RUSTAVI, GEORGIA

# RUSTAVI AZOT INDORAMA PRODUCTION

# SUMMARY AUDIT REPORT

FOR THE INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

CYANIDECODE.ORG

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# RUSTAVI AZOT INDORAMA SUMMARY AUDIT REPORT

## Executive Summary

Current report constitutes the Cyanide Production Verification Protocol for the Rustavi Azot Indorama sodium cyanide production operations based on the five principles established by the International Cyanide Management Institute. Rustavi Azot has been operating since 1963 and was bought out by Indorama in 2023. This has triggered major modification processes which are currently underway.

"Greenrock International" LLC conducted the audit in late December 2024 using two of its accredited auditors. As a result of the audit, it has been established that Rustavi Azot is in substantial compliance with the ICMI Code principles. Details of the audit results are represented in the matrix below.

| RUSTAVI AZOT INDORAMA COMPLIANCE MATRIX | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Principle 1 \| OPERATIONS** | | | | | | | | | | | |
| Production Practice 1.1 | 1.1(1) | 1.1(2) | 1.1(3) | 1.1(4) | 1.1(5) | 1.1(6) | 1.1(7) | 1.1(8) | 1.1(9) | | |
| Production Practice 1.2 | 1.2(1) | 1.2(2) | 1.2(3) | 1.2(4) | 1.2(5) | 1.2(6) | 1.2(7) | 1.2(8) | | | |
| Production Practice 1.3 | 1.3(1) | 1.3(2) | 1.3(3) | | | | | | | | |
| **Principle 2 \| WORKER SAFETY** | | | | | | | | | | | |
| Production Practice 2.1 | 2.1(1) | 2.1(2) | 2.1(3) | 2.1(4) | 2.1(5) | 2.1.(6) | 2.1(7) | 2.1(8) | 2.1(9) | 2.1(10) | |
| Production Practice 2.2 | 2.2(1) | 2.2(2) | 2.2(3) | 2.2(4) | 2.2(5) | 2.2(6) | 2.2(7) | 2.2(8) | 2.2(9) | 2.2(10) | 2.2(11) |
| **Principle 3 \| MONITORING** | | | | | | | | | | | |
| Production Practice 3.1 | 3.1(1) | 3.1(2) | 3.1(3) | 3.1(4) | 3.1(5) | 3.1(6) | 3.1(7) | | | | |
| **Principle 4 \| TRAINING** | | | | | | | | | | | |
| Production Practice 4.1 | 4.1(1) | 4.1(2) | 4.1(3) | 4.1(4) | 4.1(5) | 4.1(6) | 4.1(7) | 4.1(8) | | | |
| Production Practice 4.2 | 4.2(1) | 4.2(2) | 4.2(3) | | | | | | | | |
| **Principle 5 \| EMERGENCY RESPONSE** | | | | | | | | | | | |
| Production Practice 5.1 | 5.1(1) | 5.1(2) | 5.1(3) | | | | | | | | |
| Production Practice 5.2 | 5.2(1) | 5.2(2) | 5.2(3) | 5.2(4) | | | | | | | |
| Production Practice 5.3 | 5.3(1) | 5.3(2) | | | | | | **KEY** | | | |
| Production Practice 5.4 | 5.4(1) | 5.4(2) | 5.4(3) | | | | | | Full Compliance | | |
| Production Practice 5.5 | 5.5(1) | 5.5(2) | 5.5(3) | | | | | | Substantial Compliance | | |
| Production Practice 5.6 | 5.6(1) | 5.6(2) | 5.6(3) | | | | | | Non-Compliance | | |

In order for Rustavi Azot to achieve full compliance with the Code, the following corrective actions shall be required:

- Make sure the integrity of the floor in the areas where cyanide is present is not compromised and the ongoing floor repair is completed as planned (Production Practice 1.1 (5));
- Make sure the outdated equipment such as pumps and valves is replaced to eliminate any possible leaks (Production Practice 1.3 (1));
- Make sure the cyanide packaging process improvements are completed as planned (Production Practice 1.1 (9)).

In reference to the International Cyanide Management Code for Cyanide Production, the auditors

would recommend to ICMI that the certification is granted to Rustavi Azot. The auditors would also recommend that the Corrective Action Completion Report is provided by Rustavi Azot within one year from the date of certification to demonstrate the execution of corrective actions in question.

## Introduction

This document represents a Summary Audit Report for the Cyanide Code certification audit of Rustavi Azot JSC, a company which conducts operate sodium cyanide production facilities located in the town of Rustavi, Georgia.

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 Auditis complete, it posts the Summary Audit Report on the Cyanide Code website.

Current Summary Audit Report has been prepared based on the information available at the time of the audit. Every effort has been made to ensure accuracy of the information presented herein with the supporting evidence available where applicable. Information provided by Rustavi Azot JSC has been taken in good faith and has been verified where possible.

# RUSTAVI AZOT INDORAMA SUMMARY AUDIT REPORT

## Operation General Information

| | |
|---|---|
| Name of Production Facility: | Rustavi Azot JSC |
| Name of Facility Owner: | Rustavi Azot JSC |
| Name of Facility Operator: | Rustavi Azot JSC |
| Name of Responsible Manager: | Gela Iakobashvili, Chief of Technical department |
| Address: | 2 Mshvidoba St., |
| State / Province: | Rustavi |
| Country: | Georgia, 3702 |
| Telephone: | +995 577 505762 |
| Email: | gela.iakobashvili@indorama.com |

## Operation Location Detail and Description

Rustavi Azot manufacturing complex, hereinafter referred to as, “Rustavi” Azot, “Rustavi Azot Indorama” or “RAI” interchangeably, is located in Rustavi town, some 25km south of Tbilisi, the capital of Georgia. JSC “Rustavi Azot” is the largest chemical company and only producer of industrial chemicals and mineral fertilizers in the South Caucasus. Rustavi plant has excellent access to transport infrastructure to export its products. Today, JSC “Rustavi Azot” is one of the leaders among the industrial enterprises in Georgia where more than 3000 people are employed.

The audited Rustavi Azot cyanide production site located in Rustavi is a 173Ha fenced off area with restricted access. Approximately 6km west of the manufacturing complex the Kura River flows and approximately 1km west runs a Canal. Location and general layout of Rustavi Azot industrial area with the railway shop and adjacent facilities can be seen on Figure 1.1.1.0. The area is guarded 24/7 by the security forces. In addition, Rustavi Azot uses a tenement of 23Ha in Gardabani where a municipal sludge accumulator is located to treat effluent water.

For the purposes of the audit, the scope includes the following facilities of the operation:

- HCN Plant which produces hydrogen cyanide;
- NaCN plant which produces sodium cyanide;
- Effluent Treatment Plant where cyanide concentrations are reduced and sent back to the process;
- Warehouse facility where pelletized product is packaged and stored.

Rustavi cyanide plant was established in 1971. Rustavi’s cyanide production facilities comprise a hydrocyanic acid production plant and a sodium cyanide production plant. Technical cyanide is

produced at the facility since October 1963 (HCN) while pure sodium cyanide is produced since December 1973. Sodium cyanide operation is designed with a maximum production volume of NaCN 11000tpa; current plant capacity is 42tpd. Final product apropos the design includes cyanide pellets and flakes, albeit only pellets are being produced currently.

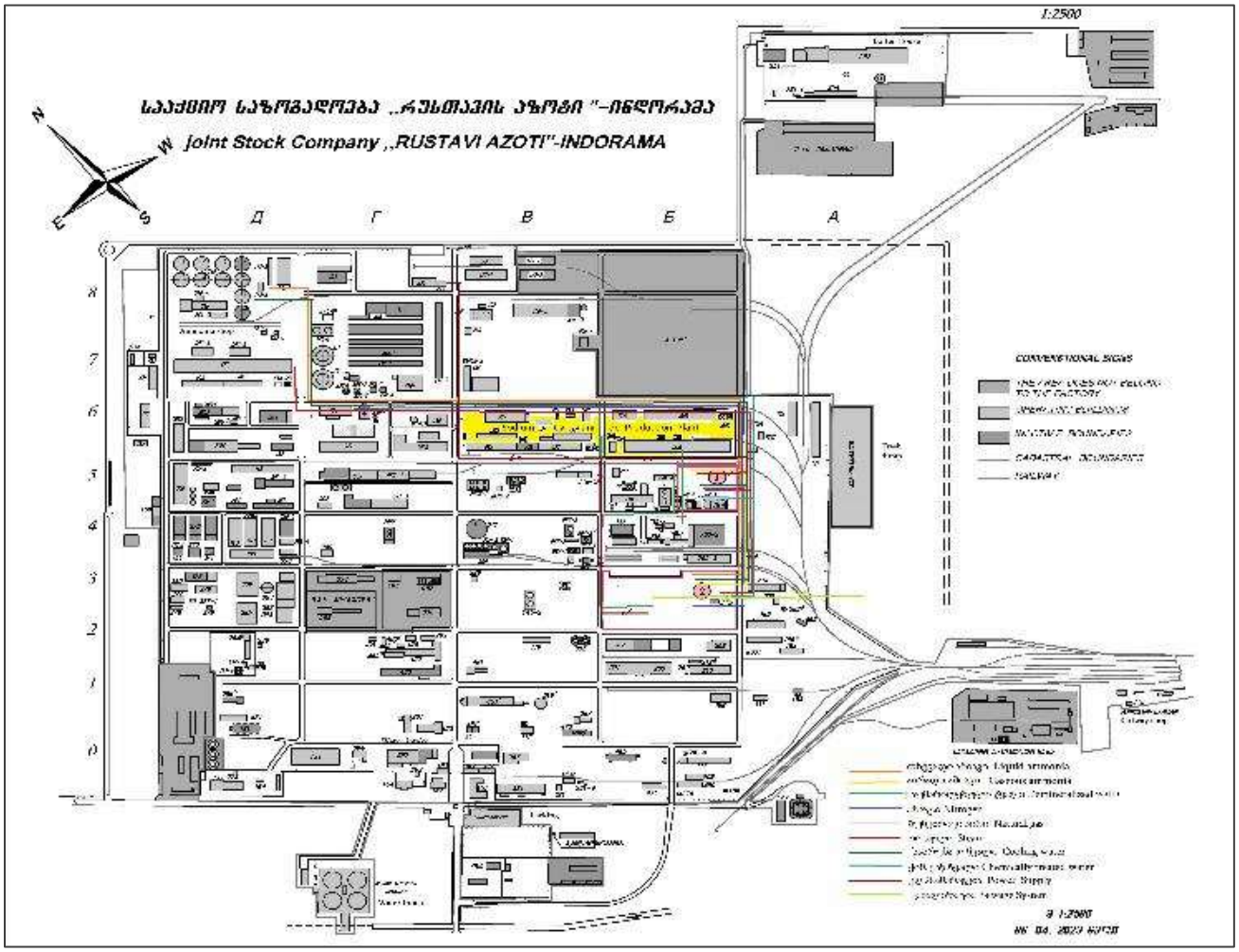


**Figure 1.1.1.0: General Layout of Rustavi Azot Industrial Facilities**

Since March 2023, Rustavi Azot is 100% owned by Indorama and has been undergoing major renovation and modernization. These include the purchase of the new control system for the cyanide production plant, refurbishment of the nitric acid plant, construction of the wastewater treatment plant and other improvement activities. New machinery for the emergency responders has been purchased as well as additional PPE and signage.

Rustavi Azot technological process comprises of two flowsheets: 1) production of hydrogen cyanide and 2) production of sodium cyanide. For the hydrogen cyanide production Rustavi Azot deploys

Andrussow method of ammoxidation using ammonia, natural gas and oxygen. Approximately half of the Hydrogen Cyanide produced globally is produced using this technique.

Hydrogen cyanide is captured and absorbed into caustic soda solution to form a solution of sodium cyanide which is then evaporated, concentrated and crystallized. Crystals of sodium cyanide are dried and compacted in a tablet press to form pellets. Sodium cyanide pellets are packed into big-bags (or drums) for storage and further distribution.

Treatment of cyanide wastewater is based on acidification of sodium cyanide with sulfuric acid, subsequent removal of cyanide from the solution by means of nitrogen and its return to the technology, further neutralization of residual sodium cyanide-containing waters with hydrogen peroxide. Finally, in order to completely neutralize it, it is cleaned with ultraviolet radiation.

## 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 the operation found in substantial compliance into full compliance is 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

"This operation was found in substantial compliance with the Cyanide Code based on the audit findings discussed in this report under the following Standard(s) of Practice:"

## Auditor Information

Audit Company: Greenrock International

Lead Auditor: Julia Kennedy

Email: juliakennedy@kennedy-global.com

Names and Signatures of Other Auditors:

Auditor 1: Gabriel Rodriguez Zamorano 

Name (Print/Type) Signature

Dates of Audit: 17-19 December 2024

## 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.

| **Rustavi Azot** |  | **18 March 2024** |
|---|---|---|
| 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<br>✓ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 1.1 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 1.1 (1) – 1.1.(4) and 1.1 (6) - 1.1 (8) requiring cyanide production facilities to be designed, constructed and operated to prevent releases of cyanide. Rustavi Azot is in SUBSTANTIAL COMPLIANCE with Production Practice 1.1 (5) and 1.1 (9).

In the course of the audit, the auditors have sighted several design documents and their approvals which confirm compliance, these included Soviet Era design documents, namely: Technological Process Flowsheet for the production of Hydrogen Cyanide and Technological Process Flowsheet for the production of Cyan Salts of pure Sodium Cyanide.

Updated technological process flowsheets from 2023 have also been sighted, including Technological Process Flowsheet for the production of hydrogen cyanide and Technological Process Flowsheet for the production of sodium cyanide, these are found appropriate. The auditors have sighted the process flowsheet design documents for both plants and are satisfied that the facilities are operating apropos the design parameters.

All materials used for construction of the cyanide production facilities are compatible with reagents used and processes employed. The use of the correct materials was defined during the project design phase. Expert conclusions and ministerial approvals are available and have been reviewed.

In addition, brick lining that is used for the on-going repairs of the floor and secondary bunds is acid-proof and alkali-resistant; specifications by Corroref™ have been made available for review and are found fit for purpose. Floor repairs are currently underway and are on target to near completion in 2025-2026.

Rustavi Azot operates automatic systems of “interlocks” to shut down production systems and

prevent releases due to power outages or equipment failures. The facilities have systems of interlocks for various phases of operations. Each system has an established lockout sequence.

The technological process of cyanide production is controlled from the central control room. The equipment dates back to the Soviet era yet is effective, as reported by the engineering personnel. It will be replaced with Honeywell automated equipment in 2025, reportedly, as has been done in RAI's ammonia production plant.

Rustavi Azot is in SUBSTANTIAL COMPLIANCE with Production Practice 1.1 (5) requiring cyanide to be managed on a concrete or other surface that can minimize seepage to the subsurface.

Over time, floor integrity in several shops has become compromised and as such RAI has commissioned an extensive floor repair/replacement project. During the site inspection, enforcement of the floor integrity was underway in both cyanide production plants and secondary bunds. Any areas with compromised floor integrity such as flooring or safety bunds have been relined with new acid-resistant tiles and furan resin mortar sourced from India. Specifications for both the tiles and the mortar filling have been reviewed and are found appropriate.

In order to achieve full compliance with this production practice RAI will be required to demonstrate the completion of the floor repair/replacement activity within one year from the date of certification. It is recommended that RAI collates an engineering commission to inspect the quality of the floor at the NaCN and HCN plants and other areas where cyanide is present upon completion of the floor improvements with an appropriate report made available for review.

Rustavi Azot employs, inspects, tests and maintain systems to prevent the overfilling of cyanide process and storage vessels. The systems include level indicators and high-level (and low level) indicators such as LICA, LIA and others. These send a light alarm followed by a signal to the Central Control Unit.

Thus, technical equipment such as overfilling detectors, level indicators and high-/low-level alarms are available at the facilities and are tested and controlled. The level indicators and similar measuring devices are listed in the operating procedures with the assigned ID name and number, method of testing and controls and other parameters, as witnessed by the auditors. The entire cyanide production process is controlled, supervised and checked by the staff.

The tank level gauges are checked each shift and recorded in the logbooks by the shift manager. The alarms are maintained on a monthly schedule and maintenance is carried out.

The auditors have been presented with maintenance schedules and logbooks of the checks being performed. These are currently maintained as paper versions in Georgian language.

Secondary containments have been designed to prevent releases to the environment. Construction monitoring and QA/QC was conducted on the containment structures and approved prior to the facilities being commissioned.

However, over time, secondary containment structures have been worn out and required significant repair and maintenance which they received in 2023-2024.

Secondary containments at the cyanide production facilities where tanks are located were inspected during the site visit and are found in good condition. Containment system at the sodium cyanide production plant was also inspected. The safety bunds were observed to have undergone significant repair and do not exhibit cracks or other breaches that may compromise their ability to effectively contain releases.

Rustavi Azot is carrying out major refurbishment of the secondary bunds as well as the construction of the new ones within the property, including the complete refurbishment of the NaOH secondary containment with the repair of the NaOH tanks.

To date, it has been concluded that not all secondary containments are entirely competent in all facilities where toxic exposures may occur. The secondary containment system is designed to contain the volume of the largest storage vessel with an additional allowance of 10%.

During the site inspection, pipeline inspection was carried out. Pipes appeared to have secondary containments, including the secondary containment for piping between HCN plant and the NaCN plant. Secondary containment consists in a second piping around HCH, NaCN pipes which contains water for temperature control purposes as per the original design.

Solid cyanide is stored in separate roofed storage buildings that prevent contact with precipitation. Water systems for potable use, safety showers or any other purposes are located in neighboring premises and leaks or other potential releases do not come in contact with cyanide containers. The floor of the warehouse is a concrete floor. Rainwater falling on the roof is diverted to adjacent storm sewers.

Cyanide Storage was inspected during the site visit, integrity of flooring appeared to have been in good condition. Cyanide is stored separately from other chemicals or products with adequate ventilation. Currently, cyanide packaging facility is being enhanced in order to minimize cyanide exposures and improve ventilation capacity of the packaging process itself.

The ventilation systems are installed in all premises, including in the cyanide storage and packaging area. Back-up ventilation option is available. The ventilation in the cyanide packing and storage area was improved in 2024 with 9 ventilation outlets mounted into the ceiling of the premises, the project is ongoing. The warehouse and packaging are equipped with CCTV and one stationary HCN monitor set for the maximum permissible concentration of cyanide (i.e., 0.3mg/$m^3$). Portable HCN detectors are also used as necessary.

Sodium cyanide briquettes produced by the plant are packed into primary (polyethylene bags) and secondary (drums, plywood boxes) packaging. The IBC boxes are packed and sealed in the packing area located on the ground floor of the unit. It appears that no contact with humidity in surrounding air occurs. NaCN is stored separately from other incompatible materials. Barrels or boxes with sodium cyanide are stored in closed warehouses in a vertical position in one, two or three tiers. Access to the warehouse is restricted to authorized personnel only that uses personal electronic permits.

Packaging for transportation of 1000kg of sodium cyanide includes a medium-tonnage container of a standard design made of plywood (plywood box). A soft container with an inner polyethylene layer is inserted into it and is filled with sodium cyanide briquettes. After filling and closing the flexible container, the box is closed with a lid and tied with a tape. The filled box is transported by forklift to the sodium cyanide storage. Packing in compound containers (ICM) and marking/labeling procedures are in place.

Cyanide packaging system is being upgraded to reduce contact of the workers during packaging through the improvement of the existing design. Importantly, acquisition of a new filling machine is considered by Rustavi Azot when practicable.

It is recommended that Rustavi Azot is considered fully compliant with this production practice as soon as it demonstrates the completion of the ongoing improvements to the existing packaging system.

Rustavi Azot is in SUBSTANTIAL COMPLIANCE with Production Practice 1.1 (5) and 1.1 (9). In order to achieve FULL COMPLIANCE with Standard of Practice 1.1 Rustavi Azot is required to fulfill the corrective actions pertaining to the Production Practice 1.1 (5) and 1.1 (9) as described in the Corrective Action Plan.

## 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<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 1.2 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 1.2 (1) - 1.2 (8).

Rustavi Azot has written management and operating plans and procedures for operating its cyanide production plant. The operation of the plant is described in full in the Technological Process Flowsheet for the production of hydrocyanic acid and pure sodium cyanide.

The facility has a full set of operating procedures that describe standard practices necessary for safe and environmentally sound operations, and also for contingencies during upsets in its activities that may result in emergencies related to cyanide exposure or releases. Operating procedures, parameters and instructions covering normal, operational upsets and emergency response are documented (in operation manuals and work instructions), are being updated and kept valid. Also, procedures are in place for training, personal protection equipment and instruction for respiratory protection. These procedures include:

- Technological Process Design Flowsheet;
- Emergency response plans;
- Working instructions;
- Technical documentation;
- Preventive maintenance program;
- Employee training program;
- Detailed work instructions;
- Risk assessments,
- Miscellaneous.

Other written instructions are in place that cover all aspects of worker safety in the workplace including hot work, cold work, fire safety, explosion risk, working at heights, working with electricity, etc. Plans and instructions are in place for emergency response and prevention.

Plans and procedures are in place for storing of packaged cyanide and loading/handling of packaged cyanide for delivery to customers. Technological Process Flowsheets provide for safety measures for storage and handling of raw materials, semi-finished products and finished products, as well as the transportation of finished products. All operations with raw materials and finished products are carried out in overalls, safety shoes and a protective mask.

The warehouse area is roofed and completely closed. Access by unauthorized persons is prohibited. In the sodium cyanide warehouse, only pallets and plywood boxes with polyethylene liners are combustible, but not the stored products (NaCN briquettes). As a fire safety measure, production facilities are equipped with powder fire extinguishers which are checked apropos the set procedures. Transportation of sodium cyanide is carried out by a licensed contractor under the contract. MSDS used for sodium cyanide are available and are detailed.

Contingency procedures are in place for addressing operational upsets and emergency shutdown. The ERPs are also in place to address emergencies including fire, chemical releases and exposures. Operating procedures detail actions to be taken in the event of an upset or an emergency. All foreseeable situations are documented in the procedures together with the response required to rectify an upset or emergency situation.

Management of Change procedure is in place and safeguards that any changes are carried out in a safe manner. Any changes are subject to review and sign off by senior managers. At the time of the audit, Management of Change procedure was made available and seems fit for purpose.

Rustavi Azot preventive maintenance program is appropriate and is maintained and updated on an annual basis. It covers all equipment (mechanics, electrical, machinery, measurement devices, safety) for production, ventilation, laboratory equipment, utilities, safety equipment, calibration, etc.

Annual maintenance plan has itemized equipment by the name of the equipment and scheduled maintenance date. Preventive maintenance programs include scheduled inspections and servicing all types of equipment: main and auxiliary equipment, electric equipment, measuring devices, etc.

Maintenance Schedule for the electric equipment at the Cyanide production plant, Maintenance Schedule for the main equipment in the Cyanide Production plant, Maintenance Schedule for the auxiliary equipment have been reviewed by the auditors. In addition, routine operational control is carried out by the shift managers and records are maintained in designated journals, including the records on the indicators of safe processes and analyses for all stages of operations.

Thus, all equipment and systems are serviced in accordance with the approved preventive maintenance programs. Maintenance of vehicles used for transportation and loading of product is carried on the basis of reaching of the set operating hours.

The cyanide production process is continually monitored by shift operators in the plant control rooms. Critical process parameters are observed, as demonstrated by the records reviewed. The equipment is inspected, any shortcomings are identified and repaired, example of repair reports

have been reviewed by the auditors. Calibration is conducted apropos the established schedule with calibration reports produced on time.

Rustavi Azot has a Maintenance Department with a dedicated calibration team. Deputy Chief Metrologist (Vladimir Loria) has the right to calibrate the equipment, which is confirmed by his ownership of a special stamp. Previously, calibration was carried out by a special department under the State Standard of Georgia. This unit has been abolished for several years now.

Calibration agency used by Rustavi Azot is Metrology LLC which is based in Tbilisi and Optec LLC based in Saint-Petersburg. The auditors have reviewed the calibration reports for 2024 and are satisfied that the equipment is calibrated apropos the established schedule.

The technological design excludes unauthorized/unregulated discharges into the environment of any cyanide solution or cyanide-contaminated water collected in the secondary containment. There have been no such discharges during the operation of the enterprise.

All wastewater from the cyanide plant is directed to the wastewater containment system. The sanitary laboratory regularly samples the effluents. The schedule of wastewater control is maintained in the sanitary laboratory and is regular (4-5 times a day). Monitoring of the groundwater is conducted using the existing boreholes. Cyanide concentrations were not detected in the effluents or the groundwater monitoring data. A video surveillance system is present at the facilities.

Secondary containment equipment and structures are monitored and checked for integrity by running a respective maintenance system with the established regularity. In case if spillages or unintended discharges occur (due to technical failures), no spillage or unintended discharges can penetrate the subsurface.

Rustavi Azot has developed procedures on handling and utilization of cyanide or other dry materials contaminated by cyanide. Contaminated clothing is washed with dedicated washing machines.

Rustavi Azot operates an incinerator where some items potentially contaminated with cyanide can be disposed of.

Hazardous waste contaminated with cyanide is collected and treated according to the local regulations by an authorized company under the contract.

The requirements for packaging and labeling at Rustavi comply with UN Recommendations on the Transport of Dangerous Goods and international regulation for transportation by road. Packaging and containers have Certificates of Conformity to the international standards, such as UN

Recommendations on the Transport of Dangerous Goods, International Maritime Dangerous Goods Code (IMDG), the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), and Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). The produced cyanide is packed in packages which are in full compliance with the international regulations for transportation of dangerous goods. Relevant Material Safety Data Sheet with comprehensive description and of current validity are available.

The finished product is produced in the form of briquettes. Finished product packaging stage is two-fold:

- Sodium cyanide powder, sifted from the drying stage on a screw sieve, is sent from line I to an elevator for processing; from line II, the powder can be packed into wooden containers;
- Line III is designed for packing screened briquettes into steel drums and wooden containers.

For packaging of finished sodium cyanide, 1t wooden containers are used. A polypropylene-polyethylene bag (big bag) is placed in a solid wooden container. Before loading the product, the container is prepared: wooden containers hold a container made of polypropylene laminated fabric, equipped with a polyethylene shell.

In the same way, the product is loaded into a wooden container. Filled containers are weighted and once the weight is adjusted, the head of the polypropylene container and the polyethylene shell is tied with a string, the “Rules for handling sodium cyanide” are inserted and the head of the wooden container is tightly closed. To maintain the integrity of the wooden container, two longitudinal and two transverse plastic clamps 10-15 cm wide, equipped with a steel lock, are installed on the outside and the container is marked.

Packaged sodium cyanide is stored in closed, clean and dry warehouses in a vertical position - head up, in no more than three tiers.

Sodium cyanide is transported by all types of covered and specialized transport. Before loading onto transport, each barrel is wiped with a clean cloth soaked in diesel fuel. A stencil is attached to the roof. Wooden or plywood stands are placed between the tiers. Net weight of the product loaded into a wooden container is 1000±1kg. Wooden containers and steel barrels used for packaging sodium cyanide must be certified.

Additional information is described in detail in the section 2.6.5. of “Basic rules for receiving, stowing, storing and transporting raw materials, materials, semi-finished products and finished products”.

## Standard of Practice 1.3

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

| | | |
|---|---|---|
| The operation is | ☐ in full compliance with<br>✓ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 1.3 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in SUBSTANTIAL COMPLIANCE with Production Practice 1.3 (1). Rustavi Azot is in FULL COMPLIANCE with Production Practice 1.3 (2) - 1.3 (3).

Routine inspections of the structural integrity of tanks holding cyanide solutions, signs of corrosion and leakages are undertaken by operators at the change of each shift as per the operator job instructions and approved charts. The facility runs routine inspections and maintenance programs to ensure the appropriate function of all equipment and technical systems, including monitoring of potential corrosion and leakage.

In addition to the inspections for tanks, pipelines, containments, etc., routine inspections of tanks, valves, and pipelines are undertaken on a regular basis by the maintenance department and are also performed regularly by shift leaders and operating personnel on a daily routine throughout the facility.

Plans, protocols and scheduling for secondary containment inspections is available. The results of these inspections are recorded in technical journals, in the equipment passports and repair logs, in acts of inspection of the secondary protective containment.

Inspections are regularly carried out by shift supervisors and operational personnel as well as by HSE personnel as part of the risk assessment procedures. Where maintenance protocols require significant repairs, contractors are involved.

Nevertheless, even though maintenance is conducted as required, certain equipment such as pumps and valves became outdated and showed signs of deterioration. However, it should be noted that RAI has replaced certain old valves and has placed a purchase order for the purchase of new pumps, six in total, as a replacement of the old ones, the contract has been presented to the auditors as evidence. Therefore, Rustavi Azot has made significant effort to improve this aspect.

Thus, in order for the operations to be fully compliant with this Production Practice, RAI is required to replace the overused pumps to eliminate leakage possibility in the future. Any such replacements and improvements should be properly documented.

Inspection frequencies are set out in the detailed work instructions for inspection and maintenance of equipment and buildings. The inspection and maintenance frequencies are sufficient. Inspections are carried out every shift, routine walkovers are carried out every two-three hours by the shift manager or technical personnel. Comprehensive inspection is carried out once a quarter with the involvement of the management.

Equipment condition and any areas of concern identified during the routine inspections of the plant are documented in the shift log and include the date of the inspection, name of the inspector and observations. The records are maintained in the control room. The logbook is reviewed and signed by the shift managers daily. A system is in place to handle the deficiencies coming out of inspections or technical checks. Rustavi Azot files a designated form on the results of the inspection, which includes information on the nature of observed deficiencies, the date of the inspection, as well as the date of deficiency being eliminated, the name of the inspector, and the measures undertaken to address and fix deficiencies identified. The results of inspections by the shift personnel are reflected in the shift logs.

Thus, corrective actions are documented and well-kept, the records contain information about specific deficiencies, indicating the numbers of technological positions, persons responsible for eliminating the deficiencies and the dates of implementation of measures.

## 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:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 2.1 (1) - 2.1 (10) requiring procedures to minimize worker exposures.

Rustavi Azot is preparing the operations to implement ISO 45000. Rustavi Azot has designed a Unified Preventive System in the field of Labor Protection and Health & Safety. The system defines HSE rules for the normal plant operations and persons responsible. It stipulates for the checks of the

knowledge of the HSE rules and safety techniques of the engineering-technical staff of the plant. HSE Manager heads up the commission that has been established and oversees targeted inspections of HSE related aspects and safety equipment in workshops to eliminate possible and detected violations. Theoretical and practical training with appropriate assessment is conducted.

HSE personnel systematically inspect the plant, inspect labour protection, condition of the safety equipment, monitor the compliance of the workers with the norms of the workplace instructions.

HSE personnel organize and carry out technical investigations pertaining to worker safety, safety equipment, investigate and register industrial injuries, analyze the causes and develop measures to prevent injuries and control the implementation of measures. Plant workers receive both oral and written instructions from the HSE department.

Importantly, Rustavi Azot performs risk analysis in which all relevant aspects regarding safety at work are considered, including routine production, non-routine activities (e.g. occurring emergency cases) and maintenance activities. Standard Operating Procedures (SOPs) describe measures to minimize worker exposure to cyanide. The company has developed work instructions on labor protection, as well as instructions for safe work for all types of jobs, working places and operations.

Stationery HCN gas monitors are installed at the cyanide production and storage facilities to ensure continuous air monitoring. In addition, Rustavi Azot is in possession of four mobile air monitors, 2 of which are used to monitor the content of HCN and other gases at a workplace and 2 are used for monitoring oxygen only.

In addition to the HCN monitors, cyanide production facilities, including the ETP are equipped with CCTV cameras and emergency alarm systems.

Operational procedures are also in place that provide instruction on work tasks associated with operating the plant.

The workplace air is continuously monitored, using the installed gas analyzers, content of harmful substances in the workplace air is monitored according to the approved schedule. Rustavi Azot analyses air at workspace (percentage of oxygen) to ensure optimal level of a minimum of 80% oxygen every 30-60 minutes depending on the hazard type of work performed. Mobile measurement (Drager 5800) devices are used and are attached on the employee chest. If there is a confined space where an employee spends 1hr and above and if a room doesn’t have a ventilation or if it is covered with walls on three sides, there is a requirement to use a mobile measurement device.

During normal plant operations the contact with or exposure of workers to cyanide is minimized.

Non-routine and emergency operations are regulated by the Emergency Response Plan, e.g. the behavior and reaction in case of release of HCN gas. Maintenance related activities, such as tank or pump repairs or other non-routine operations are described in the maintenance system, including relevant safety measures.

The chief engineer is integrated into the daily operations and in a close contact with the staff, conducts briefings and operational meetings. Staff proposals are communicated to the management during the operational meetings in a timely manner. Work crews are involved in developing or reviewing the operating procedures. Following any training or a mock drill, health and safety, medical, gas rescue and fire rescue squad discuss their observations and proposals among themselves with formal records being raised afterwards.

The areas where workers may be exposed to cyanide dust or hydrogen cyanide gas were defined in Rustavi Azot documentation. Areas where personnel can be exposed to cyanide dust or gaseous hydrogen cyanide are described in the operating procedures. Rustavi Azot has determined the areas and activities where cyanide exposures may occur and require appropriate personal protective equipment or use administrative controls.

Fixed HCN detectors are installed in areas where there is a risk of worker exposure to greater than 3 ppm (which is below ICMC's 4.7 ppm) cyanide and workers are required to use specific PPE when entering and working in these areas.

It is the responsibility of all workers to ensure that they and other workers wear appropriate PPE. Supply and distribution of PPE is undertaken on the basis of the approved PPE list and a Personal Card.

External personnel (such as maintenance personnel or auditors) are instructed individually about the risk and about the PPE to be used. During the audit, plant workers were wearing their PPE as required by instructions and trained. The auditors were fully supplied with all necessary PPE; explanation on how to use it was provided during the safety induction.

Monitoring equipment is in place to measure the HCN gas. HCN monitors in the cyanide production facilities are brand new and were installed in 2024. Alert limits for HCN at 3mg/dm$^3$ for the alert are defined for all gas detection monitoring devices. The monitoring devices are maintained, tested and calibrated according to manufacturer's directives by a professional service company (Saint Petersburg). In-house metrologist is qualified to carry out calibrations if necessary. The results of calibration activities are maintained and available.

HCN gas detectors are maintained as per the SOP according to which the schedules for equipment

and measuring instruments maintenance are developed. Maintenance of the stationary gas monitors is conducted every 40000 hours in conformance with the manufacturer recommendations of the manufacturer of the monitor and as required by their regulatory certificates. Maintenance is only permitted to be conducted by qualified persons or organizations accredited to undertake the work. The HCN gas monitors are calibrated by external organization located in Saint Petersburg (Optec LLC). Mobile gas monitors are not calibrated because they are self-calibrated before every use.

All hydrogen cyanide monitoring equipment as well as noise detector is tested and calibrated regularly with subsequent Protocols being raised and Calibration Certificate issued for each piece.

Calibration records for the gas monitoring equipment and other relevant records and documents are retained and have been reviewed by the Auditors. Calibration has been conducted by Metrology LLC, Optec LLC and Rustavi's qualified Metrologist who is in a possession of a stamp enabling him to conduct such calibrations. Official calibration office run by the Georgian governmental authorities has been shut for several years.

Rustavi Azot operates a buddy system primarily during a new employee training and a 90-day internship period, such training includes a theory, exam and internship. Buddy system forms part of the HSE management system and allows for mentoring and job training.

To ensure rapid communication, operators working with cyanide are provided with the radios. Employees involved with the technological process of sodium cyanide production has his personal portable radio communication device, in addition to the mobile phone.

Medical examination is conducted annually on all employees and records have been made available for review.

Every day before the start of the shift, the immediate supervisor interviews subordinates about their well-being, if necessary, directs the employee to the medical center of the enterprise.

Rustavi Azot has recently built and commissioned a new medical center in addition to the existing small medical facility that has been operating at the cyanide production department. Total medical staff count is 5, including paramedics, ambulance drivers and doctors. The medical centers are located within the perimeter of the site and perform employee medical examinations in addition to the routine and non-routine tasks.

All employees are subjected to obligatory preliminary and further regular medical examinations to determine their fitness to perform their specified tasks. Medical examinations include the ability to use a respirator, hearing and vision, and pulmonary function, based on the type of hazardous factors

of production.

Full medical checks are performed on an insurance using third-party organization. Every year full medical checks are done on the insurance company with whom Rustavi Azot has engaged into the agreement (reviewed by the auditors). Thus, all workers with potential exposure to hydrocyanic acid, its salts, other derivatives are examined once per year by Dermatovenereologist, Otorhinolaryngologist, Ophthalmologist and undergo laboratory and functional studies such as spirometry, pulse oximetry, visometry and biomicroscopy of the eyes.

In addition to routine checks, GPI Insurance company is also obliged to provide any medical service, such as toxicology, pertaining to the emergency situations. This is stipulated by the agreement. This insurance company covers all medical expenses. In case of a cyanide related emergency, there are toxicologists in every public clinic which is regulated by the state.

The clothing change policy is available at the facilities and has been requested for review. All employees, contractor representatives and visitors must use PPE, including facility provided coveralls where necessary. Coveralls must be removed, vacuum cleaned in a dedicated change room, and stored in separate lockers at the end of shift. The facilities are equipped with a modern laundry unit which was sighted during the audit. Procedures containing detailed description of clothes handling and clothes change policy are in place.

Hazard warning signs are present throughout the facilities to alert workers and inform them of the toxic chemicals and other hazards present. Signs are also posted that display the PPE required to be worn in various areas of the facilities. Overall, signage is excellent throughout all facilities.

It is a requirement for all workers and contractors to wear / use personal protective equipment (PPE) in all production buildings and in the working areas during all operational activities, including gas protection masks in areas, where cyanide dust or hydrogen cyanide gas may occur. The requirement for the respective PPE is shown with signs on some entries, doors and buildings.

Warning signs regarding the presence of cyanide, the need for PPE or the prohibition of fire and open flames are in place. The following signage is present at the facilities: NO FOOD / NO DRINKING / NO COOKING / CYANIDE PRESENT / NO OPEN FLAMES / USE PPE.

In addition, mandatory signs and pictograms indicating to wear PPE are put up on some entrances and walls as well as at the main entrance gates to the property and facilities.

Piping is labelled to identify the contents and includes flow direction arrows. RAI has made significant progress in repairing and repainting the tanks and pipes in the facilities in an effort to meet the

International Cyanide Management Institute requirements.

As part of personal hygiene requirements, no food, cooking or eating are permitted on the industrial premises except at specific locations or in the dining room. All personnel (including contractors and visitors) are required to wash hands thoroughly before eating, drinking or smoking. Smoking is only permitted in designated smoking rooms/areas. In case of safety breaches, employees are financially penalized.

### Standard of Practice 2.2

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

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|---|---|---|
| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 2.2 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 2.2 (1) - 2.2 (11).

Emergency Response Plans have been developed for the HCN and NaCN plants and have been reviewed by the auditors. There is also a separate ERP for the Ammonia Plant. The plans describe the response actions to be taken for various emergency scenarios, summary of the most important responsibilities in case of emergency, measures on cooperation with local and regional organizations. The documents incorporate certain requirements of ICMC. The major elements of the procedure are posted at strategic locations, included in the cyanide first aid kits, in an Emergency Response Plan, and included in Standard Operating Procedures, Safety Procedures or other documentation.

Showers and low-pressure eye wash stations are available at the facilities of the entire production cycle, including the laboratory. In total, there are 27 shower and eye wash stations in the facility, all operational. In addition to that the existing shower stations, the Company purchased additional eye wash and shower stations.

Powder fire extinguishers are located at strategic locations on each floor of the plant throughout the facilities. They are inspected and maintained on a regular basis. Evidence of routine checks / maintenance is available.

Routine inspection and maintenance of fire suppression equipment is undertaken in conformance with an annual program for maintenance of security and fire alarm systems. Fire extinguisher checks

are carried out regularly with the records available for review. Maintenance, testing, and inspection records have been presented to the auditors and are in good order.

During the site walkover confirmation was provided that showers, eye wash stations and dry powder fire extinguishers are available where they may be needed and selected showers were tested to confirm they are functional. Selected eye wash stations were also checked to confirm that they are in good working order and that they operate with low water pressure.

Rustavi Azot has oxygen, resuscitator and other first aid equipment at the facilities or in the ambulance. The antidote, namely sodium thiosulphate (state approved), is kept in the newly built medical center and is also available at the Cyan Salts Medical Center. The antidote management system and corresponding procedures are in place. Antidotes are changed according to the schedule by the doctor. Antidotes are stored under temperature conditions per manufacturer's specifications. Storage conditions are indicated on each antidote pack, storage is organized in the medical unit in a cabinet and a special refrigerator in accordance with the storage conditions of the preparation.

Water, medical oxygen, resuscitating aids (such as defibrillation equipment) are readily accessible at the facilities and a radio communication system is used throughout the plant. The main medical center is located on floor 1 of 3 at the emergency response squad building.

Distance to the nearest public hospital located in Rustavi is approximately 2km. Distance from the main medical center to the production areas, where potential contact with toxic gases etc. may occur is maximum 5 minutes by foot. The small medical center located in the cyan salts department also maintains high readiness to the emergency situations.

Rustavi Azot inspects its first aid equipment on a regular basis with a sign off in relevant logbooks. All emergency response equipment is replaced on a schedule. There is always medical staff on duty at both medical centers.

Antidote kits are stored at the main medical center within the temperature range recommended by the manufacturer. First aid equipment including antidotes is checked regularly. The expiry dates on the antidotes checked during the audit were in line. Personnel interviewed knew the location of antidotes and the emergency notification process.

The facility inspects its first aid equipment regularly to ensure its good condition and availability. The first aid and emergency response equipment are stored and tested as directed by their manufacturer and replaced on schedule so that they are effective when in use.

The amount and the quality of PPE for all working places at the plant are defined during risk

assessment of the workplaces.

Rustavi Azot maintains procedures in Georgian and partially English languages with the former being the official language in Georgia.

All employees have access to Safety Data Sheets. Hazard information, appropriate PPE, exposure symptoms and first aid measures are available at workplace. Product MSDS sheets are available.

Medical personnel are aware of hazards pertaining to cyanide and other chemicals present. Poisoning treatment protocols are displayed inside the medical facilities. The site also has additional signage concerning the presence of cyanide and precautions that should be taken. The signage was evaluated and found to be appropriate. Safety or warning signs, Safety Data Sheets, first aid procedures and other safety information are available in Georgian and English at working places where cyanide is used.

Tanks, vessels, containers, and piping are in progress of being labelled appropriately to inform workers of various substances contained and of potential hazards present. The piping is labelled to identify the contents and includes flow direction arrows, which is required for the operation in order to be in conformance with ICMI. Labelling was readily observed throughout the site visit and was found to be appropriate.

Since the previous gap audit, major improvement has been made and some pipes and tanks have been labeled and color coded, this should continue. In the cyanide warehouse and packaging area, all containers are clearly labelled and are clearly identified as required.

The decontamination policy is established and transferred to different work instructions of the plant documentation. As discussed in Section 2.1 (9) all employees, contractor representatives and visitors must use personal protective equipment, including facility provided coveralls. Coveralls must be removed and cleaned in a dedicated change room, and stored in separate lockers at the end of shift. As part of personal hygiene requirements, no food, cooking or eating is permitted on the industrial premises except at specific locations or in the dining room. It is a requirement to wash hands before eating and upon the return from the process facilities to the office.

Rustavi Azot implements procedures for hand washing or showering for individuals who have been in areas of the facility posing the potential for skin exposure to cyanide.

Employees demonstrated a good level of understanding of the decontamination procedures and the need for safety precautions during the site visit. Decontamination or clothes change policy has been reviewed and is found appropriate.

Rustavi Azot has built and commissioned its medical facilities with adequate staffing**,** in addition to the existing medical office which is also operating. Rustavi's new emergency response designated building consists of three floors. First floor is a dedicated medical facility staffed with the paramedics, nurses and other employees who are aware of first aid and miscellaneous medical assistance that is required in both routine checks and emergency situations. The medical center always has a doctor or a medical nurse during the shifts. All doctors and the rescue team are trained in the application of antidots, use of medical oxygen and a resuscitator.

Medical center for cyanide salts is equipped with necessary first aid equipment and medicine. Signage and ERP procedures (instructions) are present. Staff are well trained and are aware of actions required to perform during an emergency response related to cyanide as well as their day-to-day duties. In case of cyanide poisoning, a doctor would administer glucose followed by sodium thiosulphate. This antidote is stored in the main Medical Center under the required temperature conditions and specifications.

Main medical center is located on the Ground Floor. Every shift the total team will comprise of 5 medical staff, including: 2 paramedics and 1 doctor, 1 ambulance driver and 1 nurse (the latter located in the medical center for cyanide salts). Medical staff come across as able, bright and knowledgeable. Total Emergency Response Team count is 20 people, including medical staff.

There is an agreement with the medical insurance company which covers annual medical checks and is supposed to cover emergency situations with regard to the medical part should the need arise. First-aid equipment is in place at the facility. First aid and emergency response equipment is stored and maintained as recommended by the experts (medical doctor, manufacturer). The locked cabinets of both medical centers contain appropriate amount of drug products and active pharmaceutical ingredients which are stored appropriately (partially cooled, as necessary).

Cyanide awareness training, including symptoms of cyanide poisoning and first aid, are a part of all cyanide plant personnel training. Several facility personnel are also trained as first responders to apply antidots.

Medical staff in both medical centers are in possession of the Emergency Response Procedure and are aware of actions required in case of an emergency involving cyanide poisoning. The distance to the next public hospital is approximately 2km.

Regular checks of the medical center and its equipment / medical devices / drug products / active pharmaceutical ingredients are performed by the experts.

Water supply to the facility is a central municipal one. In addition to that, the main Medical Center has a back source of water (in tanks). This can be used in case of an emergency. Should the emergency take a catastrophic level, the medical center would dial 122 to request additional medical emergency brigades.

In addition to the emergency response, both medical facilities perform their routine functions of providing medical assistance to the Rustavi Azot workers and conducting health checks. Records and medical logs are kept at the Main Medical Center with medical records including possible CN-related incidents such as light poisoning. Incidents relating to cyanide are subsequently investigated.

Any employees who have resorted for an emergency medical assistance due to feeling unwell would be inspected with an emergency medical card produce. Regular employee medical records are kept in good order.

In case of a cyanide exposure, treatment will be undertaken by the site medical staff in the first instance apropos the established treatment protocol. Should the injuries be too severe to successfully treat, the on-site patients would be transferred to the local hospital. The in-house medical center maintains an ambulance for conveying workers to the external hospital. The procedures are available describing these actions.

The procedures describe the mechanism of protection of worker health in routine and emergency situations, type of PPE and other necessary equipment that should be applied and actions that the medical staff are required to follow. The decision on sending a worker exposed to cyanide to a municipal medical facility is made by the doctor.

Reportedly, Rustavi Azot has notified a local hospital of the potential need to treat patients for cyanide exposure, and the site is confident that the medical provider has adequate, qualified staff, equipment and expertise to respond to cyanide exposures, among others. However, it is a responsibility of the state to make sure that the affected person receives necessary treatment. Therefore, the system is centralized and is state-controlled. Should the need arise, the 112-emergency service is dialled where a decision is made which hospital would be suitable at a certain given time. There is no room for spontaneity in this kind of situations.

To date, there has been no cyanide exposure incidents at the facilities. Procedures are in place to investigate and evaluate cyanide exposure incidents to determine if the operations' programs and procedures are adequate or need to be revised in order to protect workers health and safety. Incident investigation sheets, the investigation procedure for cyanide related exposure incidents and investigation records called the "Protocol of the investigation of an accident in the workplace by the commission" have been sighted by the auditors and are found comprehensive.

Operational mock emergency drills are conducted regularly based on the approved schedule. These drills simulate operational upsets including equipment failures, depressurization and chemical releases. Mock drills are also undertaken by the rescue team to test emergency response to releases and personnel exposure and injury to hazardous chemicals. These drills include participation of third-party responders such as EMERCOM. The drill results are evaluated and analysed and are used to further enhance the procedures. Emergency Mock Drill took place during the site inspection imitating a worker exposure to cyanide at the rectification workshop. All participants of the demonstrated excellent knowledge of emergency response techniques. Records on the abovementioned drill and previously conducted drills have been provided for review.

## 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<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 3.1 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 3.1 (1) - 3.1 (7).

Rustavi Azot is located on a fenced plot of about 173Ha, sanitary-protection zone being 500m, as established by the state law (reviewed by the auditors). Closest to the tenement is a channel (circa 1km away) and River Kura (circa 7km away), there are no natural open water bodies in the close proximity. Rustavi Azot does not carry out any direct discharges of waste waters into water bodies.

Rustavi Azot carries out monitoring activities within the boundaries of its tenement based on the monitoring plan and the program. Monitoring Plan is comprehensive and outlines the frequency of monitoring as well as the determinants tested with the established maximum permissible limits.

There are three types of water monitoring implemented at Rustavi Azot facilities: groundwater monitoring, wastewater monitoring and monitoring of potable water. The selected water sample for the former two are analyzed in the in-house laboratory. Potable water analyses are performed by an accredited third-party organization.

The groundwater monitoring boreholes, 7 in total, are located upstream and within the cyanide production facilities and also downstream of the site. Average depth of the monitoring boreholes is approximately 7-11 meters which intercepts the aquifer that runs at a depth of circa 7 meters.

Rustavi Azot carries out monitoring of waste water using 16 wells, 3 of which are located outside the perimeter of the operations. Wastewater monitoring scheme showing the three lines of wastewater and the locations of the monitoring wells has been reviewed. Wastewater monitoring plan which is developed and valid for 5 years has also been reviewed. The Wastewater monitoring plan is supplemented with the wastewater monitoring schedule which outlines the area of the monitoring, frequency and the determinants to be monitored. Rustavi environmental department undertakes monitoring continuously via sampling of the designated wells twice per shift or 3-4 times a day.

Currently a significant share of wastewater, both technical and domestic, is sent to the Gardabani municipal water treatment plant with prior detoxification and sampling. After treatment at the ETP, outlet stream chemical content complies with the norms established by the nature protection legislation and cyanide content always being <0.04mg/l free cyanide. Thereafter, the stream confluences with other wastewater streams coming from other operational facilities thereby diluting it further. Before entering Gardabani wastewater treatment facility multiple streams confluence because of common drainage system. Finally, cyanide concentrations in the waters treated at the Gardabani become undetectable prior to any discharges. Importantly, National Environmental Protection Agency strictly controls the chemical content of any discharges before they enter Kura River.

Wastewater is collected in output collectors No. 1, 2, 3 and drained into a common collector, from where it is supplied to the Gardabani treatment plant. The common collector is located outside the territory of Rustavi Azot JSC and wastewater from other organizations is also discharged there. The sewer wells located on the territory of Rustavi Azot JSC also receive industrial storm water, fecal water and groundwater. The total amount of wastewater from Rustavi Azot JSC in the autumn-winter period is approximately 650-700 m3/hour; in the spring-summer period - 1100m3/hour. The maximum quantity is 1200m3/hour.

New effluent water treatment (ETP) plant has been recently constructed and was commissioned in 2024. The ETP is designed in such a way as to decontaminate the water from cyanide and return the water into the process in a closed circuit. Physico-chemical processes, such as the use of hydrogen peroxide and ultraviolet radiation, are used in the cyanide wastewater detoxification.

Rustavi Azot keeps records of the monitoring results for both the groundwater and wastewater. Groundwater and wastewater monitoring working journals have been demonstrated to the auditors

and are found in good order. Wastewater Monitoring Results are then analyzed and compounded.

Rustavi Azot has two in-house laboratories which carry out sampling and analysis: 1. the main sanitary laboratory and 2. HCN laboratory in the cyanide salts department. The latter performs analysis of the centrifugal product and the final product, and NaOH carbonate. The laboratories have been fully refurbished and are going to be accredited in the near future.

With regard to air monitoring, Rustavi Azot carries out monitoring and control of emissions apropos the established frequency and the list of determinants. Main pollutants from sodium cyanide production operations include ammonia, hydrogen cyanide, nitrogen oxide and nitrogen dioxide. Sources of pollutants have been identified, itemized and relevant environmental permits have been obtained with the main Environmental Permit being issued to Rustavi Azot on 19/02/2021 by the Decree of the Ministry on the Environmental Protection and Agriculture with no limited term of validity. To date, no exceedances have been recorded by the operations.

Rustavi conducts waste management activities related to the accumulation of waste, detoxification, transfer of waste for management, handling and disposal under the agreements concluded with the organizations licensed to undertake collection, transportation, handling, disposal and storage of waste. Rustavi Azot has waste management and handling units, including the incinerator (fully permitted).

In 2021, Rustavi Azot chemical plant has applied to the Georgian Ministry of Environmental protection to approve the change of the operating conditions as follows: incineration of hazardous waste; waste recovery, excluding pre-treatment of non-hazardous waste; preliminary treatment of hazardous waste: arrangement of a temporary storage facility for more than 10 tons of hazardous waste. Environmental impact assessment report and the accompanying documentation stipulated by the legislation, on which the Ministry ensured the creation of an expert commission, dissemination of information about the planned activities in accordance with the law, including on the official website of the Ministry of Information and placement on the official website of the EIA. Subsequently, the environmental permit was granted. Order N2-224 19/02/2021 has been reviewed as evidence of this approval as well as the EIA and other documentation preceding that.

Accordingly, Rustavi has a written plan and relevant procedures for its monitoring activities developed and approved by the appropriately qualified persons. No exceedances of the permissible limits have been identified, reportedly.

Rustavi Azot cyanide production plant does not have a direct discharge to surface water bodies. It is understood that the plant undertakes discharge of all wastewater into the municipal wastewater management and treatment facility with the cyanide content being no greater than 0.04 mg/l of free

cyanide at the point of discharge. The list of pollutants in the wastewater and their permitted concentration limits are regulated by the legislation. Municipal wastewater treatment facilities would not accept any cyanide contaminated plant water (because of the possible bacteria damage).

According to the site management interviews and reviewed documentation, cyanide concentrations do not exceed the established limits.

Treatment of cyanide wastewater is based on acidification of sodium cyanide with sulfuric acid, subsequent removal of cyanide from the solution by means of nitrogen and its return back into the process, further neutralization of residual sodium cyanide-containing waters with hydrogen peroxide. Finally, in order to completely neutralize it, it is cleaned with ultraviolet radiation.

There are no direct or indirect discharges to surface water at Rustavi Azot operations. The wastewater is piped into municipal wastewater treatment facilities. The analytical results have been reviewed for 2023 and 2024, no exceedances have been revealed. With the commissioning of the water treatment plant, all effluent water (currently up to 80%) is directed for detoxification prior to the discharge into Gardabani municipal sewerage facilities.

There are 7 boreholes on the territory of the enterprise upstream and downstream of the site, from which groundwater samples are taken regularly in order to determine the concentration of cyanides. The concentration does not exceed the norms established by Georgian legislation. Corresponding results of groundwater analyses were provided for review and did not reveal any exceedances. Cyanide concentrations were below detection limits.

Rustavi Azot undertakes monthly monitoring of potable water based on a contract with the outsource laboratory “United Water Supply Company of Georgia” (GET) apropos the established schedule.

No beneficial uses of groundwater at the operation have been identified.

No seepage to groundwater has occurred, reportedly. Analyses of groundwater from the 7 monitoring boreholes located on the territory of the enterprise did not reveal any exceedances of the established norms. Groundwater monitoring data reviewed by the auditors showed zero cyanide concentrations.

Rustavi Azot has developed ambient air monitoring program and conducts air monitoring apropos the approved schedule. In 2021, Rustavi Azot developed a Design for the maximum allowable limits of Harmful Substances to be released into the ambient air which was developed by licensed contractor Gamma Consulting LLC and subsequently approved by the Ministry of Environmental

Protection and Agriculture of Georgia. To date, no exceedances have been reported. Results of monitoring of atmospheric air in several locations at the facilities did not reveal any exceedances, as reported by Rustavi Azot. The results of air emission monitoring are summarized in Excel sheet and have been reviewed for the period of 2022 – 2024. The quantity of harmful substances released into the atmospheric air in 2024 during the production of sodium cyanide and the analytical description is within the established norm. The results are submitted to the Ministry of Agriculture and Environmental Protection.

Total gross amount limit of atmospheric pollutants resulting from the operations is established by the environmental permit. To date, no exceedances have been reported.

Rustavi Azot has developed measures to reduce emissions of pollutants into the atmospheric air.

In order to maximize the purification of exhaust gases from hydrocyanic acid and cyanide dust during repair work in 2023-2024, the following activities were carried out:

1. Raschig rings were straightened in the absorption columns, broken ones were replaced with new ones and their number was increased.
2. The amount of circulating (wash) water in absorption columns and wash scrubbers has been increased due to the installation of additional pumps.
3. In one of the absorption columns, a process for purifying exhaust gases using a 10% solution of caustic soda has been introduced.
4. Modernization project for the “Fakel” unit is being developed;
5. Solar batteries are being considered for implementation in the near future.

Rustavi Azot has established its monitoring frequencies, cyanide concentrations and the media being monitored in accordance with the Georgian law. Any potential leakages or emissions beyond the permissible limits would be detected by the continuous sampling at the Rustavi Azot sanitary laboratory and/or stationary gas monitors. Gas monitors at Rustavi Azot feed the HCN data directly into the ministry of agriculture, department of environmental protection.

The monitoring frequency of the groundwater condition seems sufficient because potential exposure areas are managed to keep potential spills away from soil / natural ground. The monitoring frequency of the wastewater seems sufficient because all potential changes can be detected in a timely manner. The monitoring frequency of the air pollution sources and concentration of cyanide are established responsibly and in compliance with the local legislation and are therefore sufficient. Thus, the established monitoring frequencies prove to be sufficient.

This requirement was verified through site inspection and discussion with the Environmental Manager and laboratory specialists and review of the results of the air and water monitoring.

## 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<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 4.1 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 4.1 (1) - 4.1 (8).

Rustavi Azot is on track to gain ISO 45001. Currently, the operations have developed and implemented a Unified Preventative System in the Field of HSE and conduct employee training in accordance with the approved training program. All new workers are required to complete a training program on hazard awareness, health effects of cyanide, the symptoms of cyanide exposure, the procedures to follow in the event of exposure and emergency response algorithm. This training includes understanding of hazards associated with cyanide and response to cyanide-related emergencies. Semi-annual refresher training is also a mandatory requirement.

Thus, Rustavi Azot system of training includes the following types of training:

- Inductions for new employees includes 2 parts: Part 1 - general safety rules of Rustavi Azot and Part 2 – specific training pertaining to a specific area/shop where an employee is going to work;
- After 3 months they carry out training “Instruction of position” whereby an employee sits an exam to confirm the knowledge required to perform work at the enterprise, this is the old system that has been retained by the Company and has undergone modifications and improvements;
- Every 6 months Rustavi Azot conducts refresher training.

Induction training is required to be completed before any work is undertaken on-site and over the period of 3 months the supervised training is carried out.

Every worker who has started at Rustavi had to obtain a permit preceding by a risk assessment with the toolbox induction; toolbox means specific inductions on specific hazards pertaining to hazardous work at a selected shop at the plant. Toolbox is introduced by the Shift Manager 5 minutes before

the shift. For example, if there is a need to perform welding works at a cyanide production plant, prior to the start of the welding a risk assessment is conducted and based on the risks and hazards identified a toolbox induction is given to the workers by the head of the workshop, head of the shift and HSE Supervisor. This procedure is called “Procedure of non-scheduled work” meaning a non-routine work not related to every employee has to get clearance prior to starting the work.

Rustavi Azot implements the workplace permit system based on 5 types of work: working on height, hot works, closed space, cold works and air works.

Rustavi Azot operate a Stop Card system whereby anyone can use Stop Card and stop the work if the see violations of safety rules. Examples include: workers performing work without the air mask in confined space, working at heights without a safety belt, smoking, drinking or eating in prohibited spaces, laboratory not performing measurements of oxygen at specified time intervals. Employees that breach the safety rules are penalised financially. Records with regard to penalizing the employees for the HSE breaches have been made available for review.

Emergency response actions to the alarm and evacuation requirements are provided to all persons entering the site. Detailed safety inductions include specific measures to protect human health and environment from cyanide release and exposure for those personnel that undertake work in and around the cyanide facilities.

Interviews with personnel and personnel training records have confirmed that workers are trained in responding to cyanide-related hazards prior to undertaking work and that all personnel receive both initial and periodic refresher training as required.

Training includes the use of appropriate PPE including gas masks and respirators. This training is mandatory and must be repeated according to the approved schedule at least once every six months. PPE training is covered in all levels of company, cyanide production plant and other operations and there are specific management and operational procedures regarding PPE storage, maintenance and which type of PPE is required in the different operations within cyanide production plant.

Training records are kept in good order and have been witnessed by the auditors. Interview with selected employees confirmed that training on how and when to use PPE is provided on a regular basis.

Rustavi Azot trains workers to perform their production tasks with minimum risk to worker health and in a manner that prevents unplanned cyanide releases. The annual training plan is approved annually. The plan includes training elements and specific training materials for each working place.

All personnel involved in the production and management of cyanide are trained to perform their assigned tasks in a safe and environmentally sound manner. New employees are required to work under direct supervision for 90 days in order to grasp all elements of the job before being permitted to work independently. Working under the supervision of the shift manager, and after 90 days passing the exam to work as normal, cleared for work.

The operating employees are qualified as skilled chemical workers on the basis of their professional education. Training is a mandatory requirement and have to be delivered regularly by qualified trainers.

Training requirements are specified in the Company procedures. Workers in the cyanide production plant are required to pass a specialized training, work at height, cold works, hot works, first aid and emergency training. Training certificates of all workers and specialists were available at the site during the audit.

Training logbooks are well maintained and contain data on certificates, date of the training and the employee details. Employee training is thoroughly planned by the Company with monthly budget set aside based on the approved program.

Refresher training is carried out once every six months in accordance with the instructions for every specific cyanide related task to ensure safe operations. Instructions are developed for every workplace and include requirements on safe conduct of the production process, emergency response, maintenance and other types of works pertaining to worker safety.

Managers and specialists of the cyanide production plant undergo mandatory training on labor protection, industrial safety, and fire safety minimum. Training records are documented and retained for all personnel, including contractors, governmental inspectors, and visitor inductions. HSE Manager conducts safety training every two weeks, records are available.

All employees at the site are trained prior to performing work with cyanide. These include workers in the cyanide production units, cyanide packaging and storage, forklift operators, medical workers and laboratory staff. The operating employees are qualified as skilled chemical workers on the basis of their professional education. They go through professional training, particularly on-the-job training mostly for the first three months of their job. All new employees are required to be accompanied by senior staff (supervisor or qualified specialists) for the period of their job training to gain sufficient experience at the workplace.

In order to obtain clearance to work, upon completion of training, workers are required to sit an examination in line with their occupations. Should the examination be failed, a worker would not be

admitted to a workplace until such time when a required examination result is achieved.

In addition, an employee is trained through a standard HSE protocol and is obliged to follow the HSE procedures, selection of the procedures has been reviewed and is found to be comprehensive and clear.

Refresher training on normal production tasks involving cyanide is conducted once every six months with examination following the training course to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. Such refresher training is specific to their assigned tasks and addresses cyanide-related safety issues.

Training elements are documented in the plant operation manuals and working instructions. Task-specific and job specific training is provided. Rustavi Azot safety training program identifies specific cyanide management elements that each worker is trained in.

The training materials, in conjunction with the verbal explanation of the dedicated trainers, give a clear overview about the content that must be understood by the employee to perform their job safely and to react correctly in case of an emergency with respect to self-protection and protection of others.

Training by external organizations is conducted with involvement of professional trainers, such as medical specialists, safety representatives for training on first-aid topics or emergency response activities. Training by internal engineers requires that all engineers have higher education and specific external safety training conducted by a state accredited organization.

Training and mentoring are provided by the qualified personnel of the cyanide production facilities. Training is carried out by an occupational safety specialist who has a higher technical education and external training at the amount of 6 months under the program in specialized institution. Qualification has to be confirmed every three years with an exam, unless the qualified trainer has an MSc or PhD.

In Georgia, all environmental protection engineers and HSE managers receive professional state accreditation through training. There are three levels in this system: 1 – HORICA, low hazard organizations, 2 – medium hazard organizations and 3 – heavy industry, such as Rustavi Azot. Rustavi Azot employs 4 health and safety personnel who are in possession of level 4 accreditation, these receive regular retraining and refresher training through internships, seminars, schools and other types of training which is conducted by licensed institutions in the field of environmental protection and industrial safety.

In order to obtain the accreditation, an employee takes a 6-month training in one of the training centers approved by the government, after which a permit is issued allowing a student to sit an exam. Following the passing of the exam, a student receives the accreditation which is valid for 3 years. After 3 years, an employee has to go through a refresher training and renew the accreditation. Those students who are in possession of a PhD or an MSc are not required to renew the accreditation.

Examinations are conducted upon completion of training as part of knowledge assessment and refresher training. Examination is organized by a special committee. Internally, the testing is provided by the examination committee, consisting of engineering personnel and representatives of the HSE Department. Job competence is also assessed through internships with a subsequent exam. All workers are required to pass the exam prior to being admitted to work unsupervised.

Repeat inductions are conducted every six months. New employees are teamed with an experienced supervisor who demonstrates and observes how the workers perform their tasks.

To achieve the high objectives in the health and safety field, HSE development program has been prepared. In addition, 2025 training calendar has been prepared.

## Standard of Practice 4.2

*Train employees to respond to cyanide exposures and releases.*

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|---|---|---|
| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 4.2 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 4.2 (1) - 4.2 (3) with respect to the required training.

Rustavi Azot is required to train employees to respond to cyanide exposure and releases. All personnel working in or around the cyanide production facilities are trained to respond to emergency cyanide release incidents in accordance with planned response specified in the on-site emergency plan.

Rustavi Azot trains workers to understand the hazards of cyanide through inductions and regular training, which includes how to behave in the presence of hazardous chemicals, including cyanide, and follow safety procedures that are in place. Workers also complete induction training to perform their normal production tasks with minimum risk to worker health and safety and in a manner that

prevents unplanned cyanide releases. Training is conducted by the heads of departments and shifts and HSE managers.

Emergency response training of employees, such as mock drills, is carried out regularly and sometimes jointly with the EMERCOM (Ministry of Emergency Situations) of Georgia.

The training process is documented accordingly: records are maintained for each individual employee, contain information about the subject and individual topics of the training, instructor data, date, duration and type of verification of the effectiveness of training as well as areas for improvement.

Rustavi Azot never had a major cyanide related emergency, reportedly. Rustavi has an investigation procedure to provide an investigation related to cyanide exposures should this be required.

Mock drills on emergency situations are conducted among the personnel of the cyanide production plant at least biannually on the basis of the schedule approved by the senior managers, financial department, HR and HSE.

Workers are trained on how to respond to cyanide exposure through the induction training process, on-going training and emergency training. Workers are trained to respond to worker exposure to cyanide and routine drills are used to test and improve their response skills. The risks scenarios are practiced via routine mock drills using different cyanide exposure scenarios. Drills are conducted regularly, are well documented and lessons learned are analyzed and taken into account during updates of the training programs. The auditors have witnessed a mock drill related to a cyanide exposure during the site inspection and can confirm that the staff are aware of their actions in emergency situations.

These drills are conducted in accordance with the schedule which forms part of the training program. The drill results are evaluated and analyzed and used to further enhance the procedures. Corrective actions are derived, defined and implemented. The staff of the plant are involved throughout the complete mock drill activities to improve their skills and to optimize their awareness.

Training records are retained for each employee with the entries in a logbook that includes the type of training, trainee name and signature, date of training, and trainer name and signature. A Personal Card is also available, which rests in employee’s personal file.

Training records for the employees of the cyanide production facility have been reviewed and contained evidence of training including course content, assessments, and certificates. Training records are also maintained for all emergency response personnel and workers who undertake

emergency response 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.*

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| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.1 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.1 (1) - 5.1 (3) requiring an Emergency Plan to address potential releases.

Rustavi Azot has developed two Emergency Response Plans (ERPs): one for HCN Production Plant and one for the Sodium Cyanide Production Plant with the last revision made on January 24, 2024. Latest versions of both ERPs are currently in force and consider potential failure scenarios that may entail potential releases of cyanide requiring a response. In addition, there is a separate ERP for the Ammonia Plant.

The ERPs comprise, among other topics, the following:

- Emergency scenarios;
- Summary of the important responsibilities for emergency cases;
- Actions in case of an emergency;
- Measures to prevent or minimize the impacts;
- Actions of the fire and rescue squad and the local municipality forces (fire brigade, chemical emergency squad, medical unit);
- Resources needed such as PPE and emergency response equipment;
- Mitigation and monitoring;
- Contact list and call-out procedures.

Rustavi has the resources and capabilities to respond to potential emergencies including releases of cyanide at the site. RAI has purchased modern machinery and equipment to strengthen its

emergency response capabilities, this includes 2 modern fire engines.

In the event of a major emergency or off-site impact the ERP includes provisions to request support from external responders and seek assistance as needed.

The auditors have conducted a review of corresponding documentation and established that the ERPs are comprehensive and adhere to the ICMI Code requirements.

The ERPs for the HCN and NaCN shops consider specific emergency situations and the appropriate procedures and responses within the facility systems. The scope of the ERPs and associated procedures include potential accidental releases of cyanide and potential failure scenarios such as toxic releases during fire and explosions, depressurization of tanks and pipelines, ruptures of valves or other production equipment. These scenarios are considered appropriate for the site-specific environmental and operating circumstances.

The plans address specific response actions, as appropriate for the anticipated emergency situations, such as the following emergency scenarios in addition to the outlined scenarios: accidents with the release of hydrogen cyanide and other hazardous chemicals, explosions and fires and other emergencies.

The ERP identifies credible emergency scenarios for catastrophic release of hydrogen cyanide during fires and explosions, pipe, valve and tank ruptures, etc.

The emergency scenarios include overtopping of tanks and waste treatment facilities, such as the wastewater storage and treatment tanks and/or containments, or those resulting from unlikely power outages and equipment failures. All potential scenarios and the potentially exposed areas are addressed in the emergency response plans.

The ERPs describe resources and means required to localize and eliminate the consequences of accidents and requires compliance with the tasks of emergency response and eliminating the consequences. Organization of interaction of forces and means as well as their composition and order of deployment is provided. It contains a procedure for ensuring constant readiness of resources for the emergency response and elimination of the consequences of accidents.

Priority actions upon receipt of an emergency signal and actions of production personnel and emergency services to localize and eliminate accidents are described in detail. The operations stipulate for active protection measures on industrial safety of hazardous production facilities.

The Company has developed a procedure for the evacuation of its personnel in natural and man-

made emergencies. The procedure stipulates for the evacuation of personnel in the event of a threat and occurrence of such emergencies.

Specific emergency response training is conducted at the facilities. Mock drills are conducted on a regular basis, at least quarterly. Employees are trained in how to use the air masks and other PPE, fire-fighting and emergency response equipment and are trained in the evacuation procedures. Dispatcher will announce on the radio in which direction the employees should move depending on the wind direction, and also the employees will be guided by the wind socks which are located around the site.

Specific response measures, first aid measures are described in the ERP. There is consideration of the use of cyanide antidotes, post-emergency mitigation and monitoring. Decision on use of antidots is made by the doctor of the main medical center. Measures aimed at ensuring safety of the population are mentioned in the ERPs.

Thus, the ERPs describe specific emergency response actions for the emergency situations, including control of any release at source; evacuation of workers and potentially affected communities; use of first aid measures and antidotes; and containment, assessment, mitigation and future prevention of releases.

This requirement was verified through discussion with Company staff responsible for preparedness to emergency situations and review of corresponding emergency scenarios in these plans.

## Standard of Practice 5.2

*Involve site personnel and stakeholders in the planning process.*

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|---|---|---|
| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.2 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.2 (1) - 5.2 (4).

Rustavi Azot cyanide production facilities have involved its workforce and relevant stakeholders in the emergency response planning process. Employee input takes place through the emergency drills debrief meetings which allows workers participating in the drills to make recommendations for improvements of the ERP. The HSE manager has indicated that the workforce has opportunities to comment on emergency response documentation during regular training and drills.

According to Rustavi Azot, inputs to the plan are coming from different stakeholders, including company workers and managers, emergency response squad, local hospital, EMERCOM and local residents. Although sufficient evidence has been provided to corroborate the input from all parties, little evidence has been derived as to the involvement of the potentially affected communities of the town of Rustavi and nearby settlements into the emergency response planning process.

In 2021, during the approval process of the change of the design parameters, Rustavi involved the relevant stakeholders. Environmental impact assessment report and the accompanying documentation stipulated by the legislation was followed by the creation of Ministerial expert commission and dissemination of information about the planned activities among the communities, in accordance with the law, including on the official website of the Ministry, information board of the executive body of Rustavi municipality and placement on the official website. Figure 5.2.1.1 shows Ministerial EIA Permitting communication. Such practice is encouraging and should continue.

There is a feedback form on Rustavi website where concerned residents may be able to leave a message. There are also Suggestion Boxes in the premises. In addition to that, there is an informational leaflet developed by RAI in Georgian and English languages informing the communities of what measures the operations are implementing in order to improve the emergency preparedness as well as the quality of ambient and aqueous environment, among other topics.

Governing authorities at the municipal and country level are made aware of the nature of the risks. In the event of a threat or occurrence of an accident, senior dispatcher of the control room notifies the specified parties via the local notification network. The company conducts regular joint drills with city emergency services to check the compliance of communication and emergency response measures.

Random interviews of local residents in Rustavi town during the audit have demonstrated that the communities are aware of risks associated with potential cyanide releases.

Rustavi Azot has identified external entities having emergency response roles and involved those entities in the cyanide emergency response planning process. EMERCOM is involved in development of emergency response plans and measures.

In case of an emergency, Chief Engineer informs municipal authorities, including EMERCOM. The system is centralized and state controlled.

Rustavi Azot is engaged in regular consultations and communications with relevant stakeholders to assure that the ERP addresses current conditions and potential risks.

Communication activities with interested parties and stakeholders take place via several mean available: telephone hotline, leaflets, website and suggestion box. This is to assure that the relevant information and updates concerning the actuality of emergency response plans are addressed. Integration of the relevant external parties in a loop of controlled documents, especially the ERP, is the main driver for spreading and receiving correct and current information to and from the relevant stakeholders.

## Standard of Practice 5.3

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

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| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.3 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.3 (1) and 5.3 (2).

The auditors have reviewed the Emergency Plans for the HCN and NaCN plants and conclude as follows:

a) *Designate of primary and alternate emergency response coordinators with explicit authority to commit the resources necessary to implement the Plan.*

Yes, both ERPs designate primary and alternate emergency response coordinators with explicit authority to commit the resources necessary to implement the Plans. The response coordinators have their roles clearly outlined.

b) *Identification of Emergency Response Teams*

Yes, both ERPs identify Emergency Response Teams, which primarily include Fire Squad, Gas Rescue team and Medical team.

c) *Requires appropriate training for emergency responders*

Yes, the ERP training involves emergency mock drills for every scenario, including all specialized response services being called in. Rustavi Azot conducts monthly quarterly drills to develop practical skills for the interaction of all units in case of a threat and occurrence of emergencies, according to the approved schedule of training sessions. Training sessions are also held in all shifts according to the approved schedules.

*d) Define call-out procedures and 24-hour contact information for the coordinators and response team members*

Yes, the ERPs provide a comprehensive list of all internal and external persons that would be involved during the emergency response. Their respective functions and phone numbers are provided.

*a) Specify duties and responsibilities of the coordinators and team members;*

Yes, the ERPs describe roles, duties and responsibilities of the coordinators and team members that would be involved during the emergency response. Their respective functions and phone numbers are provided.

*b) List all emergency response equipment that should be available;*

Yes, the ERPs list the emergency response equipment that should be available. Emergency response equipment is mainly stored at the Gas Rescue and Fire Squad.

*g) Includes procedures to inspect emergency response equipment and assure its availability when required;*

Yes, the ERPs include procedures to inspect emergency response equipment and assure its availability when required.

*h) Describe the role of outside responders, medical facilities or communities in emergency response procedures, except for the local communities*

Yes, the ERPs describe the role of outside responders and medical facilities in emergency response procedures, but do not mention the local communities. Although it is the responsibility of the municipal authorities to inform the local communities of any emergencies, the ERPs at Rustavi Azot elaborate on this as much as possible.

The ERPs have been developed with the input from third parties, involved in localization and liquidation of emergencies and with the RAI security service, fire brigade, medical unit and gas rescue squad.

External stakeholders would take part in the emergency response through the municipal authorities which collate the Emergency Plan for the town of Rustavi. Telephone numbers, addresses and contact persons are listed and kept up to date. State-run EMERCOM conducts joint drills with Rustavi plant to ensure adequate preparedness.

Rustavi Azot confirmed that the outside entities included in the ERPs are aware of their involvement and are included as necessary in mock drills or implementation exercises.

This requirement was verified through discussion with the Company staff responsible for the preparedness to the emergency situations and review of corresponding records of joint mock drills.

In addition, the auditors observed a mock drill that was conducted in their presence during the site inspection. All emergency teams have demonstrated highest class of emergency preparedness.

## Standard of Practice 5.4

*Develop procedures for internal and external emergency notification and reporting.*

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| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.4 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.4 (1) - 5.4 (3).

The ERPs include procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of an emergency. If external medical support or follow-up care is required, medical facilities and care are available at the municipal hospital. In any emergency, the state-run system is available by dialing 112.

In addition, if a cyanide emergency constitutes a "significant cyanide incident" that requires notification to the International Cyanide Management Institute, Rustavi Azot undertakes to provide such notification in a timely manner, as stated by the ERPs.

The notification of potentially affected communities of any incidents lies within the remit of the municipal authorities. In case of an emergency, General Director of Rustavi Azot undertakes to notify the relevant authorities which, in turn, notify affected communities.

It is understood that in case of an emergency threat or its occurrence, a dispatcher of the control room notifies enterprises and organizations within the site using the means of the local alerting network. Local Emergency Situations Authorities will be notified swiftly. The Dispatcher is on duty 24/7 and has a list of contacts for immediate notification, this is regularly updated.

To ensure compliance with ICMI standards, both ERPs have a provision that require notification of ICMI should any significant cyanide incidents occur.

Any cyanide emergency that constitutes a "significant cyanide incident" that requires notification to the International Cyanide Management Institute has never occurred at the site since the start of its operations, reportedly.

## 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.*

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| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.5 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.5 (1) - 5.5 (3).

No cases of spillages, debris handling, recovery and alike have occurred, since the beginning of operation, according to Rustavi Azot management.

Recovery or neutralization of solutions or solids is explained in the ERPs. Decontamination of soils or other contaminated media is properly explained in the ERPs. Management and/or disposal of spill clean-up debris are explained in the ERPs. State authorities will be responsible for any clean up, mitigation and monitoring. In addition, Rustavi Azot has arranged to use a contractor company "Sanitary" LLC located in Rustavi town.

Provision of an alternate drinking water supply is available and is described in the ERPs. Workshops are equipped with 20-liter dispensers for the required amount of water, which can be used in case of an emergency, as advised by the HSE Manager. Medical Center has an alternative water supply (in tanks), as has been informed by the Chief of the Medical Service.

Both ERPs explicitly prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water or near the waterbodies.

The Plans contain information on the potential need for environmental monitoring to identify the extent and effects of a release, and include sampling methodologies, parameters.

## Standard of Practice 5.6

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

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| The operation is | ✓ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.6 |

*Summarize the basis for this Finding/Deficiencies Identified:*

Rustavi Azot is in FULL COMPLIANCE with Production Practice 5.6 (1) - 5.6 (3).

Rustavi Azot ERPs and other emergency response procedures are subject to periodical review and evaluation of their adequacy. There is a provision mentioning this in the ERPs. The ERPs are reviewed at least every year or as necessary.

The routine and the non-routine process for review of the ERPs and other relevant ER procedures should be described. The ERPs are reviewed at least every year or as necessary.

Mock emergency drills are conducted periodically to evaluate the operation's plans, training, resources, and preparedness for response to cyanide releases and to cyanide exposures of workers and to test response procedures for various exposure scenarios including release of hazardous chemicals, explosion and fire and exposure and injury to personnel.

In addition, mock drills are also undertaken by the rescue team to test the emergency response to cyanide releases and personnel exposure to hazardous chemicals. The purpose of these drills is to test the effectiveness of response procedures, equipment and first aid capabilities of the site. Completed drill reports outline the lessons and any deficiencies of the drill response. Photographs of the drills are included in the drill reports. Mock emergency drills are scheduled each quarter, focusing on specific scenarios of accidents. Drills are repeated across the work crews to cover all shifts.

Mock drill outcomes are evaluated and analyzed and are used to further enhance the procedures. All results are archived, controlled and revisited if necessary. Drill reports on selected drills conducted in the cyanide production facility have been provided for review. Those were completed to test emergency response to hazardous chemical releases and exposure and injury to workers.

During the site visit undertaken by the auditors on December 19, 2024, a mock drill was organized using a scenario ultimately leading to NaCN solution poisoning of a worker. The emergency brigade consisting of emergency response and rescue units demonstrated excellent knowledge of actions required in this particular emergency situation. The team included a shift manager, doctor and paramedics, fire brigade, gas rescue squad, among others. All team members wore appropriate PPE and had necessary equipment and machinery to address the emergency situation. Loud-speaker and alarm were activated warning everyone present in the area of imminent danger. The rescue team arrived within 3 minutes of the alarm going off and demonstrated an excellent coordination in their emergency response actions.

Upon completion of the drill, the team convened and discussed both the excellence of certain

response actions and the areas for improvement in others. Subsequently, the mock drill records have been released and presented to the auditors for review.

This requirement was verified through observation of the mock drill in December 2024, discussion with the Company staff responsible for preparedness to emergency situations, review of corresponding emergency scenarios in these plans and protocols of mock emergency drills with lessons learned.

There is a written provision to evaluate and review the ERPs. Review of findings and a room-for-improvement analysis form part of a systematic evaluation process of emergency response actions and mock drills. This is the basis for the continuous improvement of safety and security at the site within the facility. Emergency Response Plans at the site are reviewed once a year.

In addition, Rustavi Azot develops and approves annual Emergency Mock Drill Plan which serves as the guideline for conducting emergency drills as part of the ERP.

This marks the excellence of Rustavi Azot personnel in the emergency preparedness and pursuit to achieve the highest standards of health and safety at the facility.