



RUSTAVI, GEORGIA

RUSTAVI AZOT INDORAMA PRODUCTION

CYANIDE PRODUCTION CORRECTIVE ACTION PLAN

FOR THE INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE
CYANIDECODE.ORG

RUSTAVI AZOT INDORAMA CORRECTIVE ACTIONS PLAN

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

Audit Company:

GREENROCK INTERNATIONAL LLC
12 - 1st Tverskaya-Yamskaya str.
Moscow 125047
Russian Federation

Lead Auditor:

Julia Kennedy
Email: juliakennedy@kennedy-global.com

Technical Auditor:

Gabriel Rodriquez Zamorano

Date(s) of Audit: 17 December 2024 - 19 December 2024

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EXECUTIVE SUMMARY

Current report is a Corrective Actions Report (hereinafter referred to as “CAR”) and has been prepared by “Greenrock International” LLC following the audit at JSC Rustavi Azot production facilities located in Rustavi, Georgia.

“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 three the ICMI principles. Status of compliance of the production practices is visually 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)									
Production Practice 5.4	5.4(1)	5.4(2)	5.4(3)								
Production Practice 5.5	5.5(1)	5.5(2)	5.5(3)								
Production Practice 5.6	5.6(1)	5.6(2)	5.6(3)								
									KEY		
										Full Compliance	
										Substantial Compliance	
										Non-Compliance	

This report describes the proposed corrective actions recommended for the Rustavi Azot Indorama sodium cyanide production operations to become fully compliant with the five principles established by the International Cyanide Management Institute (“ICMI”). Only those production practices which have received “substantial compliance” assessment - are reflected in the report, items with “full compliance” have been left out.

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)).

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Principle 1 | OPERATIONS

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

Production Practice 1.1

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

1.1 (5) Is cyanide managed on a concrete or other surface that can minimize seepage to the subsurface?

CORRECTIVE ACTION:

Ensure that the improvement of the floor integrity, including the replacement of old bricks is completed apropos the existing schedule in the following facilities:

- HCN Plant;
- Neutralization Section 2nd Floor;
- Neutralization Section 3rd Floor;
- Sulphuric Acid Storage yard;
- Centrifuge Section 2nd Floor;
- Briquette Machine Area 3rd Floor;
- Condenser Area 4th Floor;
- NaCN Storage Area;
- Caustic Storage Yard, and
- Caustic Dilution Plant.

In order to achieve full compliance with production practice 1.1 (5) RAI will be required to demonstrate completion of the floor repair/replacement activity within one year from the date of the 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. At the time of the audit, the execution was approximately 50% of the planned square meterage.

1.1. (9) Is cyanide stored:

- a) With measures to avoid or minimize the potential for exposure of cyanide to moisture?**
- b) With adequate ventilation to prevent the build-up of hydrogen cyanide gas and cyanide dust?**
- c) In a secure area where public access is prohibited?**

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d) Separately from incompatible materials?

CORRECTIVE ACTION:

Ventilation in the cyanide packing and storage area was improved in 2024 with 9 ventilation outlets mounted into the ceiling of the premises.

Cyanide packaging system is being upgraded to improve ventilation further and reduce contact of the workers during packaging through the upgrading of the existing design.

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

Production Practice 1.3

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

1.3 (1) Does the facility conduct routine inspections of tanks, valves, pipelines, containments and other cyanide production and storage facilities, including:

- a) Tanks holding cyanide solutions for structural integrity and signs of corrosion and leakage?**
- b) Secondary containments for their integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment?**
- c) Pipelines, pumps and valves for deterioration and leakage?**
- d) Containers used for transportation, where the producer is responsible for their integrity?**

CORRECTIVE ACTION:

Rustavi Azot equipment and systems are serviced in accordance with the approved preventive maintenance programs.

Nevertheless, even though maintenance is conducted as required, certain equipment such as pumps and valves became outdated and showed signs of deterioration. However, RAI has replaced certain old valves and has placed a purchase order for the acquisition 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.

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.