in accordance with Australian Dangerous Goods (ADG) and International Maritime Organisation Dangerous Goods (IMDG) standards, which identify and alert workers to the contents of the IBCs.

The Facility provides warehousing services for cyanide packaged in IBCs, accordingly there is not a change policy or formalised decontamination procedure applicable for the site. Notwithstanding, information and instruction is provided on good hygiene practices when working around chemicals.

The Facility has its own on-site capability to provide first aid, but not higher level medical assistance to workers exposed to cyanide. The site has a number of first aid responders that are based at the Facility. The Facility has first aid equipment located at the main office.

The Facility has developed a procedure to transport exposed workers to locally qualified, off-site medical facilities. In the event that transport of exposed workers is required to offsite medical facilities the transport would be undertaken by the Victorian Ambulance Service.

The Facility has alerted local hospitals, clinics, etc. of the potential need to treat patients for cyanide exposure, and the Facility is confident that the medical provider has adequate, qualified staff, equipment and expertise to respond to cyanide exposures. The Facility has a relationship with a clinic, which is located near the Facility. The nearest hospital is the Footscray Hospital, which Orica has supplied a cyanide antidote kit to.

Mock emergency drills are conducted periodically to test response procedures for various exposure scenarios. The Facility conducts an annual site evacuation drill and has conducted dangerous goods spill response drills in September 2012 (non-cyanide) and October 2013 (cyanide specific).

Procedures are in place to investigate and evaluate cyanide exposure incidents to determine if the operations programmes and procedures, to protect worker health and safety and to respond to cyanide exposures, are adequate or need to be revised.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



PRINCIPLE 4 – TRAINING

Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Production Practice 4.1

Train employees to operate the plant in a manner that minimises the potential for cyanide exposures and releases.

The operation is **in full compliance with** **Production Practice 4.1**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 4.1 requiring employees to be trained to operate the plant in a manner that minimises the potential for cyanide exposures and releases.

The Facility trains workers to understand the hazards of cyanide through the delivery of a sodium cyanide safety awareness presentation that has been developed by the cyanide producer. This presentation is delivered to site personnel every three years.

Site training materials introduce the items of PPE that are used at the Facility, specifically basic PPE and supplementary PPE. Practical training in the correct use of PPE is provided by the Health Safety and Environment (HSE) Advisor on the site.

The Facility trains workers to perform their normal production tasks with minimum risk to worker health and safety and in a manner that prevents unplanned cyanide releases. The Facility has a site induction programme that provides the overview of site safety rules and requirements. Workers are then trained through the site passport system, where they are trained up on areas of the Facility. The warehouse numbers are linked to work skills and workers can only work in areas where they have been trained. The training materials include core skills and duties to be undertaken by the employee to complete the task.

The training elements necessary for the unloading, storage and loading of cyanide IBCs is covered through training for the operation of forklifts, which is part of nationally recognised industry certification, and through onsite procedures and cyanide awareness.

Appropriately qualified personnel provide the training. In the opinion of the Auditor, there is a sound base of technical expertise in the team of people involved in providing training, both in general and particular to the cyanide operations.

Training on forklift operation and use is provided by nationally recognised training organisations in accordance with the Australian Qualifications framework. Organisations providing certified training meet training qualifications requirements.

Employees must undergo the appropriate training before being allowed to work with cyanide at the Facility.

The Facility evaluates the effectiveness of cyanide training through the use of questionnaires. The documentation on which these evaluations have been based is filed in individual staff files.

TCS Laverton Facility

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Signature of Lead Auditor

3 October 2014

Date



Production Practice 4.2

Train employees to respond to cyanide exposures and releases.

in full compliance with

The operation is

in substantial compliance with

Production Practice 4.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 4.2 requiring employees to be trained to respond to cyanide exposures and releases.

The Facility provides training in procedures for response to cyanide releases. This includes training in raising the alarm, emergency response, fire extinguishers, SDS, first aid, PPE and sodium cyanide safety.

The Facility has recently developed pre-incident plans for cyanide that form part of the emergency planning process and have conducted a toolbox talk to inform the responders of the nature of the plans. The Facility has also conducted a cyanide specific exercise to review the content and appropriateness of the plans.

Emergency drills are evaluated from a training aspect to determine if personnel have the knowledge and skills required for effective response. Briefing notes are produced at the end of each mock drill. The notes typically detail what happened, what could be done better and actions to be completed.

Training records are retained throughout an individual's employment, documenting the training they have received and including the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials. Training files for members of the ERT were reviewed and contained evidence of training including course content, assessments and certificates. Where external training is conducted, certificates of attendance or attainment are retained on the individual's file.

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PRINCIPLE 5 – EMERGENCY RESPONSE

Protect communities and the environment through the development of emergency response strategies and capabilities.

Production Practice 5.1

Prepare detailed emergency response plans for potential cyanide releases.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.1 requiring a detailed emergency response plan for potential cyanide releases.

The Facility has developed an *Emergency Planning Manual* for the management of cyanide related emergencies associated with the storage of cyanide. The Facility is a designated MHF under Victorian legislation and is used for the storage and distribution of dangerous goods. The *Emergency Planning Manual* has been developed to manage and mitigate emergencies likely to be encountered by the Major Incident Scenarios under regulations 5.2.9-5.2.11 of the *Occupational Health and Safety Regulations 2007*.

The *Emergency Planning Manual* does consider the potential failure scenarios appropriate for its site-specific environmental and operating circumstances. As noted previously the site stores cyanide within IBCs within dedicated warehouse buildings, at no time is cyanide product handled or mixed at the site. The manual includes the following scenarios:

- Catastrophic release of HCN gas.
- Releases during loading.
- Releases during fires and explosions.

The *Emergency Planning Manual*:

- Describes specific response actions, as appropriate for the anticipated emergency situations, such as evacuating site personnel and potentially affected communities from the area of exposure.
- Considers the site in context of neighbouring facilities and the process for evacuating the site and notifying regulatory authorities of emergency situations.
- Considers cyanide spills and contains procedure to limit the spread of releases and control the releases at their source.
- Describes specific actions necessary for containment, assessment, mitigation and future prevention of releases.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



Production Practice 5.2

Involve site personnel and stakeholders in the planning process.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.2 requiring the Facility to involving site personnel and stakeholders in the planning process.

The Facility has involved its workforce and stakeholders in the emergency response planning process. The Facility has undertaken the following to involve internal stakeholders:

- Initial and periodic reviews of the *Emergency Planning Manual*.
- Toolbox discussions on emergency response
- Training exercises

As the Facility is a designated MHF, the Emergency Planning Manual is submitted to the regulator. There is a formalised regulatory emergency response framework established for Victoria and the Facility is part of that framework. Under local legislation, the emergency manifest for the site must be available at the main entrance to the site for reference by the fire brigade and emergency services.

Communities have not been consulted within regard to specific cyanide emergencies as no community or neighbouring business has been identified as likely to be affected (based on a review of potential releases from the Facility and the distances involved). Furthermore, as the Facility is MHF, the Safety Case assessment by the regulator can be considered to satisfy consultation with the community.

The Facility has not made potentially affected communities aware of the nature of their risks associated with accidental cyanide releases as the scenarios identified at the site are unlikely to affect or require actions by the community. The most credible scenario of an incident at the Facility would involve dropping an IBC during a transfer, resulting in a spillage of solid cyanide. The zone of influence of such a scenario is limited to the Warehouses.

The Facility has involved local response agencies such as outside responders and medical facilities in the emergency planning and response process. External responders include Orica, medical facilities, police and fire brigade.

The Facility has engaged in regular consultation and communication with stakeholders to assure that the plan addresses current conditions and risks. The plan has recently been updated including the pre-incident plans for cyanide related emergencies. These updates were communicated to stakeholders through toolbox talks and emergency response drills. Orica were involved in the amendments and response exercise.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



Production Practice 5.3

Designate appropriate personnel and commit necessary equipment and resources for emergency response.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.3 requiring designated appropriate personnel and committed equipment and resources for emergency response.

The Emergency Planning Manual designates appropriate personnel and commits necessary equipment and resources, as follows:

- Part 4 – Responsibilities and Duties designates primary and assistant Incident Coordinators with explicit authority to commit the resources necessary to implement the Plan.
- Wardens, First Aid Officers and the site ERT is identified within Part 4 of the Plan.
- The plan stipulates the emergency response training required for the identified positions.
- Call-out procedures and 24-hour contact information for the coordinators and response team members are detailed within the plan.
- Duties and responsibilities of the coordinators and team members are specified.
- Part 5 – Company Premises and Equipment lists all emergency response equipment that should be available.
- Procedures and checklists for the inspection of emergency response equipment are detailed.
- The plan describes the role and interface with outside responders in emergency response procedures (e.g. medical facilities, fire brigade and police).

As the Facility is a MHF, the role of outside entities is mandated through the emergency response framework implemented by the government of Victoria. There is a formalised licensing and regulatory oversight of the Facility, including for emergency response. The types of cyanide related emergencies identified are unlikely to require the assistance of outside responders with the exception of large scale fires, where the fire brigade become the lead agency and control the scene.

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Date



Production Practice 5.4

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.4 requiring development of procedures for internal and external emergency notification and reporting.

- The *Emergency Planning Manual* does include procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the emergency. Details provided include those for: Toll Customised Solutions Emergency Response Centre
- Environmental Protection Agency
- Emergency services
- WorkSafe Victoria
- Orica.

The *Emergency Planning Manual* does not include procedures and contact information for notifying potentially affected communities of incidents and/or response measures. The most likely scenario at the Facility would involve dropping an IBC during a transfer Facility resulting in a spillage of approximately 1.1 tonnes of solid cyanide. As such, communities are unlikely to be impacted and have not been consulted with regard to cyanide Facility specific emergencies.

Responsibilities have been allocated within the Emergency Planning Manual for communicating with the media.

Production Practice 5.5

Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.5 requiring the Facility to incorporate monitoring elements that account for the additional hazards of using cyanide treatment chemicals into response plans and remediation measures.

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The manual describes specific, appropriate remediation measures, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris. This includes descriptions on decontamination of soils or other contaminated media.

The manual requires the responder to notify the Orica Emergency Response Service, which is listed as the prime contact and information concerning the management of spill clean-up debris is initiated through this service.

Provision of an alternative drinking water supply is not identified as being necessary as spills would be contained within the Facility and the area supplied by a potable water scheme that would not be impacted by a cyanide emergency on site.

The manual contains a warning not to use sodium hypochlorite or ferrous sulphate to treat cyanide that has been released into surface waters

The Emergency Planning Manual addresses the need for environmental monitoring (in water and soil) to identify the extent and effects of a release, and includes sampling methods, parameters and locations. The site has been developed to contain spill onsite within dedicated containment systems and the testing regime is focused on assessing levels within these systems prior to release.

Production Practice 5.6

Periodically evaluate response procedures and capabilities and revise them as needed.

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Facility is in FULL COMPLIANCE with Production Practice 5.6 requiring the Facility to periodically evaluate response procedures and capabilities and revise them as needed.

The *Emergency Planning Manual* includes provisions for reviewing and evaluating its adequacy on a regular basis. The *Emergency Planning Manual* (Revision 8) was last reviewed on 18 October 2013.

The Facility conducts mock drills and the Facility has a systematic process whereby the lessons learnt from drills are translated into corrective actions. Mock drills are carried out every three years.

TCS Laverton Facility

Name of Facility

Signature of Lead Auditor

3 October 2014

Date



Report Signature Page

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APPENDIX A

Limitations



LIMITATIONS

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