INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

Cyanide Transportation Summary Audit Report

For the International Cyanide Management Code

Hae Dong Logistics

09 January 2020
Hae Dong Logistics
Cyanide Transportation
Summary Audit Report

Name of Transport Operation : Hae Dong Logistics
Name of Operating Company : Hae Dong Logistics
Name of Responsible Manager : Mr. Sang-Wook Park / Operation Manager and Safety Team Leader
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Location detail and description of operation:

The Hae Dong Logistics is a logistic company operating mainly in Korea. The head office is located in Pusan Korea. The Hae Dong Logistics as a transportation service provider contracted with sodium cyanide manufacture “Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant” for roadway transportation of sodium cyanide from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port and Ulsan Rail Center in Korea. Then they have conducted the transportation of sodium cyanide since August 2016 year. The distance from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port is about 60 Km and to Ulsan Rail Center is about 3 Km.

The followings show brief transportation routes.
(1) Roadway transportation route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port
   Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant in Ulsan -> ChingRyung IC of Donghae Express Way -> Haewoondae Tunnel -> JangAn Bridge -> Gwang An Bridge
   -> Pusan New Port
(2) Roadway transportation route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Ulsan Rail Center
   Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant -> Ulsan Petrochemical Complex
   -> Ulsan Rail Center

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Auditor’s Findings

This operation is

X in full compliance
in substantial compliance
not in compliance

with the International Cyanide Management Code.

Audit Company: 3 Points Co., Ltd.
Audit Team Leader: Mr. Sang-Ho, Ahn
E-mail: triplepoint@naver.com
Dates of Audit: 06, 13 and 22 November 2019

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 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.

During this recertification audit, I confirmed that the Hae Dong Logistics has not experienced any significant cyanide incident or compliance problem during the previous three-year audit cycle.

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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.

The operation is X in full compliance with Transport Practice 1.1

with Transport Practice 1.1

in substantial compliance with
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The Hae Dong Logistics made contract with Taekwang Ind. Co., Ltd. Ulsan petrochemical #3 Plant for the transportation of sodium cyanide from Ulsan Plant to Pusan New Port and Ulsan Rail Center in Korea. The Hae Dong Logistics prepared and maintained the Cyanide Transportation Route Control Procedure HDLS-P-01 in which the process of route selection for sodium cyanide transportation and control process are defined. According to the procedure, they have checked the possible routes from the sodium cyanide manufacture to their final destination. And then they decided to maintain the sodium cyanide transportation routes as before considering the possibility of potential accident and release including detail check items as population density, infrastructure, pitch, grade, prevalence and proximity of water and fog. The customer requirements and profit were also considered.

The minimization of possibility for potential accidents and release is key item in selection of sodium cyanide transportation route. During August 2019 year, they select sodium cyanide transportation routes according to the procedure.

1) Transportation cases
   According to contract between Hae Dong Logistics and Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant, the Hae Dong Logistics have conducted the sodium cyanide transportation for two cases.
   (1) Roadway transportation from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port. The distance from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port is about 60 Km.
   (2) Roadway transportation from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Ulsan Rail Center. The distance from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Ulsan Rail Center is about 3 Km.

2) Selection of transportation routes
   According to Cyanide Transportation Route Control Procedure HDLS-P-01, the Hae Dong Logistics evaluated several possible routes and finally selected routes as below.
   (1) Roadway transportation route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port
   (2) Roadway transportation route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Ulsan Rail Center
       Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant -> Ulsan Petrochemical Complex -> Ulsan Rail Center

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The Hae Dong Logistics established and implemented Risk Evaluation Procedure HDLS-P-002.
1) Hazard identification
   Survey the detail courses from Taekwang Ind. Co., Ltd. Petrochemical #3 Plant to Pusan New Port and Ulsan Rail Center. And issued possible hazards and risks as upset of truck, traffic accident, leakage of sodium cyanide, robbery and taken away by criminal suspect etc.
2) Risk evaluation
   Evaluate the possibility and consequence for the identified hazards.

During August 2019 year, they implemented again the hazard identification and risk evaluation for their two road transportation routes. According to risk evaluation results, below were determined as high risks.
1) Route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant in Ulsan to Pusan New Port
   - Release to road, land and surface water by truck capsize during road transportation
   - Release to sea by truck capsize during Gwang An Bridge transportation
2) Route from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Ulsan Rail Center
   - Release to road and land by truck capsize during road transportation

The Hae Dong Logistics prepared control measure and applied to those high risk items as below.
1) Release to road, land and surface water by truck capsize during road transportation
   - Prepare and implement Cyanide Transportation Route Control Procedure HDLS-P-01 in which driving speed, prevention of over loading and vehicle inspection etc. were defined.
   - Prepared emergency response plan for the release of sodium cyanide to road, land and surface water.
2) Release to sea by truck capsize during Gwang An Bridge transportation
   - Prepare and implement Cyanide Transportation Route Control Procedure HDLS-P-01 in which driving speed, prevention of over loading and vehicle inspection etc. were defined.
   - Prepared emergency response plan for release of sodium cyanide to sea water.

According to Cyanide Transportation Route Control Procedure HDLS-P-01, the Hae Dong Logistics have re-evaluated the two transportation routes every year periodically. And for some changes related to route, road, vehicle and legal requirement etc., they should re-evaluate non-periodically. And also they defined the process for getting feedback on route condition from driver, reviewing the information and identification of additional risks. They should prepare additional control measure if any additional risk identified. During 2019 year, there is no information from driver that can influence the identified risks and control measures.

The Hae Dong Logistics documented the control measure in Cyanide Transportation Route Control Procedure HDLS-P-01 and emergency response plan as below.
   - Truck driving speed, maintenance of package, prevention of over loading and vehicle inspection etc. were defined
   - Detail control measure for release to road, land and water surface
And also the procedure and emergency response plan were communicated and trained to employee and driver.

The Hae Dong Logistics received comments from below stakeholders and relevant government bodies as below.
- Sodium cyanide manufacture “Taekwang Ind. Co., Ltd. Petrochemical #3 Plant”
- Sodium cyanide exporter “Samsung C & T Corporation” as consigner
- Korea health and safety agency
- Fire fighting agency
- Ulsan and Pusan Local Government Offices

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They also checked the relevant legal requirements as below.
- Industrial health and safety act
- Chemical control act
- Land contamination prevention act

The comments from above stakeholders and legal requirements were reviewed and reflected to route selection and development of control measures for high risk items as below.
1) Comments from Taekwang Ind. Co., Ltd. Petrochemical #3 Plant
   - Property of sodium cyanide, response for release and communication channel for emergency situation
2) Samsung C & T Corporation
   - Handling manual and communication channel for emergency situation
3) Korea health and safety agency
   - Handling and treatment manual, MSDS and communication channel for emergency situation

The Hae Dong Logistics reviewed the overall detail courses for the two road way transportation routes. According to the review results, they decide that convoys, escorts or additional measures are unnecessary as justified below.
1) From sodium cyanide manufacture “Taekwang Ind. Co., Ltd. Ulsan Petrochemical # 3 Plat” to Pusan New Port in Korea
   - Road transportation is about 60 Km
   - Paved road condition is good and no sever curved area
   - As main road is express way, road condition is good
   - Some segments are curved, near the high population density and surface water areas but those risks can be controlled by drivers.
   - Security condition is good and no social disturbance
2) From sodium cyanide manufacture “Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant” to Ulsan Rail Center
   - Road transportation is about 3 Km
   - Paved road condition is good and no sever curved area
   - Some segments are curved, but the risk can be controlled by drivers.
   - Security condition is good and no social disturbance

According to the Cyanide Transportation Route Control Procedure HDLS-P-01, the Hae Dong Logistics will use escort or convey for special cases as social disturbance, strike by driver and if requested by government.

The Hae Dong Logistics established and maintained emergency response plan for sodium cyanide release and human exposure. In the emergency response plan, role and mutual aid with export consigner, sodium cyanide manufacture, ports, safety agency, police, fire fighting agency, hospital etc. were defined. They communicated and advised the emergency preparedness to relevant bodies.

The Hae Dong Logistics have used ICMC certified subcontractor SAMIK LOGISTICS Co., Ltd. for the sodium cyanide roadway transportation. The SAMIK LOGISTICS Co., Ltd. have implemented relevant cyanide transportation procedures and comply with the transport practice 1.1

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.

X in full compliance with

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The operation is in substantial compliance with Transport Practice 1.2

*Summarize the basis for this Finding/Deficiencies Identified:*
The Hae Dong Logistics use only licensed drivers according to road traffic safety act. The drivers shall have license admitted the operation and driving for truck and trailer. According to Cyanide Transportation Route Control Procedure HDLS-P-01 and Industrial Safety and Health Act, the truck and trailer drivers should receive minimum 16 hours training before undertaking the handling and transportation work for dangerous substance as chemicals, gas and radioactive material. So, the Hae Dong Logistics have trained their drivers and operators minimum 16 hours for sodium cyanide safety issues as emergency response plan, wearing of personnel protective equipment and Cyanide Transportation Route Control Procedure. The Hae Dong Logistics have registered driver and operator names, license numbers, effective dates of license and training results. Then the Hae Dong Logistics use the trained and licensed drivers and operators in the register. The Hae Dong Logistics also has implemented 2 hours monthly training to their drivers and operators for safety issues related to transportation and sodium cyanide handling.

The Hae Dong Logistics have used ICMC certified subcontractor SAMIK LOGISTICS Co., Ltd. for the sodium cyanide roadway transportation. The SAMIK LOGISTICS Co., Ltd. have implemented relevant cyanide transportation procedures and comply with the transport practice 1.2

**Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment.**

The operation is in full compliance with Transport Practice 1.3

*Summarize the basis for this Finding/Deficiencies Identified:*
The Hae Dong Logistics have used trucks and trailers originally designed the maximum load bearing capacity is more than 20 Ton. The maximum load bearing capacity is defined as 20 ton in Cyanide Transportation Route Control Procedure HDLS-P-01 with the reflection of requirements from road traffic safety act. The Hae Dong Logistics have transported only one container in which 16 ton of sodium cyanide can be fully inserted. So the load-bearing capacity of the truck and trailer is greater than the weights of the cyanide loads transported.

The Hae Dong Logistics have preventive maintenance schedule for trucks and trailers. The maintenance period, inspection item, last and next inspection dates were defined in maintenance schedule. The maintenance records including inspection results, part and oil exchange results were retained in Pusan Head Office and in each truck and trailer. During the maintenance, the load bearing capacity and adequacy considering the maximum weight of transportation were checked and repair results were recorded.

The Hae Dong Logistics defined the process of verification in Cyanide Transportation Route Control Procedure HDLS-P-01. According to the procedure, the adequacy of truck and trailer for the road those must bear can be checked during preventive maintenance implemented every 6 months. The tire air pressure, tire abrasion, tire exchange date and running kilometer and distortion of frame...
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should be checked to identify sign of stress and overloading. The inspection and maintenance results were recorded in each equipment history card retained in Pusan Head Office. According to the maintenance records, until now there is no special case signing the stress and overloading. The overloading is prohibited in Korea by road traffic safety act. So the truck and trailer can't transport more than 20 tons.

According to road traffic safety act and Cyanide Transportation Route Control Procedure HDLS-P-01, the maximum weight for road transportation is 20 tons. To comply with manual and safety act, the Hae Dong Logistics transport only one container in which 16 ton of sodium cyanide can be fully inserted. That was defined in procedure. And also the sodium cyanide manufacture Taekwang Ind. Co., Ltd. Petrochemical #3 Plant ordered only one container transported for each transportation order. So the Hae Dong Logistics were prevented automatically the overloading for sodium cyanide transportation.

The Hae Dong Logistics have used ICMC certified subcontractor SAMIK LOGISTICS Co., Ltd. for the sodium cyanide roadway transportation. The SAMIK LOGISTICS Co., Ltd. have implemented relevant cyanide transportation procedures and comply with the transport practice 1.3

Transport Practice 1.4: Develop and implement a safety program for transport of cyanide.

X in full compliance with
The operation is
in substantial compliance
not in compliance with
with Transport Practice 1.4

Summarize the basis for this Finding/Deficiencies Identified:

In the Cyanide Transportation Route Control Procedure HDLS-P-01, the Hae Dong Logistics defined the handling and inspection method for the container of sodium cyanide. The loading of sodium cyanide to container was controlled and implemented by Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant. After the loading to container, the amount and appearance were checked by Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant and drivers. And the container was locked by drivers. The amount of sodium cyanide and appearance inspection results were recorded in dispatch order sheets communicated from Taekwang Ind. Co., Ltd. Petrochemical #3 Plant to Hae Dong Logistics and shipping company by computer network system.

Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant have used sodium cyanide containers on which the mark of toxic chemical presence were attached and easily identified during transportation. According to Industrial safety and health act, the marking of toxic chemical presence and maintaining of MSDS were required during transportation. The Hae Dong Logistics have transported the sodium cyanide container marked the toxic chemical presence by Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant and maintained MSDS by drivers. Those marking of toxic chemical presence and maintaining MSDS complied with Korea legal requirement and Cyanide Transportation Route Control Procedure HDLS-P-01.

The Hae Dong Logistics defined and implemented the safety processes related to sodium cyanide handling and transportation in Cyanide Transportation Route Control Procedure HDLS-P-01.
1) Truck and trailer inspection prior to departure
2) Preventive maintenance schedule was prepared for trucks and trailers. The maintenance period and check items were defined and implemented according to schedule

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3) The maximum working time of truck and trailer driver is defined as 8 hours in Cyanide Transportation Route Control Procedure HDLS-P-01.
4) Process to prevent load from shifting
5) Process to maintain the integrity of producer’s packaging
6) In Cyanide Transportation Route Control Procedure HDLS-P-01, the Hae Dong Logistics defined the process of suspension and modification of sodium cyanide transportation
7) A drug abuse is prevented according to Cyanide Transportation Route Control Procedure HDLS-P 01. If drug abuse is found, then the driver will be fired. During health check implemented every year, the drug abuse can be identified. But until now, the drug abuse case was not occurred.
8) The Hae Dong Logistics defined the retention period as five years for records originated from inspection, preventive maintenance, transportation log sheet, dispatch order sheet etc.

The Hae Dong Logistics have used ICMC certified subcontractor SAMIK LOGISTICS Co., Ltd. for the sodium cyanide roadway transportation. The SAMIK LOGISTICS Co., Ltd. have implemented relevant cyanide transportation procedures and comply with the transport practice 1.4

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air.

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

Summarize the basis for this Finding/Deficiencies Identified:

The Hae Dong Logistics do not operate the sea and air transportation for sodium cyanide. So the transportation practice 1.5 is not actually applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.

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

Summarize the basis for this Finding/Deficiencies Identified:

The drivers have pager and mobile phone. So during transportation they can communicate with the Pusan Head Office of Hae Dong Logistics and also they have communication channel sheet in which telephone numbers of Hae Dong Logistics, safety team of Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant, Industrial safety and health agency, police, hospitals in Ulsan and Pusan and fire fighting agency were defined.

The Hae Dong Logistics provided the pagers to each driver, recorded the pager number and tested once per month. The test results were recorded in log sheets. Usually the drivers communicate with Pusan Head Office during transportation. Each driver has mobile phone and the number of mobile phone was registered to emergency communication channel of Hae Dong Logistics. The mobile phone controlled by driver individually. But according to Cyanide Transportation Route Control

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Procedure HDLS-P-01, the driver should control the mobile phone properly, so that can be used in emergency situation and transportation.

The Hae Dong Logistics surveyed the two roadway main transportation routes for sodium cyanide transportation. They can't find any communication blackout area along the two roadway transportation routes.

The Hae Dong Logistics defined the tracking of sodium cyanide transportation in Cyanide Transportation Route Control Procedure HDLS-P-01. For each transportation by truck and trailer, the progress of transportation can be checked by mobile communication between driver and Pusan Head Office. The Pusan Head Office have maintained the transportation log sheets in which the transportation order number, truck and trailer number, drivers name, departing time and arriving time were recorded.

The inventory control was defined in Cyanide Transportation Route Control Procedure HDLS-P-01. The Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant input the dispatch amount, container number and date for individual transportation order in their computer network system. And also the information was communicated to Hae Dong Logistics and shipping companies by computer network system. After the loading of sodium cyanide to container, the inspection of lock on door and container appearance were implemented by drivers and Taekwang Ind. Co., Ltd. Petrochemical #3 Plant. The inspection results were recorded in log sheets and maintained by driver and communicated to Pusan Head Office. And also Pusan Head Office have maintained the transportation log sheets in which the transportation order number, truck and trailer number, drivers name, departing time and arriving time were recorded.

The dispatch and transportation control were defined in Cyanide Transportation Route Control Procedure HDLS-P-01. The Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant input the dispatch amount, container number and date for individual transportation order in their computer network system. The results were communicated to Hae Dong Logistics and shipping company. During the audit, it was found that the amount of sodium cyanide in container and transportation order were recorded in computer network system of Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant and transportation log sheets in Pusan Head Office of Hae Dong Logistics. The Material Safety Data Sheet was available during roadway transportation and Pusan Head Office. The driver, operator and office member maintain Material Safety Data Sheet in truck and Pusan Head Office.
2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.

Transport Practice 2.1: Store cyanide in a manner that minimizes the potential for accidental releases.

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

Summarize the basis for this Finding/Deficiencies Identified:

The Hae Dong Logistics do not operate the interim storage during the transportation of sodium cyanide from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant to Pusan New Port and Ulsan Rail Center. So the transportation practice 2 is not actually applicable.
3. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases.

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

Summarize the basis for this Finding/Deficiencies Identified:

The Hae Dong Logistics identified possible emergency situations as sodium cyanide release to road, land, surface water, robbery during transportation and taken away by criminal suspect during transportation. And prepared emergency response plan HDLS-P-05. They defined what they should do, wearing of personnel protective equipment, using of treatment equipment for spilled sodium cyanide, communication channel and relevant external responders such as sodium cyanide manufacture Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant, shipping companies, export consigner, Korea safety and health agency, police, hospitals in Ulsan and Busan.

The Hae Dong Logistics have transported the solid sodium cyanide. They prepared the emergency response plan HDLS-P-05 appropriate to overall emergency situations possibly expected for solid sodium cyanide transportation. The plan considered the solid sodium cyanide packaged in polyethylene inner film & polypropylene woven bag and box and transported in container. The sodium cyanide manufacture has used the waterproof packaging material as polyethylene inner film & polypropylene woven bag. Considering the spillage of solid sodium cyanide, they defined the preparation of treatment equipment, personnel protective equipment and neutralization method in emergency preparedness plan. According to the plan, they will use sawdust, cement powder and sand to collect and neutralize the spilled sodium cyanide.

The Hae Dong Logistics prepared the emergency response plan HDLS-P-05 appropriate to overall emergency situations. They considered the transportation methods as roadway transportation. They also received comments and information from Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant and Korea industrial safety and health agency and reflected to the emergency response plan.

During the preparation of detail emergency response plans, they traced two road way transportation routes. They checked the infrastructure of those two road way transportation routes. The check results of road condition, proximity of water, bridge condition and road traffic condition were reflected to emergency response plan HDLS-P-05. And also the Hae Dong Logistics considered the design of the transportation truck and trailer. They only use double walled transportation truck and trailer. So the containers were fixed as designed in double walled transportation truck and trailer. They do not transport tank lorry, so no need to consider the top or bottom unloading.

The Hae Dong Logistics prepared detail emergency response processes in the plan those can be applicable for such cases individually as sodium cyanide release to road, land, surface water, robbery during transportation and taken away by criminal suspect during transportation and human exposure to cyanide. In each detail emergency response processes, they defined steps from starting of emergency to finalizing the emergency situation. The detail response actions, responsibility and relevant external responder were defined in each step. Related to human exposure to cyanide, the wearing of personnel protective equipment as mask, first aid and medical assistant were reflected to the emergency response processes.

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The Hae Dong Logistics identified outside responders in the emergency response plan HDLS-P-05 as below.

(1) Customer and consigner: Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant, Samsung C & T Corporation and Shipping Companies
(2) Government body: Fire fighting agency, Korea Industrial safety and health agency, Local government office as Ulsan city office and Pusan city office and Police
(3) Hospital: Hospital in Ulsan and Busan,

They defined the general roles, detail response actions, responsibility and relevant external responder in the emergency response plan HDLS-P-05.

Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.

X in full compliance with
The operation is in substantial compliance with
not in compliance with
with Transport Practice 3.2

Summarize the basis for this Finding/Deficiencies Identified:

The Hae Dong Logistics prepared safety training plan every year for their drivers and employee. In the training plan, detail training items were defined for every month. The emergency response training was planned once per 6 month. During the training, they use the emergency response plan as training material. After the training, they recorded the training results and maintained the records for 5 years according to their procedure. During August 2019 year, the last training for emergency plan was implemented according to the safety training plan and also results were recorded.

The Hae Dong Logistics prepared the emergency response plan HDLS-P-05 appropriate to overall emergency situations and can be applicable for such cases individually as sodium cyanide release to road, land, surface water, robbery during transportation and taken away by criminal suspect during transportation. In the emergency response plan, the roles and responsibilities of driver, Pusan Head Office team leader, team member, other relevant team and external agency defined.

The Hae Dong Logistics defined the emergency response equipment in emergency response plan HDLS-P-05. And they prepared lists of emergency response equipment as personnel protective equipment and treatment equipment for the case of two road way transportation routes. The drivers should maintain the list and emergency response equipment as in list in truck during transportation. During audit, they maintained personnel protective equipment and treatment equipment as defined in list and emergency plan.

According to emergency response plan HDLS-P-05, Pusan Head Office member as safety representative should inspect emergency response equipment in driver's truck. The inspection should be implemented once per month and results were recorded. Main inspection items are maintaining of emergency response equipment as in list and effective function of the equipment. During 2019 year, they have inspected emergency response equipment monthly base and results were recorded.

The Hae Dong Logistics have used ICMC certified subcontractor SAMIK LOGISTICS Co., Ltd. for the sodium cyanide roadway transportation. The SAMIK LOGISTICS Co., Ltd. have implemented relevant cyanide transportation procedures and comply with the transport practice 3.2

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Transport Practice 3.3: Develop procedures for internal and external emergency notification and reporting.

The operation is

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with Transport Practice 3.3

Summarize the basis for this Finding/Deficiencies Identified:
The Hae Dong Logistics prepared and maintained the emergency response plan appropriate to overall emergency situations. They identified outside responders as below.

(1) Customer and consignor: Taekwang Ind. Co., Ltd. Petrochemical #3 Plant, Samsung C & T Corporation and Shipping Companies
(2) Government body: Fire fighting agency, Korea industrial safety and health agency, Local government office as Ulsan city office and Pusan city office and Police
(3) Hospital: Hospital in Ulsan and Busan

According to emergency response plan HDLS-P-05, they have contacted once per year the relevant personnel of outsider responders and updated the contact personnel and information.

Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

The operation is

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with Transport Practice 3.4

Summarize the basis for this Finding/Deficiencies Identified:
The Hae Dong Logistics prepared and maintained the emergency response plan HDLS-P-05 appropriate to overall emergency situations. In the emergency plan, the remediation as recovery and protect for released sodium cyanide, decontamination of soil and water, control and disposal of wastes etc. were defined. The Hae Dong Logistics are responsible for performing cyanide spill remediation and management and disposal of spill cleanup debris with the help of manufacture Taekwang Ind. Co., Ltd. Ulsan Petrochemical #3 Plant. According to the emergency response plan, the contaminated material shall be dispatched to waste contractor approved by local government office and incinerated.

The prohibit of the use of sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat sodium cyanide that has been released into surface water was defined in the emergency response plan HDLS-P-05.

Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed.

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with Transport Practice 3.5

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Summarize the basis for this Finding/Deficiencies Identified:

According to emergency response plan HDLS-P-05, the Hae Dong Logistics should check the emergency response plan once per year and revise the contact information and detail process with the reflection of changes in two transportation routes. During August 2019 year, the emergency response plan was reviewed, evaluated and updated.

According to emergency response plan HDLS-P-05 Rev.00, they should do the mock emergency drill once per year. The mock emergency drill was implemented in Pusan Head Office during August 2019 year. They checked the overall process and adequacy of emergency response plan and recorded the results.

They also evaluated and revised emergency response plan after the mock drill during August 2019 year.