The CODE

The Newsletter of
the International Cyanide
Management Institute
www.cyanidecode.org

Fall 2007 Edition

## What's Inside



Welcome to the Fall 2007 issue of The Code, a periodic publication of the International Cyanide Management Institute.

## Signatory and Certification Update

Since our last Newsletter was issued on July 11, Miller Transporters, Inc., and Vehrad Transport and Haulage Limited, cyanide transporters in the United States and Ghana, respectively, became the 29th and 30th Code signatory companies. Goldcorp, Inc., a Canadian gold producer with operations in North, Central and South America and Australia, has also become a signatory. Goldcorp was the world's eighth largest gold producer in 2006. The addition of these companies, along with several changes that existing signatories have made regarding which operations they have designated for certification, brings the total number of gold mines, cyanide production facilities and cyanide transport companies subject to Code certification to 104, located in 23 countries.

ICMI has issued 11 certifications since the last newsletter. AngloGold Ashanti Ltd's Cripple Creek & Victor Mine in Colorado, USA, and its East Gold Acid Float Plant Vaal River, Noligwa Gold Plant Vaal River, West Gold Plant Vaal River and Kopanang Gold Plant Vaal River South, all in South Africa, have been certified in full compliance with the Code. AngloGold's Mponeng Gold Plant West Wits, and Savuka Gold Plant West Wits, also in South Africa, have been certified conditionally. Barrick Gold's Pierina Mine in Peru has been fully certified, and its Cowal Mine in Australia, which had been certified conditionally prior to the initiation of operations, has undergone its operational audit and has been certified in full compliance with the Code. Australian Gold Reagents' cyanide production plant in Kwinana, Western Australia has been certified in full compliance with the Code, and Sasol Polymers South African cyanide production plant, which had been certified conditionally, has implemented its Corrective Action Plan and is now fully certified. As of October 19, there are 16 mines, 8 producers and 4 transporters certified under the Code.

## Training

IMCI has a training session on Code Implementation and Auditing scheduled for later this month Africa and is planning another in South America.

These full-day workshops will focus on the practical issues associated with implementing and auditing the Code. The intent of each of the Code's Principles and Standards of Practice will be discussed, along with the Code's expectations for performance and the measures typically necessary to achieve that performance. Interpretive guidance will be provided on how auditors are to use their professional judgment in determining whether an operation is in compliance with the Code. The training will provide participants with the critical knowledge and understanding of the Code necessary to identify appropriate and acceptable measures to improve cyanide management and meet the Code's performance-based goals.

The training is intended for all stakeholders in the gold mining industry interested in the implementation and verification of the International Cyanide Management Code. Gold mine operators, environmental and safety managers, cyanide producers and transporters, mining industry metallurgists and consultants, financiers and government regulatory personnel, NGOs and other stakeholders with interest in gold mining will find the training beneficial in enhancing their understanding of this voluntary gold industry code of practice for the responsible management of cyanide.

The training sessions will be of particular importance to gold mining company personnel whose companies have signed the Code or are considering signing the Code as well as current and potential Code auditors. Companies implementing the Code will learn about on-the ground control measures and management plans and procedures necessary to meet the Code's Principles and Standards of Practice. Auditors will gain insight in applying Audit Protocol questions to situations in the field and preparation of acceptable audit reports. Although ICMI does not require that Code auditors attend its training sessions, the information presented and the opportunity for questions and answers will be invaluable for potential Code auditors.

Both workshops will be conducted by Norm Greenwald, Vice President of the International Cyanide Management Institute. Mr. Greenwald was the Code Manager during the program's development, and worked with the Code's multi-stakeholder Steering Committee in drafting the Code and its supporting procedural and technical documents. He currently oversees the Code's auditing and certification process.

A training session in Accra, Ghana, co-sponsored by the Ghanaian Chamber of Mines, will be held on Thursday, October 25, 2007 at the M-Plaza Hotel. The cost is US$500 and includes the training session and materials, lodging at the hotel on Wednesday and Thursday, October 24 and 25, a banquet on Wednesday evening, and lunch on Thursday. Those not requiring lodging can register for the training session and banquet for US$250.

Registration information is available on the Code web site at http://cyanidecode.org/auditors_training.php.

A training session is being planned for Lima, Peru later in 2007. ICMI will announce the date and other details on its web site once arrangements are finalized.

## New Director Elected to ICMI Board

Mr. Chen Hoaran was elected to the ICMI Board of Directors at its telephonic meeting of August 2, 2007. Mr. Chen is the Executive Director and Chairman of the China Chamber of Commerce of Metals, Minerals & Chemical Importers and Exporters (CCCMC), which is based in Beijing. CCCMC's 4200 member companies represent major players in ferrous metals, non-ferrous metals, non-metallic minerals and products, chemicals, plastics, fine chemicals, agro-chemicals, and rubber products. The import and export volumes of these sectors account for, on average, 25% of China's annual national totals.

Prior to joining the Chamber in 1999, Mr. Chen was Executive Director and President of Nam Kwong (Group) Co. Ltd, Macao's oldest Chinese-funded enterprise. From 1990 to 1995, Chen Hoaran was the President & Chief Operating Officer of Pacific Refining Company, located in California, a subsidiary of Sinochem American Holdings Inc. From 1983 to 1990 he was Executive Vice President of Sinochem, one of the four major state-owned oil companies and the largest fertilizer importer and phosphorus and compound fertilizer manufacturer in China.

Mr. Chen brings an important perspective to the Board from his role with industry and his knowledge of China, which is now the third-largest gold producing country. His election brings the Board to 8 members, with one additional member allowed under the ICMI by-laws.

## New Additions to the Code Web Site

In the previous issue of the newsletter, ICMI announced the posting of a list of approved auditors on the ICMI web site at http://www.cyanidecode.org/pdf/AuditorList.pdf. ICMI has posted a revised list, current as of October 5. ICMI approved these auditors based on the credentials they submitted, and cannot guarantee that they have maintained their credentials and will still meet ICMI criteria if and when they conduct a Code audit. Please keep in mind that the audited operation is responsible for ensuring that its auditor(s) meet ICMI criteria at the time of the audit.

The importance of confirming that an auditor meets ICMI criteria at the time of the audit cannot be overstated. Audit reports will not be accepted unless the auditor(s) meet ICMI criteria when they conduct the audit. ICMI has become aware of a situation where an auditor misrepresented his credentials to a client seeking a Code audit. This individual claimed to meet ICMI lead auditor requirements, but, in fact, did not. The issue was identified and resolved, and the audit was conducted with a fully-qualified auditor serving as the lead auditor. Fortunately, the operation did not incur the lost time and additional cost of a second audit. The situation however, serves as a reminder that auditor credentials should be reviewed either by ICMI or the operation prior to conducting an audit.

Another new addition to the ICMI web site is a map showing the number of gold mines, cyanide production facilities and cyanide transporters designated for certification, and the total number of operations that have been certified, in various countries around the world. This map, which first appeared in the previous newsletter, can be accessed through a link on the main Signatory Page, http://cyanidecode.org/signatorycompanies.php. ICMI will periodically update the map as additional operations are designated for certification and new certifications are announced.

## The View from Outside

*The following article was authored by Mr. David Gaskin, P.E. Mr. Gaskin is Chief of the Nevada Division of Environmental Protection's Bureau of Mining Regulation and Reclamation. He can be reached by telephone at +1-775-687-9397.*

The vast majority of the United States' primary production of gold occurs in Nevada, which is one of the world's largest gold-producing regions. The Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation, is responsible for overseeing the state's many gold mines. One of the Division's prime concerns is the gold mining industry's management, use and disposal of cyanide.

The Division's inspectors routinely visit the state's gold mines to evaluate their environmental performance. We have seen a number of recent improvements at mining facilities in Nevada as a result of implementation of the International Cyanide Management Code. Nevada's gold mining industry has always operated with strict attention to safe, responsible handling of cyanide and associated process solutions. However, as mine sites review existing cyanide management systems with a different perspective, they discover new ways to enhance their protection of human health and the environment. Additional focus on the cyanide handling process has led to some innovative improvements in safety and security. Such measures include improved physical security, clearer identification of cyanide tanks and piping, additional secondary containment for cyanide systems, and process redesign to prevent accidental mixing of acid with cyanide. One area of notable improvement is in cyanide truck offload facility design. A number of sites have made enhancements to employee safety and spill containment where cyanide is brought to the mine.

Overall, I have been pleased that the institution of the Code has not resulted in conflict with the existing regulatory requirements, but has brought about complementary improvements in safety and environmental protection. As more facilities proceed through the certification process, I look forward to additional benefits.

# Code Questions

ICMI periodically receives questions on Code implementation and auditing from various stakeholders. Some of these questions are included below, along with ICMI's responses. These responses do not supersede previous ICMI guidance, and should be considered in conjunction with the Gold Mining and Cyanide Transportation Auditor Guidance documents.

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## Question 1, (Regarding Standards of Practice 1.1 and 2.2)

Due to reasons beyond its control, there may be a disruption in a gold mining operation's supply of "certified cyanide" (that is, cyanide produced and transported by operations that are either certified under the Code or which have successfully undergone non-certification Code-equivalent audits). What would be the mine's compliance status if, in order to remain in production, it temporarily was forced to use "non-certified cyanide"?

## Answer

To be in compliance at the time of its initial Code Verification Audit, the mine must have its cyanide produced and transported by operations that are either certified under the Code or which have successfully undergone non-certification Code-equivalent audits (i.e., "certified cyanide").

The Code recognizes that such certified supplies may be interrupted by market forces, accidents, equipment failures, natural disasters and other circumstances beyond the mine's control. A mine that already has been certified is not expected to shut down until it can re-establish a certified cyanide supply, nor is it necessarily in non-compliance with the Code. In such a case, the auditor's finding will depend on the nature of the disruption and the mine's response. The auditor should consider the following factors when determining whether the gold mining operation was in full, substantial or non-compliance with Standards of Practice 1.1 during the preceding three-year audit cycle:

- What caused the disruption in the services of the certified producer?
- How did the mine respond when its certified supply was disrupted?
- Did the mine re-establish a certified cyanide supply as soon as reasonably practical?

In general, full or substantial compliance could be indicated when a) the disruption was due to forces beyond the mine's control, b) the mine made a good-faith effort to re-establish a certified cyanide supply, but was unable to due so, and/or c) the mine re-established its certified supply in a relatively short period of time. Substantial or non-compliance may result when a) the mine elected to use a non-certified cyanide supply due to the higher cost of certified cyanide, b) the mine used up a large stockpile of certified cyanide before it sought an alternate certified supply, and was then forced to use non-certified cyanide because it had not made arrangements to receive certified cyanide in a timely manner, and/or c) when the mine continued to use non-certified cyanide for a prolonged period even though a certified producer was available. The auditor's decision is highly dependent on site-specific circumstances, and mining operations that experience such disruptions should document their circumstances and responses to provide the auditor with a basis for his finding.

Additionally, as specified under Item 6 in the Signatory Application Form (as revised in August 2007), the mine is requested to notify ICMI of an agreement for the purchase or transport of non-certified cyanide within 72 hours of making such an agreement. The notification should include the reason for using a non-certified cyanide producer or transporter, the time anticipated until a certified cyanide supply can be re-established, and contact information of a company representative to respond to requests for additional information. This information will not be posted on the ICMI web site, but will be used by ICMI to refer inquiries it may receive to the designated company representative.

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## Question 2, (Regarding Standard of Practice 4.1)

Operating procedures are required for a gold mining operation's cyanide facilities. Does this mean that a written operating procedure is required for every piece of operating equipment or would one procedure be sufficient for combinations of equipment?

### Answer

Generally speaking, if cyanide is present in a system or piece of equipment, and operator error can result in an exposure or release to the environment, then a written operating procedure should be available to prevent these incidents. Procedures can be combined as long as they accomplish their goals, and operating procedures often address several pieces of equipment that are all part of the same unit process. See the discussion under question 1 of Standard of Practice 4.1 in the Auditor Guidance for Use of the Gold Mining Operations Verification Protocol (http://cyanidecode.org/pdf/RevisedAuditorGuidance.pdf) for additional information regarding the nature of the necessary procedures.

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## Question 3, (Regarding Standard of Practice 4.6)

Does the Code seek to protect ground water quality from cyanide only? Does the Code address historical seepage or only current potential impacts?

### Answer

All of the Code's provisions, including those of Standard of Practice 4.6 for protection of the beneficial uses of ground water, are specific to cyanide. The Code's provisions only apply to the operation beginning at the time of its initial audit. Decommissioned facilities at an operating mine, which may include old and inactive tailings impoundments, are not covered under the Code. If no further deposition were to occur, then the operation can exclude a decommissioned impoundment from the scope of its audit.

However, with respect to its active facilities, an operation that has already exceeded the locally applicable cyanide standard at its regulatory designated point of compliance (or an actual point of use) is expected to initiate remedial activities designed to prevent further degradation and restore the beneficial use at the point(s) of compliance or use. The nature of the remedial action is discussed further under question 4 of Standard of Practice 4.6 of the Auditor Guidance for Use of the Gold Mining Operations Verification Protocol, (http://cyanidecode.org/pdf/RevisedAuditorGuidance.pdf).

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## Question 4, (Regarding Standards of Practice 4.6 and 4.7)

Does the Code require leak detection, secondary containment and/or ground water monitoring for a process water impoundment lined with HDPE?

### Answer

Impoundments are subject to Standard of Practice 4.6 regarding protection of the beneficial uses of ground water, but this applies only where such uses actually exist or are designated by the applicable local authority. Moreover, while such beneficial uses must be protected, the Code does not require specific technologies such as synthetic lining or leak detection to accomplish this. Compliance with Standard of Practice 4.6 is based solely on meeting applicable numerical or narrative standards for the allowable level of cyanide in ground water.

If such standards apply at an operation, and the impoundment has a level of cyanide in excess of the standard, then ground water monitoring would be necessary to demonstrate that its design, construction and operation protect the standard. However, if there is no standard, no actual beneficial use of the ground water, and/or no point of compliance where the applicable regulatory body requires the standard to be met, then ground water monitoring of the impoundment would not be necessary for compliance with the Code.

Neither leak detection nor secondary containment is required for the process water impoundment. The secondary containment provisions of Standard of Practice 4.7 apply only to tanks and pipelines, not impoundments.

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## Question 5, (Regarding Standard of Practice 4.7)

Is secondary containment required for a tailings thickener? How does the secondary containment requirement apply to interconnected containments? For example, if an operation interconnected its leach and adsorption containment areas with the thickener area and the size of leach tanks, adsorption tanks and the thickener are all different, which tank size is used to calculate the necessary 110% capacity of the containment? Will it be the largest tank in the series regardless of how they are interconnected?

## Answer

Tailings thickeners are considered to be tanks, and if the tailings are "process solution," (defined in the Code Definitions as solution with a WAD cyanide level of 0.5 mg/l or greater), then secondary containment is necessary.

The 110% rule applies to the largest tank that would be contained in that containment area. If the relative elevations and flow paths are such that a release from a given tank would not flow to some part of an interconnected containment, then the capacity of that portion of the containment would not be counted. In a complex situation, it may be necessary to determine the flow paths from a number of tanks as well as the capacities of various segments of the containment, to be able to demonstrate that the system has the necessary containment capacity.