

# CONTOURGLOBAL



## VOROTAN CASCADE OF HYDROPOWER PLANTS



404MW Vorotan hydro cascade in Armenia  
**Health and Safety conditions improvement plan**  
November 2015

## Summary of revisions

No	Date	Description	Prepared by	Checked by	Approved/ Issued by
0	26 Nov 2015	First issue	N. Kolev	E. Shopov G. Turanov	G. Levesley

# Table of Contents

1	Overview .....	4
2	Documentary Framework .....	4
3	Approach.....	5
4	Health and Safety Conditions Improvement Plan.....	5
4.1	Introduction .....	5
4.2	Hazardous Material Management .....	6
4.3	Waste management.....	6
4.4	Equipment subject to technical surveillance (pressurized vessels, cranes, hoists etc.).....	7
4.5	Occupational health and Safety .....	7
4.5.1	Workplaces, safe access and egress .....	7
4.5.2	Fire precautions .....	8
4.5.3	Lavatories and showers .....	8
4.5.4	Portable water supply .....	8
4.5.5	Clean Eating areas .....	9
4.5.6	Lighting .....	9
4.5.7	First aid provision .....	9
4.5.8	Work Environment temperature and air conditioning.....	9
4.6	Communication and training .....	10
4.6.1	OHS Training .....	10
4.6.2	Visitors Orientation and Visitor Safety Guides .....	10
4.6.3	New task employees and training for Contractors .....	11
4.6.4	Area signage. Safety, Emergency and other signage.....	11
4.7	Physical hazards .....	11
4.7.1	Rotating and moving equipment at the plants and workshops .....	11
4.7.2	Noise.....	12
4.7.3	Vibration .....	12
4.7.4	Electrical hazards.....	12
4.7.5	Eye hazards.....	13
4.7.6	Welding, grinding, cutting .....	13
4.7.7	Site and public traffic and driving.....	13
4.7.8	Working at heights .....	13
4.7.9	Manual handling and Ergonomics .....	14
4.8	Personal Protective Equipment (PPE) .....	14
4.9	Confined Spaces and lone working practices.....	14
4.10	Monitoring- Safety Inspections, medical surveillance .....	15
4.11	Accident Reporting.....	15
4.12	Emergency Preparedness, Procedures and Training.....	16
5	Appendix 1 - TASK LIST.....	1

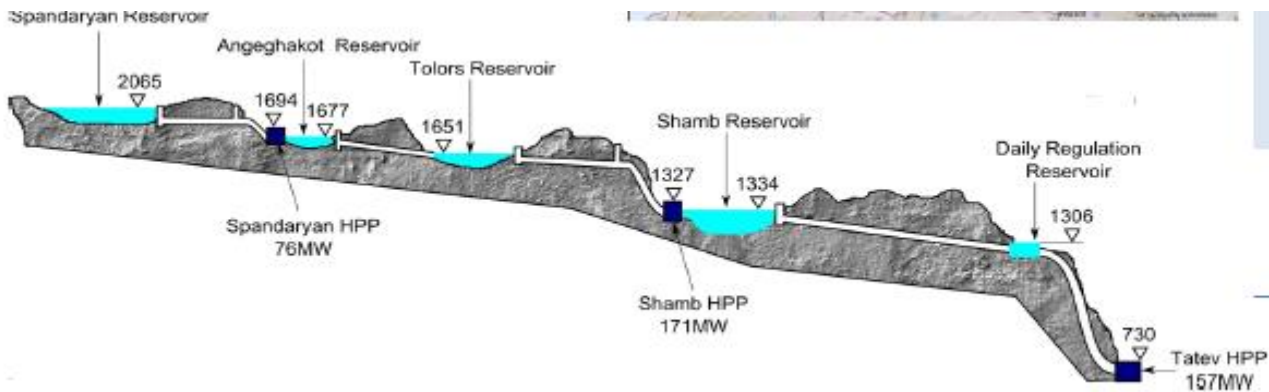
# 1 Overview

The Vortan Cascade, consisting of three hydro power plants with a total installed capacity of 404MW located on the Vortan River in the southeast of the Republic of Armenia, was acquired by ContourGlobal at the end of July, 2015. After closing of the deal, CG has taken over the O&M of the assets and has the long term responsibility to refurbish the assets. Thus, CG has launched a comprehensive integration process covering all organizational and operating areas of significance. One of the main aspects under consideration in this process is the transformation of the H&S functions, processes, awareness, consideration and performance of the asset.

Vortan Cascade produces approximately 20% of the electricity generation of the country from three hydro plants built during the Soviet period:

- Spandaryan - the 76MW Spandaryan hydro power plant consisting of two units built in 1989,
- Shamb - the 171MW Shamb hydro power plant consisting of two units built in 1979, and
- Tatev - the 157MW Tatev hydro power plant consisting of three units built in 1970.

Figure 1: Vortan Cascade



The plants are located over a stretch of 178 km and cover a total head of 1,223 meters. The plants have historically operated in a reliable way, averaging 1,133 GWh of generation annually over the past decade. The two upper plants are generally used for peak production, whereas Tatev is used for baseload energy and grid stabilization.

It is important to highlight that the Vortan Cascade is of strategic importance to the Armenian grid as it is a key player in the provision of frequency and voltage regulation in the Southern Armenian region, providing the necessary structure for a best practice risk allocation.



Figure 2: Location of Vortan Cascade

# 2 Documentary Framework

- IFC General EHS Guidelines ( 2007)

- IFC/EBRD Guidance Note for Worker's accommodation (2009)
- ContourGlobal OHS Policy
- ContourGlobal OHS Corporate Manual
- ContourGlobal OHS Standards and Definitions
- Fichtner Health& Safety Regulatory Compliance Assessment Report (2015)
- Fichtner Hazardous Substances Assessment Report ( 2015)

### 3 Approach

Immediately after Financial Closing ContourGlobal started an Environmental, Social, Health and Safety audit/assessment performed jointly with an internationally recognized consultant, FICHTNER GMBH & CO. KG (Fichtner). The objective of the audit was to perform a full gap analysis of the current condition of the asset vs. local legislation, IFC Performance Standards and Best Industry Practices. The present Health and Safety Conditions Improvement Plan was prepared based on the findings of the a.m. audit. A detailed task list with prioritization of the different improvement measures and description of the timeframe and responsibilities for the various tasks is appended to this document. This tasks list is subject to a quarterly review and monthly progress updates in order to facilitate precise and detailed planning. This plan follows the structure of the IFC General EHS Guidelines.

## 4 Health and Safety Conditions Improvement Plan

### 4.1 Introduction

Immediately after the acquisition of the asset, ContourGlobal started introducing its high standards in Health, Safety and Environmental management. The main areas of concern identified/reconfirmed after 3 months of operation are the following:

- Very poor H&S knowledge and culture across the company;
- Health and Safety Manager Role is undermined and marginal;
- Existing understanding and approach to H&S management is more administrative rather than proactive and does not strive to address and eliminate any unsafe practices and hazards;
- Basic H&S training is limited to yearly exams as per Armenian H&S manual for work in HPP;
- H&S issues reporting process is not in place and it is not formalized;
- Quality of initial H&S induction and toolbox talks vary from plant to plant. In one of HPP's this process is limited to signing the record book;
- Non-compliances have been found with actual implementation of PTW system;
- Firefighting facilities and equipment are old and in many cases faulty. There is no inspection regime enforced;
- Emergency plan and procedures exist but have not been tested for a long period of time;
- Unsafe electrical equipment and appliances have been found;
- Unsafe access and egress at many working places have been found;
- Poor working at height equipment and practices are in place;
- There are no IT systems in place;
- Very few people have computers and/or are computer literate;
- Not properly defined responsibilities with regards of H&S matters;
- Only few employees are able to communicate in English language;
- None (or limited) EHS policies and procedures;
- Cultural differences (post-soviet country, state-owned company, etc.);

- Old and few PPE were available to employees.

Taking the above listed areas of concern into consideration, Contour Global had to re-prioritize its original H&S improvement program and to focus proactively on:

- Supply of new, western standard, high quality and suitable PPEs,
- Improvement of existing OHS conditions,
- Hazardous materials and waste management,
- Changing of existing organization structure with clearly defined HSE responsibilities,
- Basic OHS training sessions to all personnel,
- Hiring an experienced HSE Professional to take a lead on HSE improvement plan, HSE Leadership and commitment, implementation of safety inspections program across the organization etc.

The following sections describe actual H&S conditions and CG improvement actions structured according to the IFC General EHS Guidelines.

## 4.2 Hazardous Material Management

The current situation regarding hazardous materials and hazardous waste management is poorly organized. All hazardous materials and wastes are stored at the various facilities of Vorotan Cascade.

The following hazardous substances and materials has been found to be in use or stored (in many occasions mixed together in the same storage location): Sulfuric Acid, asbestos, Gasoline, Silica gel, Organic glues, explosive gases in pressurized gas cylinders, Sodium hydroxide (solid), Different kinds of oils and grease, Diesel, Antifreeze, Oxygen, Paint and thinner.

The following hazardous wastes have been identified stored in the facilities: Waste oils (transformer, turbine, hydraulic, etc.), used absorbents, filter materials (including used oil filters), wipe clothes and overalls contaminated with hazardous substances, hazardous waste packaging containing residues, sludge from oil/water separators, insulation and construction material containing asbestos, lead batteries and other batteries containing discarded inorganic and organic chemical substances and mixtures, used electrical and electronic equipment containing hazardous materials/substances (asbestos, mercury etc.), fluorescent tubes and other mercury containing lamp bulbs etc.

**ACTIONS:** As there are no facilities for recycling, neutralization or elimination of hazardous waste in the Republic of Armenia all hazardous waste is foreseen to be stored in secure storage areas at the HPP sites (in line with recommendations from Fichtner's Hazardous Substances Assessment report 2015). Such storage areas shall be lockable, roofed, ventilated and shall have solid bundled floor.

- All hazardous waste will be securely packed in sealed drums or other suitable sealed containers and clearly identified with labels. Furthermore Material Safety Data Sheets (MSDS) will be prepared.
- Asbestos and asbestos containing materials/waste shall be stored in concreted, roofed and secured storage area.
- Hazardous substances/waste awareness training program will be developed and implemented involving all relevant personnel.
- A spill response procedure will be developed and emergency drills conducted on a regular basis.
- Specific Job Safety Analysis Form will be developed and communicated with employees to identify specific risks and corrective measures to be undertaken when handling hazardous substances.

## 4.3 Waste management

Household and solid waste management in this part of Armenia is poorly organized. Most of the solid waste is dumped in provisional dump sites and landfills without any segregation or recycling. Waste is either burned or

is simply disposed of at dump sites. The same practices are valid for Vorotan cascade facilities. All kinds of waste can be found dumped near the river, the dams or just across the fence of HPP's.

**ACTIONS:** Contour Global will enforce a housekeeping program across all facilities including:

- Collection of disposed waste from all areas and buildings,
- Segregation of hazardous waste,
- Storage of all hazardous materials/waste at dedicated temporary storage areas at the HPPs,
- Transportation disposal of household waste at the dedicated community dump or landfill,
- Removal and transportation of old oils to dedicated storage vessels at the HPPs,
- Provision of dedicated household waste bins at each facility and sealed containers for solid hazardous waste,
- Organization of regular waste collection, etc.

#### **4.4 Equipment subject to technical surveillance (pressurized vessels, cranes, hoists etc.)**

As of recently, some of the pressure vessels and overhead cranes at the HPPs have expired testing records and certification. Some of the lifting hoists have not been even declared to the proper authorities. In the Republic of Armenia all equipment subject to technical surveillance has to be certified from and tested in the presence of Government Inspector.

The current condition of electrical parts, operator's cabins and controls of the cranes and hoists is below H&S standards.

**ACTIONS:**

- In order to expedite the recertification of pressure vessels and lifting equipment the contract with government inspection body has been promptly renewed. Proper load tests and inspections must be performed prior to the start of the rehabilitation project. Contour Global will enforce strict adherence to inspection and certification regime for all equipment subject to technical surveillance.
- Replacement of the old equipment handling slings and introduction of a system for periodic control are foreseen. New set of lifting slings and beams specifically designed for handling of the main turbine and generator parts will be provided for the purposes of the turbines and generators refurbishment works.

#### **4.5 Occupational health and Safety**

##### **4.5.1 Workplaces, safe access and egress**

Generally all buildings, access staircases and exits are in poor condition and need proper evaluation with regards to safe access and egress. Most metal and concrete access ladders and staircases leading to the facilities at the dams and HPPs are damaged and having an old soviet-type design, which does not provide for fall protection. Some of those ladders are unsafe to climb. Provisional and substandard metal service platforms and ladders were observed at many locations. At some places handrails are either missing or unstable with missing middle rail and toe boards.

Employees occupied buildings and rooms are in poor condition including lack of proper sanitary installations, deficient supply of drinking water, lack of adequate heating and air conditioning. For example during summer time the inside building temperature at Tatev HPP can reach 45 °C. There are unsafe electrical connections and substandard heating devices, old and damaged furniture, lack of personal work clothes, changing lockers etc.

**ACTIONS:**

- Contour Global will initiate thorough Health and Safety assessment of all platforms, access ladders and staircases in order to establish the priority list for urgent repair works and provision of adequate fall protection. After assessment results are communicated to Site management, a repair program will be enforced to guarantee safe access and egress.



- Assessment will be performed to evaluate employees' occupied buildings and rooms aiming to evaluate and establish proper refurbishment program of the premises. When a program and schedule are finalized, Plant Management will provide all necessary resources and will assume close monitoring of repair works together with HSE Department.

#### 4.5.2 Fire precautions

Through external and internal inspections it has been established that most of the firefighting equipment at the facilities does not conform to international standards (e.g. NFPA). Fire extinguishers, where available, are old, some of them empty or with missing parts, and with expired inspection stickers. Firefighting hose reels are not properly labeled and few of them have proper standard hoses. Last delivery of firefighting hoses dating several years back, has been of substandard hoses, especially at Spandaryan HPP. During the interviews with employees the issue of the quality of the hoses was raised.

The fire alarm system is in poor condition with very few smoke detectors installed. Some of the detectors are free hanging from the ceiling especially inside cable tunnels and galleries. Firefighting pump station at Spandaryan HPP is in very poor condition and has design and construction faults. The level of the pumps suction inlet pipes is approx. 40 cm higher than the water level of HPP's water outlet. At some of the HPPs floor around HV and MV electrical equipment is made from wood and is covered with carpet, which presents a fire risk.

##### **ACTIONS:**

- Assessment of existing firefighting provisions has been performed and budget for new firefighting equipment is allocated. Supply and exchange of new firefighting equipment is foreseen to start at the beginning of 2016.
- Inspection regime will be established to meet CG H&S Standards and International Fire prevention standards.
- Assessment of the room floors will be performed and wherever necessary the floors will be exchanged with fire proof ones during the refurbishment project.
- Complete redesign of the Fire Systems as per NFPA will be implemented as part of the Refurbishment program.

#### 4.5.3 Lavatories and showers

Shortage of WC and shower rooms has been observed at the employees occupied buildings across the facility. At most of the places drinking water supply is either unavailable or damaged. Sanitary facilities, where present, are in poor condition and not cleaned on a regular basis. At all Dam Sites and Water reservoirs WCs are missing or if available are in extremely poor and unsanitary condition. Shower rooms are present at the HPPs but in Tatev and Shamb water supply is connected to technical service water without any control of water quality for human use.

##### **ACTIONS:**

- Contour Global will perform a thorough assessment and investigation of the possibilities to construct and refurbish sanitary provisions at all the employees' accommodating buildings. A detailed schedule supported with necessary resources will be prepared and executed.

#### 4.5.4 Portable water supply

Working potable water supply exist only at Spandaryan HPP and Goris office. At Shamb HPP, Spandaryan and Angeghakot Dams natural spring water is available. In the past there were potable water supply line to Tatev Daily reservoir and Tatev HPP, which has been damaged and is currently not working.

##### **ACTIONS:**

- Contour Global will perform review and assessment of the possibilities to provide potable water to all facilities. A detailed schedule supported with necessary resources will be prepared and executed.



#### 4.5.5 Clean Eating areas

There is no dedicated kitchen or hygienic eating area equipped with necessary sanitary provisions in any of the buildings including the main office in Goris. Usually employees bring their own food from home and reheat it using substandard and electrically unsafe heating devices. In the premises, where the employees are changing their clothes and having lunch, there is no water and the hygienic conditions are very poor.

##### **ACTIONS:**

- Contour Global collected and disposed of all substandard and unsafe electrical heating and warming devices. New heating plates and ovens have been procured.
- Action plan is in place to evaluate the possibilities for provision of dedicated locker and dining rooms for the personnel including a kitchen area in the Goris main office building.

#### 4.5.6 Lighting

Generally lighting is poor at many working places especially at the areas outside of the buildings. At many places electrical lighting fixtures are not safely fixed and are hanging on electrical supply cables. There are missing or broken light bulbs. For example, there is insufficient lighting inside cable tunnels and galleries, generator circuit breakers compartments, workshops etc. None of the buildings have independently power supplied emergency lighting.

##### **ACTIONS:**

- As part of the Refurbishment project, all lighting provisions will be evaluated and new lighting system will be installed. Meanwhile, Plant Management will initiate a complete assessment of lighting provisions across the facilities. A detailed schedule supported with necessary resources will be prepared and executed.
- Construction of independently powered emergency lighting is foreseen. Emergency lighting system is part of the new electrical design and will be executed as part of the refurbishment works.

#### 4.5.7 First aid provision

During external and internal H&S assessments, a shortage of first aid supplies and procedures in case of a personnel injury was observed. First aid compartments with inadequate and/or expired medicines and insufficient supply of bandages are present at few places. There is no formal procedure on how to act in case of personal injury. As part of employees basic H&S training, first aid procedures are mentioned but never practiced during the emergency drills. Depending on the facility different arrangements have been made in the past – for example at Tatev HPP a local paramedic from neighborhood village has been engaged for a small monthly fee to inspect and refill the first aid. Due to presence of viper snakes in the area, there are viper antidotes stored at the HPP, which are however outdated. There are no dedicated first aiders trained and nominated. Due to remote distances between facilities there are no adequate emergency transport provisions.

##### **ACTIONS:**

- As urgent action Contour Global supplied new first aid boxes for the buildings and first aid cases to vehicles providing employees and material transportation to and from the facilities. Three new viper antidote potions were supplied to Tatev HPP. Electronic devices and special aroma powder were provided in order to secure the working areas against reptiles.
- Vorotan H&S Department will prepare and execute full assessment of first aid provisions. Dedicated first aiders will be trained and supplied with all necessary resources to act adequately in case of an emergency. Where possible contracts with local paramedics for upkeep of first aid provisions will be arranged. H&S Department will prepare a program and perform regular emergency drills including first aid scenarios.

#### 4.5.8 Work Environment temperature and air conditioning

Generally there is no central heating or air conditioning in any of the employee occupied buildings. During the winter time temperature in some areas can fall below minus 20 - 25 °C with cold winds (Spandaryan Reservoir).

In summer temperatures can rise to 40 °C (inside Tatev HPP control room for example). Self-made, substandard and electrically unsafe heating devices have been observed in many of the buildings. Refrigerators and water coolers were observed in some places. Window glasses are cracked and inadequately sealed at many locations.

#### **ACTIONS:**

- Contour Global will provide quality and warm winter clothes to employees, whose duties involve work and inspections outside of the buildings. All substandard heating devices are collected and new heaters are being distributed. Arrangements have been made to provide water cooling/heating dispensers to all employee occupied buildings. Inspection of existing refrigerators is to be carried out and replaced where needed.
- Assessment of window glass replacement is made and repair works are underway.
- Further development of the HVAC systems will be implemented through the Refurbishment project corresponding to the requirements of the newly installed equipment.

## **4.6 Communication and training**

### **4.6.1 OHS Training**

The current HS&E management is below CG standards. Management attention, communication with the personnel and consistent training is required post acquisition in order to raise the safety level of the personnel to meet ContourGlobal standards. Poor safety culture and practices have been observed across the organization. Current basic training performed is limited to annual assessment of the personnel with regards to safe operation of the equipment, PTW procedures etc. as per Armenian legislation. There is no specific training in place with respect to high risk activities such as work at height, work in confined spaces, work near or above water reservoirs, firefighting procedures and awareness, emergency preparedness etc. Induction training for new comers is performed only verbally in the main office in Goris and rest of the toolbox talks are assigned to be done by different Plant/ Department Managers. Visitor's induction training is poorly organized. Sometimes it is limited to only signing the record book. Public safety awareness has not been communicated to water reservoirs surrounding villages and communities.

#### **ACTIONS:**

- Contour Global hired a new dedicated HSE Manager for Vorotan Cascade. One of his duties is to improve the health and safety culture within the organization, which will include :
  - ✓ Evaluation of the needs, organization and execution of periodic safety training sessions for all the personnel.
  - ✓ Execution of periodic fire safety and fire extinguishing trainings.
  - ✓ Evaluation existing Permit-to-Work (PTW) system and upgrading it altogether with operational staff. Training of the personnel for safe execution of specific activities such as hot works, works at height, construction and safe use of scaffolding, work at confined spaces, check and control on hand tools and PPE and procedures for PTW issue
- HSE Department together with Plant Management will prepare and approve detailed training plan supported by training session schedule in order to raise safety awareness and culture across the organization. Such plan will include safety procedures for performance of high risk activities, emergency preparedness etc. Some of those training sessions may require external specialists to be contracted in order to provide quality training sessions to personnel.
- New more detailed Induction training presentation will be developed and presented to all new coming employees, Contractor's staff and Visitors prior to accessing and commencing of activities at Sites. Monitoring system will be established to ensure that access and PTW shall not be issued without prior HSE Induction training.

### **4.6.2 Visitors Orientation and Visitor Safety Guides**

Prior to the acquisition of the asset by Contour Global, there was no formal procedure regarding Visitors' access and their safety during visits at the sites. Visitor induction and H&S awareness were poorly managed and insufficient.

**ACTIONS:**

- Training on CG OHS Procedure CG 04 – Visitor’s Site Safety Induction has been performed to all relevant Management and operational staff. CG Visitor Safety Guide (VSG) books in Armenian and English languages were supplied and distributed across the facilities.
- Further VSGs shall be updated and distributed on a regular basis. Visitor’s HSE orientation process has been established and procedure is enforced.

**4.6.3 New task employees and training for Contractors**

Currently there is no formal procedures existing with regards to H&S communication flow with employees. Common understanding and practice with respect to Contractor’s safety is that the Contractor’s work area is isolated and a permit to work is issued. After that Contractor is solely responsible for its workers actions regarding H&S. There is no practice to supervise and ensure that the works performed by Contractors are safe. New tasks are verbally communicated to employees and Contractor’s staff and some of the safety precautions are described inside of the permits. Hazards and control measures are briefly communicated. Potential risks to health, precautions to prevent exposure, hygiene requirements and correct use of PPE, incident/accident procedures are communicated either inadequately or not at all.

**ACTIONS:**

- Contour Global will present and enforce a Job Safety Analysis system (as per CG OHS Procedure CG06- Job Safety Analysis) as a prerequisite to all tasks being performed on the territory of the Cascade. Management and Supervisory H&S awareness will be raised through specific trainings concerning new task assignments and procedures. This requirements will be incorporated into complete HSE training package to all O&M teams.

**4.6.4 Area signage. Safety, Emergency and other signage**

Existing labeling and signage across the premises is poorly organized and inadequate. There are missing Site evacuation and emergency signs. Safety signs (where available) are outdated and do not meet current international standards. In high risks areas such as high voltage, rotating and moving machinery and parts, high noise and vibrations or others, safety signs are insufficient or completely missing.

LOTO signage is insufficient and on many locations is unavailable isolated equipment. There is no formal locking out/ tagging out procedure in place other than the one described in old safety manuals that require only tagging and labeling instead of putting locks.

**ACTIONS:**

H&S Department together with O&M teams will perform full assessment of labeling and signage at the premises, organize delivery of required signs and labels and perform following actions:

- Labeling of all production facilities – control rooms, relay premises, cable basements and tunnels, machine rooms, oil plants, storage, battery rooms, warehouses, etc.
- Mounting of safety signs showing existing dangers and the required safe behavior and bans in all production facilities,
- Replacement of Lock out/Tag out labels in order to meet language needs and requirements,
- Labeling of all the emergency exits and evacuation routes as well as installation of evacuation diagrams in the premises,
- Supply and installation of public safety signs on the water reservoirs and entrances of the HPP’s to communicate to the general public the existing hazards including speed restriction road signs and markings, warning signs at the reservoirs (no fishing, no swimming on premises etc.).
- Implementation of a modern LOTO system together with the relevant equipment replacement as part of the Refurbishment project.

**4.7 Physical hazards****4.7.1 Rotating and moving equipment at the plants and workshops**

There are unguarded moving and rotating parts of the big plant equipment such as turbine/ generator rotating and moving parts, portable and stationary tools and machines at workshops and the plant (hand and stationery grinders, big lathe machines etc.)

**ACTIONS:**

- H&S Department together with O&M teams will perform thorough inspection focused on rotating/moving hazards at the facilities and launch preventive program to guarantee proper protection when working with or in the area of such equipment as per international H&S Standards.

#### 4.7.2 Noise

During external and internal working condition assessment high noise levels were observed inside of HPPs areas. In the past some noise level assessments have been carried out in the Plant rooms. The reports from those assessments are available in the H&S Department. The last noise levels assessments are dated from the late 1980-s and early 1990-s. Some of the figures are showing constant noise levels of 100 dBa inside the Turbine rooms and pump stations.

**ACTIONS:**

- Contour Global will source and organize external noise assessment (including consideration of IFC EHS Guidelines indicating zonation of high noise levels areas, proposal of noise damming measures, PPE required, signage etc.),
- H&S Department together with O&M teams will develop and launch program for mandatory use of ear protection when working in high noise levels areas and will include such areas and precautions in specific JSAs,
- Noise Measuring Device will be procured and provided to Vorotan H&S Department for monitoring purposes.

#### 4.7.3 Vibration

High levels of vibration during operation of the turbine units has been detected during the inspections.

**ACTIONS:**

- Contour Global will source and organize external vibration assessment including zonation of high vibration levels, proposal for preventive measures and actions etc. After evaluation of the assessment report vibration preventive program will be developed and implemented.

#### 4.7.4 Electrical hazards

Unsafe electrical wiring and connections are present in almost all of the buildings. Some domestic wall sockets are missing and there are exposed live electrical wires. Most outdoor lighting fittings and poles are missing proper and safe electrical wiring and connections insulation. There are few places at HV electrical equipment with properly restricted access and lockable fencing. Some electrical installations, having exposed live cables and connections, are critically dangerous. There is insufficient or missing marking of energized electrical devices and lines with warning signs. No double insulated hand tools and equipment is present. All electrical distribution boards are without Ground Fault Interrupters (GFI). There is no practice to protect extension power cords from the traffic by shielding or suspending above (or not to present tripping hazards to pedestrians). There are “No approach “zones established under HV power lines at the substations and HV transformers at water reservoirs.

**ACTIONS:**

- H&S Department together with O&M teams will perform thorough inspection and evaluation of all unsafe electrical installations and launch proper maintenance program to eliminate risks of electrocution and block contact with HV energized equipment.
- Further, after development of refurbishment project, a new Lock –out / Tag-out system will be introduced and implemented as part of existing PTW system.

#### 4.7.5 Eye hazards

Current working practices at the facilities does not consider eye hazards and eye protection of the employees. Several working practices were observed and unsafe actions have been stopped such as cutting and grinding of metal parts without use of proper eye protection (safety glasses, full face shields, safety goggles for gas cutting and welding). Eye wash station has been observed in only one of the battery rooms. No safety goggles or face shields were found at the premises where chemicals are handled and mixed (sulfuric acid and distilled water to prepare electrolyte for refilling of the batteries).

##### **ACTIONS:**

- H&S Department is in the process of preparing detailed instructions on when and where dedicated PPE must be used. This instruction will be added to an already issued written order for mandatory use of PPEs. Training focusing on eye hazards, safe working practices and different types of eye protection to be used will be undergone by all affected personnel.

#### 4.7.6 Welding, grinding, cutting

Welding and hot works are carried out in various areas during repair and maintenance works without proper fire prevention precautions and hot work permits. No fire wardens were observed and areas with ongoing welding works were not segregated by welding screens to prevent exposure of the surrounding working teams. None of the gas cutting equipment lines were protected with flash-back arrestors to prevent contact of flash with pressurized gas cylinders.

##### **ACTIONS:**

- H&S Department together with O&M teams will develop and enforce dedicated Safe Operating Procedure for Hot works. Assessment will be made of possibilities to establish dedicated welding zones / workshops provided with all necessary fire preventive measures, proper ventilation and segregation from arc light exposure.

#### 4.7.7 Site and public traffic and driving

Generally in this part of Armenia public traffic can be dangerous due to poor road conditions, dangerous weather conditions, heavy traffic and use of old vehicles. Drivers can be undisciplined and not observing speed limits and taking risky maneuvers. There is no common practice and understanding of using safety belts while driving. Some of the embankments at the public roads passing near the Vorotan cascade premises are not secured and the roads are in poor condition and not maintained. As per Armenian legislation accidents occurred when going to and back from work are classified as work-related. Special attention shall be paid on the training and licensing of Vorotan Cascade drivers, their medical surveillance records and safe driving practices. Roads and pathways inside of the facilities are not marked, there are no established rights-of-way markings, site speed limits and safe driving procedures. None of the industrial vehicles is equipped with audible back-up alarms or flashlights.

##### **ACTIONS:**

- H&S Department together with O&M teams will prepare assessment of safe site traffic requirements and practices. Detailed schedule supported with all necessary resources will be developed and executed.
- H&S department will develop "Safe Driving "training program and all drivers driving company vehicles will be trained.

#### 4.7.8 Working at heights

Current working at heights practices are unsafe and with low perception of the risks involved. Unsafe and self-made access ladders and working platforms can be found everywhere on the premises. Employees are not trained to work at heights. During the H&S inspections no standard scaffolding has been observed. Contractors are using substandard scaffolding material, usually poorly constructed and unstable. There is no understanding of how safe temporary working platform should be constructed and inspected. There is no provision of fall arrest and working at height PPEs and employees are not trained how to use such equipment safely.

#### **ACTIONS:**

- Contour Global already supplied high quality safety harnesses and they are distributed to the working teams. H&S Department is preparing a dedicated training program on how to wear and use safety harness,
- H&S Department together with O&M teams will develop and organize dedicated “Safe working at height” training program, which will include a rescue procedure to respond to workers after an arrested fall. Some of those training sessions may require external specialists to be contracted in order to provide quality training sessions to the personnel,
- H&S Department will perform inspection of all access ladders and temporary working platforms at the premises. All substandard and unsafe working at height equipment will be collected and banned from use. Periodical inspection regime will be established and maintained for all working at height equipment,
- Contour Global will source and supply a set of quality standard scaffolding (tower type with extended outriggers) and specialized vehicle equipped with high elevated working platform in order to facilitate maintenance activities for elevated equipment (HV overhead lines, transformers etc.)

#### **4.7.9 Manual handling and Ergonomics**

Manual handling practices and ergonomic postures never been communicated to employees and there is a little awareness of the risks involved.

#### **ACTIONS:**

- As part of Global H&S communication program, Contour Global will communicate hazards related to manual handling and ergonomics on 18 of November 2015 to all Vorotan Employees.
- As part of Basic OHS Training, H&S Department will develop and implement a training course for Safe Manual handling and Ergonomics practices and behavior.

#### **4.8 Personal Protective Equipment (PPE)**

Existing PPE prior to acquisition were old, inadequately distributed and non-conforming to international safety standards. As a first priority Contour Global provided all employees depending on their duties with high quality PPEs which include:

- Safety helmets
- Safety glasses
- Ear Protection ( ear muffs)
- High quality safety boots
- High quality working clothes - 2 pairs per person
- Welders’ leather overalls –full set
- Welding masks, goggles, gloves
- High quality hand protective gloves
- Raincoats
- Full face shields, Full face cartridge respirator masks, disposable dust masks
- High visibility vests
- High quality safety harnesses
- Dielectric protective equipment (dielectric gloves, carpets, boots and isolating rods) are in process of supply

To ensure that the distributed PPEs will be used according to their purpose Contour Global Plant Management has issued a written order for mandatory use of PPE when at work. H&S department is preparing an appendix to this order with clear instructions when and which type of PPEs should be used during work activities.

#### **4.9 Confined Spaces and lone working practices**

Currently there is not clear definition or procedure concerning risks related to confined space entry and lone working. Employees are not trained and with very little safety awareness in this respect.



#### **ACTIONS:**

- H&S Department together with O&M teams will define all existing confined spaces and prepare a register divided by facility. All confined spaces will be properly labeled with safety warning signs. List of needed specialized rescue equipment and gas measuring devices will be prepared purchased according the Procurement Procedure.
- H&S Department will develop confined space awareness training program and will launch training sessions for all related personnel. H&S Department together with O&M teams will define a list of authorized confined space entrants and stand-by personnel.
- H&S Department together with O&M teams will assess lone working practices and prepare list of operations where lone working practices are involved (outdoor equipment inspections, driving between facilities, any lone working activities for continuous periods exceeding 1 hour etc. ). Standard Operating Procedure for lone and isolated workers will be subsequently developed and implemented. A list of needed communication equipment will be prepared and presented to Plant Management.

#### **4.10 Monitoring- Safety Inspections, medical surveillance**

Existing H&S programs and procedures at Vorotan cascade are poorly organized and maintained with regards of safety inspections, surveillance of the working environment, surveillance of the employees' health and OHS training. In the past during Soviet time some of those matters were implemented and evaluated. Medical surveillance of the employees' health has been irregularly performed and with inadequate factors observed.

**ACTIONS:** As part of HSE integration process Contour Global will implement and enforce its system and procedures for OHS monitoring. ContourGlobal will ensure that non-conformities are assessed and appropriate corrective and preventative actions are implemented and monitored through the implementation and maintenance of internal verification processes:

- Level 1 – Safety tours.
- Level 2 – Safety Inspections.
- Level 3 – Internal Audits – compliance with the OHS internal Standards.
- External on-site audits conducted by external consultants on a regular basis.
- H&S Department will prepare a training package and together with O&M teams will nominate personnel involved in verification processes. Paper-based formal inspection sheet will be developed and implemented in consideration of limited knowledge and access to electronic devices.
- H&S Department will ensure regular performance of planned verification methods and will report KPI's in monthly OHS Site report.
- External assessment will be organized to evaluate working environment conditions – temperature, noise, vibration, humidity etc. Based on the findings from the assessment, H&S Department will present and communicate a health prevention program to Plant Management.
- H&S Department will ensure provision of regular medical checks for the employees with summarized report to the Management.

#### **4.11 Accident Reporting**

During external and internal HSE inspections and assessments it has been observed that accident/incident perception and reporting is limited to only major accidents or incidents. There are no clear and formal definitions of lost time accident, medical treatment, first aid etc. After acquisition, Contour Global distributed to each employee an Essential Information Pack in Armenia language, which includes CG's accident/incident reporting procedure and definitions.

**ACTIONS:** In order to ensure full understanding and adherence to the procedure the following steps shall be undertaken:

- H&S Department together with Plant management will develop a training presentation and schedule to ensure full compliance with CG accident/incident procedure.



- Full investigation will be performed following any accident/incident, ensuring line of reporting to be strictly followed and safety alert to be prepared and communicated.

#### **4.12 Emergency Preparedness, Procedures and Training**

Existing Vorotan emergency response plan is mainly focused on events related to war actions and civil defense procedures.

**ACTIONS:** With a high priority, a new emergency plans shall be developed, communicated and practiced:

- H&S Department will evaluate existing emergency response plans and develop a schedule for their updating. New emergency response plans shall consider all aspects of emergencies and clearly define responsibilities and follow-up actions. When the new plans are developed they will be presented to Plant Management for approval and communicated to all personnel.
- H&S Department together with O&M teams will enforce and monitor regular emergency response drills considering all aspects and conditions.
- H&S Department together with Plant Management will assess possibilities to establish an internal emergency and rescue team. Such a team shall be properly trained and equipped with all necessary rescue equipment including specialized vehicle.

## **5 Appendix 1 - TASK LIST**

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
1	Introducing CG H&S Culture	Prepare, translate and present H&S presentation to be delivered upon signing	11.5.2015	30.6.2015	completed	Presentation delivered during visit to Vorotan on 25.06.2015.	CG Corporate HSE
1	CG OHS policy	Present (train) and discuss with leadership the HSE Vision, Mission and Policy including key management concepts (ownership and line responsibility). CG OHS Policy, signed by CEO and revised annually to be posted in central locations in all Buildings.	3.8.2015	12.10.2015	completed	Completed as part of the presentation to employees of Essential Info Pack. CG Policy is available in English and Armenian Language and is displayed in all Buildings.	CG Corporate Management, Vorotan management
1	PPE	To procure all new PPEs and branded working clothes for the Vorotan employees.	3.8.2015	12.10.2015	completed	A wide range of high quality PPEs and branded working clothes have been delivered and distributed to employees against signature.	CG Management, Purchasing Department, H&S Department
1	OHS monthly report	Establish Monthly report template and prepare monthly OHS report.	3.8.2015	1.9.2016	in progress	Reporting of lagging indicators is ongoing on a monthly basis. Leading indicators reporting will start after aligning local procedures with CG standards with regards to safety inspections, training matrix and site risk matrix.	HSE Department with support of Plant Management
1	Visitor safety guide	Issue / adjust safety visitor's induction procedure and update Visitors Safety Guides. The updated VSG to be translated and printed into Armenian and English. Quarterly update of stock availability.	3.8.2015	31.10.2015	Completed	400 pcs of bilingual (ENG/ARM) VSGs have been printed and delivered to Vorotan. Training has been performed to Vorotan Management in line with visitor induction procedure. VSGs have been promptly distributed to Plants.	Plant management
1	Accident reporting	Develop a training presentation and schedule to ensure full compliance with CG accident/incident procedure.	3.10.2015	30.3.2016	In progress	Full investigation shall be performed following any accident/incident, ensuring line of reporting is strictly followed and safety alert is prepared and communicated.	H&S Department, Plant Management
1	First aid provision	Supply new first aid boxes for the buildings and first aid cases to company vehicles. Vorotan H&S Department to organize full assessment of first aid provisions. Dedicated first aiders to be nominated, trained and supplied with all necessary resources to act adequately in case of an emergency. Where possible contracts with local paramedics for upkeep of first aid provisions to be arranged. H&S Department to prepare a program and perform regular emergency drills including first aid scenarios.	3.10.2015	30.5.2016	In progress	First sets of first aid boxes and cases supplied. Three new viper antidote potions were supplied to Tatev HPP. Electronic devices and special aroma powder were provided in order to secure the working areas against reptiles.	H&S Department, Plant Management.
1	Working environment temperatures and air conditioning	Supply of quality and warm winter clothes to employees, whose duties involve work and inspections outside of the buildings. Provide adequate industrial type heating equipment. Supply drinking water for employees. Provide refrigerators where needed. Prepare assessment of integrity of the building in terms of insulation from external temperatures.	10.10.2015	30.1.2016	In progress	All substandard heating devices have been collected and new heaters are being distributed. Arrangements have been made to provide water cooling/heating dispensers to all employee occupied buildings. Inspection of existing refrigerators is to be carried out and replaced where needed. Assessment of window glass replacement is made and repair works are underway.	Procurement and H&S Department

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
1	Initial assessment of existing OHS conditions	Sourcing and engage external company to perform a certified OHS conditions measurements and assessment - noise levels, temperature, humidity, vibrations etc.	15.10.2015	3.06.2016	in progress	Sourcing process ongoing. Additional noise meter will be purchased for the needs of H&S Department.	H&S, Purchasing Departments
1	Equipment subject to technical surveillance (pressurized vessels, cranes and hoists etc.)	Renew contract with Government Notified body and re-inspect all related equipment. Update equipment register. Enforce regular inspection program.	15.10.2015	30.3.2016	In progress	Annual contract with Government Inspection renewed. Updating of the register ongoing.	H&S Department, O&M Teams
1	Monitoring – Medical surveillance	Ensure provision of regular medical checks for the employees with summarized report to the Management.	30.10.2015	30.3.2016	In progress	Sourcing process ongoing and specification is to be written with regards of medical checks scope.	H&S Department, Plant Management
2	Housekeeping program	Enforce housekeeping program across all facilities including collection of waste from all areas and buildings, segregation of hazardous waste, storage of all hazardous materials/waste at dedicated temporary storage areas on HPPs, transportation of household waste to dedicated community dump or landfill, removal and transportation of old oils to dedicated storage vessels on HPPs. Supply dedicated household waste bins in each facility and sealed containers for storage of solid hazardous waste.	3.10.2015	1.10.2016	In progress	Housekeeping actions started. Provision of new household waste bins is being organized. Sourcing waste removal company is ongoing. Organize regular collection of the waste.	H&S Department, Purchasing Department, O&M Management
2	CG OHS priority procedures	Align local procedures with CG requirements for the following priority items - Incident Management, Emergency response, Inspection level 1 and 2, site risk matrix, PTW etc.	3.10.2015	30.6.2016	in progress	CG Incident management procedure applied as part of EIP. Training foreseen for all employees.	Plant management, HSE Department
2	CG OHS orientation	OHS orientation module to be customized and delivered to all personnel and managers and to facilitate the training of new comers	3.10.2015	30.4.2016	in progress	Materials under preparation	H&S Department
2	Collection, segregation and storage of all hazardous waste. Supply of adequate storage containers.	All hazardous waste will be securely packed in sealed drums or other suitable sealed containers and clearly identified by labels. Furthermore Material Safety Data Sheets (MSDS) will be prepared.	10.10.2015	01.12.2016	In progress	Substandard heating devices containing asbestos have been collected and stored in a secured area.	H&S Department, Plant Management
2	Eye hazards assessment and preventive measures	To develop instruction to all personnel with clear specification where and how PPE will be used including eye protection. Training focusing on eye hazards, safe working practices and different types of eye protection to be undergone by all affected personnel.	10.10.2015	30.3.2016		H&S Department is in the process of preparing detailed instructions on when and where dedicated PPE must be used. This instruction will be added to an already issued written order for mandatory use of PPEs.	H&S Department , Plant Management

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
2	Area Signage. H&S signs.	To implement H&S labelling of all production facilities.	30.10.2015	30.5.2016		Assessment of existing firefighting provisions has been performed and budget for new firefighting equipment is allocated. Supply and exchange of new firefighting equipment is ongoing.	H&S Department, O&M Teams
2	Electrical hazards assessment and corrective measures	Perform thorough inspection and evaluation of all unsafe electrical installations and launch proper maintenance program to eliminate risks of electrocution and block contact with HV energized equipment.	30.10.2015	30.6.2016		Further, after development of refurbishment project, a new Lock –out / Tag-out system will be introduced and implemented as part of existing PTW system.	H&S Department, Electrical Department, Plant Management
2	Job Safety Analysis	Develop and implement Specific Job Safety Analysis Form to identify specific risks and corrective measures to be undertaken when handling hazardous substances and performing high risk activities.	5.1.2016	30.10.2016		Job Safety Analysis form under review.	H&S Department, O&M Team
2	Firefighting equipment inspection and replacement.	To implement a system for inspection of the existing fire extinguishers, replacement of the outdated ones and introduction of the periodical checks and timely replacement.	5.1.2016	30.6.2016		Nomination of responsible persons for fire prevention and inspections. Inspection regime to be established in line with CG H&S Standards and International Fire prevention standards.	H&S Department, Plant Management
2	Hot works- welding, grinding, cutting	Develop and enforce dedicated Safe Operating Procedure for Hot works.	1.3.2016	30.8.2016		Assessment to be made of possibilities to establish dedicated welding zones / workshops provided with all necessary fire preventive measures, proper ventilation and segregation from arc light exposure.	H&S Department, Maintenance Department
2	Hazardous material awareness and hazardous substances spill response.	Develop and implement Hazardous substances/waste awareness training program.	1.3.2016	1.9.2016		Develop and implement oil & chemicals spill response procedure with emergency drills conducted on a regular basis.	H&S Department, O&M Team
2	Safe access and egress, permanent working platforms, staircases and ladders.	Initiate complete health and safety assessment of all platforms, access ladders and staircases in order to evaluate urgent necessity of repair works and provision of adequate fall protection. Results to be communicated to Site management and repair program to be enforced in order to guarantee safe access and egress.	1.3.2016	30.6.2017		Organize complete inspection of all facilities and prepare schedule for urgent repair works needed.	H&S Department, O&M Teams
2	Working at heights accident prevention	Develop and organize dedicated “Safe working at height” training program, which will include a rescue procedure to respond to workers after an arrested fall. Perform inspection of all access ladders and temporary working platforms at the premises. Source and supply a set of quality standard scaffolding (tower type with extended outriggers) and specialized vehicle equipped with high elevated working platform in order to facilitate maintenance	30.3.2016	30.12.2016		Contour Global already supplied high quality safety harnesses and they are distributed to the working teams. H&S Department is preparing a dedicated training program on how to wear and use safety harness. Some of the training sessions may require external specialists to be contracted in order to provide quality training to the personnel. All substandard and unsafe working at height equipment to be collected and banned from use. Periodical inspection regime to be	H&S Department, O&M teams, Plant Management

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
		activities for elevated equipment (HV overhead lines, transformers etc.)				established and maintained for all working at height equipment.	
3	Condition of employees' occupied premises	Perform internal assessment of employees' occupied premises to evaluate and establish proper refurbishment program of facilities. When program and schedule are established, Plant Management sponsor and supervise repair works together with HSE Department.	5.1.2016	30.3.2017		Organize inspection	H&S Department, Plant Management
3	Basic HSE Training needs	Evaluation of the needs, organization and execution of periodic safety training sessions for all personnel.	5.1.2016	30.6.2016		Evaluate and prepare a list of responsible persons and training schedule.	H&S Department, Plant management
3	Lighting	Plant Management to initiate complete assessment of lighting provisions and illumination levels across the facilities. Detailed schedule supported with necessary resources to be prepared and executed.	5.1.2016	30.8.2016		Organize assessment	H&S Department, O&M Teams, Plant Management
3	Rotating and moving equipment at the plants and workshops	Perform thorough inspection focused on rotating/moving hazards at the facilities and launch preventive program to guarantee proper protection when working with or in the area of such equipment as per international H&S Standards.	30.1.2016	30.7.2016		Organize assessment of rotating and moving hazards across the facilities.	H&S Department, Plant O&M Teams
3	Noise assessment and preventive measures	Source and organize external noise assessment (including consideration of IFC EHS Guidelines indicating zonation of high noise levels areas, proposal of noise damming measures, PPE required, signage etc.), Provide noise Measuring Device to H&S Department for monitoring purposes.	30.1.2016	30.9.2016		H&S Department together with O&M teams to develop and launch program for mandatory use of ear protection when working in high noise levels areas including such areas and precautions in specific JSAs.	H&S Department, Plant Management
3	Vibrations assessment and preventive measures	Source and organize external vibration assessment including zonation of high vibration levels, proposal for preventive measures and actions etc.	10.2.2016	1.9.2016		After evaluation of the assessment report vibration preventive program will be developed and implemented.	H&S Department, Plant Management
3	Lavatories and Showers	Perform assessment and investigation of the possibilities to construct and refurbish sanitary provisions in all employees' accommodated buildings. Detailed schedule supported with necessary resources to be prepared and executed.	30.3.2016	31.12.2016		Evaluation and preparation of detailed schedule underway.	H&S Department, Plant Management

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
3	Emergency preparedness, procedures and training	Evaluate existing emergency response plans and develop a schedule for their updating. Organize and monitor regular emergency response drills considering all aspects and conditions. Assess possibilities to establish an internal emergency and rescue team. Such a team shall be properly trained and equipped with all necessary rescue equipment including specialized vehicle.	30.3.2016	30.10.2016		New emergency response plans shall consider all aspects of emergencies and clearly define responsibilities and follow-up actions. When the new plans are developed they will be presented to Plant Management for approval and communicated to all personnel.	H&S Department, O&M Teams
3	PTW System	Extension of existing PTW system with additional requirements for high risk activities and PPEs	30.10.2016	30.7.2017		Implement additional permit systems for high risk activities such as entering Confined spaces, work above and near water, work in EX areas etc.	H&S Department, Plant Management
4	CG OHS Standards and Procedures	CG OHS Standards and procedures to be made available on site in English and Armenian Languages	2.11.2015	30.7.2016		Translation works into Armenian Language ongoing for the existing CG OHS Standards. Updates of the documents shall be promptly translated and communicated.	H&S Department , Plant management
4	Monitoring-Safety inspections	Train participants and start conducting and reporting safety inspections level 1 and 2. Prepare training package and nominate personnel involved in verification processes.	30.1.2016	31.12.2016		Preparation of training program ongoing. List of participants to be defined by H&S Department and Plant management. Paper-based formal inspection sheet to be developed and implemented in consideration of limited knowledge and access to electronic devices. Ensure regular performance of planned verification methods and report KPI's in monthly OHS Site report.	H&S Department, Plant management
4	CG OHS Orientation	Adjust and start training the organization in the OHS Orientation program	10.5.2016	30.11.2016		Define responsibilities and confirm list of participants.	H&S Department
4	Manual handling and ergonomics awareness	Develop and implement a training course for Safe Manual handling and Ergonomics practices and behavior - part of Basic OHS Training.	30.5.2016	30.10.2016		Contour Global communicated hazards related to manual handling and ergonomics on 18 of November 2015 to all Vоротan Employees. Training course need to be developed and implemented.	H&S Department, Plant Management
4	Confined spaces management and lone working practices prevention	Define all existing confined spaces and prepare a register divided by facility. All confined spaces to be properly labeled with safety warning signs. List of needed specialized rescue equipment and gas measuring devices to be prepared and purchased according the Procurement Procedure. Assess lone working practices and prepare list of operations where lone working practices are involved (outdoor equipment inspections, driving between facilities, any lone working activities for continuous periods exceeding 1 hour etc.).	30.6.2016	30.3.2017		H&S Department to develop confined space awareness training program and launch training sessions for all related personnel. Define a list of authorized confined space entrants and stand-by personnel. Standard Operating Procedure for lone and isolated workers to be developed and implemented. A list of needed communication equipment to be prepared and presented to Plant Management.	H&S Department, O&M Teams

## Appendix 1 - TASK LIST

Category	Process	Transition Activity	Start date	Due date	Status	Comment/Notes	Responsible
4	Site and public traffic and driving	Prepare assessment of safe site traffic requirements and practices. Detailed schedule supported with all necessary resources to be developed and executed.	30.10.2016	30.7.2017		H&S department will develop "Safe Driving "training program and all drivers driving company vehicles will be trained.	H&S Department, Maintenance Department
4	Managers Training	Managers to participate to ARMSA Corporate Training	30.10.2016	30.5.2017		Include at least 3 Vorotan Managers in the next ARMSA Corporate training	Corporate HSE, Plant Management
4	OHS performance assessment and feedback program	Implement Safety Disciplinary and Award procedures	30.12.2016	30.7.2017		Develop local performance assessment and feedback system including Contractors	HSE Department with support of Plant Management