International Cyanide Management Code Pre-Operational Certification Audit of:



Coatzacoalcos Sodium Cyanide Production Facility

Summary Audit Report

Submitted to:

The International Cyanide Management Institute 1400 I Street, NW – Suite 550 Washington, DC 20005 USA

2015 Audit Cycle





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CyPlus Idesa Coatzacoalcos Sodium Cyanide Production Facility Summary

Company Names & Contact Information

Name and location of Operation:	CyPlus Idesa, S.A.P.I. de C.V. Boulevard Morelos Km 4.2 Parque Industial Petroquimico Morelos, Coatzacoalcos, Veracruz de Ignacio de la Llave, 96400 Mexico
Responsible Manager for Operation:	Oscar Vélez Alvarez Gerente de Planta CyPlus Idesa Coatzacoalcos Plant Manager
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Operational Overview

CyPlus Idesa, S.A.P.I. de C.V. is a joint venture company formed by Evonik Industries (Germany) and Grupo Idesa S.A de C.V. (Mexico). The Coatzacoalcos sodium cyanide production plant that was under construction at the time of this pre-operational audit has a planned production capacity of 40,000 metric tons.

CyPlus GmbH (a 100% subsidiary of Evonik Industries) and Idesa are both large companies that bring years of experience in chemical production to the joint venture. Among other things, CyPlus Idesa benefits from CyPlus' mature integrated management systems for environment, health, safety, and quality and from CyPlus sodium cyanide technology and production experience. Idesa has also brought experienced chemical operations personnel, infrastructure, and regional knowledge and experience in building and resourcing a chemical operations to the joint venture.

The facility will produce solid sodium cyanide for the precious metals mining market.

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Audit Implementation and Conclusions

Solid sodium cyanide pre-production operations, policies and procedures, and the facility that was under construction were evaluated during this audit. The audit was conducted through discussions and interviews with senior management, operations management, engineering, and environmental, health, safety & quality (EHSQ) staff. Personnel involved in the audit were from Germany and Mexico and from CyPlus, Evonik, Idesa, and CyPlus Idesa. The auditor used the ICMI "Cyanide Production Pre-Operational Verification Protocol" to evaluate International Cyanide Management Code (ICMC) compliance.

Locally defined draft procedures were largely in place and were evaluated during this audit. The assessment was based on random samples of information and therefore deficiencies may exist which have not been identified. The depth to which records and data were sampled was typical of an environmental, health and safety (EH&S) management system audit. Although legally required records were sampled in order to evaluate ICMC compliance, legal compliance with federal, regional, and local regulations was not part of the scope of this evaluation.

The CyPlus Idesa pre-operational certification audit was performed by an independent third-party auditor who is pre-approved by the ICMI as Lead Auditor for all types of International Cyanide Management Code (ICMC) audits and as a technical expert for ICMC audits of cyanide transportation and production operations. Cyanide was not yet present at the time of the pre-operational audit.

All aspects of the cyanide operations in its pre-operational state noted above were included in this ICMC Pre-Operational Certification Audit. The operation was found to be in FULL COMPLIANCE with ICMC Cyanide Production Pre-Operational requirements.

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Auditor's Finding

The planned cyanide management practices for the CyPlus Idesa Coatzacoalcos production were evaluated for ICMC compliance using the *ICMI Cyanide Production Pre-Operational Verification Protocol*. CyPlus Idesa internal standards, policies, practices, and procedures regarding the management of the cyanide operations were reviewed.

The auditor found that the overall level of preparedness and understanding of ICMI Cyanide Code requirements was excellent. Management systems upon which the operation is based were found to be very mature, personnel demonstrated excellent operational discipline, the plant construction project was very well managed and organized, and facility construction records were readily available for review.

Cyanide had not yet been introduced in the plant at the time of this audit.

The results of this pre-operational certification audit demonstrate that the CyPlus Idesa Coatzacoalcos production facility and all planned cyanide-related operations are in FULL COMPLIANCE with International Cyanide Management Code pre-operational requirements.

Audit Company:	MSS Code Certification Service, A Division of Management System Solutions, Inc. www.mss-team.com
Lead / Technical Auditor:	Nicole Jurczyk E-mail: njurczyk@mss-team.com
Date(s) of Audit:	November 11-13, 2015

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Certification 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 the Audit Reports accurately describe 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 Pre-Operational Verification Protocol* and using standard and accepted practices for health, safety and environmental audits.

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CyPlus Idesa Pre-Operational Certification Audit Results

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

<u>Production Practice 1.1</u>: 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 Production Practice 1.1

Summarize the basis for this Finding:

CyPlus Idesa has implemented quality control and quality assurance programs as part of the Coatzacoalcos production facility construction project. Leadership interviewed during the audit confirmed that the company is committed to retaining all quality control and quality assurance records from the construction of the cyanide production and storage facilities. Records were available to demonstrate that appropriately qualified personnel are reviewing the facility construction process at frequent intervals to confirm that all stages of the facility conform to engineering plans. Extensive quality control and quality assurance records were reviewed during the audit and were found to be acceptable.

The materials of construction for the cyanide production facility are compatible with reagents that will be used and the processes that will be in place at the operation. Materials of construction specifications were sampled during the audit and were found to be acceptable. Interlock information was reviewed during the audit. Each critical system has been designed to have an interlock mechanism. The interlocks are designed to prevent cyanide releases in the event of a power loss or equipment failure.

All production activities will be done on a concrete surface. There will be no cyanide-related activities performed outside of the containment area. Specifications and drawings were reviewed during the audit to confirm that all tanks and storage vessels will have level indicators and high-level alarms that will be linked into the distributed control system (DCS). Designs were reviewed and interviews with project engineers indicate that the planned indicators should be sufficient for preventing the overfilling of cyanide process and storage vessels.

CyPlus Idesa is committed to constructing secondary containments for process and storage tanks and containers with materials that provide a competent barrier to leakage. Additionally, these secondary containment areas are sized to hold a volume greater than that of the largest tank, any piping draining back to the tank, and additional capacity to account for the highest possible rainfall from a severe storm event. Engineering planning information, calculations, and rainfall

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information were reviewed for the tanks that were installed and planned. All information was found to be appropriate and acceptable.

All cyanide solution piping is planned to be located over concrete that has secondary containment. In the event that a specific location cannot be physically placed over secondary containment, CyPlus Idesa is committed to ensuring that such cyanide solution piping has a double wall design and/or leakage detection system installed.

<u>Production Practice 1.2</u>: 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 Production Practice 1.2

Summarize the basis for this Finding:

CyPlus Idesa has draft plans and procedures for the Coatzacoalcos production and storage facilities that describe the standard practices necessary for its safe and environmentally sound operation. Extensive operational and emergency response procedures have been drafted by CyPlus Idesa specifically for this operation. Procedures that address normal operations, upset conditions, and emergency events are addressed in the documentation.

Draft maintenance procedures and operational procedures were reviewed and provide information about minor process upset issues. The draft Civil Protection Plan describes the procedures to be followed in the event of a fire, explosion, and exposure or cyanide release. CyPlus Idesa also plans to develop an additional procedure for contingencies during upsets in its activities. Management, engineering, and EHSQ personnel were interviewed during the audit. All personnel audited demonstrated a high level of procedural awareness. CyPlus Idesa plans to implement a formal Management of Change (MOC) procedure that calls for a risk analysis to be performed prior to making any changes to procedures or equipment. All draft procedures reviewed were found to be appropriate for the operation.

CyPlus Idesa plans to implement a formal preventive maintenance program including procedures, training, and checklists to maintain the production and storage equipment and facilities. Operators will inspect and perform preventive maintenance at appropriate frequencies. According to interviews, maintenance activities will be recorded and records will be maintained as part of the overall management system that will be used for the plant, including the administration of maintenance activities.

CyPlus Idesa is committed to monitoring HCN levels using portable and stationary HCN gas detectors at all times inside the cyanide storage production and during loading operations. According to interviews, the gas detectors will be calibrated at manufacturer recommended

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frequencies. Maintenance and calibration records will be available for review during the operational audit.

CyPlus Idesa is committed to implementing procedures to prevent discharges to the environment of cyanide-contaminated water and for the decontamination of cyanide-contaminated solids and the proper disposal of all materials.

The production building will have adequate ventilation to prevent the build-up of hydrogen cyanide gas. The partially-built facility was reviewed during the audit and interviews confirmed that ventilation plans appear to be appropriate. All cyanide production and storage activities will be done under roof to prevent contact with water. The perimeter of the facility is completely fenced and there is 24/7 manned security to ensure that no unauthorized personnel access the site. CyPlus Idesa is committed to ensuring that all cyanide packages are labelled in the appropriate languages for the countries through which the material is transported.

Production Practice 1.3: Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

The operation is **☑** in full compliance with Production Practice 1.3

Summarize the basis for this Finding:

CyPlus Idesa is committed to developing a program to conduct routine inspections of all cyanide production and storage facilities including: tanks, valves, pipelines, and containments. This inspection program was under development at the time of the audit. The program will include inspections to confirm that tanks that will hold cyanide solutions are evaluated for structural integrity and signs of corrosion and leakage. Secondary containments will be assessed for their integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed to prevent accidental releases to the environment. Pipelines, pumps and valves will be inspected for deterioration and leakage. CyPlus Idesa is committed to inspecting its cyanide facilities at frequencies that are sufficient for ensuring that equipment is functioning within design parameters. Records that fulfill all ICMI inspection record requirements, including the recording of corrective actions when deficiencies are found will be retained. This information was confirmed through interview and a review of draft procedures and plans. All information was found to be acceptable by the auditor.

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2. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.

<u>Production Practice 2.1</u>: Develop and implement procedures to protect plant personnel from exposure to cyanide.

The operation is \square in full compliance with Production Practice 2.1

Summarize the basis for this Finding:

To minimize worker exposure under normal operations, the facility is developing and plans to implement cyanide related procedures for: producing, storing, and shipping cyanide, as well as for inspecting and cleaning of equipment, maintenance of the facility, management of solid waste and wastewater, and the use of safety protective equipment.

Procedures are being drafted for normal operations and abnormal operations and maintenance-related activities. A list of all planned operational, maintenance, and EHSQ procedures was available for review and many draft procedures had already been written at the time of the audit. The draft Civil Protection Plan has been drafted and describes the procedures to follow in case of emergencies involving cyanide.

CyPlus Idesa is committed to developing and implementing procedures for preventive maintenance which are supported by periodic inspections of the facility and equipment. The procedures will address periodic maintenance of a number of different types of equipment including cyanide detectors, cyanide production equipment, forklifts, firefighting equipment, and emergency response equipment.

CyPlus Idesa has drafted and is committed to implementing a Management of Change procedure to review proposed operational changes as necessary. Changes in documentation, installations and operational changes will be processed using this procedure.

According to interviews, leadership will involve operators in the development and roll-out of procedures and encourage operators to provide feedback on procedures and changes at the facility.

The facility is committed to using portable and stationary monitoring devices throughout the cyanide production, storage, and loading areas. Plans are in place to calibrate HCN monitors according to manufacturer's specification. Maintenance and calibration will be performed by internal personal and an external service provider.

CyPlus Idesa is planning to conduct an occupational health study to confirm that safe working conditions exist and that cyanide levels are below 4.7 ppm. The facility will be evaluated for elevated HCN exposure potential. The results of the monitoring study will be used to refine personal protective equipment requirement definitions. Initial personal protective equipment requirements have been developed and are defined in draft procedures.

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CyPlus Idesa is committed to ensuring that at least two people work in the operation at all times. Interviews confirmed that the health of employees will be evaluated to determine their fitness to perform their specified work tasks. Records will be maintained.

A clothing change policy has been drafted which requires that employees change clothes upon leaving the operational area. Prior to leaving the facility, operators will remove any clothing that has potentially been in contact with cyanide.

CyPlus Idesa is committed to ensuring that appropriate cyanide signs and PPE signs are present in all operational areas. Eating, drinking, smoking, and open flames will be prohibited where there is a potential for cyanide contamination. Leadership showed very good awareness of the restrictions and of the potential dangers of not adhering to those restrictions.

<u>Production Practice 2.2</u>: Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

The operation is
☑ in full compliance with Production Practice 2.2

Summarize the basis for this Finding:

CyPlus Idesa has drafted a comprehensive Emergency Response Plan (ERP) for rapid and effective response to cyanide exposure. Draft procedures were reviewed and were found to address procedures to be followed in the event that cyanide is ingested, skin or eye contact made, and/or if cyanide dust or gas is inhaled.

Shower / low-pressure eye wash stations are planned to be located throughout the facility. Maps showing the location of this equipment were reviewed during the audit. The facility will also have non-acid fire extinguishers located at strategic locations. Shower / low-pressure eye stations and fire extinguishers will be inspected regularly. CyPlus Idesa is committed to maintaining records of these inspections.

CyPlus Idesa is committed to having water, oxygen, resuscitator, antidote and a means of communication readily available for use in the plant at all times. The facility is planning to inspect and appropriately maintain emergency response equipment and cyanide antidote to ensure availability during an emergency. The antidote will be maintained according to manufacturer recommendations. Emergency response equipment plans were found to be acceptable.

Cyanide Safety Data Sheets and first aid procedures will be available to workers in the operational and storage areas of the plant in at least English and Spanish. The safety information will also be published as posters in the operation.

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The facility is committed to identifying storage tanks, process tanks, containers and piping that will contain cyanide to alert workers of their contents. The direction of cyanide flow in pipes will also be identified.

The facility decontamination procedure has been drafted and requires that all personnel change out of their clothing and personal protective equipment (PPE) after working in areas with the potential for contact with cyanide. The showering and clothes changing part of the facility was included in the facility tour. Leadership demonstrated an excellent understanding of the decontamination procedure and the need for safety precautions.

CyPlus Idesa has its own on-site capability to provide first aid to workers who are potentially exposed to cyanide. The on-site medical area already exists and serves the Idesa operation. The facility has been planned in such a way that on-site medical personnel will be able to quickly respond to any on-site emergency at either plant. The medical area maintains an ambulance. Trained Emergency Medical Technicians and nurses work at the facility at all times; this will be 24 hours a day / 7 days a week once the sodium cyanide plant is in operation. Local hospitals and medical staff have been alerted to the plan to have cyanide at this facility. The medical capabilities of the on-site emergency response team and the local hospitals had already been evaluated at the time of the audit. The operation plans to have formal agreements in place with these medical facilities prior to the introduction of cyanide at the site.

The facility has developed draft instructions to transport exposed workers to locally qualified offsite medical facilities after necessary decontamination and stabilization have been achieved. As part of the service agreement with a local medical service provider, CyPlus Idesa will ensure that the hospital staff will be trained and provided with antidote. The capabilities of the local medical facilities with respect to the availability of qualified personnel, necessary equipment, and expertise to respond to cyanide exposures has already been assessed by the Evonik Corporate Medical Department.

Mock emergency drills of the site's ability to respond to exposure scenarios are planned to be conducted periodically. The CyPlus Idesa draft Civil Protection Plan calls for at least two emergency response drills to be conducted per year. Project personnel indicated that these drills will be conducted at the very start of operations to ensure that personnel are appropriately trained in emergency response procedures.

CyPlus Idesa has drafted, and is committed to implementing, an incident investigation procedure for investigating, evaluating and reporting incidents, including cyanide exposure cases.

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3. MONITORING: Ensure that process controls are protective of the environment.

<u>Production Practice 3.1</u>: 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 Production Practice 3.1

Summarize the basis for this Finding:

There are no plans for this facility to have direct discharge to surface water. CyPlus Idesa is committed to ensuring that any indirect discharge to surface water has a free cyanide concentrations that comply with ICMC requirements. CyPlus Idesa is also committed to ensuring that its operations do not impact groundwater.

No cyanide had been introduced to this facility at the time of the audit. In the unlikely event of a release of cyanide to the environment in the future, the operation is committed to engaging the appropriate resources to ensure that any remediation needs are fulfilled.

Indoor air cyanide concentrations are monitored using portable and stationary HCN detectors. CyPlus Idesa has committed to limit atmospheric process emissions of hydrogen cyanide gas such that the health of workers and the community are protected.

4. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

<u>Production Practice 4.1</u>: Train employees to operate the plant in a manner that minimizes the potential for cyanide exposures and releases.

The operation is **☑** in full compliance with Production Practice 4.1

Summarize the basis for this Finding:

CyPlus Idesa is committed to training all personnel to ensure that they understand the hazards of cyanide. The training will be given prior to working with cyanide and training will be refreshed on an annual basis. The training will be offered in Spanish and will include information on a full range of training topics related to cyanide. This material will be used for the cyanide safety training along with face to face training sessions that will be given annually.

Site personnel will receive training regarding the use, storage and cleaning of the personal protective equipment (PPE) required by each activity or task. CyPlus Idesa is committed to training its workers to perform their normal production tasks with minimum risk to worker health

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and safety and in a manner that prevents unplanned cyanide releases. Internal training in the operational procedures will be delivered to all relevant personnel prior to cyanide being introduced to the operation.

The training elements necessary for each job will be identified in the training materials. The facility will use the work procedures to supplement training materials. Training will be provided by appropriately qualified personnel. The auditor confirmed through interviews that the individuals who will be involved in the development and delivery of training are highly qualified and capable of providing safety and operations training.

CyPlus Idesa will train all personnel on cyanide awareness prior to their beginning work in the operation. Personnel will be trained on job procedures before working with cyanide. Records will be retained.

The facility plans to evaluate the effectiveness of cyanide training by testing and performance evaluations done after the initial training sessions. Evaluation records will be kept by the site.

Production Practice 4.2: Train employees to respond to cyanide exposures and releases.

The operation is **☑** in full compliance with Production Practice 4.2

Summarize the basis for this Finding:

CyPlus Idesa is committed to training all personnel on its emergency response procedures. The draft Civil Protection Plan was reviewed. The document details what is to be done in the event that a cyanide release is discovered. Plans are in place to train workers to respond to potential cyanide exposures. The surrounding industrial companies will be also informed via the CLAM (Local Mutual Aid Committee). Routine drills are planned to test their response skills. The CyPlus Idesa Emergency Response Brigade will be trained to provide assistance to workers exposed to cyanide. Training for the medical staff will include the use of the cyanide antidote that will be maintained by the site.

Drills will be conducted at least twice annually to test general response to chemical emergencies, including chemical exposure. CyPlus Idesa is committed to processing corrective actions and revising emergency procedures as necessary following the drills or actual plan deployment. Drill results will be evaluated from a training perspective to determine the need for revisions to training materials or training approaches.

The site is committed to maintaining training records and evaluation results of all trained workers. Training records will be maintained for at least as long as the employee is working at the site and will fulfill all ICMI training record requirements.

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5. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities.

<u>Production Practice 5.1</u>: Prepare detailed emergency response plans for potential cyanide releases.

The operation is ☐ in full compliance with Production Practice 5.1

Summarize the basis for this Finding:

CyPlus Idesa has developed draft emergency response procedures specific to the site to address potential releases of cyanide that may occur on site. The draft Civil Protection Plan was available for review during the audit.

The draft emergency plans consider the potential failure scenarios appropriate for its site-specific environmental and operating circumstances, including potential releases of cyanide from the operation, cases of fire and explosion, and situations where equipment may malfunction. The scenarios were found to be appropriate by the auditor.

The draft emergency plans also consider cases of power failure during production activities. The plans include specific actions such as evacuation in case of a cyanide release. The emergency plans will specify the telephone numbers and the notification procedure to be followed in the event of an emergency.

The draft emergency plans call for the control of releases at their source. The draft Civil Protection Plan and the cyanide exposure procedure also describe how to use cyanide antidotes and first aid measures to be taken in the event of a cyanide exposure.

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<u>Production Practice 5.2</u>: Involve site personnel and stakeholders in the planning process.

The operation is ☐ in full compliance with Production Practice 5.2

Summarize the basis for this Finding:

CyPlus Idesa is committed to involving its workforce, authorities the adjacent facilities, and the community in the emergency response planning process. The operation will join the CLAM (Local Mutual Aid Committee) in early 2016. This organization is involved in emergency planning and includes industrial neighbors and local response agencies. The environmental impact assessment associated with the building of the facility was communicated to the local community at the beginning of the project. The operation is committed to training local agencies such as the Red Cross, State Civil Protection Agency, Fire Department and the local hospitals in the emergency response process for the operation.

The site has informed adjacent facilities and the civil protection authorities about the nature of its operations and associated risks. The facility was able to demonstrate through interviews and through communication records that they are in regular contact with local authorities and others in the industrial park.

The Police Department, Fire Department, Red Cross, State Civil Protection Agency and the local hospital will receive training on cyanide and will be invited to participate in emergency drills. CyPlus Idesa plans to provide training to the industrial neighbors and external responders on a regular basis.

<u>Production Practice 5.3</u>: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

The operation is **☑** in full compliance with Production Practice 5.3

Summarize the basis for this Finding:

The CyPlus Idesa draft Civil Protection Plan designates primary and alternate emergency response coordinators with explicit authority to commit the resources necessary to implement the emergency plans. Operators, management personnel and office staff will be members of the site emergency response brigade. The site manager is the brigade coordinator and the responsibilities for internal and external communications in case of emergency are designated. Responsibility, authority, and duties for managing an emergency situation are clearly described in the emergency procedures.

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The initial emergency response team has been identified in the plan. The team will be trained by qualified personnel. The draft Civil Protection Plan includes the responsibilities and training needs of emergency responders.

The draft Civil Protection Plan includes telephone numbers of the local emergency response agencies, CyPlus Idesa, CyPlus, Evonik, and Idesa representatives. The telephone list with emergency telephone numbers list was found to be up-to-date. The responsibilities, authorities and duties for managing an emergency situation are clearly described in the plan. Emergency plans will list the emergency response equipment that will be maintained by the site.

The emergency response equipment will be inspected regularly using a checklist. Its availability and operability will be confirmed during the audit. Completed checklists will be reviewed and will be available for review. Interviews were used to confirm Leadership awareness of requirements. The role of the local emergency response agencies is described in the draft Civil Protection Plan.

CyPlus Idesa is committed to confirming that outside entities included in the Civil Protection Plan are aware of their involvement. External responders will be included in the emergency response drills and implementation exercises. CyPlus Idesa was developing an agreement with the hospital in Coatzacoalcos to provide medical attention to exposed workers that require attention beyond the site capabilities. Interactions, collaborative emergency response planning strategies, and training programs offered to external responders were found to be appropriate for the operation.

<u>Production Practice 5.4</u>: Develop procedures for internal and external emergency notification and reporting.

The operation is ☐ in full compliance with Production Practice 5.4

Summarize the basis for this Finding:

The Civil Protection Plan will include up-to-date emergency telephone numbers. CyPlus is committed to including the telephones numbers of the nearest hospital and local emergency agencies, as well as CyPlus Idesa emergency numbers. The plan will also establish who is responsible for calling the external responders and authorities.

The production is located within an industrial park; the contact information in the Civil Protection Plan will include the names of the adjacent facilities who would be notified in case of an emergency. The plan will include information about who needs to make the notifications (in the event of an emergency) to CyPlus Idesa leadership, parent organizations, neighboring industrial partners, and authorities.

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<u>Production Practice 5.5</u>: Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The operation is ☐ in full compliance with Production Practice 5.5

Summarize the basis for this Finding:

CyPlus Idesa is committed to ensuring that its emergency plans describe specific, appropriate remediation measures, 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, and provision of an alternate drinking water supply, as appropriate.

The facility is committed to ensuring that emergency plans prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water. Plans will also address the potential need for environmental monitoring to identify the extent and effects of a release, and include sampling methodologies, parameters and, where practical, possible locations.

<u>Production Practice 5.6</u>: Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is **☑** in full compliance with Production Practice 5.6

Summarize the basis for this Finding:

The draft Civil Protection Plan states that the emergency plans are reviewed at least once a year and that emergency response drills are performed at least two times per year. These drills will include cyanide spill and worker exposure scenarios, as well as evacuation drills.

Emergency drills will be evaluated by the site management, workers and local emergency agencies. Lessons learned from the emergency drills will be considered when updating the Civil Protection Plan and emergency procedures.

The draft Civil Protection Plan states that emergency plans will be reviewed and updated after any emergency or recommendations following an emergency response drill.

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