INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

CYANIDE TRANSPORTATION VERIFICATION PROTOCOL

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INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE
1400 I Street, NW, Suite 550, Washington, DC 20005, USA
Tel +1.202.495.4020 | Fax +1.202.835.0155 | Email info@cyanidecode.org | Web CYANIDECODE.ORG

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The International Cyanide Management Code (hereinafter "the Code", "Code" or "the Cyanide Code"), this document, and other documents or information sources referenced at *www.cyanidecode.org* are believed to be reliable and were prepared in good faith from information reasonably available to the drafters. However, no guarantee is made as to the accuracy or completeness of any of these other documents or information sources. No guarantee is made in connection with the application of the Code, the additional documents available or the referenced materials to prevent hazards, accidents, incidents, or injury to employees and/or members of the public at any specific site where gold or silver is extracted from ore by the cyanidation process. Compliance with this Code is not intended to and does not replace, contravene or otherwise alter the requirements of any specific national, state or local governmental statutes, laws, regulations, ordinances, or other requirements regarding the matters included herein. Compliance with this Code is entirely voluntary and is neither intended nor does it create, establish, or recognize any legally enforceable obligations or rights on the part of its signatories, supporters or any other parties.

CYANIDE TRANSPORTATION VERIFICATION PROTOCOL

Introduction

This Cyanide Transportation Verification Protocol is designed for assessing whether a cyanide transportation operation of a Signatory to the International Cyanide Management Code ("Code", "the Code" or "the Cyanide Code") is adhering to the Transport Principles and Transport Standards of Practice of the Code.

All elements of the cyanide transportation and distribution system bringing cyanide from its point of manufacture to a gold or silver mining operation are subject to this Protocol. This includes 1) Code signatory trucking companies, 2) signatory consignors arranging the transport of cyanide through contracted carriers included in designated supply chains, 3) trucking companies not signatory to the Code but transporting cyanide as part of a designated cyanide supply chain, 4) interim storage sites used during transport, and 5) other entities such as ports, marine carriers, and rail lines and terminals which are included in designated cyanide supply chains.

In addition to the actual physical carriers of the cyanide, any entities contracted by a transporter to conduct activities that are addressed by the Verification Protocol, such as a company hired to perform maintenance of cyanide transport vehicles, or a contracted convoy escort are subject to the relevant parts of the Verification Protocol

Detailed guidance and instructions for use of this Protocol and application of Protocol questions during a Code certification audit is provided in the International Cyanide Management Institute's *Guidance for Use of the Cyanide Transportation Verification Protocol*, available on the *Cyanide Code* website.

Cyanide Transportation Verification Protocol

Principle 1 | TRANSPORT

Transport cyanide in a manner that minimizes the potential for accidents and releases.

Transport Practice 1.1

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

1. Does the transporter implement a process or procedure for selecting transport routes that minimizes the potential for accidents and releases or the potential impacts of accidents and releases? Does the process or procedure consider:
   a) Population density?
   b) Infrastructure (roadway, rail, port) construction and condition?
   c) Pitch and grade?
   d) Prevalence and proximity of water bodies and fog?

2. Does the transporter implement a procedure to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks?

3. Does the transporter implement a process or procedure to periodically reevaluate routes used for cyanide deliveries or does the transporter have a process for getting feedback on route condition from the transporter's operators?

4. Does the transporter document the measures taken to address risks identified with the selected routes?

5. Does the transporter seek input from applicable governmental agencies, communities and other stakeholders as necessary in the selection of routes and development of risk management measures?

6. Where routes present special safety or security concerns, does the transporter use convoys, escorts or other additional safety or security measures to address the concern?

7. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 1.1, does it implement procedures to make the contractor aware of the applicable Code requirements and ensure the contractor complies with those requirements?

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.

1. Does the transport company use only trained, qualified and licensed operators to operate its transport vehicles?

2. Have all personnel operating cyanide handling and transport equipment been trained to perform their jobs in a manner that minimizes the potential for cyanide releases and exposures?

3. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 1.2, does it implement procedures to make the contractor aware of the applicable Code requirements and ensure the contractor complies with those requirements?

Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

1. Does the transport company only use equipment designed and maintained to operate within the loads it will be handling?

2. Are there procedures to verify the adequacy of the equipment for the load it must bear?

3. Are there procedures in place to prevent overloading of the transport vehicle being used for handling cyanide (i.e., overloading a truck, ferry, barge, etc.)?

4. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 1.3, does it implement procedures to make the contractor aware of the applicable Code requirements and ensure the contractor complies with those requirements?

Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

1. Are there procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer's packaging?

2. Are placards or other signage used to identify the shipment as cyanide, as required by local regulations or international standards?

3. Does the transporter implement a safety program for cyanide transport that includes (where appropriate or applicable):
   a) Vehicle inspections prior to each departure/shipment?
   b) A preventive maintenance program?
   c) Limitations on operator or drivers' hours?
   d) Procedures to prevent loads from shifting?
   e) Procedures by which transportation can be modified or suspended if conditions such as severe weather or civil unrest are encountered?
   f) A drug abuse prevention program?
   g) Retention of records documenting that the above activities have been conducted?

4. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 1.4, does it implement procedures to make the contractor aware of the applicable Code requirements and ensure the contractor complies with those requirements?

Transport Practice 1.5

Follow international standards for transportation of cyanide by sea.

1. Are shipments of cyanide by sea transported in compliance with the Dangerous Goods Code of the International Maritime Organization?
   a) Is the cyanide shipment packaged as required by Part 4 of the IMO DG Code and according to the packaging instructions and packaging provisions indicated on the DG List?
   b) Are cyanide packages marked as required by Section 5.2.1 of the IMO DG Code and according to the labeling requirements indicated on the DG List?
   c) Are cyanide packages labeled as required by Section 5.2.2 of the IMO DG Code and according to the labeling requirements indicated on the DG List?
   d) If cyanide is shipped in cargo transport units, are the units placarded and marked as required by Chapter 5.3 of the IMO DG Code?
   e) Has a dangerous goods transport document been prepared with the information required under Chapter 5.4 of the DG Code?
   f) If the cyanide is packed or loaded into a container, has a "container/vehicle packing certificate" been prepared meeting the requirements of Section 5.4.2 of the DG Code?
   g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?
   h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?
   i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

1. Do transport vehicles have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders, as appropriate?

2. Is the communication equipment (e.g. GPS, mobile phones, radios, pagers.) periodically tested to ensure it functions properly?

3. Have communication blackout areas along transport routes been identified? Are special procedures implemented for the blackout areas?

4. Are there systems or procedures to track the progress of cyanide shipments?

5. Does the transporter implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment?

6. Are shipping records indicating the amount of cyanide in transit and Safety Data Sheets available during transport?

7. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 1.6, does it implement procedures to make the contractor aware of the applicable Code requirements and ensure the contractor complies with those requirements?

Principle 2 | INTERIM STORAGE

Design, construct and operate cyanide interim storage sites to prevent releases and exposures.

For purposes of the audit, "interim storage sites" and "trans-shipping depots" refer to facilities where cyanide is held temporarily when changing carriers or transport modes. Truck and rail terminals and port facilities are examples of interim storage sites and trans-shipping depots. Activities such as parking a cyanide transport vehicle for the night while en route do not involve interim storage. However, parking a truck carrying a cyanide load at a truck or rail terminal or a port for transfer to another truck, train or ship would constitute interim storage unless such a transfer took place within a short period of time (hours as opposed to a day or more). Storage in a warehouse, as defined in the Code's *Definitions and Acronyms* document, is a production activity and must be evaluated for compliance using the Cyanide Production Verification Protocol.

Transport Practice 2.1

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

For port facilities that act as trans-shipping depots, and when rail or ship transport involves interim storage sites or interim storage occurs at ports, the questions under Transport Practice 2.1 may be addressed to the extent practical by the consignor's Due Diligence Investigation, and the information included in the Due Diligence Investigation for those facilities.

1. Are warning signs posted alerting workers 1) that cyanide is present; 2) that smoking, open flames, eating and drinking are not allowed and 3) what personal protective equipment must be worn?

2. Are there security measures in place to prevent unauthorized access to cyanide, such as lockouts on valves and fenced and locked storage of solids?

3. Is cyanide separated from incompatible materials such as acids, strong oxidizers and explosives with berms, bunds, walls or other appropriate barriers to prevent mixing?

4. Is cyanide stored in a manner designed to minimize the potential for contact of solid cyanide with water (e.g., under a roof, off the ground, or in specially designed containers)?

5. Is cyanide stored with adequate ventilation to prevent build-up of hydrogen cyanide gas and cyanide dust?

6. Are there systems in place to contain any spilled cyanide materials and minimize the extent of a release?

Principle 3 | EMERGENCY RESPONSE

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

In evaluating a transporter's emergency response strategies and capabilities, the auditor must recognize that different approaches may be appropriate in different locations, and that for long transport routes, emergency response capabilities may vary greatly along the routes. In areas with robust emergency response capabilities, transporters of dangerous goods such as cyanide often rely on these in-place services. A single telephone call may trigger a rapid and comprehensive response by prepared and well-trained personnel capable of managing cyanide and other hazardous materials emergencies. This response may even include a pre-planned command structure, with the local authorities having designated incident command authority once on the scene. In areas lacking an established response infrastructure, it may be necessary for cyanide transporters, consignors, or mining operations to have their own emergency response equipment and personnel available with the cyanide shipment, and be more directly responsible for response and remediation actions. The nature of the transporter's emergency response program will be highly dependent on such local circumstances. Auditors must evaluate this element of the Code with an understanding both of what strategies and capabilities are necessary, and what expectations are appropriate, given the route and location-specific circumstances.

The Transport Practices and questions under this principle apply to interim storage sites as well as cyanide in transport. Emergency response elements should be included as practical in a consignor's Due Diligence Investigations of rail and ocean transport and rail yards and ports.

Transport Practice 3.1

Prepare detailed emergency response plans for potential cyanide releases.

1. Does the transporter have an Emergency Response Plan?

2. Is the Emergency Response Plan appropriate for:
   a) The transportation route?
   b) The physical and chemical form of the cyanide?
   c) The method of transport?
   d) The transport infrastructure (e.g., condition of the road, railway, port)?
   e) The design of the transport vehicle or interim storage facility?

3. Does the plan include descriptions of response actions, as appropriate for the anticipated emergency situation?

4. Does the plan identify the roles of external responders, medical services or communities in emergency response procedures and have they been advised of their roles?

Transport Practice 3.2

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

1. Does the transporter provide initial and refresher emergency response training to appropriate personnel?

2. Are there descriptions of the specific emergency response duties and responsibilities of personnel?

3. Is there a list of all emergency response equipment that should be available during transport or along the transportation route?

4. Does the transporter have available the necessary emergency response and health and safety equipment, including personal protective equipment during transport?

5. Are there procedures to inspect emergency response equipment and assure its availability when required?

6. If the transporter contracts other entities to conduct any of the activities required in Transport Practice 3.2 or has designated other entities to conduct emergency response activities, does it clearly delineate its roles and responsibilities and those of the contractor or other entity during an emergency response?

Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

1. Are there procedures and current contact information for notifying appropriate entities such as the cyanide producer, the customer, regulatory agencies, external response providers, medical facilities and potentially affected communities of an emergency?

2. Are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current?

3. Does the operation have a procedure for notifying ICMI of any significant cyanide incidents, as defined in ICMI's *Definitions and Acronyms* document? Have all such significant cyanide incidents that have occurred been reported to ICMI?

Transport Practice 3.4

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

1. Are there procedures for remediation, such as recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris?

2. Does the procedure prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water?

Transport Practice 3.5

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

1. Are there provisions for periodically reviewing and evaluating the Plan's adequacy and are they being implemented?

2. Are there provisions for periodically conducting mock emergency drills and are they being implemented?

3. Is there a procedure to evaluate the Plan's performance after its implementation and revise it as needed, and have they been implemented?