INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

CYANIDE PRODUCTION SUMMARY AUDIT REPORT TEMPLATE

FOR THE

INTERNATIONAL CYANIDE MANAGEMENT CODE

JUNE 2021

INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

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Orica Malaysia		22-23 June 2023
Name of Facility	Signature of Lead Auditor	Date

PRODUCTION SUMMARY AUDIT REPORT TEMPLATE

Table of Contents

Introduction

This document provides the framework for the information that an auditor must include in the Summary Audit Report prepared for a Cyanide Code Certification Audit conducted for a cyanide production facility and serves as a general template for presenting the required information.

The International Cyanide Management Institute ("ICMI" or "the Institute") reviews the Summary Audit Report to ensure that it accurately represents the results of the Detailed Audit Findings Report and includes sufficient information to demonstrate the basis for each finding. Once ICMI determines that all documentation required for the Cyanide Code Certification Audit is complete, it posts the Summary Audit Report on the Cyanide Code website.

Instructions

1) The basis for the finding and/or statement of deficiencies for each Standard of Practice should be summarized in the Summary Audit Report. The Summary Audit Report is intended to provide a summary of the information included in the Detailed Audit Findings Report prepared for the certification audit; and therefore, should include only information that is presented in the Detailed Audit Findings Report.

2) The name of the cyanide production facility, the Lead Auditor's signature, and the submittal date of the final report must be included at the bottom of each page of the Summary Audit Report.

3) An operation that is found in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.

4) The Summary Audit Report, the Detailed Audit Findings Report, and any necessary Corrective Action Plan with all required signatures must be submitted in electronic format to ICMI within 90 days of completion of the site inspection portion of the audit. An electronic copy of a letter from the owner or authorized representative of the audited operation granting ICMI permission to post the Summary Audit Report and Corrective Action Plan (if one is necessary) on the Cyanide Code website must also be submitted, along with both an electronic copy and a hard copy of a completed Auditor Credentials Form. The Lead Auditor's signature on the Auditor Credentials Form must be certified by notarization or equivalent. Electronic documents should be submitted to the Institute via email at:

audits@cyanidecode.org

The hard copy of the notarized Auditor Credentials Form should be sent to:

International Cyanide Management Institute

1400 I Street, NW, Suite 550

Washington, DC 20005, USA

5) The Summary Audit Report should include a description of the operation, identifying the facilities included within the scope of the audit and any new facilities or facilities that have undergone substantial changes since the previous audit (in the case of a recertification audit), and indicating key operational components such as cyanide form(s) produced, packaging and storage, and other site-specific operational features that provide context to the reader ahead of the audit findings. The description of the operation should include sufficient information to describe the scope and complexity of the cyanide production operation being audited.

Operation General Information

Name of Production Facility:	Transfer Station of Orica Malaysia
Name of Facility Owner:	Mr. Jeremy Stanley, Area Business Manager – Cyanide & Indirect, Asia, Orica
Name of Facility Operator:	Orica Malaysia Sdn. Bhd.
Name of Responsible Manager:	Mr. Musa BIN MA'AMOR, site supervisor
Address:	Lot 87968, Jalan Perigi Nenas 8/10, Kawasan Perindustrian Pulau Indah, 42920 Port Klang, Selangor
State / Province:	
Country:	Malaysia
Telephone:	Tel 60 3 7859 8312
Fax:	Fax 60 3 7859 8314
Email:	musa.maamor@orica.com
Report accepted by the Facility Owner:	(Signature) Jeremy Stanley

Operation Location Detail and Description

Provide a description of the cyanide production operation (see Item 5 in the Instructions, above).

Orica Malaysia SDN. BHD. was licensed on 1st Jan. 2022 by the government for business and with license of 'wholesaler' s poisons license'

Production conducts at the address above in an exclusive warehouse that operated by CFA with security guard and CCTV.

Main activity of production:

One transfer plant: operated and managed by Orica. Transfer NaCN from bag to bulk container (sparge isotainer). Whole transferring process is dry process without any additive or reaction processes.

Production type: batch operation by manual (subject to production order)

Production: detail in the TRANSFER PLANT NORMAL OPERATION (OM-WI-TF-001)

1. Transfer plant is equipped with automatically control transfer hopper, cranes, hydraulic system and compressed air system.
2. Raw material (one ton) in a double bags and wooden box from the same warehouse operated by CFA
3. Move by electrical fork lifter from storage area to the receiving area for handover to

production (operated by Orica); and then lift to transfer hopper with bag filter

4. NaCN transfer to sparge isotainer (27 tons) via enclosure hopper and duct sealed to prevent air and moisture.
5. Transfer completed and sealed then pick up by transportation company to clients.
6. Whole production operated by 2 workers at the same shift with one supervisor, normally 2 batches/one day.

Auditor's Finding

This operation is

■ in full compliance

☐ in substantial compliance *(see below)

☐ not in compliance

with the International Cyanide Management Code.

** The Corrective Action Plan to bring an operation found in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The operation must bring the operation into compliance within one year from the date on which ICMI posts the operation's Summary Audit Report on the Cyanide Code website.*

Compliance Statement

The Summary Audit Report for a recertification audit must include one additional statement that is not required in the Summary Audit Report for an initial certification audit. For an operation found in full compliance with the Code, the report must indicate whether the operation had any compliance issues or significant cyanide incidents since its previous certification and identify where in the report such information can be found.
This operation has not experienced any compliance issues or significant cyanide incidents during the previous three-year audit cycle.

Auditor Information

Audit Company: Paul Ng

Lead Auditor: Paul Ng

Lead Auditor Email: paul.ng.esg@gmail.com

Names and Signatures of Other Auditors:

Auditor 1: NA

Name (Print/Type) Signature

Auditor 2: NA

Name (Print/Type) Signature

Auditor 3: NA

Name (Print/Type) Signature

Dates of Audit: 22-23 June 2023

Auditor Attestation

I attest that I meet the criteria for knowledge, experience and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, 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 Cyanide Code Auditors.

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

Orica Malaysia		22-23 June 2023
Name of Facility	Signature of Lead Auditor	Date

Principles and Standards of Practice

Principle 1 | OPERATIONS

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

Standard of 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
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

The Commissioning Check Sheet for the Port Klang Transfer Station was approved on April 23, 2022, by authorized personnel from the Construction Works Company and Orica Malaysia. This approval confirmed the compliance of the quality control and assurance programs during construction and commissioning.

A Letter of Start of Operation was issued by Orica Malaysia's Director, signifying the commencement of operations for the new plant.

As a new facility, modifications were not required. Detailed design and as-built drawings were retained, covering safety, P&ID diagrams, and construction details.

The project involved multiple contractors, subsequently managed and approved by Orica's project team. Some QC and QA records were not retained on-site, but inspections by the supervisor, a government-licensed supervisor appointed by Orica, ensured compliance. Certificates of test and examination were available for equipment like slings and cranes.

The production area used concrete with epoxy coating, suitable for cyanide and high pH conditions. Metal equipment in contact with NaCN was coated with paint and epoxy, including hoppers and platforms.

To prevent material spillage during power shutdowns, an automatic system was in place. The oil hydraulic system maintained the ISO tank's position during power failures, preventing leakage. The dry transferring process ensured only dry products were present, even in case of bag rupture.

The concrete with epoxy coating in the production area prevented subsurface seepage, eliminating the need for level indicators.

Routine production inspections included monthly sampling of the sewer system's liquid content.

Design drawings and containment calculations confirmed the ISO tank transferring

area's capacity to contain the in-process product.
Wastewater from the daily changing room's decontamination process was stored in an ICB tank within secondary containment. Overflow directed contaminated liquid to the storm/rain drain system, requiring monitoring. Accumulated liquid in the storm/rain drain system was sampled and tested for compliance.
Raw materials were stored in double-sealed bags within wooden boxes in a rain-proof warehouse.
The entire production process occurred inside a building with two ventilation systems to prevent the accumulation of cyanide dust and hydrogen cyanide gas.
On-site observations ensured proper housekeeping within the production area, with access control measures enforced.
Solid cyanide storage was in a roofed and enclosed warehouse next to the production area, separate from incompatible materials.

Standard of Practice 1.2

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 1.2

Summarize the basis for this Finding/Deficiencies Identified:

Set of procedures were available on site for meeting ICMI requirements. This new production line adheres to established procedures with no significant changes. Any necessary modifications follow documented revision control.
Orica Group Procedure: SHES Management of Change is available but hasn't been applied due to the new plant's stability.
Preventive maintenance, including crane inspections, is outsourced to professional contractors. Crane routine inspections require identification with Orica/CFA, as the plant's facility is owned by CFA. The automatic process relies on mechanical switches, eliminating the need for production instrument calibration.
Workers routinely sample liquid in basins and follow disposal regulations outlined in procedures. Wasted empty ICB bags (category code: 409) are stored in sealed wooden boxes and transported to a government-authorized incineration plant, documented with a Consignment Note.
Procedures for cyanide packaging and labeling are followed and confirmed on-site, aligning with associated facility requirements.

Standard of Practice 1.3

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 1.3

Summarize the basis for this Finding/Deficiencies Identified:

The dry production process minimizes the presence of liquid substances in the production area. Compliance with the General Warehouse Safety Rules and Monthly Transfer Facility Inspection Checklist covers various aspects, including compressed air and hydraulic systems, hopper and ducts to ISO tanks, cranes, epoxy coatings, decontamination cabins, and stormwater drain CN tests.
During on-site observations, no deterioration or leaks were detected from the hopper and ducts. Some spots of precipitated salt, likely due to humidity, were identified and promptly cleaned during routine housekeeping.
Operations is not responsible for the integrity of the containers, it is under the Logistic team. Operations only conduct visual inspection. Any issues or defects, operation will feedback to Logistic team for action.
All facility units undergo monthly inspections as mandated by the Monthly Transfer Facility Inspection Checklist and routine external inspections, particularly for cranes that was sufficient to assure equipment is functioning with design parameters,. Inspection and maintenance records are available, with sampling data from the past six months using test kits. Any deficiencies are marked as "broken," and appropriate actions, such as "senior engineer repair," are recorded accordingly.

Principle 2 | WORKER SAFETY

Protect workers' health and safety from exposure to cyanide.

Standard of Practice 2.1

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 2.1

Summarize the basis for this Finding/Deficiencies Identified:

Several procedures are in place for different operational scenarios: Emergency Normal, Abnormal Operations and maintenance guidelines.
During on-site observations of normal operations, it was noted that workers consistently wore proper PPE and adhered to procedures. Warning signs, precaution notices, and GHS signs were appropriately displayed. Monthly safety meetings were scheduled, with the January 2023 meeting minutes reflecting worker input on safety matters.
The production area is categorized as a hazard zone, necessitating the use of proper PPE and HCN detectors for all personnel. Daily production logs are reviewed, with a maximum of two batches produced during a single shift, maintaining an eight-hour limit. Adequate safety stock of new and spare PPE, including coveralls, full-face masks, PAPRs, and filters (C4 type), is maintained.

Routine PPE inspections are conducted in accordance with the "Weekly Transfer Facility PPE Inspection Checklist," with room for improvement in housekeeping noted. Each worker is equipped with a personal CN gas detector, totaling five devices. The setting of personal HCN gas detectors were as Low alarm - 4.7ppm & High alarm - 10.0ppm. For low alarm, personnel should stop work and leave the area immediately. SCBA is required if to continue to be in the area. Area should be ventilated properly. For high alarm, no entry is permitted without SCBA. Refer to page 6 onwards for abnormal HCN levels.

A sampling video revealed that workers wore airtight coveralls with PAPRs, with one operating the crane and the other on the transfer hopper platform. HCN gas detectors (Honeywell BW Solo) are calibrated every six months by an external contractor.
Communication during operations involves the use of walkie-talkies and internal broadcasting systems, with workers paired as buddies. Occupational health checks and surveillance are managed by CFA for operators.

Health assessment reports for foreign workers are considered confidential and submitted directly to work permit authorities for "fit to work" assessments.
Clothing change policies are outlined in the "Normal operation procedures."
Daily housekeeping practices and PPE management are well-maintained, with immediate action taken in case of PPE contamination.
Prior to contractor entry into the production area, cleaning is performed, documented through Permit to Work (PTW) records. Special safety measures may be required, such as N95 masks, detectors, and gloves.
Warning signs indicating hazards and the necessity of PPE use, including N95 masks for visitors and a "no smoking" policy, are prominently displayed at main gates, fences, and building entrances to the control area.

Standard of Practice 2.2

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 2.2

Summarize the basis for this Finding/Deficiencies Identified:

The plant adheres to requirements outlined in Emergency Response and Abnormal Operations procedures. While there is a shower in the daily changing room next to the production area for accidentally and potential contact with CN, emergency showers and low-pressure eye wash stations are not currently on-site, budget has been approved and available for improvement by the Area Business manager for Asia of Orica.
Non-acidic fire extinguishers are regularly inspected by local authorities and undergo monthly checks conducted by supervisors, with two replacements in May 2023.
In case of emergencies, the plant has confirmed arrangements with Port Klang Hospital to provide necessary medical care, including oxygen and antidotes (administered by doctors). There is no stock of antidotes in the plant, as they are exclusively permitted for use by doctors. A drill photo indicates the involvement of doctors and nurses in emergency response procedures.
Two first aid boxes are regularly inspected and replaced, with the understanding that antidotes are only for use by doctors. Oxygen not on site considering the nearby clinic has stock available. Site visit and drill has confirmed the nearby government clinic is aware and are ready with the oxygen tanks.
Safety Data Sheets (SDS), first aid procedures, and other cyanide safety information are available in both English and Malay to cater to the workforce.
Hazard marks are utilized to alert workers to cyanide presence.

The direction of cyanide flow in pipes is not applicable, but crane operation directions are available.
General Warehouse Safety Rules and Decontamination of a Shipping Container are applicable, with consistent decontamination policies for employees, contractors, and visitors leaving areas with potential cyanide exposure.
In case of emergencies, workers equipped with full PPE remove affected individuals to safe areas, followed by intervention from doctors and nurses from Hospital. The plant has an Emergency Response Plan to contact Hospital for the transportation of exposed workers for further medical treatment.
Drills have been conducted with Hospital to formalize emergency medical support. Notification and correspondence with the local hospital are available, with the hospital confirming the availability of antidote stocks. The plant complies with Crisis Management requirements and has maintained an accident-free record over the years.

Principle 3 | MONITORING

Ensure that process controls are protective of the environment.

Standard of Practice 3.1

Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 3.1

Summarize the basis for this Finding/Deficiencies Identified:

The plant, situated within an industrial park, does not have direct discharge into surface water courses via sewer systems. Given its dry production process, there is typically no process water discharge to storm sewers, except for periodic releases from the changing room showers and seasonal rainwater. Monitoring to ensure compliance with cyanide discharge regulations is conducted using the "Monthly Transfer Facility Inspection Checklist," which includes sampling from the 1st and 2nd containment areas and storm sewers. These tests have consistently yielded results within the acceptable range, facilitated by the use of a colorimeter test kit.

The plant's location and production process naturally prevent environmental discharge, with evidence from local authorities corroborating this.

Internal controls adhere to numerical standards for cyanide species, as defined in Production Practice 3.1, items 2 and 3. Free cyanide is measured at/near the discharge point. As per Malaysia standard it would be 0.03mg/l.

As a newly constructed plant with a dry production process, there have been no recordable accidents or uncontrolled leaks.

Preventive measures such as bag filters and ventilation systems are employed to minimize the release of NaCN dust and gas into the atmosphere. Routine inspections and replacement of bag filters are conducted as needed to maintain their effectiveness. Overall, the plant's practices ensure compliance with cyanide discharge regulations and environmental standards.

Standard frequency of discharge monitoring will be on a monthly basis but testing will also be done prior to discharging water containing cyanide to ensure it is below 0.03mg/l.

Principle 4 | TRAINING

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

Standard of Practice 4.1

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 4.1

Summarize the basis for this Finding/Deficiencies Identified:

Workers undergo regular and refresher training as per the Training Matrix, with intervals of 1, 2, and 3 years for refreshed courses. This training encompasses the proper use of PPE in compliance with safety requirements. Emergency Response, Normal, and Abnormal Operations training is conducted to prevent unplanned cyanide releases.
To verify training adequacy, sampling and worker interviews are conducted. Refresh training is scheduled according to the training matrix, typically every 1-3 years, focusing on normal and abnormal production scenarios.
Training materials and elements, including procedures like ERP, normal operations, safety basics, PowerPoint presentations with images, and on-the-job training, are provided. Qualified trainers include supervisors as documented in training records.
Effectiveness of production process training is assessed through interviews, participation, and observations for evaluation. This comprehensive training approach ensures worker preparedness and safety compliance.

Standard of Practice 4.2

Train employees to respond to cyanide exposures and releases.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 4.2

Summarize the basis for this Finding/Deficiencies Identified:

The training matrix includes abnormal and emergency cyanide exposure scenarios. Valid training records are maintained in hard copies, containing details such as the date, topics, and evaluation results, without personal names. Drill records and these records serve as evidence of training.

Principle 5 | EMERGENCY RESPONSE

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

Standard of Practice 5.1

Prepare detailed emergency response plans for potential cyanide releases.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.1

Summarize the basis for this Finding/Deficiencies Identified:

The Emergency Response Plan encompasses various scenarios relevant to the dry process plant, such as sodium cyanide spills, container decontamination, fire response, and more. It outlines mitigation, prevention, and specific response actions, including evacuation procedures, first aid, and the use of cyanide antidotes from hospitals. A drill conducted in November 2022 incorporated multiple scenarios, including a fire accident, worker cyanide exposure, and medical response. Another fire drill is planned for 2023, continuing to enhance emergency preparedness and response capabilities based on the ERP's comprehensive guidelines.

Standard of Practice 5.2

Involve site personnel and stakeholders in the planning process.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.2

Summarize the basis for this Finding/Deficiencies Identified:

The CIMAH report, which involved five companies, including Orica, identified hazards as the basis for preparing the ERP. The ERP encompasses external entities and roles in supporting emergency response, detailed in 'APPENDIX 1 – Emergency Contact List' and 'Emergency Operations and Evacuation Flowchart.' This plan is reviewed biennially, involving stakeholder consultation and communication, ensuring it remains up-to-date and effective. The CIMAH report's content, including hazards, risks, and response actions, is publicly available to stakeholders, validated by the 2022 Information to Public (ITP) acknowledgment form. Previous drills have involved the workforce in ERP reviews, enhancing readiness for potential major accidents.

Standard of Practice 5.3

Designate appropriate personnel and commit necessary equipment and resources for

emergency response.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.3

Summarize the basis for this Finding/Deficiencies Identified:

The ERP incorporates key elements to ensure effective emergency response. It designates primary and alternate ER coordinators, identifies ER teams, and outlines their responsibilities. Training, as per the training matrix, is mandated and verified for adequacy. The ERP includes call-out procedures and 24-hour contact details, along with a comprehensive list of ER equipment, subject to monthly inspections per the Emergency Response Equipment Inspection Checklist. Additionally, it defines the role of external responders, as reflected in the Emergency Operations and Evacuation Flowchart. The November 2022 drill review demonstrated that external entities, such as hospitals and ambulances, are fully aware of their roles and actively participate in emergency response exercises.

Standard of Practice 5.4

Develop procedures for internal and external emergency notification and reporting.

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.4

Summarize the basis for this Finding/Deficiencies Identified:

The ERP includes the APPENDIX 1 – EMERGENCY CONTACT LIST and Emergency Operations and Evacuation Flowchart, featuring procedures and contact details for management, regulatory agencies, external responders, and medical facilities. Additionally, the ERP outlines a written procedure for notifying ICMI of significant cyanide incidents, consistent with the Emergency Operations and Evacuation Flowchart. It also maintains a contact list of local communities for effective communication during emergencies.

Standard of Practice 5.5

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.5

Summarize the basis for this Finding/Deficiencies Identified:

The ERP encompasses recovery and remediation strategies outlined in specific

scenarios, such as sodium cyanide spills inside/outside facilities, container decontamination, handling wet cyanide, fire response, and container rollovers. For instance, in the Sodium Cyanide Spill to Waterway or Drain (ERP 4.7), the plan prohibits chemical use and mandates constant monitoring through pH water sampling to assess release extent and impact. These measures ensure effective response and environmental protection in case of cyanide incidents.

Standard of Practice 5.6

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

The operation is
- ■ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

Standard of Practice 5.6

Summarize the basis for this Finding/Deficiencies Identified:

As per the ERP, regular reviews involve the safety team to account for site changes, with a mandatory 2-year review interval. A drill plan for 2023 and 2024 outlines preparedness. In November 2022, an extensive 8-stage drill was conducted, followed by a comprehensive ERP evaluation and review.