



July 2014

**INTERNATIONAL CYANIDE MANAGEMENT
CODE CYANIDE SUPPLY CHAIN
CERTIFICATION AUDIT, SUMMARY AUDIT
REPORT - HANGZHOU AND HEFEI (CHINA)
TO BALYKCHY (KYRGYZSTAN)**

**Anhui Anqing Shuguang
Chemical Company Limited**

Submitted to:

International Cyanide Management Institute
1400 I Street, NW, Suite 550
Washington, DC 20006
UNITED STATES OF AMERICA

Anhui Anqing Shuguang Chemical
Company Limited,
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PEOPLES REPUBLIC OF CHINA

REPORT



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1.0 INTRODUCTION

1.1 Operational Information

Name of Consigning Company: Anhui Anqing Shuguang Chemical Company Limited
Name of Supply Chain: China – Kyrgyzstan Supply Chain
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Country: PEOPLES REPUBLIC OF CHINA

1.2 Description of Operation

Anhui Anqing Shuguang Chemical Company Limited (Shuguang) is a manufacturer of cyanide and responsible for management of the cyanide Supply Chain the subject of this audit. Shuguang is a subsidiary of the Anhui Anqing Shuguang Chemical (Group) Co. Ltd.

Shuguang manufactures solid sodium cyanide at its facility located at Anqing in eastern China. This manufacturing facility is certified as being compliant with the ICMC, the most recent re-certification date being 12 September 2013.

Anqing Shuguang Supply, Sales and Transportation Co. Ltd (also a subsidiary of the Anhui Anqing Shuguang Chemical (Group) Co. Ltd.) is a contracted forwarding agent for Shuguang and undertakes road transportation of solid sodium cyanide from Anqing to North Hefei Railway Station and Hangzhou North Railway Station in China. This road transportation operation is certified as being compliant with the ICMC, the most recent re-certification date being 16 May 2013. The road transportation is not included within the scope of this Supply Chain audit.

Shuguang's Supply Chain addressed by this audit comprises the following:

- Loading packaged solid sodium cyanide onto trains at Hangzhou North Railway Station and North Hefei Railway Station in eastern China.
- Rail transport to Urumqi in western China.
- Unloading the cyanide packages and temporarily placing these in interim storage at a designated cyanide storage facility within the North Urumqi Railway Station precinct.
- Removing the cyanide packages from the interim store, placing it in shipping containers and loading onto a train.
- Rail transport from Urumqi, via Dostyk, where the cyanide is transferred from the Chinese train to the Kazakhstan train.

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- Rail transport from Dostyk to Balykchy Marshalling Yard at Balykchy in Kyrgyzstan. The end of the Supply Chain is the arrival of the train at Balykchy Marshalling Yard. Unloading of the cyanide from the train at Balykchy Marshalling Yard is undertaken by Shuguang’s customer, Centerra Gold Inc. via Kumtor Operating Company (KOC), which operates Centerra’s Kumtor Gold Mine and is not part of the scope of this Supply Chain audit.

1.2.1 Description of Transport Operations Addressed by this Audit

These transport stages are described in more detail in the following.

Receipt of Cyanide at Hangzhou North Railway Station, Hangzhou, China

One of the two starting points for the Supply Chain the subject of this audit is Hangzhou North Railway Station, owned and operated by China Railway Corporation.

Cyanide is delivered by Shuguang in steel drums (50 kg) and timber boxes (380 kg) within locked shipping containers by truck and offloaded by the railway station freight department, inspected and, if there are no defects, are immediately transferred via forklift to awaiting railway carriages on the opposite side of the railway platform. There is no storage of cyanide at the station site. All handling of the cyanide at the station is undertaken by employees of China Railway Corporation.

Once all the cyanide has been transferred onto the train and paperwork is completed the train leaves for Urumqi.

Receipt of Cyanide at Hefei Goods Transportation Railway Station (North Hefei Railway Station), Hefei, China

The second starting point of the Supply Chain subject to this audit is Hefei Goods Transportation Railway Station. The Station is owned and operated by China Railway Corporation.

Cyanide transfer operations at Hefei Goods Transportation Railway Station are the same as those at Hangzhou North Railway Station and the cyanide is similarly despatched to Urumqi.

Rail Transport from Hangzhou and Hefei to Urumqi

Once loaded onto the train at Hangzhou or Hefei, the cyanide is transported by train owned and operated by China Railway Corporation to Urumqi. The journey takes approximately seven days. The specific rail route is selected by China Railway Corporation depending on other rail movements and track capacity. The trains may park at designated parking locations enroute awaiting approval from railway management to proceed along the next stage of the journey. At no stage along the route are the railway carriages opened or the cyanide unloaded.

Urumqi Interim Storage Facility – North Station of Urumqi

Upon arrival at North Station of Urumqi the cyanide containers are unloaded from the railway carriages and transferred via forklift to an interim storage facility, comprising a cyanide storage warehouse (solely used by Shuguang for supply to Kumtor) located within a secure dangerous goods storage facility within the railway precinct. The storage facility is owned and operated by a government company (Xinjiang Non-Ferrous Metal Industry Goods Ltd, a separate company to the railway company) and used for the storage of only cyanide. No other goods are stored at the facility. The use of the facility is shared by several companies. Shuguang is the largest user of the facility.

The cyanide is stored for a period of up to one month, then loaded into shipping containers by forklift. The shipping containers are then subject to Chinese custom’s clearance and loaded onto a China Railway

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Corporation train for transport to Dostyk in Kazakhstan.

The cyanide unloading and loading operations are undertaken by Xinjiang Non-Ferrous Metal Industry Goods Ltd under the supervision of Shuguang, its transport contractor (Benbu Railway Security Service Company) and China Railway Corporation.

Rail Transport from Urumqi via Alashankou (also known as Alataw Pass) to Dostyk, Kazakhstan

The cyanide is transported from Urumqi via Alashankou (on the Chinese side of the China/Kazakhstan border) to Dostyk (on the Kazakhstan side of the China/Kazakhstan border) on a China Railway Corporation train.

Intermodal Transfer at Dostyk Railway Station, Kazakhstan

At Dostyk Railway Station the cyanide shipping containers pass through Kazakhstan customs and are transferred from the Chinese train to the Kazakh train, as the two countries operate on different railway gauges.

Dostyk Railway Station is owned and operated by Kazakh Railways (known as Kazakhstan Temir Zholy or KTZ), with support of subcontractors. KTZ is owned by the Kazakhstan government.

Rail Transport from Dostyk to Balykchy, Kyrgyzstan

Rail transport from Dostyk to Balykchy is undertaken on the Kazakhstan train. There is only one rail entry point from China into Kazakhstan (at Dostyk) and one rail exit point from Kazakhstan to Kyrgyzstan (at Lugovaya, in Kazakhstan). There are several different routes railway routes within Kazakhstan that Kazakh Rail can chose to use. The specific route selection for each journey is made by Kazakh Railways.

At Lugovaya on the Kazakhstan side of the Kazakhstan / Kyrgyzstan border, the train passes through Kazakhstan exit customs and the control of the train is passed from a Kazakh rail crew to a Kyrgyz rail crew.

Arrival at Balykchy

Upon arrival at Rybachie Railway Station (in Balykchy), the train passes through Kyrgyz entry customs and then travels a short distance to KOC’s Balykchy Marshalling Yard, located in an industrial area southwest of the town, where KOC takes delivery of the cyanide on behalf of Kumtor Gold Mine. This point represents the end of the Supply Chain the subject of this audit. Unloading of the train is undertaken by KOC and is not within the scope of this audit.

1.2.2 Interim Storage Facilities

Interim storage is defined by the ICMC (Definitions section of ICMI website) as follows: *“Temporary storage of cyanide that occurs when changing carriers or transport modes. Interim storage facilities typically are integral to the transport of cyanide and involve holding individual shipments during the transport process. Under the Code, interim storage facilities are considered to be part of cyanide transport and are evaluated for certification using the Cyanide Transportation Verification Protocol. Facilities such as ports, rail yards and truck terminals are typical interim storage sites. Storage in a warehouse for subsequent distribution is not considered to be interim storage.”*

A warehouse is defined as *“a facility where unopened containers of cyanide are stored pending distribution to gold mines, which may include a storage area where multiple shipments are accumulated prior to repackaging activities.”* There are no warehouses along the Supply Chain the subject of this due diligence report.

Within the scope of this due diligence, there is one interim storage facility, as defined in the audit protocol:

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- At North Urumqi Railway Station, cyanide boxes and drums are removed from the railway carriages and transferred via forklift to a warehouse providing an interim storage facility within the Station precinct. This storage facility is owned by the Chinese government via its company Xinjiang Non-Ferrous Metal Industry Goods Ltd. The warehouse building used for storage of Shuguang cyanide only stores Shuguang cyanide – no other goods. Storage is for a period of up to one month to enable sufficient cyanide to be accumulated at Urumqi to fill the train which transports the cyanide from Urumqi to Dostyk. Following storage, the cyanide boxes and drums are loaded into 20-foot shipping containers at the interim storage facility and placed on a train by Xinjiang Non-Ferrous Metal Industry Goods Ltd.

The following trans-shipping facilities are not considered to be interim storage sites as the transfer of cyanide takes place “*within a short period of time (hours as opposed to a day or more)*” (refer to the introductory comments of Transport Practice 2 of the ICMI’s Auditor Guidance for the Use of Cyanide Transportation Verification Protocol, dated January 2011):

- At Hangzhou Station, cyanide boxes and drums are removed from the shipping containers and immediately packed into railway carriages. Transfer is completed within a period of 5 to 8 hours. There is no interim storage at Hangzhou.
- At Hefei Station, cyanide boxes and drums are removed from the shipping containers and immediately packed into railway carriages. Transfer is completed within a period of 5 to 8 hours. There is no interim storage at Hefei.
- At Dostyk, the sealed shipping containers containing the boxes and drums of cyanide are transferred from the China Railway Train directly to the Kazakh Railways Train for transport through to Balykchy. Transfer and custom’s clearance is completed within a period of 5 to 8 hours. There is no interim storage at Dostyk.

Each of these facilities was inspected by the Auditor as part of the railway due diligence for this Supply Chain to confirm these arrangements.

At no stage of the Supply Chain subject to this audit is cyanide removed from the cyanide packaging containers (boxes and drums).

1.2.3 Parties involved in the cyanide transport

The parties directly involved in the handling of cyanide through the railway part of the Supply Chain are as follows.

Anhui Anqing Shuguang Chemical Co. Ltd (Shuguang)

Shuguang is the consignor and manages the Supply Chain through its representatives (including its subsidiary Xinjiang Shuguang Trading Co. Ltd. in Urumqi) who attend all cyanide loading and unloading activities at Hangzhou, Hefei and Urumqi. Shuguang’s representatives also accompany each train transporting cyanide from Dostyk in Kazakhstan to its delivery to Kumtor at Balykchy in Kyrgyzstan.

Shuguang was certified by the ICMI as a Code-compliant cyanide manufacturer on 31 March 2010 and re-certificated on 12 September 2013.

China Railway Corporation

China Railway Corporation is the national railway operator of the People's Republic of China, under the Ministry of Transport. China Railway Corporation operates rail commuter and freight transport via several smaller companies. The railway operates on approximately 100,000 kilometres of rail line, the world’s third largest rail network, employs approximately 2,000,000 people and has an annual investment budget of

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approximately \$100 billion.

China Railway Corporation owns and operates all trains within China and from Alashankou to Dostyk including management of the following stations where packaged solid sodium cyanide is transhipped along the Supply Chain the subject of this audit:

- Hangzhou North Railway Station, which undertakes the cyanide unloading and loading operations.
- Hefei Goods Transportation Railway Station, which undertakes the cyanide unloading and loading operations.
- North Urumqi Railway Station (Changji Goods Transportation of North Urumqi Railway Station). Cyanide unloading/loading are undertaken by a separate government-owned Chinese company – Xinjiang Non-Ferrous Metal Industry Goods Ltd.

The railway line reached Urumqi in western China in 1962. The link from Urumqi to the border with Kazakhstan was completed in 1990.

Benbu Railway Security Service Company

Shuguang's transport contractor, Benbu Railway Security Service Company, accompanies all cyanide transport on trains from Hangzhou and Hefei through to North Urumqi Railway Station, operating under Shuguang's procedures with respect to management of solid sodium cyanide, including emergency response.

Xinjiang Non-Ferrous Metal Industry Goods Ltd

Xinjiang Non-Ferrous Metal Industry Goods Ltd (a Chinese government company) owns and operates the warehouse facility at North Urumqi Railway Station used by Shuguang as an interim storage facility and is responsible for unloading the cyanide from the inbound train carriage and loading the cyanide into shipping containers at the railway station and loading the shipping containers onto the outbound train. Xinjiang Non-Ferrous Metal Industry Goods Ltd has operated the existing warehouse since 2002 and has operated other warehouse facilities at the station for storage of cyanide for over 20 years.

Kazakhstan Temir Zholy (KTZ) – Kazakhstan's state-owned railway company

Kazakhstan Temir Zholy (KTZ) is the state-owned railway company which operates Kazakhstan's network of approximately 15,000 km of rail lines. KTZ:

- Owns and operates the Dostyk Railway Station, which undertakes the transfer of the cyanide shipping containers from the Chinese train to the Kazakhstan train in Dostyk.
- Owns the train used for transporting cyanide from Dostyk in Kazakhstan through to Balykchy in Kyrgyzstan.
- Operates the cyanide transport train from Dostyk to Lugovaya Railway Station in Kazakhstan.

Much of the rail network was constructed during the Soviet era. The Kazakhstan railway line reached Dostyk on the border with China in 1959, however, the border rail link did not open till 1990.

Kyrgyz Railway

Kyrgyz Railway, a state-owned railway company, operates the rail line from Lugovaya Railway Station in Kazakhstan to Balykchy Marshalling Yard in Kyrgyzstan, i.e. at Lugovaya the Kazakh train operator hands the train over to a Kyrgyz train operator. This stretch of rail is Kyrgyzstan's only operating rail line. The rail

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line was constructed during the Soviet era.

Kazakhstan Systems Ltd

Shuguang's transport contractor, Kazakhstan Systems Ltd, accompanies all cyanide transport on trains from Dostyk in Kazakhstan through to Balykchy in Kyrgyzstan, operating under Shuguang's procedures.

Other Parties

Kumtor Operating Company (KOC) takes delivery and unloads the cyanide boxes/drums from the train at Balykchy Marshalling Yard in Kyrgyzstan. This unloading operation is not part of this transport due diligence.

Shuguang is assisted by several contractor companies to liaise with customs and railway authorities in China, Kazakhstan and Kyrgyzstan. These contractor companies are not involved in the physical handling of cyanide or supervision of transport operations along the transport route. These companies include the following.

China Railway International Multi-way Transit Co. Ltd. is contracted by Shuguang to provide liaison between China Railway Corporation and Kazakhstan System Ltd, also contracted by Shuguang. Kazakhstan System Ltd liaises with the Kazakhstan State-owned Railway Company. China Railway International Multi-way Transit Co prepares the transportation management plan to get approval from China Railway Corporation and the orders for Urumqi Railway Station to undertake the transport. Shuguang's subsidiary in Urumqi (Xinjiang Shuguang Trading Co. Ltd.) organises the customs approval in Urumqi for transport into Kazakhstan. China Railway International Multi-way Transit Co Ltd arranges the second part of the customs clearance in Alashankou.

Victoria Alt Ltd is contracted by Shuguang in Kyrgyzstan to provide coordination of shipment logistics and commercial terms with Kyrgyzstan Rail.

Shuguang's subsidiary in Urumqi employs representatives in Kazakhstan (based in Almaty) and Kyrgyzstan (Bishkek) to manage the transport of cyanide within those countries.

Custom's clearance from Kazakhstan to Kyrgyzstan is arranged by Kazakhstan System Ltd, a contractor, on behalf of Shuguang.

1.2.4 History of Operations

Shuguang has been transporting cyanide on the route to Balykchy for more than ten years. The majority of cyanide transport has been via Hefei.

A shipment transfer from truck to train was observed by the Auditor at Hefei during the diligence inspections in November 2013. The Hangzhou route is used as an alternative when the Hefei route is not practicable or commercially suitable.

Shuguang and its various railway transport contractors advised that in this time there have not been any damage to packages, spills or losses of cyanide along the Supply Chain.

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1.3 Auditor's Findings and Attestation

Anhui Anqing Shuguang Chemical Company Limited is:

- in full compliance with
- in substantial compliance with
- not in compliance with

the International Cyanide Management Code

Audit Company: Golder Associates
Audit Team Leader: Tom Carmichael, RABQSA (14544)
Email: tomcarmichael@golder.com.au

1.4 Name and Signature Auditor

Name	Position	Signature	Date
Tom Carmichael	Lead Auditor and Technical Specialist		17 July 2014

1.5 Dates of Audit

The Certification Audit was undertaken over seven days (7 person-days) from 19 to 29 November 2013.

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

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

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2.0 CONSIGNOR SUMMARY

2.1 Principle 1 – Transport

The Code requires the consignor to “**transport Cyanide in a manner that minimises the potential for accidents and releases**”.

2.1.1 Transport Practice 1.1

Select cyanide transport routes to minimise the potential for accidents and releases.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes to be selected to minimise the potential for accidents and releases.

Shuguang has developed and implemented a procedure to guide the selection of transport routes to minimise the potential for accidents and releases or the potential impacts of accidents and releases. Shuguang has implemented the procedure and undertaken an evaluation of the relative risks of rail transport versus road transport. Shuguang has concluded that rail transport presents a safer and reliable option along the Supply Chain route. The specific rail routes used in China and Kazakhstan are selected by the railway companies in these countries taking into account the status of the network logistics at that time.

Hazards identified during the route selection have been assessed by Shuguang. Prevention and/or protective measures have been identified and implemented to manage risks, including constant supervision of rail cyanide shipments and rail movements by Shuguang and its contractors. Additional security measures are implemented by the railway companies in Kazakhstan and Kyrgyzstan.

Shuguang has developed a procedure requiring feedback on route conditions from its representatives and transport contractors during and following each cyanide delivery.

Shuguang has documented measures taken to address risks identified with the selected routes within the Cyanide Transport Route Assessment Reports.

Shuguang liaises with the railway companies in each country of the supply route either directly or through its transport contractors. The railway companies are responsible for all liaison with governmental agencies in the selection of routes and development of cyanide management measures. It should be noted that each cyanide transport activity is subject to approval by the governments in each country and the approval process involves consideration of the transport route and potential risks.

Security escorts are not required along the transport routes through China, however, are used by the railway companies for each cyanide transport event in Kazakhstan and Kyrgyzstan due to the risk of terrorist action.

In the event of an incident, primary emergency response is coordinated by the railway companies in each country with assistance as required provided by Shuguang. The railway companies liaise as necessary with external responders such as police, ambulance, traffic authorities, hospitals and environmental authorities. Shuguang provides emergency response and first aid equipment for each cyanide transport event.

Shuguang ensures that all of its subcontractors are aware of their obligations under Shuguang’s procedures.

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2.1.2 Transport Practice 1.2

Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 1.2 requiring that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

All personnel involved in handling cyanide along the Supply Chain route are employees of the respective railway companies or their subcontractors. These personnel have received appropriate training and vehicle licences to transport cyanide in accordance with legislative requirements in China, Kazakhstan and Kyrgyzstan.

All personnel operating cyanide handling and transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures. The training of chemical handling and transport equipment operators is provided by the railway companies. In addition, Shuguang undertakes periodic mock spill event training at locations where cyanide is unloaded or loaded from/onto trains along the Supply Chain route.

The operator of the interim storage facility at Urumqi undertakes mock drills for cyanide handling at least every three years.

Interview of representatives of the railway companies in Kazakhstan and Kyrgyzstan confirmed that personnel handling hazardous cargo undergo training for such tasks.

All train drivers reportedly hold licences issued by the respective railway companies authorising them to drive trains carrying hazardous chemicals such as cyanide. However, access to training records and licences were not available.

2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 1.3 requiring that transport equipment is suitable for the cyanide shipment.

The transport equipment used for transshipment and rail shipment along the Supply Chain route is owned and operated by the respective railway companies. The equipment has been designed for the loads it carries.

The railway carriages in China have capacities of 50 to 55 tonnes. The load of cyanide placed in the carriages is less than these limits as demonstrated by shipment records.

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The capacity of the railway flat-beds used in Kazakhstan and Kyrgyzstan is 70 tonnes, onto which two 24 tonne shipping containers are placed, i.e. presenting a total load of 48 tonnes, significantly less than capacity.

The crane used for transshipment at Dostyk has a capacity of 30.5 tonnes and is used to transfer containers with a total weight of 24 tonnes.

The forklifts used for loading unloading cyanide to/from the trains are used as designed for single pallet loads.

The loads placed in railway carriages and shipping containers are monitored by Shuguang and its representatives and recorded on shipping documents.

The train carriages, flat-beds, shipping containers, forklifts and cranes are subject to planned inspection and maintenance procedures which include labelling of equipment with its previous inspection date and next due inspection date.

2.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

in full compliance with

The operation is in substantial compliance with **Transport Practice 1.4**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 1.4 requiring the operation develop and implement a safety program for transport of cyanide.

Shuguang has procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer's packaging. These comprise checks by Shuguang representatives and its transport contractors prior to departure.

Shuguang is a Code certified cyanide producer and has systems in place to ensure its containers are labelled in accordance with the International Maritime Dangerous Goods (IMDG) Code and as required by local regulations or international standards.

The transport operations are undertaken by government owned railway companies on behalf of Shuguang. The railway companies have safety programs for cyanide transport that include:

- Vehicle inspections.
- Preventative maintenance.
- Limitations on operator or drivers' hours.
- Procedures to prevent loads from shifting.
- Procedures to modify or suspend transport if conditions such as severe weather or civil unrest are encountered.
- Drug abuse prevention.

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2.1.5 Transport Practice 1.5

Follow international standards for transportation of cyanide by sea and air.

The operation is **in full compliance with** **Transport Practice 1.5**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 1.5 requiring the operation to follow international standards for transportation of cyanide by sea and air is NOT APPLICABLE to Shuguang.

Shuguang does not transport consignments of cyanide by sea or air within the scope of this audit.

2.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

The operation is **in full compliance with** **Transport Practice 1.6**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 1.6 requiring the operation track cyanide shipments to prevent losses during transport.

All trains used for cyanide transport along the Supply Chain have communications systems that include train radios, cell phones and a GPS tracking system.

The train radios, cell phones and GPS tracking system are used continuously throughout the trip.

There are no locations along the Supply Chain route where the train radios do not function. There are some locations in China where there are cell phone communication blackout areas. The train radios would be used if required to make contact with Shuguang or other non-railway parties.

The GPS tracking system continuously transmits position data from each train throughout the trip.

Shuguang and the railway companies implement rigorous chain of custody procedures to prevent loss of cyanide during shipment. Once delivered, a customer representative signs a form acknowledging that the consignment was received in good condition and unopened. Seal numbers on the train carriages and shipping containers are recorded upon departure and arrival and checked to ensure that the seal has not been disturbed during transport.

Shipping papers and Material Safety Data Sheets accompany each cyanide convoy.

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2.2 Principle 2 – Interim Storage

The Code requires that the consignor “**design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures**”.

2.2.1 Transport Practice 2.1

Store cyanide in a manner that minimises the potential for accidental releases.

The operation is in full compliance with **Transport Practice 2.1**
 in substantial compliance with **Transport Practice 2.1**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 2.1 requiring transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Within the scope of this audit, there is one interim storage facility located at North Station of Urumqi.

Warning signs posted alerting workers:

- a) that cyanide is present;
- b) that smoking, open flames, eating and drinking are not allowed; and
- c) what personal protective equipment must be worn.

The signs are placed on the gate at the entrance of the storage facility, at the gate house and on the door of the storage building used by Shuguang.

There are security measures in place to prevent unauthorised access to cyanide. The storage facility is located within the railway station precinct which is accessible only via a permanently manned gateway. The storage facility has a second locked gate and a permanently manned gate house. The building within which the cyanide is stored has locked doors.

The cyanide is separated from incompatible materials such as acids, strong oxidizers and explosives with walls to prevent mixing. The only item stored in the building used by Shuguang is cyanide. The building is separated from other buildings which store other hazardous materials.

The cyanide is stored in a manner deigned to minimise the potential for contact of solid cyanide with water. The building has a concrete floor, concrete walls and concrete roof. The floor of the building is slightly raised above the surrounding ground to prevent rainwater ingress.

The cyanide is stored with adequate ventilation to prevent build-up of hydrogen cyanide gas. The building walls have a number of permanently open vents. The doorway entrance provides further ventilation when the doors are opened.

There are systems in place with the capacity to contain any spilled cyanide materials and minimise the extent of a release. The facility has an emergency response kit, including spill kit, supplied by Shuguang to respond to a spill.

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2.3 Principle 3 – Emergency Response

The Code requires that the consignor “**Protect communities and the environment through the development of emergency response strategies and capabilities**”.

2.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

The operation is in full compliance with **Transport Practice 3.1**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 3.1 requiring the operation prepare detailed Emergency Response Plans for potential cyanide releases.

Shuguang and the railway transport companies which transport Shuguang’s cyanide have each developed detailed emergency response plans which address emergency response for potential releases of cyanide during transportation within China, Kazakhstan and Kyrgyzstan and whilst at interim storage at Urumqi in China.

The emergency response plans are based on rail transportation and interim storage and contain information specific to solid sodium cyanide.

The plans are appropriate for the selected transportation route and they consider relevant aspects of the transport and interim storage infrastructure. The route evaluation process, route hazard/risk assessment process, and operational experience was used by Shuguang identify likely emergency scenarios and appropriate response measures.

The plans consider the physical and chemical form of cyanide and design of the transport vehicles and interim storage facility.

The emergency response plans include descriptions of response actions, as appropriate for the anticipated emergency situation. External responders identified in the documents are aware of their role in an emergency.

Shuguang representatives, or its contractors, accompany each cyanide transport event to provide specialist advice in the event of an incident. Each cyanide transport is accompanied by five suitcases of emergency response and first aid equipment supplied by Shuguang and prepared specifically for management of solid sodium cyanide.

Each country has well established procedures and resources for involvement of government third party responders to major spill events which cannot be adequately addressed by Shuguang and its contractors during transport and interim storage of cyanide.

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2.3.2 Transport Practice 3.2

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 3.2 requiring it designates appropriate response personnel and commit necessary resources for emergency response.

China Railway Corporation provides emergency response training of appropriate personnel involved in handling cyanide at Hangzhou and Hefei railway stations. The training includes a six day course in chemical management, with specific details on solid sodium cyanide and mock spill event training for cyanide. The mock spill training is attended by employees of the railway company, police and Shuguang's transport contractor (Benbu Railway Security Service Company). The training is repeated every two years.

Similar emergency response training and mock drills are undertaken for the interim storage facility by its operator (Xinjiang Non-Ferrous Metal Industry Goods Ltd) and training records were sighted by the Auditor.

Records of the completed training attendance registers and training assessments were viewed for 2013.

The emergency response plans of each relevant organisation involved in the cyanide transport and interim storage identify the specific emergency response duties and responsibilities of personnel for the specific scenarios. The cyanide training provides additional detail of the responsibilities for each of the specific roles.

Shuguang maintains a list of all of the emergency response equipment that should be available during the transport route. The equipment is checked each month and prior to departure of each cyanide transport event by Shuguang.

Shuguang uses subcontractors as part of the cyanide transport. The subcontractors comprise the railway companies which undertake the transport, personnel who accompany each cyanide transport and the interim storage facility. The subcontractors undergo training for handling of cyanide and spill response as detailed in this Audit report.

2.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 3.3 requiring that they develop procedures for internal and external emergency notification and reporting.

The emergency response plans of each organisation involved in the transport and interim storage of cyanide along the Supply Chain route contains procedures and current contact information for notifying the shipper, the receiver/consignee, outside response providers, and medical facilities of an emergency.

A copy of the applicable emergency response plans accompanies the transport team on the trains carrying

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the cyanide and is held at the interim storage facility's offices in Urumqi.
The emergency response plans have procedures in place to ensure the contact numbers are kept current.

2.3.4 Transport Practice 3.4

Develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

in full compliance with

The operation is in substantial compliance with **Transport Practice 3.4**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 3.4 requiring that it develops procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

Shuguang and its transport and interim storage contractors have procedures for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris.

The emergency response plans of each relevant railway company and the interim storage facility include details on recovery and treatment of spills. A copy of the applicable emergency response plans accompanies the transport team on the trains carrying the cyanide and is held at the interim storage facility's offices in Urumqi.

The training programs undertaken by the rail transport companies and the interim storage facility also contain requirements for remediation depending on the spill. The railway company personnel and interim storage facility personnel involved in loading or unloading cyanide onto/from the trains undergo training in emergency response with refresher training provided at least every three years.

The emergency response plans prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

2.3.5 Transport Practice 3.5

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

in full compliance with

The operation is in substantial compliance with **Transport Practice 3.5**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang is in FULL COMPLIANCE with Transport Practice 3.5 requiring the operation periodically evaluate response procedures and capabilities and revise them as needed.

The emergency response plans of Shuguang, its transport contractors and the railway companies and interim storage facility contain provisions for periodically reviewing and evaluating the plans' adequacy.

The emergency response plans contain provisions for cyanide awareness training and conducting mock drills and they are being implemented.

The drill scenarios comprised spills at railway stations and the interim storage facility and involved the participation of the railway company personnel, police, Shuguang's transport contractors and interim storage facility personnel.

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The emergency response plans contain provisions for conducting a review after an incident. However, there have not been any incidents to date triggering the need for a review of the plans.

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Report Signature Page

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A handwritten signature in black ink, appearing to read 'T. Carmichael', with a long horizontal flourish extending to the right.

Tom Carmichael
ICMI Lead Auditor, Associate

TC/EWC/gf

A.B.N. 64 006 107 857

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APPENDIX A

Limitations

LIMITATIONS

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