Environmental and Social Quarterly Monitoring Report

Project Number: 38928 (Loan 2198)
September 2012

PAKISTAN: New Bong Escape Hydropower Project
Environmental and Social Issues Compliance Report (July to September 2012)

Asian Development Bank

New Bong Escape Hydroelectric Power Project

Environmental and Social Issues Compliance Report

Quarterly Report

July 01, 2012 – September 30, 2012

Laraib Energey Limited

Islamabad

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A. Project/Business Name and Summary Information

a) Location of project/business

Village Lehri, Tehsil and District Mirpur, Azad Jammu and Kashmir.

b) Nature

Run of river, low head Hydropower Project.

c) Scale/size

84MW (4 bulb turbines of 21MW each) with average annual generation capability of 470GWh.

d) Date of construction/operation commencement

Construction commencement: December 29, 2009

e) Name, designation and signature of person responsible for preparing/reviewing the report

Prepared by: Mr. Jahanzeb Murad- Manager ESOHS

B. Relevant Environmental Permits or Compliance Certificates

a) Issued by which government agencies

1. Environmental Protection Agency Azad Jammu and Kashmir (EPA-AJ&K).

b) Issuance dates and duration of validity

1. February 26, 2007 for the Project term (the "Original NOC").
2. Revised NOC issued on August 25, 2010 for the Project term (the "Revised NOC")

c) Permit conditions and renewal requirements.

From Revised NOC

1. The Company will resolve all social issues if any? like land compensation, human displacement etc at project site.
2. Appropriate land slope stabilization steps will be taken and maintenance of tailrace will be carried out as given in construction plan to forestall the possible soil erosion.
3. Training programs for the officers and workers will be organized under the supervision of AJK-EPA.
4. Periodic water sprinkling will be done to minimize the dust emission and Solid Waste will be properly managed at project site by practicing segregation at source.
5. As part of obligation under IEE, Plantation has been completed on flood protection dike, Total 14,000 plants has been planted at flood protection dike.
6. The Company and Contractor shall provide safe drinking water to all employees/workers. The ground water of the project site is chemically and biologically contaminated and not fit for human consumption hence is avoided for consumption and water analysis to be carried out on fortnightly basis to monitor its quality and results be furnished to EPA.
7. The machinery and all transport will be fixed with double chamber silencers and night time work shall be avoided and music will not be played in high volumes to avoid the noise pollution.
8. The Company and Contractor will be responsible for health and safety of the entire workforce and will provide good working environment. Occasional training programs will be conducted by the Company for the workers to meet with the emergences. Safety hand gloves, helmets, long shoes, goggles and masks will be provided to all the workers during working hours.

9. The Environmental Compliance Officer of the Company and the Contractor shall present all the time at project site to check/ensure the environmental performances of the project and also to check the progress towards EMP compliance.
10. The Company and the Contractor will provide un-skilled, semi-skilled and skilled Jobs to AJK Nationals on priority and especially to the Local people of the project area.
11. The AJK-EPA can make any surprise visit to check the environmental performances and also to check the progress on EMP.

C. Incidents of Violations or Non-Compliance

1. The following information regarding incidents of violations or non-compliance has been recorded

   (i) Nature of non-compliance
   (ii) Violation or non-compliance based on environmental standards and regulations
   (iii) Recorded dates and authorities
   (iv) Media or community reactions (if any)
   (v) Corrective actions, deadlines, identification of responsible parties

2. Incidents of violation and non compliance along with its corrective actions in the form of ESOHS Corrective Action Plan (ESOHS CAP) are attached as "**Exhibit-01".** The following is the status of ESOHS CAP as of September 30, 2012.

   - Total number of observations 113
   - Number of Issues closed 103
   - Number of Issues In Progress 05
   - Number of Issues open 05

D. Incidents of Environmental and Safety Accidents

a) Environmental Accidents and Mitigation

1. No Environmental accident has been reported in this quarter.

b) Health and Safety Accidents and Mitigation

1. The summary of accidents encountered from July to September 2012, are as follows;

Type of incident	July	Aug	Sep	Total
Near Miss	3	3	4	10
First Aid Cases	1	1	1	3
Critical Injury	0	0	0	0
Occupational injury/illness	9	10	13	32
Incident Property damage	0	1	0	1
Medical Treatment case (routine checkups) (All these cases are seasonal diseases like nausea, flue and cough, headache etc)	70	73	68	211
Total Unsafe Acts/Unsafe Conditions (UA/UC) (All reported UA/UC have been incorporated in ESOHS CAP with the updated progress on each reported UA/UC)	12	08	14	34
Total number of man-hours without LTI &I	**5,340,970**			

2. Routine medical examinations were conducted for newly hired workforce and other sub-contractor's crew.

c) Near Miss:

1. One of the side walls of metallic sheet of the cabin of gantry crane was broken down because of heavy wind storm and fell on ground.
2. An employee trips over an extension cord that lies across the floor but avoids a fall by grabbing the one end of the steel pipe of the scaffolding.
3. Instead of using a ladder, an employee puts a box one on one, loses balance and stumbles to the ground. Although the employee is shaken, there is no injury.
4. A worker slipped from ladder while descending the ladder with mechanical tools in his hand, but he regained his balance by holding the safety railing.
5. Tea boys slipped on the spilled coffee in tea room but remain safe.
6. Site Engineer tripped on steel mesh at lining slab but remained safe by holding the hand of his co worker.
7. A worker slipped from ladder while descending the ladder with mechanical tools in his hand, but he managed to avoid falling by holding the safety railing along ladder.
8. Laraib ESOHS officer tripped over the manhole of oil collection tank but remained safe.

9. A labor tripped on uneven ground at headrace being agile and empty handed he regain his balance with No harm done.
10. A labor almost tripped over an electrical cord plugged into an outlet stretched across the walking way. But he remains safe
    All above near miss attached as ***"Exhibit 17"***.

d) First Aid Cases:

1. One first aid case report in the month of July.
2. A laborer sustained a cut injury at his finger during grass cutting, as a first aid camp supervisor applied pressure with dressing bandage and then sent to site clinic where doctor cleaned his wound and provided Anti Septic Dressing on wound with some pain killer tablets.
3. A Chinese employee got forehead injury in the power house, he was provided first aid at site by covering his wound with the gauze at site, and then he was brought to site clinic where he was given first aid by site Doctor.
   Detail of all above first aid cases is attached as **"*Exhibit 18".***

e) Incident Property damage

1. One incident of property damage was recorded during the month of August. August 15, 2012 at 0900 hrs dump truck having registration # LES-10-1583 turned over at downstream of the power house, no personal harm done however dump truck got damages. The detailed Incident Investigation Report is attached as *"**Exhibit 02**".*

f) Report of Unsafe Acts/Unsafe Conditions

UA/UC reported in July:

Twelve unsafe acts/ unsafe conditions (UA/UC) are reported in April. All reported UA/ UC along with their corrective actions are mentioned below:

1. Poor housekeeping at level 260 has been observed, the area supervisor was advised to make the area clear and obstruction free.
2. A helper found sitting over the bumper of the moving dump truck of subcontractor carrying crush material at site. Before entering the site he was stopped at security check post and advised to sit in the driver cabin to avoid any mishap.
3. During dismantling the scaffolding, a Folder was observed throwing steel pipes from height to ground without barricading the area and arranging a signal man at ground. As a corrective action they were advised to barricade the area and arrange an observer to watch the activity continually.
4. A worker was observed working in the power house building without safety shoes while his shoes were their near the working area. He was advised to wear the safety shoes to avoid any kind of foot injury.

5. A laborer was observed riding the tri pot stand without safety harness which is erected by the piling works contractor. He was called down and advised to ensure the use of safety harness in future while climbing the tri pot.
6. A worker was observed wearing improper safety harness, as a corrective measure a demonstration of wearing safety harness was conducted in order to educate the workers.
7. A naked electric cable was observed unattended in the power house, as a corrective action electrical supervisor was advised to ensure the inspection of all electrical cables and inspections in the power house.
8. A welder was observed welding without face shield; a tool box talk has been conducted on the use of face shield.
9. During the dismantling of tower crane, a group of few workers were observed directly under the lifted load. As a Corrective action a tool box was conducted on avoid working under the lifted load.
10. A damage ladder was observed being used as access in the power house, as a corrective action damage ladder has been replaced with the new one.
11. A welder was observed welding without face shield, a tool box talk has been conducted on the use of face shield, Further as a habitual offender for not wearing face shield the welder has been issued warning letter also.
12. Excess dust observed along the tail race while dumper moving to the parking area after the end of the day shift work was in progress as a corrective measure Pedestal fans were arranged there to minimize the dust problem.

UA/UC reported in August:

Eight unsafe acts/ unsafe conditions (UA/UC) are reported in May. All reported UA/ UC along with their corrective actions are mentioned below:

1. Pressurized Acetylene gas cylinder lying on ground during cutting activity. As a corrective action a TBT was conducted and a cylinder aligned properly.
2. A worker observed holding the drill machine from power card. As a corrective action he was advised to hold its handle.
3. A worker was observed smoking near fuel injector of fuel station he was advised to avoid smoking here.
4. An electric cable was found to be plugged bare. As a corrective action it was properly plugged.
5. Crane helper was observed operation truck mounted crane while Operator of crane was busy on mobile phone chatting, As a corrective action Operator and helper were issued a warning letter, further Operator was advised to avoid such negligence's in future.
6. A working was observed taking unsafe conditions while working on ladder, he completely bend his body on ladder to increase his approach.
7. Poor housekeeping observed near step transformer # 01, as a corrective action the waste material was collected and disposed off properly.
8. A manhole observed missing the cover causing a serious falling hazard, as a corrective action all manhole was covered properly.

UA/UC reported in September:

Fourteen (14) unsafe acts/ unsafe conditions (UA/UC) are reported in current month. All reported UA/ UC along with their corrective actions are mentioned below.

1. Cover of Manhole of oil collection pit was found missing with a clear danger of falling in the pit, as a corrective action manhole was covered with the plywood temporarily, later it was replaced with the permanent steel cover
2. Wild grass and shrubs observed along the labor camp, as a corrective action the grass and shrubs have been scratched.
3. Gas cylinders used for cooking were observed without safety cage outside the mess facility, as a corrective action safety cage has been provided for proper protection of gas cylinders.
4. During inspection Empty fire extinguishers were observed at some places, as a corrective action fire cylinders were collected immediately and disputed for refilling. After refilling cylinders have been placed at appropriate locations again.

5. Poor housekeeping observed at level 260m (transformer area), some packaging wooden and steel items were observed causing the tripping and falling hazard. As a corrective action the house keeping of area has been ensured the same day.
6. Water was observed leaking from water pipes that delivers water supply to electric water coolers, the spilled water was falling on electric cables behind the water coolers which enhancing the potential of electric shock for users. As a corrective action damaged pipes have been replaced with the new one to reduce the leaking.
7. Poor housekeeping near main entrance of power house was observed causing tripping and falling hazard, as a corrective action the rubbish has been removed.
8. Excavator found working near the public road without proper safety measures as a corrective action the area was properly cordoned off with reflective road safety cones to make the area safe.
9. Two workers were observed painting in the confined space without any fresh air circulation; it was hard to breath there. Immediately the activity was halted and area supervisor was advised to make proper arrangements for fresh air.
10. A small quantity of soil was found spilled over the oil near workshop, as a corrective action the soil was removed for proper disposal.
11. Some workers were observed working at headrace without safety shoes, as a corrective action the workers were warned to ensure the use of mandatory PPE's.
12. A worker was observed cutting the cemented tiles without wearing dust masks, as a corrective action the dust masks were issued him.
13. A worker was observed working at height wearing the safety harness but not hooked during the erecting the electric pylon. He was advised to avoid such unsafe acts that put life in danger.
14. A wooden baton was found unattended in the way with the tips of steel nails out of surface, as a corrective action it was removed from passage and then nail were bent and leveled with the surface.

E. Labor Relations and Conditions

S.No	*Parameter*	*Actions Taken*
I.	Nature of labor dispute or grievance	Since the start of the construction activity, no incidents of violation took place.
II.	Permit conditions and renewal requirements	No new requirements
III.	Authorities in charge of investigation/recording	No new requirements
IV.	Media or community reactions (if any)	• Work on jeepable tailrace bridge has been started after award of contract to a third party contractor. • In nearby girls school, laraib is constructing 5 wash rooms and almost 80% work has been completed.
V.	Corrective actions, deadlines, identification of responsible parties	No new requirements

F. Environmental Capacity

a) Record of Trainings:

1. Manger ESOHS and the Contractor delivered a total of 5 trainings to its staff. The distribution is described below.
   i. Following two training were conducted in July. The training agenda is attached as ***"Exhibit-03".***
      a. First Aid and CPR.
      b. Internal Audit Techniques.

   ii. Training on "Importance of Water" has been conducted in the month of August, Training presentation. The training material, agenda and attendance sheet is attached as ***"Exhibit-03".***
   iii. Following two training were conducted in September. The training agenda, Presentation and Attendance Sheet is attached as ***"Exhibit-03".***
      a. Work at Height & Ladder Safety
      b. First Aid & CPR
2. Photographs for the training on First Aid and CPR are as following:

b) Toolbox Talks:

1. The Contractor delivered a total of 45 toolbox talks to staff. The distribution is described below.
   i. The Contractor conducted 17 tool box talks in July, 2012, 12 in August 2012 and 16 in September 2012. The toolbox talk manual is attached as ***"Exhibit-04"***.
   ii. Keeping in view the established procedures of Environmental Management System (EMS), the Employer has placed UA/UC Card in Site Office for creating awareness about Health and Safety inside the office employees.

G. Stakeholder Consultation/CSR Activities

a) Details of consultations

1. A Community Complaint Register (CCR) is placed at the entrance gate of the Site along with the sign board to communicate its location. All complaints in CCR have been addressed and resolved for developing good relations with the nearby community.
2. Efforts have been made by the Company by the Contractor in developing good relations with the nearby communities.
3. Company's community liaison officers are in closed coordination with community of the project surroundings. Verbal complaints are also received and recorded.
4. Pursuant to the Community complaint regarding water flow from Surat siphon, the Contractor replaced the gabion structure with the flat structure in order to avoid movement of water in nearby private lands. Laraib has also allocated additional funds to take further measures to mitigate any residual impacts of this issue even beyond the project area
5. As a standard practice, the Contractor checks the CCR on daily basis. Additionally, the Company checks the register regularly to ensure smooth functioning of Construction period.
6. Company is promoting community relations as on June 2012, all emerged community complaints have been addressed and no complaint is pending.
7. Local employment has been created to enhance the local employment and community relations.
8. As per the EPC Contract Clause K-B- 4.1, the Contractor will provide facilities for the locals and their cattle's i.e. washing, bathing and animal's drinking water facility along the tail race channels. As the way forward, the Contractor identified three locations for providing such facility. The identified locations are located at RD 6+150 Pindi Siphon, RD 5+400 Chohan Siphon and RD 4+650. Activity has been completed.
9. As CSR activity 5 washrooms is under construction in government school which is necessary requirement of the school. Following are the pictures of toilet construction progress.

10. As part of obligations under the IEE, Plantation at flood protection dike has been completed. Total 14,000 plants have been planted at flood protection dike. Following are the pictures of plantation.

H. Monitoring and Compliance

1. Environmental Management Plan (EMP) is the document providing the description of methods and procedures for mitigating and monitoring the impacts of the Project activities. Thus, it acts as a tool which provides assurance of implementing the Project activities in an Environment friendly manner.
2. The Contractor reported Environmental Social Issue Management Plan (ESMP) / Environmental Management Plan (EMP) after incorporating updated status of Environmental Sampling of drinking water, surface water and waste water quality and noise level. Also, the quantification of generated Solid Waste has been included in update ESMP/EMP, attached as ***"Exhibit-05".***
3. As per ESMP requirements a third party monitoring of environmental parameters was conducted in month of June. Results provided by SGS are attached in ***"Exhibit 06".***
4. Laraib and Contractor devised the way of implementing EMP by conducting periodic Audits, Inspections and walkabouts. In order to track the level of implementation of Audits and Inspections, Laraib and the Contractor has formally signed the ESOHS Corrective Action Plan (ESOHS CAP). The Contractor has provided timeframes for completion of actions in various ESOHS weekly meetings held on Site and clearly identified responsibilities for implementation across all parties.
5. In order to reduce soil erosion, culverts have been constructed on the siphon's outlet, joining the tail race. It helps to reduce the soil erosion as well as speed of rain water falling in the tailrace channel.
6. To reduce soil erosion alongside the tail race channel coble and boulders have been placed, after placing geo-textile layer of non woven fabrication at the interface of gravel.

a) Recommendations

1. As per MM recommendation Scaffolds are inspected by a competent person, in the current month two inspections are conducted, proper fall protections i.e. railings and braces have been provided at accesses and egresses.
2. As per MM recommendation a local contractor has been hired from Mirpur for the transportation and disposal of non recyclable waste at Mirpur Municipality approved site. The contractor has started services from June 05, 2012 and collecting all the waste from dumping pit also for its safe disposal.
3. In order to eliminate the tripping and falling hazard at project site, housekeeping has been ensured by managing the same kind of items at same place and it is a continuous activity. More over in order to avoid falling hazard permanent guard railing has been installed along the stairs in the office building of power house

4. As per MM recommendation different kinds of incidents are categorized and guidelines have been developed for better understanding, for brief description the document naming "Categorization of Incidents" is attached as ***"Exhibit 07"***. All incidents are reported accordingly.
5. As per MM recommendation documented chain of custody of recyclable waste is maintained at project site as a continuous activity. It comprises complete address of the contractor, quantity of the waste delivered, date of delivery and receipt of handing over and taking over of the waste.
6. As per MM recommendation smoking area has been designated outside the office, power house and Labor camp.
7. As per MM recommendation new format of risk assessment has been developed including residual risk and is being implemented.
8. As per MM recommendation frequency of scaffold inspection has been increased from monthly to weekly basis and will be implemented from 1st October 2012.

b) Air

1. Ensuring the dust suppression due to transportation activity, all paved roads are being sprinkled with water on continuous basis. Water is also sprinkled in construction areas regularly.
2. Regular servicing has been conducted, in order to control the smoke emission from the construction vehicles.
3. Keeping in view the dust emissions, speed limits for HTV and LTV vehicles have been communicated and monitored.
4. Loading and unloading of trucks is being carried out at appropriate places on Project Site away from receptors for dust during activity.
5. Air monitoring of the project site was conducted for 24 hrs, all parameters are compared with Pak NEQS and IFC guidelines and found within the limits. Result of SGS report attached as ***"Exhibit 06"***.
6. Emission of SOx, NOx, CO and CO2 has been minimized by regular servicing of the light and heavy transport vehicles. Physical monitoring is carried out in this regard.

c) Water (Surface and Groundwater)

1. The Contractor conducts service of the drinking water treatment plant, according to its supplier's instruction. The general method of servicing includes replacement of water filters with the pore size 1 micron and 5 micron, in order to maintain the water quality. Also, all pipes, joints and taps were rinsed with hot water and reaffixed for usual working.

2. Though, the Contractor has properly stored fuel in fuel tank, but, as pro-active approach and standard practice, the Contractor is checking the level difference (if any) of the liquid fuel on monthly basis for determining any leakage. This pro-active approach helps to determine any groundwater contamination.
3. Fuel station and used lubricant storage areas are properly maintained, in order to prevent contamination of surface and ground water sources by accidental spillages of oil and fuel.
4. In order to check any leakage, Level difference (if any) of the liquid fuel in underground fuel storage tanks is measured twice a month at the end and before start of shift. It helps to check whether there is any kind of contamination to the ground water.
5. The Average concentration for Carbon monoxide for 8 hrs for ambient air quality should not exceed from 5.0 mg/ m3 where as the value obtained at monitoring site was 2.02 mg/ m3.which is within the limits.
6. The standard value for Nitrogen Di oxide NO2 mentioned in the NEQS is 80 µg/ m3 for 24 hrs where as the average value obtained at site was found 17.60 µg/ m .
7. The standard value for Sulphur dioxide SO2 in ambient air is 120 µg/ m3 for 24 hrs where as the average value obtained at site is 6.90 µg/ m3.
   Result of SGS report attached as ***"Exhibit 06"***

d) Waste Generation and Management

1. The Contractor has quantified produced Solid waste for the months of July, August, and September 2012. Different types of waste produced at site are as follows;

July 2012:

General Waste:

Type	*No. of solid waste generated*	*Total weight of generated waste (Kg)*
Used engine oil	3 drums of 200 liter each	496.8
Cement/ Slag Bags	1633 bags of 0.35 kg each	571.6
Waste tyres	4 number of 62 kg each	248
Used batteries	• 0 LTV battery of 13 kg • 0 HTV batteries of 30 kg each	0
Total		**1316.4**

Food Waste:

Description	*Tetra packs (Kg)*	*Plastic bags (Kg)*	*Paper(Kg)*	*Metal*	*Food (Kg)*

Local Staff Mess hall	1.25	0.50	2.00	0.50	43
Local Labor Mess hall	1.50	0.50	3.50	1.50	74
Korean Staff Mess hall	1.05	0.50	3.00	1.00	32
Offices	1.00	0.25	7.50	01.00	3
Sub Total	4.25	1.7o	16.00	4	152
Total	180.00 Kg				

August 2012:

General Waste:

Type	*No. of solid waste generated*	*Total weight of generated waste (Kg)*
Used engine oil	3 drums of 200 liter each	496.8
Cement/ Slag Bags	1938 bags of 0.35 kg each	678.3
Waste Tires	7 number of 62 kg each	434
Used batteries	• 2 LTV battery of 13 kg • 2 HTV batteries of 30 kg each	86
Total		**1695.1**

Food Waste:

Description	*Tetra packs (Kg)*	*Plastic bags (Kg)*	*Paper (Kg)*	*Metal*	*Food (Kg)*
Local Staff Mess hall	2.50	2.00	8.00	3.00	110.00
Local Labor Mess hall	3.00	1.50	13.00	5.00	150.00
Korean Staff Mess hall	2.00	1.00	5.50	2.50	55.00
Offices	0.50	1.00	13.50	2.50	03.00
Sub Total	**8.00**	**5.50**	**40.00**	**13.00**	**318.00**
Total		**384.5**			

September 2012:

General Waste:

Type	*No. of solid waste generated*	*Total weight of generated waste (Kg)*

Used engine oil	2 drums of 200 liter each	331.2
Cement/ Slag Bags	1013 bags of 0.35 kg each	354.6
Waste Tires	5 number of 62 kg each	310
Used batteries	• 0 LTV battery of 13 kg • 1 HTV batteries of 30 kg each	30
Total		**1025.8**

Food Waste:

Description	*Tetra packs (Kg)*	*Plastic bags (Kg)*	*Paper (Kg)*	*Metal*	*Food (Kg)*
Local Staff Mess hall	3.50	3.00	13.50	4.00	118.00
Local Labor Mess hall	4.75	2.00	17.50	4.50	159.00
Korean Staff Mess hall	2.00	1.50	5.00	2.25	51.00
Offices	0.50	1.50	8.50	3.00	04.50
Sub Total	**10.75**	**8.00**	**44.50**	**13.75**	**332.50**
Total		**409.50**			

e) Noise and vibration

1. Noise prone activities are avoided during night time.
2. Four (4) samples for noise monitoring have been collected, three samples from the nearest communities and one sample from the project site
3. The test results are compared with the Pak NEQS and IFC guide lines, and all results found satisfactory within the limits. The comparison of test results against NEQS and IFC.
4. Provision of necessary safety and personal protective equipment such as ear plugs, ear muffs etc are ensured at high noise area like Powerhouse.
5. Excavators and all heavy machines are lubricated in a routine matter to minimize the noise and to increase the life of equipment.

f) Labor relations and living conditions for construction labor force

1. As per Annual Management Plan and Company's observation, the Contractor has conducted medical examinations of all appointed food handlers. The examination has been conducted based on following parameters; Hepatitis B&C, Chest X-Ray, blood and Erythrocyte Sedimentation Rate (ESR) test. The results showed absence of any contagious diseases in food handlers.
2. The Contractor has already developed a labor grievance re-dressal mechanism as per IEE.

3. Keeping in view the Security of the staff, the Contractor issued service cards to its employees.
4. Guard house has been constructed on entrance gate of the Project Site and deputed security guards maintain records of incoming staff, visitors and vehicles.
5. To collect safe drinking water from installed water treatment plant, workers and vehicles have been deputed to supply chill drinking water to whole Project Site.
6. The Contractor conducted spraying in labor camp and offices, in order to avoid mosquito breeding.

g) Occupational health and safety

July 2012

1. Contractor visit the Mess halls on regular basis and hygienic conditions of food handlers and food items observed satisfactory. Moreover food handlers were advised to cover the food items and don't place the raw items and cooked food together in refrigerator. They were advised to keep the surroundings clean while cooking as dirt and waste around the cooking area might pollute the food and While cutting and peeling vegetables the peels should not be dropped on floor but should be kept in the bins.
2. Physical examinations of the workers are in progress almost all employees on board have been passed through the process of physical examination at site clinic.
3. The Contractor submitted key Performance Indicators (KPIs) of July, 2012, attached as ***"Exhibit-08".***
4. The Contractor conducted ESOHS Monthly Meeting to show progress on health, safety, environment and social issues. The minutes of meeting is attached as "***Exhibit-09".***
5. An annual environmental sampling plan for year 2012 has been developed and approved. Sampling and testing has been carried out. Results are in compliance with IFC and NEQS, attached as ***"Exhibit-06".***
6. Pursuant to Annual Plan, regarding investigation of the reported ill health cases, no ill health cases have been reported since start of Project activity, hence, it is on target now. However, for simplicity, medical routine checkups have been updated, investigated and reported. All medical routine checkups include seasonal diseases like flue, cough etc.
7. The Contractor conducted toolbox talks during this period. Through tool box talk, workers have been informed that majority of accidents happen as a result of an unsafe condition and/or unsafe act of the person. These unsafe acts and/or unsafe conditions result in a near miss accident or incident.
8. The Company and the Contractor conducted two Risk Assessments during this period. Following Risk Assessments have been conducted on Project Site. Risk Assessments area attached as ***"Exhibit-11".***
    - Dismantling of Tower Crane
    - Erection of electric poles

9. The Contractor encouraged workers to wear full sleeve shirts and use of anti mosquitoes' oil on the naked part of body, in order to remain safe from mosquito bite and dengue fever.

August 2012

1. While cutting and peeling vegetables the peels should not be dropped on floor but should be kept in the bins.
2. In order to reduce the breeding of mosquitoes, mosquitoes repellent are being used on regular basis as a continuous activity, Further more all supervisors are advised to instruct their workforce to wear full sleeve shirts and paints to protect themselves.
3. The existing procedures for working at height, over scaffoldings already provides for wearing of safety harnesses. As per IFC recommendations all sub-contractors are also advised for strict compliance of procedures and standards on working at height. No worker is allowed to work at height without safety harness. ESOHS officer of contractor carries out daily inspections to ensure compliance.
4. As per IFC recommendations all the passages for working areas have been made clear all tripping hazards have been removed and work site is ensured obstruction free.
5. To minimize the hazards and improving the road safety of drivers and others a number of safety signs including mandatory, informatory and warning signs are placed along the road sides and at entrance and exits of the power house. Moreover cautions signs inscribing "No Entrance for public" and "deep excavation ahead" are also installed at different locations.
6. The non recycle able waste is collected and transported from site on regular basis, this is a continuous activity. All kinds of non recyclable waste are transferred to the designated area by the Mirpur Municipality for the final disposal.
7. The Areas in the main building where welding operations were in progress had poor circulation of fresh air resulting in high concentration of toxic fumes in ambient air. As per IFC recommendations the contractor has installed exhaust fans at different locations with a potential of dust and fumes. Furthermore all the man power working in the dusty environment has been issued safety masks.
8. As per Doctors recommendation awareness on access use of water has been conducted in the previous week. A tool box talk on importance of water has been conducted in the current month. Furthermore cooking staff has also been advised minimize the use of red meat, tomato and green chilies.
9. HSE key performance indicator report for current month has been prepared and is attached as ***"Exhibit 08"***.
10. Contractor's Annual Management performance Plan, attached as ***"Exhibit-10"***.
11. Through tool box talk's workers are informed about the hazards and their preventive measures at site. Tool box talks related to work at work at height and using the safely harness and wearing of PPE's are conducted at project site. Photographs are attached below.
12. Regular inspections of local staff, labor and Korean staff's mess hall are performed in order to monitor the health and hygienic conditions, and it had been that observed that all the cooking staff was well aware about the hygienic situations. Furthermore they are

briefed them about best practices of hand washing before cooking, serving or washing the utensils.

13. Format of risk assessment has been amended as per MM recommendation and the following Risk Assessments have been conducted in the current month.
    i. Use of Vibrating Tools
    ii. Clinical Activities

    Copies of Risk Assessments are attached as ***"Exhibit 11".***

14. A safety Bulletin on "Dengue Fever" issued during the current month for information of the Contractor's staff and compliance at site. It has been circulated to all staff and workers at site, also displayed at HSE notice boards. The purpose is to create awareness among the staff and workers about basic symptoms of the disease and precautionary measures against the dengue virus. Update is issued in English & Urdu Language keeping in view the local manpower literacy level. Safety update is attached as *"**Exhibit 13**".*

<u>September 2012</u>

1. Physical examinations of the workers are in progress almost all employees on board have been passed through the process of physical examination at site clinic.
2. Manpower status has been shared with the employer in each weekly meeting clearly categorizing the names, region like AJK, Non AJK and Surroundings.
3. Mess halls are being visited along with the site Doctor on regular basis and hygienic conditions of food handlers and food items observed satisfactory. Moreover food handlers were advised to cover the food items and don't place the raw items and cooked food together in refrigerator. They were advised to keep the surroundings clean while cooking as dirt and waste around the cooking area might pollute the food and While cutting and peeling vegetables the peels should not be dropped on floor but should be kept in the bins.
4. As per MM recommendation documented chain of custody of recyclable waste is maintained at project site as a continuous activity. It comprises complete address of the contractor, quantity of the waste delivered, date of delivery and receipt of handing over and taking over of the waste.
5. The non recycle able waste is collected and transported from site on regular basis, this is a continuous activity. All kinds of food and camp waste are transferred to the designated area by the Mirpur Municipality for the final disposal.
6. To promote the safety awareness among staff and to encourage the workers Safety Awards are distributed on monthly basis. In the current Month Two safety awards are distributed among the workers. Two ceremonies held each by Andritz and Sambu.

Dinner was arranged for staff and workers and awards were distributed by Management to the selected staff and workers. It comprises some cash prizes, wall clocks and appreciation letters. Photographs are attached below.

7. HSE key performance indicator report for current month has been prepared and is attached as ***"Exhibit 08"***.

8. The Contractor conducted ESOHS Monthly Meeting to show progress on health, safety, environment and social issues. The minutes of meeting is attached as ***"Exhibit- 09".***

9. Through tool box talk's workers are informed about the hazards and their preventive measures at site. Tool box talks related to work at height and using the safely harness and wearing of PPE's are conducted at project site.

10. In order to reduce the breeding of mosquitoes, mosquitoes repellent are being used on regular basis as a continuous activity, Further more all supervisors are advised to instruct their workforce to wear full sleeve shirts and paints to protect themselves.

11. Cutting of wild grass and shrubs around the offices and staff residences is a continous activity in the current month.

12. The existing procedures for working at height, over scaffoldings already provides for wearing of safety harnesses. As per IFC recommendations all sub-contractors are also advised for strict compliance of procedures and standards on working at height. No worker is allowed to work at height without safety harness. Contractor ESOHS officer carries out daily inspections to ensure compliance.

13. To minimize the hazards and improving the road safety of drivers and others a number of safety signs including mandatory, informatory and warning signs are placed along the road sides and at entrance and exits of the power house. Moreover cautions signs

inscribing “No Entrance for public” and “deep excavation ahead” are also installed at different locations.

14. In order to eliminate the tripping and falling hazard at project site, 100% housekeeping has been ensured by managing the same kind of items at same place and it is a continuous activity. More over in order to avoid falling hazard permanent guard railing has been installed along the stairs in the office building of power house.
15. Regular inspections of local staff, labour and korean staff’s mess hall are performed in order to monitor the health and hygienic conditions, and it had been that observed that all the cooking staff was well aware about the hygienic situations. Furthermore they are briefed them about best practices of hand washing before cooking, serving or washing the utensils.
16. Objective and targets for the Third quarter of 2012 are attached as ***“Exhibit 16”***. It shows that 149.25 score out of 200 has been gained till completion of third quarter.
17. Annual Management Plan Performance year 2012 is attached as ***“Exhibit 10”,*** clearly describing the status for the month of Sep 2012.
18. The following Risk Assessments have been conducted in the current month

    i. Driving at site
    ii. Tile Works

    The remaining risk assessments for the month of May and July are as following

    iii. Scaffolding Installations for Stator and Bulb
    iv. Installation of Rotor, Runner, Shaft & Distribution Servomotors

    All above stated Risk Assessments along with Half Yearly Schedule are attached as ***“Exhibit 11”.***
19. A trend analysis for third quarter of year 2012 with a description of the adverse events, Non Compliances, first aid cases. Minor injuries, major injuries and routine medical cases has been conducted which provides an overview of the quarter. Furthermore a separate trend analysis from January 2012 to September 2012 has also been carried out and both analyses are attached as “***Exhibit 12”.***
20. A safety update on” Prevention of Mobile Cranes from Overturning” has been issued during the current month for information of the Contractor’s staff and compliance at site. It has been circulated to all staff and workers at site, also displayed at HSE notice boards. The purpose is to create awareness among the staff and workers about basis hazards related to crane activities and its control measuers. Safety update is attached as ***“Exhibit 13”.***

h) Audits/Inspections

July, 12

1. Following Inspections were carried out during the month of July:
    i. Scaffoldings
    ii. Fire Extinguishers
    iii. Spraying and Fogging Record

    The inspection check lists are attached as ***"Exhibit 14".***
2. Hygienic Audit of Food handlers has been conducted in the month of July, purpose of this audit is to conduct an assessment of hygiene practices in the food handlers', carried out in the Contractor's Site Kitchen and to ensure that all relevant corrective actions are applied and documented for future references.
3. Copies of Audits are attached as "**Exhibit 15**".

August, 12

1. Following Inspections were carried out during the current month:
    i. Fire Extinguishers
    ii. Spraying and Fogging Record
    iii. Hygiene of Food Handlers
    iv. Dump truck inspection
    v. Crane Inspection

    The inspection check lists are attached as ***"Exhibit 14".***
2. Internal Audit Schedule has been established and Following Audits have been conducted in the current month

    i. Medical and First Aid Facilities
    ii. Fuel Station
    iii. Workers Accommodation
3. Copies of Audits are attached as "**Exhibit 15**".

September, 12

1. Following Inspections were carried out during the current month
    i. Spraying and Fogging Record
    ii. Hygiene of Food Handlers
    iii. Scaffolding Inspection
    iv. Kitchen Hygiene
    v. Electric Panels/ Subpanels
    vi. Crane Inspection
2. The inspection check lists are attached as ***"Exhibit 14".***

3. Internal Audit Schedule has been established and Following Audits have been conducted in the current month.

    i. Workshop/ Maintenance Yard
    ii. Electrical Installations

iii. Ware house
iv. Workers Accommodations
v. Project Security Arrangements

4. Audits conducted in the current month are attached as ***"Exhibit 15".***

i) Community Safety and Security

1. Community complaint register (CCR) has been placed on the Project Site along with the placement of sign board. As per MM recommendation, the Contractor has inserted all telephone complaints in CCR to follow up the complaints.
2. All complaints on CCR have been addressed and resolved by the Company through Contractor.
3. Necessary road safety sign boards have been affixed to communicate to the community about the temporary diversion road.
4. As routine activity, surprise security checking at night time by the Contractor's Security Manager has been executed with the aim to strengthen the security surveillance.
5. Site security audit was not conducted during this period.
6. The Contractor developed cordial liaison with concerned Government Departments for explaining Site Security arrangements. For this purpose, Contractor Security Manager conducted various meetings with the Government officials.

j) CO2 displacement by the Project

1. The qualitative outcome of potential Carbon dioxide (CO2) emission sources and its mitigation measures to ensure CO2 displacement by the Project activities is attached as ***"Exhibit-19".***

Exhibit 01 – ESOHS CAP

(Please see the next page)

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Recommendations from EP-AJK	1	Site	Appropriate land slope stabilization steps will be taken and maintenance of tailrace will be carried out as given in construction plan to forestall the possible soil erosion.	Letter on 25/8/2010	Boulder placing and gabians at tail race are complted to forestall the possible soil erosion. An extention of the tailrace has now been initiated. The same engineering and management measures will be implemented.	COD	High	ESOHS Manager	In-progress	Backfilling of the powerhouse is progress. Work for landscaping at headrace and tailrace has been initiated
Recommendations from EP-AJK	2	Site	Plantation be started in ongoing rainy season and proper protective measures shall be taken to enhance their survival rate.	Letter on 25/8/2010	Small scale implementation is underway. Large scale implementation shall be done after completion of talrace channel (i.e. after availability of the required land for planatation)	Ongoing activity		ESOHS Manager	In-progress	Platation has been started and 12,000 trees/Shrub has been planted.Activity is inprogress.
Recommendations from EP-AJK	3	Site	Necessary Environmental, OHS training are yet not provided to the Project staff and EPC Contractor in presence of EPA AJK staff	Monitoring Report on November 27, 2010	A full scale effective training program is under implementation on Site, however, training under EPA supervision shall be done after fixation of appropiate date	Ongoing activity		ESOHS Manager	In-progress	A raining plan has been developed and approved. The same shall be shared with EPA for their participation upon their availability.
Recommendations from MM	1	Site	Provide NEBOSH training to ESOHS officers	Lenders' Engineer Comments of September, October & November 2011 MPR	This observation have been communicated to Management and shall be reported accordingly	6/1/2012		ESOHS Manager	Open	
Recommendations from MM	2	Site	The contractor should contact the Municipality and reinstate their services in disposing of general waste, paying the appropriate levy for this service	Lenders' Engineer Comments of November 2011 MPR	Services re-instated	6/16/2012		ESOHS officer/ Sambu Management	Completed	Contractor has been hired and services are in-progress
Recommendations from MM	7	Site	A comprehensive waste audit is to be carried out by the ESOHS Officer and all arising actions included on the ESOHS Corrective Action Plan with responsibilities assigned for their early implementation.	Lenders' Engineer Comments of November 2011 MPR	A comprehensive waste Audit has been carreid out and reproted in the MPR of May 2012.	5/1/2012		ESOHS officer/ Sambu Management	Completed	Included in May report

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Recommendations from MM	8	Site	The third party contractor must remove the enclosure and open fire and use the mess facilities provided on site, this situation must be monitored to ensure compliance	Lenders' Engineer Comments of November 2011 MPR	The polyethylene sheath was used to protect the facility from rainwater. At this stage this ployethylene sheet has been removed hence removing the confined facility.	3/31/2012		Head of Labor Camp/ESOHS officer/ Sambu Management	Completed	It has been removed and all the workers using this facility have been shifted to othe mess facilites. For further detail referred to MPR of April 2012.
Recommendations from MM	11	Site	To bring sanitary waste water within the recommended COD limits, a grease trap should be installed prior to the septic tank and the use of non-biological detergents for cleaning purposes implemented	Lenders' Engineer Comments of November 2011 MPR	Pits have been installed and in opearation	5/6/2012		ESOHS officer/ Sambu Management	Completed	Grease and oil trap pits for effluents discharged from mess hall has been constructed for each mess hall.
Recommendations from MM	12	Site	Mott MacDonald to explore the potential for the Project to satisfy NEQS for BOD rather than IFC	Lenders' Engineer Comments of November 2011 MPR				Mott MacDonald	Completed	MM explain in July MPR that waste water result is accoring to the IFC and NEQS so this point is closed Now.
Recommendations from MM	15	Site	PPE has improved considerably and the Project is commended on its ongoing efforts;	Lenders' Engineer Comments of January 2012 MPR	Maintain the current practices	On-going		SAMBU	Completed	100 % PPE's complliance has been esured at site and had been observed by MM during their site visit in April.
Recommendations from MM	16	Site	Toe boards should be installed on all working platforms to prevent objectives falling from height;	Lenders' Engineer Comments of January 2012 MPR	Agreed to be istalled by contractor	On-going		SAMBU	Completed	Scaffoldings were temporarily there and have been removed now.
Recommendations from MM	17	Site	A clean up of the litter and debris on the Old Bong River bank is to be implemented immediately and any resulting waste to be recorded;	Lenders' Engineer Comments of January 2012 MPR	To be cleaned immediately and actions to be taken to ensure no recurrance in the entire project area.	On-going		SAMBU	Completed	Refer to MPR Feb 2012
Recommendations from MM	18	Site	Andritz should be tasked with tidying up their work area before it becomes a more significant issue;	Lenders' Engineer Comments of January 2012 MPR	Clean-up activities to go parallel with other activities	On-going		ANDRITZ	Completed	Satisfactory house keeping had been ensured at site

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Recommendations from MM	20	Site	To demonstrate the Project's Duty of Care, a high level waste form should be developed that includes key information regarding any waste consignment. Relevant staff must be trained in the requirement to complete this for all waste consignments and the records must be collated and held on site;	Lenders' Engineer Comments of January 2012 MPR	A chain of custody to be recorded and traingings to be provided to all related personnel.	On-going		SAMBU	Completed	As per MM recommendation documented chain of custody of recyclable waste is attached as Annex. It comprises complete address of the contractor, quantity of the waste delivered
Recommendations from MM	32	Site	This may be sufficient to reduce the levels of COD and further sampling is recommended to ascertain how effective these controls are;	Lenders' Engineer Comments of January 2012 MPR	Sampling was carried out on June 16, 2012 by SGS and report are expected by 29th of June 2012.	March		SAMBU	Completed	Sampling has been conducted after the construction of oil and grease pits.
Recommendations from MM	33	Site	Further waste streams need to be reported along with the quantities and their disposal routes i.e. recycled, re-used, landfill etc. Mott MacDonald is pleased that the Project responds well to all recommendations made and endeavors to maintain a well managed site from an EHS perspective. However, some unsatisfactory issues raised during the site monitoring visit in January should have been picked up and dealt with more proactively.	Lenders' Engineer Comments of January 2012 MPR	To be implemented	March		SAMBU	Completed	As per MM recommendation documented chain of custody of recyclable waste is attached as Annex. It comprises complete address of the contractor, quantity of the waste delivered
LEL Comments	1	Workshop	Soil contamination has been observed inside workshop.	Inspection by LEL Feb 14, 2012	Contaminated soil has been removed and disposed off accordingly.	25-Feb		H/ E Chief	Completed	Removed and burnt
LEL Comments	2	Lubricant storage area	Soil contamination has been observed.	Inspection by LEL Feb 14, 2012	Contaminated soil has been removed and disposed off accordingly.	25-Feb		H/ E Chief	Completed	Removed and burnt
LEL Comments	3	Oil change facility	Soil contamination has been observed	Inspection by LEL Feb 14, 2012	Contaminated soil has been removed and disposed off accordingly.	25-Feb		H/ E Chief	Completed	Removed and burnt
LEL Comments	4	Besides Workshop	Soil contamination has been observed besides workshop.	Inspection by LEL Feb 14, 2012	Contaminated soil has been removed and disposed off accordingly.	25-Feb		H/ E Chief	Completed	Removed and burnt

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
LEL Comments	5	Besides Workshop	Poor solid waste management has been observed besides workshop. It was also observed that a big container was placed having mixed solid waste comprising of steel waste, wires, drums, plastic bags etc. This activity depicted that segregation at source is not accomplishing.	Inspection by LEL Feb 14, 2012	All kind of waste has been dumped inside the container, and also it has been divided in three segments to store different kind of waste in different segments	20-Feb		H/ E Chief	Completed	waste has been sold to the recyclic ontractor. Refer to MPR Apr
LEL Comments	6	Powerhouse	Poor housekeeping has been observed in general.	Inspection by LEL Feb 14, 2012	Housekeeping will be maintained by collecting waste and debris,	20-Mar		Site Engineers	Completed	Refer to MPR Mar & Apr 2012
LEL Comments	7	Powerhouse	It was observed that workers were taking their lunch in an open air inside the powerhouse.	Inspection by LEL Feb 14, 2012	Some local workers bring their meal with them, it will be communicated them use mess hall to take their lunch	22-Feb		Site Engineer	Completed	Refer MPR Feb 2012
LEL Comments	8	Powerhouse	It was found that electricity panel with high voltage wires were placed unattended.	Inspection by LEL Feb 14, 2012	It has been noted and the issue will be rectified by placing loose cables in rolls over the wooden planks.	3-Mar		Electrical Engineer	Completed	Refer to MPR Mar 2012
LEL Comments	9	Powerhouse	It was found that high voltage bare electricity wires were placed unattended.	Inspection by LEL Feb 14, 2012	It has been noted and the issue has been rectified.	20-Feb		Electrical Engineer	Completed	Refer to MPR Mar 2012
LEL Comments	10	Powerhouse	It was found that employees were working without wearing proper PPEs.	Inspection by LEL Feb 14, 2012	More safety items will be arranged at site to close the observation.	10-Mar		Electrical Engineer	Completed	Refer to MPR Mar & Apr 2012
LEL Comments	11	Powerhouse	It was found that employees were working in the dust without wearing dust masks.	Inspection by LEL Feb 14, 2012	Dust masks have been provided to the workers working in the dusty environment.	20-Feb		|Site Engineer	Completed	All the employees have been provided the dust masks.
LEL Comments	12	Powerhouse	It was found that workers were taking rest on wooden plank inside powerhouse.	Inspection by LEL Feb 14, 2012	All workers have been communicated to avoid sleeping at working area through Tool Box Talk.	20-Feb		Site Engineer	Completed	Refer to TBT Feb 2012
LEL Comments	13	Powerhouse	It was found that gas cylinders were being used without proper protective measures. As, all cylinders were found to be lying down without protective measures.	Inspection by LEL Feb 14, 2012	It has been communicated to the authorities concerned and proper arrangements would be made to fix the cylinders vertical.	5-Mar		Site Enigineer	Completed	Refer to TBT Feb & Mar 2012
LEL Comments	14	Powerhouse	Workers were working inside the turbine housing without proper PPEs.	Inspection by LEL Feb 14, 2012	The observation has been noted and will be implemented soon.	10-Mar		Site Engineer	Completed	Refer to MPR Mar & Apr 2012
LEL Comments	15	Powerhouse	It was found that bare high voltage wire joined by tape has been used.	Inspection by LEL Feb 14, 2012	Damaged cables will be replaced with the new one.	3-Mar		Electrical Engineer	Completed	The observation has been rectified

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
LEL Comments	16	Powerhouse	Workers were working inside the powerhouse in gougers, without safety boots.	Inspection by LEL Feb 14, 2012	The observation has been noted and will be implemented soon.	10-Mar		Site Engineer	Completed	Refer to MPR Mar & Apr 2012
LEL Comments	17	Powerhouse	A worker was found to use stairs for moving inside the powerhouse without protective equipment. Also, the same worker was moving while talking on mobile phone.	Inspection by LEL Feb 14, 2012	It has been communicated through tool box talk to avoid using mobile phones during work at height.	20-Mar		Site Engineer	Completed	Refer to TBT Feb & Mar 2012
LEL Comments	18	Powerhouse	Workers at near the entrance gate doing the welding work without goggles and other PPEs. Workers belong to Sambu Pakistan	Inspection by LEL June 06, 2012	A tool box talk was conducted on the use of face shield during work, all have been issued the required PPE's at site.	7-Jun		Site Engineer	Completed	
LEL Comments	19	Powerhouse	Workers doing the concrete work of the wall outside the powerhouse near Andrits Expatriates camp wearing no PPEs like coveralls and Harnesses or safety shoes. These workers belong to Sambu Korea.	Inspection by LEL June 06, 2012	All the man power working at site have been issued PPE's.	9-Jun		HSE	Completed	
LEL Comments	20	Headrace	Heavy dust emissions at site around the headrace area.	Inspection by LEL June 06, 2012	Sprinkling frequency has been enhanced to control the dust emissions.	7-Jun		Site Engineer	Completed	
LEL Comments	21	Main Entrance	Safety tap not installed near working area and near slope next to the road in public use.	Inspection by LEL June 06, 2012	Safety tap has been installed at the mentioned locations.	6-Jun		Site Engineer	Completed	
LEL Comments	22	Power house	A worker was observed welding without using face shield.	Inspection by LEL June 20, 2012	He was advised to wear face shield during welding, further a warning letter has been issued.	20-Jun		Site Suprevisor	Completed	
LEL Comments	23	Power house	Crane rigger was observed smoking at power house near the transformers.	Inspection by LEL June 20, 2012	A tool box talk on "No smoking" has been conducted, signs installed there and also a warning letter has been issued to the rigger	20-Jun		Site Suprevisor	Completed	
LEL Comments	24	Power house	A worker was observed busy in grinding work in the office building without wearing dust masks.	Inspection by LEL June 20, 2012	He was orientated to ensure the use of required PPE's, further warning letter has also been issued to the individual.	20-Jun		Site Suprevisor	Completed	

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Reported Accidents By Contractor	1	Powerhouse	The workers were found to use the instrument with coal (angethe) for heating purposes. When one the worker belonging to this room came back after offering his prayer, he found one person vomiting in the room. Another person was found to become dizzy.	Accident in february 2012	• Opened the windows and doors, switched on the fans. • Coal burning stove was brought out of the room • Security guard deputed and assigned the task to check all the rooms before the employees sleep and not allowed any employee carrying coal burning stoves inside the rooms. A notice from Project Manager for the strict compliance not using the stoves in the rooms has been circulated and displayed at different location in the labor camp and it was also communicated through Tool box talk. • All employees were briefed about the hazards associated with the burning coal through tool box talks	3/1/2012		ESOHS Officer	Completed	Refer to Accident Investigation report of February 2012.
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	1	Powerhouse	Workers were working at turbine housing, at area level 245m near round 15 meter deep openings for turbines, without any guard railing. .	UA/UC of Feb MPR 2012	As a corrective measure guard railing was being installed to rectify the falling hazard			ESOHS Officer	Completed	It has been verified by Laraib that guard railing has been provided
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	2	Powerhouse	A naked electric cable was observed inside the power house	UA/UC of Feb MPR 2012	as a corrective measure, electrician was informed about it and damaged cable was replaced with the new one.			ESOHS Officer	Completed	Damaged cable has been replaced with new one
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	3	Powerhouse	A crew of local workers was observed taking their lunch at working area while sitting on ground. .	UA/UC of Feb MPR 2012	As a corrective measure, workers were briefed to avoid taking their meal in unhygienic place and use the mess hall building for taking their meals			ESOHS Officer	Completed	Refer to tool box talk records of feb 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	4	Powerhouse	Workers were observed sleeping at the worksite during lunch break.	UA/UC of Feb MPR 2012	As a corrective measure, tool box talk was conducted to avoid sleeping at workplace			ESOHS Officer	Completed	Refer to tool box talk records of feb 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	5	Powerhouse	Workers observed busy in working at turbine housing area level 245m near 15 meter deep openings for turbines without any guard railing there.	UA/UC of Mar MPR 2012	As a corrective measure guard railing was installed there to rectify the falling hazard.			ESOHS Officer	Completed	Refer to tool box talk records of Mar 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	6	Powerhouse	One worker found working at height without safety harness.	UA/UC of Mar MPR 2012	As a corrective action he was strictly advised to avoid work at height without safety harness.			ESOHS Officer	Completed	Refer to tool box talk records of Mar 2012

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	7	Powerhouse	A damaged ladder with improper railing was observed at power house	UA/UC of Mar MPR 2012	As a corrective action damaged ladder was replaced with the new one and proper railing has also been installed.			ESOHS Officer	Completed	It has been verified by Laraib
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	8	Powerhouse	A plank was found missing at a platform while workers were working there. .	UA/UC of Mar MPR 2012	As a corrective action the plank had arranged to fill the gap			ESOHS Officer	Completed	Iit has been verified by Laraib
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	9	Powerhouse	Two laborers were observed handling the heavy wooden sheet during dismantling the form work.	UA/UC of Mar MPR 2012	As a corrective action all the workers working in the vicinity were given tool box talk on safe manual handling of material.			ESOHS Officer	Completed	Refer to tool box talk records of Mar 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	10	Office building	Poor housekeeping observed at 4th floor of the office building which may cause slip, trip and fall.	UA/UC of Apr MPR 2012	As a corrective measure the area in charge has been advised to make the area neat and clean.			ESOHS Officer	Completed	Refer to tool box talk records of MPR Apr 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	11	Office building	One worker found working at height without safety harness	UA/UC of Apr MPR 2012	He was called down and advised to wear the safety harness always while working at height.			ESOHS Officer	Completed	Refer to tool box talk records of MPR Apr 2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	12	Powerhouse	A damaged ladder was observed at unloading bay which one used as access and egress to the units at an elevation of 245m.	UA/UC of Apr MPR 2012	As a corective action the damaged ladder has been replaced with the new one			ESOHS Officer	Completed	It has been verified by Laraib
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	13	Powerhouse	One bore hole was observed open at left side of power house building directly under the scaffolding form work and the workers were busy in working at platform vertically above the borehole.	UA/UC of Apr MPR 2012	As a corrective measure the Area Supervisor was called there and advised to place planks or ply wood sheets to cover the open hole and it was covered in the mean time.			ESOHS Officer	Completed	It has been verified by laraib
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	14	Powerhouse	Damaged cable was found lying in the wet floor thay may cause shock hazard	UA/UC of Apr MPR 2012	This cable was replaced with the new one and wooden supports were used there to keep the cable at some higher level to keep it safe from wet surface			ESOHS Officer	Completed	It has been verified by laraib
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	15	Office building	Some spare steel nails observed lying unattended at 2nd floor making the situation unsafe.	UA/UC of Apr MPR 2012	Area supervisor was informed about and nails were collected there to make the area safe for working.			ESOHS Officer	Completed	Houekeepin of the area has been reported in MPR of April
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	16	Power house	Electrical distribution panel's door was observed open near the stop lock storage area with a potential of Electric Shock.	UA/UC of May MPR 2012	As a corrective action electrical supervisor was informed and action has been taken.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	17	Power house	Workers were observed busy in grinding work in the GIS room without wearing dust masks.	UA/UC of May MPR 2012	As a corrective action dust masks have been issued to the workers working in the area.			ESOHS Officer	Completed	

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	18	Power house	Workers were observed working at height without guard railing with a potential of falling hazard there.	UA/UC of May MPR 2012	As a corrective action railing has been provide to the workers working at height.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	19	Steel Yard	Mr. Maqsood store helper was found washing hands in the river while sitting at slope of the bank by putting himself in danger	UA/UC of May MPR 2012	Area supervisor was advised to strictly ensure the compliance that no one should be allowed to move near the deep waters.			ESOHS Officer	Completed	
IFC	1	Safety at work	a. Sub-contractors' staff during civil works found working at height, over scaffoldings, at several locations without safety harnesses in violation to the procedures for 'working at height' thereby engendering potential risk of fatal accident.	Visit May 22, 2012	The existing procedures for working at height, over scaffoldings already provides for wearing of safety harnesses. The sub-contractors will be advised for strict compliance of procedures and standards on working at height. ESOHS officer of Sambu shall carry out daily inspections to ensure compliance.	27/05/12	Hight	Sambu	Completed	100% issuance of Safety harnesses. Regular inspections on daily basis are carried out. Trainnngs and toolbox talks have been conducted. See photographs for reference
IFC	2	Safety at work	b. No safety rails were noted on the scaffoldings for protection of falling tools or construction materials.	Visit May 22, 2012	The sub-contractors shall strictly be advised to revive the practice of installing safety railings on urgent basis and also Sambu shall install safety rails where required. This practice shall not be discontinued during the entire construction phase.	27/05/12		Sambu	Completed	Safety raillings have been provided at each necessary location. Please provide the photgraphs of safety railings.
IFC	3	Safety at work	c. Tripping hazards and obstruction due to leftover construction materials observed at several locations, especially in the regular and expected movement trails of workers.	Visit May 22, 2012	Sambu shall ensure a clear passage for each working area. Sambu shall identify and remove all tripping hazards and obstructions. Daily inspections shall be carried out for strict compliance.	27/05/12		Sambu	Completed	Hose keeping has been imprved. All triping hazards have been removed. At least one passage for the movment of workers and matrial has been ensured. Dailly inspections are carried out to check the compliance. Photgraphs

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
IFC	4	Safety at work	d. Sub-contractors' staff were using exhausted PPE, especially safety shoes of many workers were worn out due to overuse. Some workers were not wearing coverall and were casually dressed.	Visit May 22, 2012	The subcontractors will immediately be provided new PPEs and strict compliance shall be ensure through inspection on daily basis.	15/06/12		Sambu	Completed	100% issuance of new PEEs to all contractor and sub-contractor staff working at site. 100% compliance. Data
IFC	5	Solid waste management	a. Contractor selected for solid waste management is not an approved/authorized person from the concerned authorities.	Visit May 22, 2012	The EPA of AJ&K has not approved any recycling contractor in its jurisdiction. Sambu shall approach an approved waste recycling contractor in other cities like Jhelum or Rawalpindi and finalize the arrangement by June 15, 2012.	15/06/12		Sambu	Open	No aprroved recyling contractors fond also in Jehlum, Rawalpindi and othr cities in the surroundings.
IFC	6	Solid waste management	b. The contractor also does not provide necessary evidence for safe disposal of waste item being handed over to him	Visit May 22, 2012	The current recycling contractor shall be advised to start providing the safe disposal records with immediate effect to maintain the evidence of chain of custody.	6-Oct-12		Sambu	In-progress	The evidences shall be provided at the time of next consignment.
IFC	7	Occupational health	a. Areas in the main building where welding operations were in progress had very poor circulation of fresh air resulting in high concentration of toxic fumes in ambient air. Welding workers were also not using appropriate safety masks to prevent inhalation of hazardous fumes.	Visit May 22, 2012	The mitigation measures for this issue have already been initiated. Movable exhaust fans shall be used to ensure circulation of fresh air in confined areas. Training shall also be conducted on use and benefits of dust masks and ventilation.	15/06/12		Sambu	Completed	Movable exhaust fans have been installed in this working area. Masks have been issued are in use.
LEL Comments	25	Occupational health	Few worker obseved without dust Mask.	Inspection by LEL Feb 14, 2012	The Sambu shall carry out daily inspection to ensure that the workers are using dust masks	20-Feb-12		ESOHS Officer	Completed	
IFC	9	Occupational health	b. Poor ventilation conditions in the switch gear room was causing high dust levels during abrasion work of interior walls and ceiling in due course of painting process.	Visit May 22, 2012	Same as above	5/6/2012		Sambu	Completed	Two blowers have been provided and four exhaust fans have been issued in this area.

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
IFC	10	ESOHS System	a. Gaps were observed in ESOH system coordination and enforcement process. Present ESOH staff of EPC Contractor needs to enforce the provisions of EMP and HSE related procedure on Sub-contractors' workers in a more persistent and diligent manner.	Visit May 22, 2012	Sambu will ensure enforcement of the requirements of the EMP and HSE related procedures by the sub-contractors' workers. The requirement shall be reiterated through a strong official communication.	27/05/12		Sambu	Completed	Evidence of communications to be provided by SAMBU
IFC	11	ESOHS System	b. Additionally, LEL has to appoint appropriate number (at least two) of fulltime well qualified field officers to coordinate, monitor and supervise EHS related performance of the EPC Contractor and Sub-contractors.	Visit May 22, 2012	Action in this respect has already been initiated by Laraib. The hiring process is expected to take some time to comply with HR policy requirements.	30/06/12		Laraib	Completed	ESOHS Officer has been appointed by 6/8/2012
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	20	Power house	A single plank was observed being used as an access missing the safety railing.	UA/UC of May MPR 2012	As a corrective action the plank was removed and workers were advised to arrange a safe access with proper railings.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	21	Power house	A laborer was observed descending down from roof of power house via slope of embankment wall.	UA/UC of May MPR 2012	As a corrective measure his supervisor was informed and he verbally warned to avoid unsafe practices.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	22	Power house	An electrician was observed installing the light at embank wall with out any safe access	UA/UC of May MPR 2012	He was advised to use Crane bucket or proper ladder to reach there.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	23	Power house	Over head falling hazards observed at entrance of office building area of Power house	UA/UC of May MPR 2012	As a corrective action a platform with plywood sheets & wooden batons had been arranged to eliminate the over head falling hazard.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	24	Power house	Openings for elevators observed unguarded with the potential of falling hazard of maximum severity,	UA/UC of May MPR 2012	as a corrective action guard railing has been installed			ESOHS Officer	Completed	
LEL Comments	26	Tailrace	Overspeeding dumpers found emitting excessive dust	Inspection by LEL June 27, 2012	Drivers shall be warned and water shall be sprikled.	10-Jul-12		ESOHS Officer	Completed	Verbally warned and a toolbox talk provided

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
LEL Comments	27	General	No routine inspection of heavy equipments working at site are conducted by contractor. This activity has been discontinued without information.	Inspection by LEL July 11, 2012	Checklist for inspection for all eqiupments including cranes, dozers, loaders, dumpers etc shall be developed and monthly inspection shall be carried out	20-Aug-12 01-Sep-12 18-Sep-12		ESOHS Officer	Completed	Inspection check list has been share with laraib ESOHS officer.
LEL Comments	28	Andritz Warehoue	General and packing waste found scattered outside the warehouse area	Inspection August 01, 2012	A general clean up activity to be undertaken in the entire area	13-Sep-12		ESOHS Officer	Completed	Mr. Sardar Azam comment that waste has been segrigated and Now this a responsibilty of sambu to remove it.
LEL Comments	29	Solid waste management	Mix Costruction waste was observed in Batching plant area.	Inspection August 08, 2012	Proper dispose off the waste.	16-Aug-12 28-Aug-12 15-Sep-12 30-Sep-12		ESOHS Officer	In-progress	
LEL Comments	30	Head Race	No safety sign boards observed at head race to avoid any public entrance at site.	Inspection August 08, 2012	Arrange sign boards of " No admitance for public" at open places of head race.	18-Aug-12		ESOHS Officer	Completed	Sign Board have been Installed.
LEL Comments	31	Transformer Area	One supervisor found without PPEs	Inspection August 01, 2012	Complete PPEs to be issues to all personnel at site	10-Aug-12		ESOHS Officer	Completed	
LEL Comments	32	Office building	Personel of a third party contractor found without PPEs (ear plugs, gloves, and safety shoes) in an excessive noise area	Inspection August 01, 2012	Ensure issuance of complete PPEs prior mobilization at site	10-Aug-12		ESOHS Officer	Completed	
LEL Comments	33	Office building	General housekeeping of the area found unsatisfactory	Inspection August 01, 2012	Area needed to be cleaned and housekeeping to be improved	10-Aug-12		ESOHS Officer	Completed	
LEL Comments	34	Andritz Warehoue	A lot of scrap and store item observed in emergency exit way and way almost block	Inspection August 10, 2012	Emergency way needed to be clean and clear.	10-Aug-12		ESOHS Advisor	Completed	
LEL Comments	35	All Areas	PPEs compliance at site	Inspection August , 2012	Compile the data of employee without PPEs and share Ensure the issuance and 100 % compliance at site.	10-Aug-12 27-Aug-12 15-Sep-12		ESOHS Officer	Open	ESOHS Officer visited the project site and PPEs compliance found satisfactory.
LEL Comments	36	Infront of Offices	Visibility of speed breker with marking	Inspection by LEL Aug 27, 2012	Speed Breaker should be clearly mark with florescent paint.	29-Aug-12		ESOHS Officer	Completed	
LEL Comments	37	Water Treatment Plant	Poor House in water treatment plant	Inspection by LEL Aug 27, 2012	Waer Treatment plant should be clear and properly managed by competant person.	1-Sep-12		ESOHS Officer	Completed	

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
LEL Comments	38	Mess Area	Wild growth arround Mess and Residance Area of sambu.	Inspection by LEL Aug 27, 2012	Grass cutting activity needed to be expedite	08-Sep-12 18-Sep-12 30-Sep-12		ESOHS Officer	Completed	
LEL Comments	39	Mess Area	Safety cage are not available for LPG cylender and pressurized cylender in sambu labor mess and workshop area.	Inspection by LEL Aug 27, 2012	Arrange safety cages on immediate basis and cylender should be placed in their safety cages.	15-Sep-12		ESOHS Officer	Completed	
LEL Comments	40	General	covers of electrical DBs are missing. This is very hazardous condition.	Inspection by LEL Sep 03, 2012	Contractor must arrange the covers of DBs to avoid any accident	08-Sep-12 18-Sep-12 25-Sep-12 30- Oct-12		ESOHS Officer	Completed	
LEL Comments	41	General	Depressurized Fire Extinguishers are observed at different locations of the site	Inspection by LEL Sep 03, 2012	Replace the extinguisher with new one or refill the existing fire extinguisher	12-Sep-12 18-Sep-12 25-Sep-12		ESOHS Officer	Completed	
LEL Comments	42	General	Large No. of old oil Barrels, Batteries and tires observed near work shop	Inspection by LEL Sep 03, 2012	Contractor need to be auction the observed material as soon as possible	25-Sep-12 05-Oct-12		ESOHS Officer	Open	
LEL Comments	43	Transforme r Area	An open hole observed at transformer area.	Inspection by LEL Sep 03, 2012	Hole must be cover with the suitable slab	5-Sep-12		ESOHS Officer	Completed	
LEL Comments	44	Transforme r Area	Poor Housekeeping observed in Transformer area.	Inspection by LEL Sep 03, 2012	Remove the waste from entire area and arrange all using equipment.	5-Sep-12		ESOHS Officer	Completed	
LEL Comments	45	Headrace stop log storage area.	An electrical DB installed in open air/ There is no shed.	Inspection by LEL sep18,2012	Shed is needed to be fabricated over the DB or relocate the DB inside the building.	22-Sep-12 01-Oct-12		ESOHS Officer	Open	
LEL Comments	46	General	Unattended HSE at night shift	Inspection by LEL sep18,2012	Contractor depute a person who will look after HSE issues at night shift.	25-Sep-12		ESOHS Officer	Completed	Night Shift has been closed.
LEL Comments	47	Andritz warehouse	General Cleaning condition is unsatisfactory	Inspection by LEL sep 25,2012	general cleaning activity need to be performed.	2-Oct-12		ESOHS Officer	Completed	
LEL Comments	48	Andritz warehouse	MSDS of chemicals and flameable liquids is not available in warehouse.	Inspection by LEL sep 25,2012	Place MSDS with every chemical and flameable liquid.	27-Oct-12		ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	25	Transforme r Area	Cover of Manhole of oil collection pit was found missing with a clear danger of falling in the pit,	UA/UC of Sep MPR 2012	as a corrective action manhole was covered with the plywood temporarily, later it was replaced with the permanent steel cover			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	26	labor camp,	Wild grass and shrubs observed along the labor camp,	UA/UC of Sep MPR 2012	as a corrective action the grass and shrubs have been scratched.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	27	mess facility	Gas cylinders used for cooking were observed without safety cage outside the mess facility,	UA/UC of Sep MPR 2012	as a corrective action safety cage has been provided for proper protection of gas cylinders.			ESOHS Officer	Completed	

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	28	Project Site	During inspection Empty fire extinguishers were observed at some places,	UA/UC of Sep MPR 2012	as a corrective action fire cylinders were collected immediately and disputed for refilling. After refilling cylinders have been placed at appropriate locations again.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	29	Transformer Area	Poor housekeeping observed at level 260m (transformer area), some packaging wooden and steel items were observed causing the tripping and falling hazard.	UA/UC of Sep MPR 2012	As a corrective action the house keeping of area has been ensured the same day.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	30	labor camp,	Water was observed leaking from water pipes that delivers water supply to electric water coolers, the spilled water was falling on electric cables behind the water coolers which enhancing the potential of electric shock for users.	UA/UC of Sep MPR 2012	As a corrective action damaged pipes have been replaced with the new one to reduce the leaking.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	31	main entrance of power house	Poor housekeeping near main entrance of power house was observed causing tripping and falling hazard,	UA/UC of Sep MPR 2012	as a corrective action the rubbish has been removed.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	32	near the public road	Excavator found working near the public road without proper safety measures	UA/UC of Sep MPR 2012	as a corrective action the area was properly cordoned off with reflective road safety cones to make the area safe.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	33	Power House	Two workers were observed painting in the confined space without any fresh air circulation; it was hard to breath there.	UA/UC of Sep MPR 2012	Immediately the activity was halted and area supervisor was advised to make proper arrangements for fresh air.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	34	workshop	A small quantity of oil was found spilled over the soil near workshop,	UA/UC of Sep MPR 2012	as a corrective action the soil was removed for proper disposal.			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	35	headrace	Some workers were observed working at headrace without safety shoes.	UA/UC of Sep MPR 2012	as a corrective action the workers were warned to ensure the use of mandatory PPE's			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	36	Power House	A worker was observed cutting the cemented tiles without wearing dust masks,	UA/UC of Sep MPR 2012	as a corrective action the dust masks were issued him			ESOHS Officer	Completed	
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	37	electric pylon	A worker was observed working at height wearing the safety harness but not hooked during the erecting the electric pylon.	UA/UC of Sep MPR 2012	He was advised to avoid such unsafe acts that put life in danger			ESOHS Officer	Completed	

ESOHS RECOMMENDED ACTION ITEMS/ CORRECTIVE ACTION PLAN										
Source	**No**	**Location**	**Finding**	**Reference/Date**	**Action Required**	**Target Date**	**Priority**	**Responsibility**	**Status**	**Remarks**
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	38	Near road	A wooden baton was found unattended in the way with the tips of steel nails out of surface,	UA/UC of Sep MPR 2012	as a corrective action it was removed from passage and then nail were bent and leveled with the surface.			ESOHS Officer	Completed	

Summary

Source	Total Issues	Closed	In-progress	Pending
Recommendations from EP-AJK	3	0	3	0
Recommendations from MM	13	12	0	1
LEL Comments	48	44	1	3
Reported Accidents By Contractor	1	1	0	0
Reported Unsafe Acts/Unsafe Conditions (UA/UC)	38	38	0	0
Recommendations from IFC	10	8	1	1
Total	113	103	5	5

Exhibit 02 – Property Damage

(Please see the next page)

Accident Investigation Report

Injured/ Involved Persons		
Name: Amjad Iqbal		Occupation/Job Title: Driver
Witnesses		
Name: Muzaffar Khan		Occupation/Job Title: Foreman
Location: Down stream	Date Reported: *17/08/2012*	Time: *0900 am*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

It is reported that on August 15, 2012 at 0900 hrs dump truck having registration # LES-10-1583 turned over at downstream of the power house, no personal harm done however dump truck got damages. Information's were obtained from site by collecting photographs and statements of eyewitness. HTV driver Mr. Amjad Iqbal was assigned a job for transferring the excavated soil from downstream to protection dyke. The driver has a sound experience of operating heavy vehicle for last twelve years and is working with the Contractor for last two years. His job duties required him to operate a the dump truck to transfer the excavated soil at dumping site.

According to detail, an excavation work for lining slab floor at downstream was in progress under the supervision of Foreman Mr. Muzaffar. Almost the surface was even where excavation was in progress. Weather was drizzling and there was heavy downpour intermittently. Dumper driver placed the reverse gear to move in rewind order in order to get it close the excavator for loading. He hardly covered few meters in reverse order when it overturned on driver side. Foreman and Excavator operator rushed the scene to assist him escape out from cabin, he himself came out of the cabin from other door. He was enquired about any injury, but he remained safe and unhurt. Later he was sent to site clinic where Site Doctor examined him whether he suffered any blunt trauma or injury. Doctor declared him quite healthy and fit with no injury at any part of his body.

The occurrence site was visited and in formations, evidences and facts were collected. Investigation revealed that soil contained sandy gravel formation; heavy rain caused the erosion of fine particles from top soil leaving behind the voids among coble & boulders (rounded stone). During reverse movement the erosion caused the skidding of boulder underneath the rear tyres and it subsided and within no time to control it overturned in the driver side. Fortunately driver remained safe and itself came out of the cabin from other door. Later the vehicle was placed right there with the help of exactor and then it was brought to site workshop. The dumper sustained minimal damages as its right side of cabin, front mudguard and rear indicators damaged.

Type of Accident/Incident:

Check off (✓) statements that best describe the accident/incident:

- ❑ Repetitive Strain
- ❑ Acute Strain (lifting, pulling, carrying)
- ❑ Caught in/under/between
- ❑ Struck, contacted by/with/against
- ❑ Slip/fall
- ✓ Vehicle
- ❑ Client/employee action
- ❑ Cut/bruise
- ❑ Exposure to
- ❑ Other (explain)

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	✓ Not following appropriate procedures
❑ Fire and explosion hazards	❑ Inappropriate conduct
❑ Inadequate warning systems	❑ Hazardous personal attire
❑ Irate client/employee action	❑ Other (explain):
❑ Adverse weather	

❑ Other (explain):
Corrective Action
Following are recommendations • During drizzling all activities like excavation and movement of dumpers at site should be brought to a halt • Ramps and slopes should be properly maintained prior the start of work. • Remove the unstable and steep slopes and gradually improve the gradients • Trainings for drivers should be conducted on regular basis

Persons Conducting Investigation:		
Name	Signature	Date
Muhammad Azam		17/08/2012
Maj ® Assad Abbas Naqvi		17/08/2012
Mr. Park Kesio		14/08/2012

Exhibit 03 – Trainings

(Please see the next page)

Training on Occupational Health and Safety
Training Agenda and Schedule
First Aid & CPR

Project: NBE Hydro Electric Power Complex Date: 13/07/ 2012

Time	Session	Contents	Methodology	Expected Output	Resource Person
0830 –0900 hrs	Introduction to First Aid &CPR and roles and responsibilities of heads	Identification of roles and responsibilities of supervisors	Interactive Discussion/ Group Presentations	The participants will be able to identify their roles and responsibilities in case of any emergency and provision of First Aid &CPR at work place.	ESOHS Officer Doctor
0900- 0930 hrs	Procedures for First Aid	Identification of procedures and its implementation on Project Site. The content included measures to deal with; 1. Injury of any body part 2. Throat obstruction. 3. Snake bite.	Group Presentations	The participants will be able to understand procedures for first aid implementing on Project Site	ESOHS Officer Doctor
0930- 1000 hrs	Procedures for CPR	Identification of CPR procedure on Project Site. It included the presentation on Resuscitative measures explaining ABC phenomena.		The participants will be able to identify their roles and responsibilities in case of any emergency and provision of CPR at work place.	ESOHS Officer Doctor
1000- 1025 hrs	Training by videos/demonstration	The videos on CPR have been demonstrated to participants for better understanding.	Group Videos	The participants will be able to understand the CPR Technique.	ESOHS Officer Doctor
1025-1050 hrs	Training by Practical Drill	Practical demonstration on First Aid & CPR	Practical demonstration	The participants will be able to understand best techniques in case of First Aid as well as ABC techniques during CPR.	Assistant Director Rescue 1122
1050-1100 hrs	**Attendance Sheet**				
End of Session					

Training on Occupational Health and Safety
Training Agenda and Schedule
Internal Auditing Techniques and Reporting Procedure

Project: NBE Hydro Electric Power Complex Date: 08/07/ 2012

Time	Session	Contents	Methodology	Expected Output	Resource Person
0900 –0930 hrs	Introduction to audit and basic terminologies	Definitions of Audi, Types of Audit and terminologies involved in Audit process	Interactive Discussion/ Group Presentations	The participants will be able to understand the Audit and basic terms	Jahanzeb Murad
0930- 0950 hrs	Knowledge of ISO	What is Quality Management System		The participants will be able to understand the ISO 14001 and quality management system	Jahanzeb Murad
0950-1020 hrs	Audit Roles and Responsibilities	Roles and responsibilities of client, Auditor and Auditee		The participant will be able to understand the roles and responsibilities of Client, Auditors and Auditee during the process	Jahanzeb Murad
1020-1100 hrs	Audit stages and activities	Audit planning Opening meeting Preparation of Checklists Preparation of Audit report Audit follow up and Closing meeting		The Participants will be able to having better understanding regarding its planning and preparation of checklists and the whole audit process	Jahanzeb Murad
1100-1110 hrs	**Attendance Sheet**				
End of Session					

Training on Occupational Health and Safety
Training Agenda and Schedule
Importance of Water In Human Body

Project: NBE Hydro Electric Power Complex Date: 28/ 08/ 2012

Time	Session	Contents	Methodology	Expected Output	Resource Person
0900 –0930 hrs	Introduction to Importance of water	Identification of roles and responsibilities of supervisors	Interactive Discussion/ Group Presentations	The participants will be able to identify their roles and responsibilities in case of creating awareness among the workers about importance of water.	ESOHS Officer Doctor
0930- 1000 hrs	Water use and water diseases and water deficiency in human body	The participants will be briefed about 1. Water to drink 2. Water diseases 3. Worldwide water use 4. Water future	Group Presentations	The participants will be able to understand the use of water and problems in human body because of deficiency of water.	ESOHS Officer Doctor
1000- 1030 hrs	Water role in human body	Identification of Role of water in human body like water as lubricant, a way of transporting and a major cause of sexual reproduction.		The participants will be able to identify their roles and responsibilities in creating awareness about role of water in human body.	ESOHS Officer Doctor
1030-1035 hrs	**Attendance Sheet**				
End of Session					

Exhibit 04 – Toolbox Talks

(Please see the next page)

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TOOL BOX TALK RECORD SHEET

Project: New Bong Escape Hydro Electric Power Complex Date: 01/09/12 to 31/09/12

SR No	Date	Craft	No. of Workers	Location	Subject	Delivered by
1	02/09/12	Helper/ Labour/ Folder/ Welder	19	ATC Workshop	Dengue Fever	Abdul Latif
2	03/09/12	Drivers/ Carpenter/ mason/ labor/ etc	21	Power house	House Keeping	M. Fazal
3	05/09/12	Carpenter/ labor/mason/ steel fixer etc	32	Power house	Use of Dust Masks	Gulab Shah
4	07/09/12	Carpenter/ labor/mason etc	20	Mess hall	Concrete Safety	Jahangir
5	09/09/12	Welders/ Mechanics/ helpers etc	9	Office building	Work at height	Abdul Latif
6	10/09/12	Carpenter/ labor/mason/ steel fixer etc	10	Stop log Storage Area	Dust & Fumes	M. Azam
7	11/09/12	Electerician/ Folders/ Fitter/ Rigger	40	Ware houe	Electrical Safety	Abdul Latif
8	13/09/12	Welder/ helper	8	Workshop Ib	Use of PPE's	Abdul Latif

SAMBU

TOOL BOX TALK RECORD SHEET

Project: New Bong Escape Hydro Electric Power Complex Date: 01/09/12 to 31/09/12

SR No	Date	Craft	No. of Workers	Location	Subject	Delivered by
9	15/09/12	Carpenter/ labor/mason/ steel fixer etc	31	Power house	Gas Cylinder Safety	M. Azam
10	17/09/12	Welder/ helper/ labor	8	Power house Ib	Manual Handling	M. Azam
11	22/09/12	Cooking Staff	16	Labour Mess	Hand Washing & Hygiens	M. Azam
12	24/09/12	Labour/ masons/ Helpers/ Carpenters/ Scaffolders	29	Power house	Safe distance from moving machinery	Waqas
13	26/09/12	Labour/ masons/ Helpers/ Carpenters/ Scaffolders etc	21	Power house	Use of Safety harness	Abdul Latif
14	27/08/11	Labour/ helpers/ operator	9	Batch Plant	Handling of Solid waste	M. Azam
15	28/09/12	Carpenter/ labor/mason etc	12	Office building	Skin Protection	Kamran Akram
16	30/09/12	Labour/ helper/ folder/ Painter etc	18	Powerhouse	Confined Space	Major Azam

SAMBU

Tool Box Talk Attendance sheet

Topic: Dengue fever.

Venue: A.T.C. W/shop

Project: NBE Hydro Electric Power Complex

Date: 2-09-2012.

Sr. No	Name	Company	Designation	Signature
1	M. Shahid.	A.T.C	Foreman.	Shw
2	Muhammad Asif.	"	Helper	Asif
3	نزاکت حسین	"	فیبریکیٹر	نزاکت
4	Ahmed Hussain	"	Welder.	Ahmed
5	M. JAFER	"	Febreceter	JAFER
6	مشتاق	"	پیلیر	مشتاق
7	محمد نذیم	"	پیلیر	نذیم
8	Tahib Hussain.	"	Engineer	Tahib
9	DANAYAL	"	Folder	Danyal
10	راجہ قدیر	"	انسولیٹر	قدیر
11	راجہ منظاس	"	فورمین	منظاس
12	M. SAJAD	"	INSULATOR.	SAJAD
13	SUHAIL	"	Insu	SUHAIL
14	BASHARAT	"	Helper	Basharat
15	اعجاز	"	فیبریکیٹر	اعجاز
16	خلیل احمد	"	پیلیر	خلیل
17	SULTAN	"	Helper	SULTAN
18	RAFEQ	"	انسولیٹر	Rafeq
19	مقصود	"	فیبریکیٹر	مقصود

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Verified by ESOHS Officer

SAMBU

Tool Box Talk Attendance sheet

Topic: Housekeeping. **Venue:** P/House.

Project: NBE Hydro Electric Power Complex **Date:** 3-9-12

Sr. No	Name	Company	Designation	Signature
1	M. Inamullah	Sambu Pak.	C.M.	
2	Imran Khan	Site Engr	Site Engr	
3	Bakhat Munir	=	Driver	
4	ذوالفقار علی	=	ویلڈر	
5	فضل کریم	=	کاربینٹر	
6	Bahadar Khan	=	Carpenter.	
7	یوسف	=	کاربینٹر	
8	غلام عباس	=	کاربینٹر	
9	ایاز احمد	=	لیبر	
10	SHAMIM	=	MASON	
11	BADARZAMAN	=	Folder	
12	آصف علی	=	کاربینٹر	
13	لال زمان	=	فولڈر	
14	ارشد زمان	=	کاربینٹر	
15	حلیم	=	لیبر	
16	مشتاق احمد	=	میسن	
17	ضیاء اللہ	=	لیبر	
18	اشفاق	=	فولڈر	
19	عابد محمود	=	میسن	
20	خلیل احمد	=	لیبر	
21	ممتاز	=	میسن	
22				

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SAMBU

Tool Box Talk Attendance sheet

Topic: Use of Dust Mask **Venue:** Power House

Project: NBE Hydro Electric Power Complex **Date:** 5-9-12

Sr. No	Name	Company	Designation	Signature
1	مسعود احمد	Sambu - Const	لیبر	Masood
2	محمد عارف		لیبر	عارف
3	زاکر علی		لیبر	زاکر
4	شوکت علی		لیبر	Shoukat
5	سعید اقبال		لیبر	SAEED
6	محمد ظاہیب		لیبر	صاحب
7	غفران خان		لیبر	Ghufran
8	مرزا عمران مجید		ہیلپر	عمران
9	عادل حسین		ہیلپر	Adil
10	زبیر ساجد		ہیلپر	Zubair
11	صفدر اعظم		ہیلپر	صفدر
12	طاہر زاہد		ہیلپر	طاہر
13	نوید احمد		ہیلپر	Naveed
14	طارق عزیز		کاربینٹر	Tariq
15	عباس خان		کاربینٹر	Abbas
16	منفعل احمد		کاربینٹر	Faiz
17	اعجاز احمد		کاربینٹر	اعجاز
18	محمد اکبر		کاربینٹر	محمد
19	عدیل کامران		کاربینٹر	Adil
20	عدنان اسلم		کاربینٹر	عدنان
21	محمد رمضان		کاربینٹر	Ramzan
22	محمود اختر		کاربینٹر	اختر

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Sign: _____ Verified by HSEQNS Officer

SAMBU

Tool Box Talk Attendance sheet

Topic: Use of Dust Mask

Venue: P/House.

Project: NBE Hydro Electric Power Complex

Date: 5-9-12

Sr. No	Name	Company	Designation	Signature
23	طارق مسیح	Sambo Const.	کاربینٹر	طارق
24	اسد عباس		کاربینٹر	اسد
25	محمد عثمان		میسن	عثمان
26	اللہ دتہ		میسن	اللہ دتہ
27	غلام رسول		میسن	غلام رسول
28	محمد سعید		میسن	سعید
29	افتاب		میسن	Aftab
30	فرحان خان		میسن	فرحان
31	مشتاق مسیح		سٹیل فکسر	مشتاق
32	وسیم اکرم		سٹیل فکسر	وسیم

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Sign: _____ Verified by ESOHS Officer

SAMBU

Tool Box Talk Attendance sheet

Topic: Concrete Safety. **Venue:** Power House

Project: NBE Hydro Electric Power Complex **Date:** 7-9-12

Sr. No	Name	Company	Designation	Signature
1	M. Jamil	Sambu. Const	Site Engr.	
2	محمد سلیم		میسن	
3	محمد عرفان		سرو یئر	
4	محسن علی		ہیلپر	
5	محمد قاسم		لیبر	
6	عنصر محمود		فورمین	
7	ذکاء اللہ		فورمین	
8	شکیل احمد		کارپینٹر	
9	Bashir		لیبر	
10	M. Iqbal		Carpenter.	
11	Mubshar		Welder.	
12	جوار خان		فورمین	
13	محمد رفیع		لیبر	
14	بنیامین		شیل فکسر	
15	آزاد خان		شیل فکسر	
16	عابد محمود		کارپینٹر	
17	ملک ریاض		فولڈر	
18	لیاقت		فولڈر	
19	خرم		ہیلپر	
20	عمران خان		شیل فکسر	
-				

Sign: Jahangir
Delivered by

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Verified by ESOHS Officer

SAMBU

Tool Box Talk Attendance sheet

Topic: Work height.

Venue: P/House Office Building.

Project: NBE Hydro Electric Power Complex

Date: 9-9-12

Sr. No	Name	Company	Designation	Signature
1	Abdul Aleem	Consult ib.	Engr.	
2	Mirza Abas		F/M.	
3	آصف		ویلڈر	
4	عدیل		پلمبر	
5	شہزاد		ویلڈر	
6	Shabir		Rabri	
7	رفاقت		فیبریکیٹر	
8	فیصل		فٹر	
9	عمران		پلمبر	

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Verified by ESOHS Officer

SAMBU

Tool Box Talk Attendance sheet

Topic: Dust & Fumes.

Venue: Storage area

Project: NBE Hydro Electric Power Complex

Date: 10-9-12

Sr. No	Name	Company	Designation	Signature
1	Nadeem Akhtar	Sambu.	Helper	ندیم
2.	Ziggarat Gul		Mason	زیارت گل
3	Aamir Raza		labor	Amir
4	Zakaullah		Forman	Zakult
5	Shakeel Ahmed		Carpenter	شکیل احمد
6	Akhtar Munir		Car penter	Akhtar
7	Binyamin		Steel Fixer	بنیامین
8	سرفراز		ویلڈر	سرفراز
9	یوسف		سٹیل فکسر	یوسف
10	Mubasher		Welder	مبشر

SAMBU

Tool Box Talk Attendance sheet

Topic: Electrical Safety.

Venue: Store house

Project: NBE Hydro Electric Power Complex

Date: 11-9-12.

Sr. No	Name	Company	Designation	Signature
1	Sardar Azam Khan.	Andritz.	H.S.E. Advisor.	Sad
2	Ishtiaq Ahmed.		Sup.	Ishtiaq
3	M. Kashif Rasool		F/M.	Kashif
4	محمد طارق		سینئر الیکٹریشن	Tareq
5	M. Asif		Fitter.	Asif
6	واصف علی		ویلڈر	واصف
7	عمران خان		فٹر	Imran
8	Qamran Abassi		الیکٹریشن	عباسی
9	Younis Masih		Helper.	یونس
10	الیاس خان		فورمین	الیاس
11	محمد حبیب		ٹیکنیشن	حبیب
12	بشیر حسین		فورمین	بشیر
13	Amir Abassi		الیکٹریشن	Amir
14	اعجاز اصغر		رگر	اعجاز
15	بابر حسین		کیبل پرنٹر	بابر
16	JAMIL		FITTER	JAMIL
17	منور حسین		ویلڈر	منور
18	Qasim		Electrician	Qasim
19	بشیر		ڈرائیور	بشیر
20	رفیع اللہ		ڈرائیور	رفیع
21	Faiz		Folder	Faiz
22	رفیق		رگر	رفیق

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Tool Box Talk Attendance sheet

Topic: Electrical Safety

Venue: Ware house.

Project: NBE Hydro Electric Power Complex

Date: 11-4-12.

Sr. No	Name	Company	Designation	Signature
23	ضیاء الحق	Andritz.	ویلڈر	ZAYA
24	محمد ناصر	الیکٹریشن	ناصر
25	Muhabat Khan		Crane operator	Muhabat
26	ASAD		HELPER	ASAD
27	azar hayat		Fitter	azar
28	Pervaz Masih		Cleaner	Pervaz
29	محمد اکرام		مکینکل ورکشاپ	اکرام
30	سعید احمد		پائپ فٹر	سعید
31	راحیل احمد		ویلڈر	راحیل
32	Saqib Ali		Painter	Saqib
33	فرحان علی		فورمین	فرحان
34	صوبیا خان		سینڈ بلاسٹر	صوبیا
35	SAFDAR		Folder	SAFDAR
36	فہیم		پینٹر	فہیم
37	راحیل		ویلڈر	راحیل
38	مامون رشید		فٹر	مامون
39	مظہر		فٹر	مظہر
40	Rana Mubsher		Welder	Mubsher

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SAMBU

Tool Box Talk Attendance sheet

w/shop.

Topic: Use of PPE's.

Venue: Consult-ib

Project: NBE Hydro Electric Power Complex

Date: 13-9-12

Sr. No	Name	Company	Designation	Signature
1	Mirza Abass	Consult-ib.	F/M.	
2	M. Asif	=	Welder.	
3	عبدل ارشد	=	پلمبر	Abdul Arshad
4	ا.م شہزاد	=	ویلڈر	شہزاد
5	M. Shabir	=	FEBRICATOR	شبیر
6	Rafaqat		=	رفاقت
7	فیصل یسع		پلمبر	تسلیم
8	محمد عمران		پلمبر	عمران

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SAMBU

Tool Box Talk Attendance sheet

Topic: Gas Clynder.

Venue: P/House.

Project: NBE Hydro Electric Power Complex

Date: 15-9-12.

Sr. No	Name	Company	Designation	Signature
1	Masood Ahmed	Sambu - Const	Labour	مسعود
2	Zakir Ali		Labour	ذاکر
3	اعجاز		کارپینٹر	اعجاز
4	عثمان		کارپینٹر	Usman
5	طاہر		پلمبر	Tahir
6	ناجی اکبر		کارپینٹر	ناجی اکبر
7	وسیم		مستری	وسیم
7	آفتاب		ویلڈر	آفتاب
8	فرحان		ویلڈر	Farhan
9	محسن		ویلڈر	محسن
10	عتیق		ویلڈر	عتیق
11	عرفان		ویلڈر	عرفان
12	عابد		مستری	عابد
13	سعید حسن		پلمبر	سعید حسن
14	کاشف		لیبر	Kashif
15	نور		لیبر	Noor
16	حسن نواز		لیبر	حسن نواز
17	رفیق خان		ویلڈر	رفیق خان
18	حامد علی		ویلڈر	Hamid
19	شاکر		پلمبر	Shakir
20	زیارت گل		پلمبر	زیارت گل
21			ویلڈر	Waqeem

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Sign: _____ Verified by ESOHS Officer

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Tool Box Talk Attendance sheet

Topic: **Venue:**

Project: NBE Hydro Electric Power Complex **Date:**

Sr. No	Name	Company	Designation	Signature
22	انس			
23	عابد			عابد
24	عرفان			عرفان
25				
26				
27	نازر			Nazar
28				
29				
30				
31				Faisal

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Tool Box Talk Attendance sheet

Topic: Manual Handling

Venue: Power House

Project: NBE Hydro Electric Power Complex

Date: 17-9-12

Sr. No	Name	Company	Designation	Signature
1	Mirza Abass	Cosult-ib	F/M.	
2	M. Asif	=	Welder	
3	عدیل ارشد		پلمبر	
4	ایچ شہزاد		ویلڈر	
5	M Shabir		FEBRICATOR	
6	Rafaqat		=	
7	فیصل نوید		پلمبر	
8	محمد عمران		پلمبر	

SAMBU

Tool Box Talk Attendance sheet

Topic: Hand washing & hexigen. **Venue:** Mess

Project: NBE Hydro Electric Power Complex **Date:** 22-9-12

Sr. No	Name	Company	Designation	Signature
1	یوسف	Sambu-Const	Cook	یوسف
2	شیراز	تندوری	تندوری	شیراز
3	نواز	کک	کک	نواز
4	وکیل	تندوری	تندوری	وکیل
5	فاروق	تندوری	تندوری	فاروق
6	غلام جیلانی	واش مین	واش مین	غلام جیلانی
7	جمیل	تندوری	تندوری	جمیل
8	جبار	کک	کک	جبار
9	خالد	کک	کک	خالد
11	بنارس	کک	کک	بنارس
12	رفیق	کک	کک	رفیق
13	طبیب	تندوری	تندوری	طبیب
14	عالم نور	واش مین	واش مین	عالم نور
15	نیاز	تندوری	تندوری	نیاز
16	جمیل	کک	کک	جمیل

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Sign: _____ Verified by ESOHS Officer

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Tool Box Talk Attendance sheet

Topic: Safe distance from mowing machinery. Venue: Power House

Project: NBE Hydro Electric Power Complex Date: 24-9-12.

Sr. No	Name	Company	Designation	Signature
1	Waqas Ahmed	Sambu-Const	Site Engr.	
2	Sardar Ali		F/M.	
3	Zohaib Ali		Labor	
4	Gulzameer.		Labor.	
5	M. Lugman.		Helper	LUQMAN
6	Tariq Aziz		Lab. F/M.	
7	Abass Khan		Carpenter	Abass
8	Faiz Ahmed.		Carpenter	
9	Admas Aslam		Carpenter	
10	Allah Ditta		Mason.	
11	Naseem		S/Fixer.	
12	Irfan		Welder	
13	Ibne Amin		Scaffolder.	IBNEAmin
14	Mohsan Ali		Helper.	
15	Abid		Mason.	Abid
16	Adeel		Helper.	
17	Asad Abass		Mason.	
18	Zabir Ali		Labor.	Zakir
19	Zeesham		Labor.	Zeesham
20	Sagheer		Steel fixer.	
21	Abu Raz		Helper.	
22	Saeed		Mason	

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Tool Box Talk Attendance sheet

Topic: Safe distance from moving Machinery.

Venue: Power House

Project: NBE Hydro Electric Power Complex

Date: 24-9-12

Sr. No	Name	Company	Designation	Signature
23	Basharat		Helper	
24	Shaukat Ali		Welder.	Shaukat
25	Taj Akbar		Carpenter	
26	Faiz Ahmed		Caber-	Faiz Ahmed
27	Qaisar		Steel fixer.	
28	Aftab		Carpenter.	Aftab
29	Shakeeb		Helper-	

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Tool Box Talk Attendance sheet

Topic: Use of safety Harness **Venue:** Power House

Project: NBE Hydro Electric Power Complex **Date:** 26-9-12

Sr. No	Name	Company	Designation	Signature
1	M. Riaz	Sambu-Pak	Engr.	
2	Imran		Engr.	
3	وسیم		سروئیر	
4	Zulifqar		Driver	
5	Kareem		Carpenter	
6	Fazal		Carpenter	
7	خان زادہ		کارپینٹر	
8	رضوان		ویلڈر	
9	اللہ یار		فولڈر	
10	لال زمان		فولڈر	
11	مشتاق		فیٹر	
12	شاھد		مکینک	
13	عابد		لیبر	
14	رمضان		کارپینٹر	
15	عاشق		فیٹر	
16	علی اصغر		فیٹر	
17	خلیل		لیبر	
18	ولیس پرویز		کارپنٹر	
19	نور علی		فولڈر	
20	یاسر		لیبر	
21	شاھد		پیلیر	

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Sign: _____ Verified by ESOHS Officer

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Tool Box Talk Attendance sheet

Topic: Handling Solid waste.

Venue: Batching Plant.

Project: NBE Hydro Electric Power Complex

Date: 27-9-12.

Sr. No	Name	Company	Designation	Signature
1	Zahaib	Sambu.	P/Optr.	Zahaib.
2	Zakir		Helper	Zakir
3	Saeed		Labor	
4	Jared		P/Optr	Jared
5	Mehrban		Labor	
6	Abu Raz		Labor	
7	Amanat		Labor	
8	Naeem		Helper	Naeem
9	Shaukat		Helper	

SAMBU

Tool Box Talk Attendance sheet

Topic: Skin Protection

Venue: Office Building

Project: NBE Hydro Electric Power Complex

Date: 28-9-12.

Sr. No	Name	Company	Designation	Signature
1	M. Shahid	Samb- Pak	Forman.	
2	Fazal.		Carpenter.	
3	Wasim		Surveyer.	
4.	جنت گل		کارپینٹر	
5	شیر ولی		فولڈر	
6	نوید اکبر		فولڈر	
7	شاہ زیب		فولڈرز	
8	Riayasat		Carpenter	
9	Shamim		Mason	
10	NIAZ		Mechanic	
11	Kaleem		Labor	
12	Karman		Labor	

SAMBU

Tool Box Talk Attendance sheet

Andritz.

Topic: Confine space.

Venue: Ware house

Project: NBE Hydro Electric Power Complex

Date: 30-9-12

Sr. No	Name	Company	Designation	Signature
1	Sardar Azam Khan	Andritz.	HSE Advisor	
2	Sarfraz.		Sup.	Sarfraz
3	Haider Ali		Asstt: Engr	
4	Munawar Rafique.		Storekeeper	
5	M Tariq		Electrician	
6	M. Asif.		Fitter	
7	Irfan Ishaq		Fitter.	
8	Wasif Ali		Helper.	Wasif Ali
9	Ejaz		Rigger.	
10	Sher Hassan		Scaffolder.	
11	Ilyas		Scaffolder	TL/AS
12	Muhammad Hussain		Welder.	
13	Azhar Hayat		Fitter.	Azhar
14	M. Ikram		Mill right.	
15	Zaikham		Fabricator.	
16	Saqib Ali		Painter.	Saqib Ali
17	Mubarak Ali		Welder.	
18	Bilal		Helper	

Exhibit 05 – ESMP

(Please see the next page)

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ENVIRONMENTAL MANAGEMENT PLAN/ ENVIRONMENTAL SOCIAL ISSUE MANAGEMENT PLAN

Project: NBE Hydro Electric Power Complex

Date: 19-09-2012

Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
1	Site Preparation	Community effect	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM	Yearly	Headrace Channel Tailrace Channel	Feb 20, 2010 as per project activity	Throughout Project Period	Alternate routes has been provided. Project Employment opportunities have been created to suite the particular skills or enhanced skills from nearby villages of Project Site. Total number og Employees: 688 Number of Local and Nearabouts: 259 Contractor persons are not involved in any interaction with the nearby community
		Loss of Cultivation/ flora	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer	Yearly	Headrace Channel Tailrace Channel	Aug, 2012	Aug, 2012	Tree Plantation Plan has been implemented,trees has been planted along tailrace, it has been planted the five times of the trees that has been cut. The land scaping of Power house is in progress and will be finalized in the end of the current year.
		Solid Waste	Revised IEE, Pak NEQS, Solid Waste Management System, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Yearly	Headrace Channel Tailrace Channel	—	Throughout Project Period	Proper solid waste handling has been accomplished. All rubbish and non reuseable waste is handed over to local contractor for safe disposal at Mirpur muncipility approved site. The recyleable waste handed and reuseable waste produced from commencement of the project is handled over to recyclic contractor
2	Transportation of Power house Equipment	Air Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi-annual for 1st year of Construction. Annual for next two years	Power house	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June 16, 2012	May 7, 2010 Feb 1, 2011 Jun 15, 2012	Fugitive dust emissions are minimized by spraying water on soil, where required and appropriate. Air Quality monitoring has been conducted thrice since the commencement of the project site and test results were found satisfactory within the limits of Pak NEQS, WHO and IFC Standards. Vehicular traffic through the communities are avoided as far as possible. Vehicle speeds is under limit at project stie as well out out side the site.
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Construction. Annual for next two years	Power house	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June, 2012	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.
		Safety Hazards	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / PM in coordination with ESOHS Officer	Annual	Power house Office area	Dec 30, 2010. Dec 30, 2011. Sep 20, 2012	Sep. 2010 Aug, 2012	Road signage are fixed at appropriate locations to reduce safety hazard associated with project-related vehicular traffic. A number of safety sessions and traings have been conducted on defensive driving. Project drivers are trained on defensive driving. Further permanat safety signs along with the new public road have also been displayed in the month of Augut 2012.
		Damage to Infrastructure	Revised IEE, IFC Environmental, Health, and Safety General Guidelines	Sambu / PM	Annual	1) Headrace Channel 2) Power house 3) Tailrace Channel	—	No damage has been done till Sep, 2012	Damaged infrastructure will be restored to original or better condition.

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3	Contractor Mobilization	Air Quality	Pakistan NEQS, IFC Environmental, Health, and Safety	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Power house	June 30, 2010 Dec 30, 2010. Sep. 20, 2012	May 7, 2010 Feb 1, 2011 Jun, 15, 2012	Fugitive dust emission are minimized by spraying water on soil, where required and appropriate. Vehicular traffic through the communities is avoided as far as possible. Vehicle speeds to be kept low. Air quality has been monitored thrice since the commencement of project and results found within the limits of PAK NEQS, WHO and IFC standards.
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction Annual for next two years	Power house Lehri Village Chichian Village Afzal Pur Village	June 30, 2010 Dec 30, 2010. July 31, 2011 June.2012	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.
		Safety Hazards	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer	Annual	Power house	Dec 30, 2010. Dec 30, 2011. Sep 20, 2012	Sep 2010 Aug 2012	Road signage are fixed at appropriate locations to reduce safety hazard associated with project-related vehicular traffic. A number of safety sessions and traings have been conducted on defensive driving. Project drivers are trained on defensive driving. Further permanat safety signs along with the new public road have also been displayed in the month of Augut 2012.
		Community effect	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer	Annual	Whole Project Site	Through out Project Construction Period	All grievances have been settled	Contractor persons are communicated through tool box talks not to involve in any interaction with the Community. Community Complaint Register is placed on entrance gate of Project Site. This is being checked by Sambu regularly and monthly by Laraib. All complaints registered in the register have been rectified with the consultation of Employer and Effectees. The presence of Community Complaint Register has been communicated by displaying board in front of Project entrance. Community Grievance Committee has been established to deal with community concerns Community Liaison Officer has been appointed by Laraib
4	Excavation and Construction of Headrace Channel	Air Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	1st year of Project activity (2010)	Headrace Channel	Dec 30, 2010. Dec 30, 2011 Jun, 2012	May 7, 2010 Feb 1, 2011 Jun 15, 2012	Fugitive dust emissions are minimized by spraying water on soil, where required and appropriate. Air Quality monitoring has been conducted thrice since the commencement of the project site and test results were found satisfactory within the limits of Pak NEQS, WHO and IFC Standards. Vehicular traffic through the communities are avoided as far as possible. Vehicle speeds is under limit at project stie as well out out side the site.
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	1st year of Project activity (2010)	Headrace Channel	Dec 30, 2010.	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.

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4	Excavation & Construction of head race channel	Surface water Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	1st year of Project activity (2010)	Headrace Channel	Dec 30, 2010. Aug, 2011 Jun, 2012	Sep 2, 2010 Aug 26, 2011 Jun 16, 2012	Vehicles and construction machinery movement very close to the canal/channel banks is minimized, as these may cause water contamination. Management practices have been employed to minimize leakage and spillage of oils, chemicals and fuels to the ground. This is being accomplished by applying regular inspection system of vehicles. Vehicles and equipment are being repaired in the specified location (Workshop) having impervious sheathing/ cement pad to avoid soil and water contamination. Spill containment trays are used, while repairing vehicles outside the Workshop.
		Soil Erosion	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	1st year of Project activity (2010)	Headrace Channel	Through out Project Construction Period	Aug, 2012	Excavated slopes are not left untreated/unattended for long durations. Appropriate slope stabilization measuresa have been taken, All Slopes alontg tailrace are covered with Geo texttile and coble & bolders to minimize the soil erosion and to stable the soil. Vehicle and construction machinery movement very close to the canal/channel banks is minimized, as these may cause soil erosion
		Loss of flora	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer		Headrace Channel	Aug, 2012	Aug, 2012	Tree Plantation Plan has been implemented,trees has been planted along tailrace, it has been planted the five times of the trees that has been cut. The land scaping of Power house is in progress and will be finalized in the end of the current year.
		Community effect	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer	1st year of Project activity (2010)	Headrace Channel	Through out Project Construction Period	All grievances have been settled	Contractor persons are communicated through tool box talks not to involve in any interaction with the Community. Temporary alternate routes have been provided. Community Complaint Register has been placed on entrance gate of Project Site. This is being checked by Sambu regularly and monthly by Laraib. The complaints registered in the register have been rectified already. Community Grievance Committee has been established to deal with community concerns Community Liaison Officer has been appointed by Laraib.
		Safety Hazards	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer	Annual	Headrace Channel	Dec 30, 2010. Dec 30, 2011. Sep 20, 2012	Sep 2010 Aug 2012	Road signage are fixed at appropriate locations to reduce safety hazard associated with project-related vehicular traffic. A number of safety sessions and traings have been conducted on defensive driving. Project drivers are trained on defensive driving. Further permanat safety signs along with the new public road have also been displayed in the month of Augut 2012.
5	Excavation and construction of Power house	Air Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Power house	Dec 30, 2010. Dec 30, 2011 Jun, 2012	May 7, 2010 Feb 1, 2011 Jun 15, 2012	Fugitive dust emissions are minimized by spraying water on soil, where required and appropriate. Air Quality monitoring has been conducted thrice since the commencement of the project site and test results were found satisfactory within the limits of Pak NEQS, WHO and IFC Standards. Vehicular traffic through the communities are avoided as far as possible. Vehicle speeds is under limit at project stie as well out out side the site.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
5	Excavation and construction of Power house	Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Power house	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June, 2012	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.
		Soil Erosion	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Power house	Through out Project Construction Period	Aug, 2012	Excavated slopes are not left untreated/unattended for long durations. Appropriate slope stabilization measuresa have been taken, All Slopes alontg tailrace are covered with Geo texttile and coble & bolders to minimize the soil erosion and to stable the soil. Vehicle and construction machinery movement very close to the canal/channel banks is minimized, as these may cause soil erosion
		Loss of flora	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer		Power house	as per project activity	Aug-12	Tree Plantation Plan has been implemented,trees has been planted along tailrace, it has been planted the five times of the trees that has been cut. The land scaping of Power house is in progress and will be finalized in the end of the current year.
		Safety Hazards	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM	Annual	Power house	Dec 30, 2010. Dec 30, 2011. Sep 20, 2012	Sep 2010	Teporary Protective fencing was installed in Sep 2010 where as permannt raod fencinig has been installed in Aug 2012.
		Community effect	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM	----	Power house	-----	------	------
		Air Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / PM in coordination with ESOHS Officer	Semi annual for 1st year of Excavation/ Construction Annual for next two years	Tailrace Channel	June 30, 2010 Dec 30, 2010. Jun, 2012	May 7, 2010 Feb 1, 2011 Jun, 15, 2012	Fugitive dust emission are minimized by spraying water on soil, where required and appropriate. Vehicular traffic through the communities is avoided as far as possible. Vehicle speeds to be kept low. Air quality has been monitored thrice since the commencement of project and results found within the limits of PAK NEQS, WHO and IFC standards.
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Tailrace Channel	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June, 2012	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.
		Surface water Quality	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Tailrace Channel	Jun 30, 2010 July , 2011 Jun, 2012	Se 2, 2010 Aug 25, 2011 Jun 16, 2012	Vehicles and construction machinery movement very close to the canal/channel banks are minimized, as these may cause water contamination. Management practices have been mployed to minimize leakage and spillage of oils, chemicals and fuels to the ground. Thisis accomplished by applying regular inspection system of vehicles. Vehicles and equipment are repaired in the specified location (Workshop) having impervious sheathing/ cement pad to avoid soil and water contamination. If repairing is unavoidable in open field, then impervious sheathing is always used.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
5	Excavation and construction of Power house	Soil Erosion	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Entire Project Period	Tailrace Channel	Through out Project Construction Period	Aug, 2012	Excavated slopes are not left untreated/unattended for long durations. Appropriate slope stabilization measuresa have been taken, All Slopes alontg tailrace are covered with Geo texttile and coble & bolders to minimize the soil erosion and to stable the soil. Vehicle and construction machinery movement very close to the canal/channel banks is minimized, as these may cause soil erosion
		Solid Waste		Sambu/ PM	1st year of Excavation Activity	Tailrace Area	As per Project Excavation schedule	Event based	Trees cut down have been taken up by relevant Government Department.
		Solid Waste	Revised IEE, Pak Solid Waste Mang. System, IFC Env, Health, & Safety Gen. Guidelines	Sambu/ PM	1st year of Excavation Activity	Tailrace Area	As per Project Excavation schedule	Event based	Shrubs have been sold to recycling contractor
		Wastewater	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu/ PM in Coordination with ESOHS Officer	Throughout excavation and construction activity	Tailrace area	May 30, 2010 Dec 30, 2011 June , 2012	May 7, 2010 Aug 26, 2012 Jun 16, 2012	Wate water analysis have been conducted and found within the limit of WHS and IFC. No need for the temporary toilet facility as tailrace work is near to camp area
		Loss of flora	IFC Environmental, Health, and Safety General Guidelines	Sambu / PM in cordination with ESOHS Officer	Throughout excavation and construction activity	Tailrace Channel	as per project activity	Aug-12	Tree Plantation Plan has been implemented,trees has been planted along tailrace, it has been planted the five times of the trees that has been cut. The land scaping of Power house is in progress and will be finalized in the end of the current year.
		Loss of Aquatic Biota/ Fauna	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer	Throughout excavation and construction activity	Tailrace Channel		No damage till todate.	The project staff are not allowed to indulge in any hunting or trapping activities. Necessary awareness has been provided to all staff by carrying out various awareness sessions or toolbox talks.
		Community effect	IFC Performance Standards on Social & Environmental Sustainability Revised IEE	Sambu/ PM	Entire Project Period	Tailrace Channel	Through out Project Construction Period	Sep, 2010	Contractor persons are not allowed to involved in any interaction with the Community. Temporary alternate route has been provided. Community Complaint Register has been placed on entrance gate of Project Site. This is being checked by Sambu regularly and monthly by Laraib. Community Grievance Committeehas been established to deal with community concerns Community Liaison Officer has been appointed by Laraib. Footbridge will be provided for crossing over the tailrace area at specified location.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
6	Construction of Camp Establishment and Operation	Soil Erosion / Contamination	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Monthly	Left side of Old Bong Escape	30th of every month till entire Project Period	Sep, 2010	Vehicle and construction machinery movement very close to the canal/channel banks is minimized, as these may cause soil erosion. Management practices are employed to minimize leakage and spillage of oils and fuels to the ground. These includes building containment dikes around fuels/oils/chemical storage, storing these in covered areas, constructing a concrete pad for machinery/ vehicle maintenance areas, inspecting machinery and vehicles for any leakage, and removing contaminated soils for appropriate disposal. Equipment and vehicles are kept in good working condition and properly tuned, in order to minimize the exhaust emissions. Vehicles and equipment are repaired in the specified location (Workshop) having impervious sheathing/ cement pad to avoid soil and water contamination. If repairing is unavoidable in open field, then impervious sheathing is always used.
		Air Quality Deterioration	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Left side of Old Bong Escape	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June 16, 2012	May 7, 2010 Feb 1, 2011 Jun 15, 2012	Fugitive dust emissions are minimized by spraying water on soil, where required and appropriate. Air Quality monitoring has been conducted thrice since the commencement of the project site and test results were found satisfactory within the limits of Pak NEQS, WHO and IFC Standards. Vehicular traffic through the communities are avoided as far as possible. Vehicle speeds is under limit at project stie as well out out side the site.
		Surface Water Contamination	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Left side of Old Bong Escape	June 30, 2010 Dec 30, 2010. Dec 30, 2011 Sep. 20, 2012	Sep 2, 2010 Aug 26, 2011 Jun 16, 2012	Septic tanks and soakage pits have been constructed having adequate capacity. Monitoring of sewage wastewater is being conducted twic a year. No Littering Policy has been formulated and executed on Project Site. All employees have been provided awareness/training about No Littering on Project Site. No Littering Policy has been communicated to all employees through HSE Information board.
		Solid Waste	Revised IEE, Pakistan Solid Waste Management System, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer		Left side of Old Bong Escape		Sep, 2010	Covered bins have been provided inside the room of labour and on Project specified location to avoid open dumping of solid waste. Solid Waste Management System has been established and implemented. This includes quantification of the solid waste (paper, food waste etc), segregation of waste, transfer and transportation and disposal. Construction of a burn pit (for combustible waste), barricadation of the waste management area has been done. Handling of recycling waste is done by handing over the recycling waste to recycling contractors or dispose off in a safe manner. Food and camp waste are handed over to a local contractor for proper disposal at Mirpur muncipility designated site. No Littering Policy has been formulated and executed on Project Site. All employees have been provided awareness/training about No Littering on Project Site. No Littering Policy has been communicated to all employees through HSE Information board. Internal Audits/ inspections/walk about are being incorporated.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
6	Construction of Camp Establishment and Operation	Loss of Vegetation	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer		Left side of Old Bong Escape	As per project activity	Refer to pint 4.	Cutting of trees and other natural vegetation are avoided as far as possible. The construction crew are provided with LPG as cooking (and heating, if required) fuel. Tree Plantation Plan has been established and will be executed on Project Site The planted trees will be at least 5 times the trees cut as part of the construction activities.
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Left side of Old Bong Escape	June 30, 2010 and Dec 30, 2010. July 31, 2011 and Sep. 20, 2012	Noise level of powerhouse has been measured in May 7, 2010 Feb 1, 2011 Aug 25 2011	Generators and vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring of generators was conducted and test results found within the limits of Pak NEQS, WHO and IFC Standards. Management practices have been employed to avoid noise pollution by generators. This include the construction of generator room (confined body) as practically possible.
		Noise							Noise has been measured at Lehri, Chechian and Ferozabad. And found within the IFC and PAK NEQS limits.
		Safety Hazards	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer	Annual	Left side of Old Bong Escape	December 30, 2010 December 30, 2011 September 20, 2012	Sep-10	Protective fencing has been installed around the Camp to avoid any accidents.
		Gender Issues	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer	Monthly	Left side of Old Bong Escape	30th of every month till entire Project Period	No issue till 2010 March, 2010	Camp is more than 1,500 feet from the nearest community. Construction crew are instructed to avoid entering the nearby villages and settlements. Training has been conducted on Gender and Cultural Sensitization. Awarenesses are being created among all employees in form of toolbox talks, by HSE bulletin.
		Soil Erosion / Contamination	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Monthly	Left side of New Bong Escape	30th of every month till entire Project Period	Sep-10	Vehicle and construction machinery movement very close to the canal/channel banks minimized, as these may cause soil erosion. Management practices are employed to minimize leakage and spillage of oils,
		Air Quality Deterioration	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Monthly	Left side of New Bong Escape	June 30, 2010 Dec 30, 2010. Sep. 20, 2012	Powerhouse air quality has been measured on May 7, 2010 feb 1, 2011	Fugitive dust emissions are minimized by spraying water on soil, where required and appropriate. Vehicles are properly tuned to minimize air pollution. Vehicles smoke tests were conducted in the current year and test results found within the limits of Pak NEQS, WHO and IFC standards. Vehicles are inspected on regular basis.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
6	Construction of Residential Colony	Surface Water Contamination	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. 2) Annual for next two years	Left side of New Bong Escape		Sewage water is regularly monitored May 7, 2010 Aug 25, 2011 Jun 16, 2012	Septic tanks and soakage pits have been constructed having adequate capacity. Monitoring of sewage wastewater has done twice since the commencement of the project & test results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. No Littering Policy has beenformulated and executed on Project Site. All employees have been provided awareness/training about No Littering on Project Site. No Littering Policy has been communicated to all employees through HSE Information board.
		Solid Waste	Revised IEE, Pakistan Solid Waste Management System, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Monthly	Left side of New Bong Escape		Sep 2010 July 2011	Covered bins have been provided inside the room of labour and on Project specified location to avoid open dumping of solid waste. Solid Waste Management System has been established and implemented. This includes quantification of the solid waste (paper, food waste etc), segregation of waste, transfer and transportation and disposal. Food waste and paper waste etc has been quantified and the total waste generated for the month of September & October is 780 Kg. barricadation of the waste management area will be done. Provision of adequate safety sings on identified Compost location. Handling of recycling waste is done by handing over the recycling waste to recycling contractors or dispose off in a safe manner.
		Solid Waste	Revised IEE, Pakistan Solid Waste Management System, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Monthly	Left side of New Bong Escape		Sep 2010 July 2011	No Littering Policy has been formulated and executed on Project Site. All employees have been provided awareness/training about No Littering on Project Site. No Littering Policy has been ommunicated to all employees through HSE Information board. Food waste and paper waste etc has been quantified and the total waste generated for the month of September & October is 780 Kg. Internal Audits/ inspections/walk about have been conducted for the camp area and cooking areas and no major observation has been raised.
			IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM in coordination with ESOHS Officer		Left side of New Bong Escape	As per project activity	Refer to point 4	Cutting of trees and other natural vegetation is avoided as far as possible. Tree Plantation Plan has been established and will be executed on Project Site. The planted trees will be at Least five times the tree cut during Construction period
		Noise	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semi annual for 1st year of Excavation/ Construction. Annual for next two years	Left side of New Bong Escape	May 30, 2010 Dec 30, 2010. Dec 30, 2011 June, 2012	May 7, 2010 Feb 1, 2011 Aug 25, 2011 Jun 15, 2012	Vehicles have exhaust mufflers (silencers) to minimize noise generation. Noise monitoring has been conducted Four time since the commencement of the project and results found satisfactory within the limits of Pak NEQS, WHO and IFC standards. Night time traffic is avoided near the communities. Vehicular traffic through the communities is avoided as far as possible. Vehicle speed is under limit and horns are not being used while passing through or near the communities as far as practically possible.

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Sr No.	Activities	Impacts	Key Performance Indicators (KPIs)	Responsible Party/ Person	Monitoring frequency	Monitoring Location	Target date	Completion date	Mitigation Measures/ Actions
7	Excavation and Construction of Subsidiary Outfall	Damage to Infrastructure	IFC Performance Standards on Social & Environmental Sustainability	Sambu / PM	Annual	Left side of New Bong Escape	Dec 30, 2010. Dec 30, 2011. Sep 20, 2012	No damage till to day	Damaged infrastructure will be restored to original or better condition.
		Soil Erosion / Contamination	IFC Performance Standards on Social & Environmental Sustainability	Sambu / ESOHS Officer	Monthly	Project Area	Thoughout the project construction activitie	Monthly done	Vehicle and construction machinery movement very close to the canal/channel banks are minimized, as these may cause soil erosion. Management practices are employed to minimize leakage and spillage of oils, chemicals and fuels to the ground. These includes building containment dikes around fuels/oils/chemical storage, storing these in covered areas, constructing a concrete pad for machinery/ vehicle maintenance areas, inspecting machinery and vehicles for any leakage, and removing contaminated soils for appropriate disposal. Equipment and vehicles are kept in good working condition and properly tunned, in order to minimize the exhaust emissions. Vehicles and equipment are repaired in the specified location (Workshop) having impervious sheathing/ cement pad to avoid soil and water contamination.
		Air Quality Deterioration	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semiannual for 1st year of Excavation/ Construction. Annual for next two years	Project Area	June 30, 2010 Dec 30, 2010. Sep. 20, 2012	May 7, 2010 Feb 1, 2011 Jun, 15, 2012	Fugitive dust emission are minimized by spraying water on soil, where required and appropriate. Vehicular traffic through the communities is avoided as far as possible. Vehicle speeds to be kept low. Air quality has been monitored thrice since the commencement of project and results found within the limits of PAK NEQS, WHO and IFC standards.
		Surface Water Contamination	Pakistan NEQS, IFC Environmental, Health, and Safety General Guidelines	Sambu / ESOHS Officer	Semiannual for 1st year of Excavation/ Construction. Annual for next two years	Project Area	June 30, 2010 Dec 30, 2010. July 31, 2011 Jun, 2012	Tailrace water has been analysed for turbidity in Sep 2, 2010 & Aug 26,2011 & Jun 16, 2012	Septic tanks and soakage pits have been constructed having adequate capacity. Monitoring of sewage wastewater has been done in the month of June, 2012 and found satisfactory. No Littering Policy has been formulated and will be executed on Project Site. All employees have been provided awareness/training about No Littering on Project Site. No Littering Policy has been communicated to all employees through HSE Information board.

Exhibit 06 – Monitoring Results

(Please see the next page)

Monitoring Report

Environmental Assessment at Sambu Construction Company Ltd.

Our Ref.: ENV – LHR – 400/ 2012
Monitoring Date: June 15 – 16, 2012

For

By

Environmental Services
SGS Pakistan (Pvt) Ltd.

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Annexes

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Annexure – II	Ambient Air Quality Monitoring Data
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1. Introduction

Sambu Construction Co. is a company that specializes in civil works, architectural works, housing development and plant works. The company operates in South Korea, Malaysia, Saudi Arabia, Kazakhstan, Bolivia, UAE, Nepal and Pakistan. Currently Sambu is engaged in installation of "BONG ESCAPE HYDRO ELECTRIC POWER PROJECT" at Mirpur Azad Jamu and Kashmir in Pakistan. For the purpose of environmental monitoring of the said project, services of SGS Pakistan (Pvt.) Ltd. have been hired. This report is prepared on the basis of field survey carried out from June 15 to June 16, 2012 for monitoring of ambient air quality, weather conditions and noise level. In addition to this, water samples were also collected from advised sampling points.

1.1. Study Objectives

The main objective of the study was to monitor ambient air quality, recording sound level and analyze the water samples to examine the environmental conditions and water quality of the project site and its surroundings. The obtained data is compared with standards attached as **Annexure- V** of the report.

1.2. Scope of Services

Scope of services covered following main components:

- Ambient Air Quality Monitoring
- Weather Conditions
- Noise Level Monitoring
- Water Sampling and Analysis

1.3. Ambient Air Quality Monitoring

In accordance to National Environmental Quality Standards for Ambient Air, following priority pollutants were monitored in the ambient air of the study area:

- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2)
- Particulate Matter (PM_{10})

In addition to above mentioned parameters, the weather conditions were also monitored in order to interpret ambient air quality. For the purpose following parameters were monitored:

- Ambient Temperature
- Relative Humidity
- Barometric Pressure
- Wind Direction
- Wind Velocity

1.4. Noise Level Monitoring

Noise level using portable digital sound meter was monitored at following advised sites:

- Ferozabad Village
- Power House Area
- Lehri Village
- Chechian

1.5. Water Sampling

Four water samples were collected from advised sampling point and submitted to SGS environmental lab for analysis according to parameters as per contract.

1.5.1 Analysis Parameters:

The collected water samples were analyzed as per contract for following list of parameters according to USEPA and APHA approved methods.

Table 1: WasteWater Parameters

Test Type	Physical	Chemical
Parameter	Temperature pH	Total Dissolved Solids (TDS) Total Suspended Solids (TSS) BOD_5 COD Grease & Oil Chloride (Cl) Chlorine Phenolic Compounds Anionic Detergents Sulphate Sulphide

Test Type	Physical	Chemical
		Fluoride Ammonia Iron Cyanide Nickel Manganese Zinc Arsenic Copper Cadmium Chromium Mercury Lead Silver Selenium Barium Boron Total toxic metal

Table 2: Drinking Water Parameters

Test Type	Physical	Microbiological	Chemical
Parameter	Temperature pH Color Odor Turbidity Taste Total Dissolved Solids (TDS)	Total Coli form Total Colony Count Faecal E. Coli Faecal Streptococci/Enterococci	Chloride (Cl) Phenolic Compounds Chlorine Fluoride Cyanide Nickel Manganese Zinc Arsenic Copper Cadmium Chromium Mercury Lead Selenium Barium Boron Nitrates Nitrites Total Hardness Antimony

Table 3: Surface Water Parameters

Test Type	Physical	Chemical
Parameter	Temperature pH	COD BOD TDS TSS Oil and Grease Iron Chloride Copper Phenolic Compounds

1.6. Schedule

In order to cover the above scope of work, following schedule was planned and followed:

Table 4 : Schedule

Sr.#	Intervention Date	Activity	Monitoring and Sampling Location							
			Power House Area near Embankment Wall	**Ferozabad Village**	**Lehri Village**	**Chichian Village**	**Power House**	**Surface Water (Bong pond & Tail race)**	**Drinking Water (water purification plant)**	**Wastewater (Labour camp, septic tank)**
Environmental Monitoring at Sambu Construction Company Limited										
1.	June 15 to June 16, 2012	Ambient Air Quality Monitoring								
2.	June 15 to June 16, 2012	Meteorological Conditions								
3.	June 15 to June 16, 2012	Noise Level Monitoring (24 Hours)								
4.	June 15, 2012	Noise Level Monitoring (One Hour Duration)								
5.	June 16, 2012	Water Sampling and Analysis								

2. Methodology

Following is the brief description of methodology adapted for this environmental monitoring:

2.1 Ambient Air Quality

Ambient air quality was monitored with the help of Mobile Air Quality Station equipped with the state of the art ambient air analyzers. Locations for the sampling and monitoring were identified and finalized by the Sambu representative and Field Analyst of SGS Pakistan (Pvt) Ltd. Ambient air quality of the project site was monitored for the estimation of carbon monoxide, nitrogen dioxide, sulphur dioxide and particulate matter concentrations at advised sampling points.

2.1.1 Carbon Monoxide

Carbon monoxide monitoring was carried out using gas filter Correlation CO analyzer. Measurement range of the analyzer is 0-100 ppm. Continuous data was recorded for duration of 24 hrs and hourly average is reported.

2.1.2 Nitrogen Dioxide

Nitrogen dioxide at the project site was measured using Chemiluminescent analyzer. Measurement range of the analyzer is 0-50 ppb and 0-1000 ppm. Reference method used for detection of NO_2 is USEPA Method RFNA-1289-074.

2.1.3 Sulphur Dioxide

Concentration of Sulphur dioxide in ambient air of the project site is measured by using Pulsed Fluorescent Analyzer. Measurement range of the analyzer is 0-50 ppb and 0-1000 ppm. USEPA Designated Method EQSA-0486-060 was used to measure SO_2 concentrations.

Table 5: Methodology of Ambient Air Quality Monitoring

Air Pollutant	Monitoring Technique	Method	Measurement Range	Lowest Detection Limit
Carbon Monoxide (CO)	Gas Filter Correlation CO Analyzer	USEPA Designated Method RFCA-0981-054	0 – 100	0.01 ppm
Sulfur Dioxide (SO_2)	Pulsed Fluorescent Analyzer	USEPA Designated Method EQSA-0486-060	0 – 50 ppb 0 – 1000 ppm	1 ppb
Nitrogen Dioxide (NO_2)	Chemiluminescent Analyzer	USEPA Designated Method RFNA-1289-074	0 – 50 ppb 0 – 1000 ppm	1 ppb
Particulate Matter (PM_{10})	High Volume Sampler	40 CFR 50, App. B (US-EPA)	02 – 750 µg/m^3	2 µg/m^3

2.1.4 Sampling and Analysis of Particulate Matter

Particulate matter concentration in terms of PM_{10} was monitored in the ambient air with the help of high Volume PM_{10} Sampler. Reference method used for PM_{10} determination in ambient air is 40 CFR 50, Appendix J (USEPA).

Air sample for detection of PM_{10} concentration was drawn on fiberglass filter paper and then the collected sample was preserved in protective holder which was transported to SGS lab for further analysis under standard environmental conditions.

2.2 Meteorological Conditions

In addition to the advised parameters for ambient air quality, weather conditions were also monitored continuously for 24 hours with the help of mobile weather station. Selection of sampling points was made considering the wind direction at the advised sampling site.

2.3 Noise Level Monitoring

Noise level was monitored at Ferozabad Village site for 24 hours and hourly average data is reported. Noise level at other three advised sites was also measured for one hour duration. The sound level was monitored with the help of portable Digital sound meter. Noise level measurement was performed according to standard operating procedures.

2.4 Water Sampling

Two surface water, one drinking water and one effluent water samples were collected from advised sampling points. Water samples were collected according to the SOP based on the recognized methods of National Environmental Quality Standards (NEQS) and American Public Health Administration (APHA) for water sampling and analysis.

2.4.1 Sample Preservation

The collected water samples were preserved in appropriate container as per APHA guidelines. A shipping container (Ice box with eutectic cold packs instead of ice) with maintained temperature of 4° C ±5 °C was used for transporting the sample from the collection site to the analytical laboratory.

Table 6: Summary of Special Handling Requirements for Water Sample

Determination	Container	Minimum sample size (ml)	Preservation	Maximum storage recommended / regulatory
BOD_5	P, G	1000	Refrigerator @ 4 ^oC	06 Hrs / 48 Days
COD	P, G	100	Refrigerate @ 4 ^oC Analyze ASAP OR Add H_2SO_4 TO pH <2	07 Days / 28 Days
Chlorine, Residual	P, G	500	Analyze Immediately	0.5 Hr / 02 Hrs
Color	P, G	500	Refrigerate	48 Hrs / 48 Hrs
Fluoride	P	300	None Required	28 Days / 28 Days
Grease & Oil	G, wide mouth calibrated	1000	Add H_2SO_4 To pH < 2, Refrigerate	28 Days / 28 Days
Metals, General	P (A), G (A)	-	For Dissolved Metals Filter Immediately	06 MON / 06 MON
Mercury	P (A), G (A)	500	Add HNO_3 To pH < 2.4 C	28 Days / 28 Days
Nitrogen Ammonia	P, G	500	Analyze ASAP OR Add H_2SO_4 TO pH < 2, Refrigerate	07 Days / 28 Days
Nitrate	P, G	100	Analyze ASAP OR Refrigerate, OR Freeze At –20 C	48 Hrs / 48 Hrs
Nitrate + Nitrite	P, G	200	Add H_2SO_4 To pH < 2, Refrigerate	None / 28 Days

Nitrite	P, G	100	Analyze ASAP OR Refrigerate, OR Freeze At –20 C	None / 48 Hrs
Odor	G	500	Analyze ASAP, Refrigerate	06 Hrs
Phenols	P, G	500	Refrigerate, Add H_2SO_4 TO pH < 2	24 Hrs / 28 Days
pH	P, G	-	Analyze Immediately	02 Hrs / 02 Hrs
Phosphate	G (A)	100	For Dissolved Phosphate Filter Immediately, Refrigerate, Freeze At –10 C	48 Hrs / 48 Hrs
Solids	P, G	-	Refrigerate	07 Days / 07-14 Days
Sulfate	P, G	-	Refrigerate	28 Days / 28 Days
Sulfide	P, G	100	Refrigerate, Add 4 Drops 2N Zinc Acetate	28 Days / 28 Days
Temperature	P, G	-	Analyze Immediately	- / -

P : Plastic Container
G : Glass Bottle

2.4.2 Sample Identification and Chain of Custody

The collected water sample was labelled and assigned a unique sample identification number, sampling date and time of collection to collected samples. All the relevant information (sampling location, time of collection, sample identification, temperature, pH, collected by, preservation techniques etc) was recorded immediately on the Chain of Custody form signed by SGS field Analyst.

2.4.3 Analysis Methods

The collected water samples were analyzed according to following methods:

Table 7 : Methods Used for Analysis

a) Microbiological Analysis:

Sr.#	Parameters	Procedure Reference
01	Total Coli form	APHA – 9222 B
02	Total Colony Count	APHA – 9215 B
03	Faecal E. Coli	APHA – 9222 D
04	Faecal Streptococci/Enterococci	APHA – 9230 C

b) Physical analysis:

Sr. No.	Parameter	Method	
		Description	Reference
01	pH	Electrometric	APHA-4500H^+ B
02	Solids, Total dissolved(TDS)	Gravimetric	APHA-2540 C
03	Taste	Organoleptic	In House
04	Color	Pt-Co/Hazen/APHA	APHA-2120 B/C
05	Odor	Organoleptic	In House
06	Turbidity	Nephelometric	APHA-2130 B

c) Chemical analysis:

Sr. #	Parameters	Method	
		Description	Reference
01	Temperature	Thermometer	-
02	pH	Electrometric	APHA-4500H^+ B
03	Biochemical Oxygen Demand(BOD5) @ 20 ^{o} C	Manometric	ASTM-5210 B
04	Chemical Oxygen Demand(COD)	Digestion, Colorimetric	APHA-5220 D
05	Solids, Total Suspended (TSS)	Gravimetric	APHA-2540 D
06	Solids, Total dissolved(TDS)	Gravimetric	APHA-2540 C
07	Chloride (Cl)	Titration	APHA-4500Cl^- B
08	Ammonia (NH_3)	Ion Selective Electrode	APHA-4500NH_3 B
09	Chlorine, Residual (Cl)	DPD Colorimetric	APHA-4500Cl G
10	Cyanide (CN)	Ion Selective Electrode	APHA-4500CN F
11	Detergents, Anionic	Colorimetric	APHA-5540 C
12	Phenols, Total (Phenolic Compounds)	Colorimetric	APHA-5530 D
13	Fluoride (F)	Ion Selective Electrode	APHA-F^- 4500 C
14	Sulphide(S)	Iodometric Titration	APHA-4500S^{2-} E
15	Oil & Grease	Gravimetric	USEPA-1664

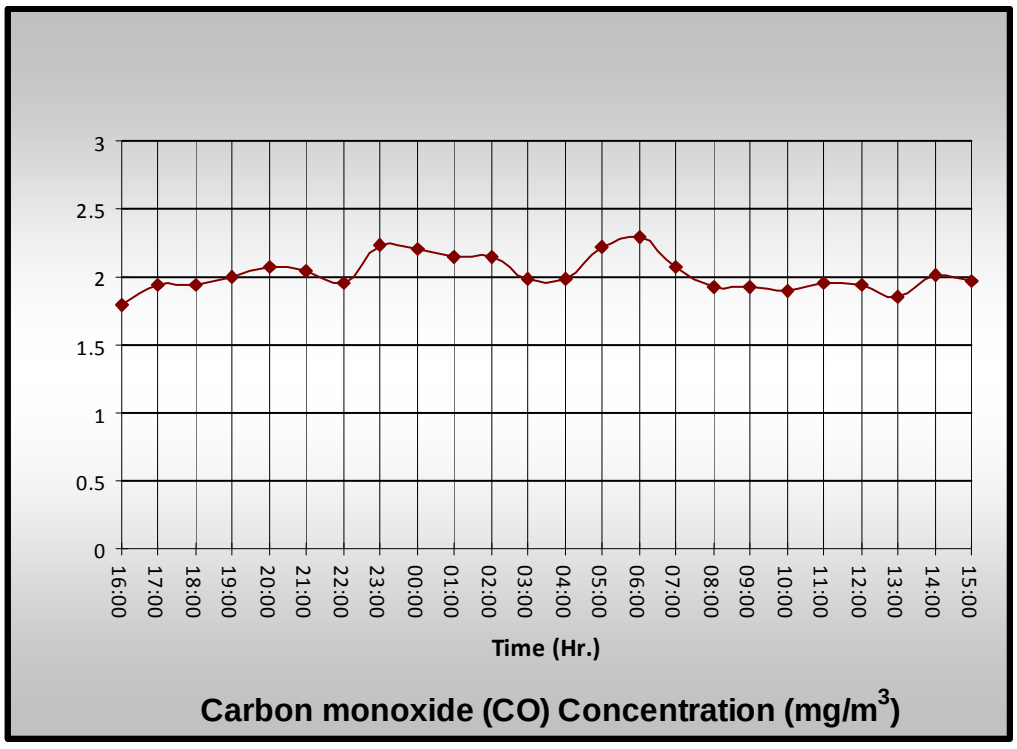
Sr. #	Parameters	Method	
		Description	Reference
16	Sulphate(SO_4)	Gravimetric	APHA-4500-SO_4 C
17	Arsenic (As)	AAS/Hydride generation	APHA-3114/3120 B
18	Barium(Ba)	AAS/ICP	APHA-3111/3120 B
19	Boron	ICP	APHA-3120 B
20	Cadmium (Cd)	AAS/ICP	APHA-3111/3120 B
21	Chromium total (Cr)	AAS/ICP	APHA-3111/3120 B
22	Copper (Cu)	AAS/ICP	APHA-3111/3120 B
23	Iron (Fe) $^{+3}$ as Total	AAS/ICP	APHA-3111/3120 B
24	Lead (Pb)	AAS/ICP	APHA-3111/3120 B
25	Mercury (Hg)	AAS/Cold vapour/ICP	APHA-3111/3120 B
26	Manganese (Mn)	AAS/ICP	APHA-3111/3120 B
27	Nickel (Ni)	AAS/ICP	APHA-3111/3120 B
28	Selenium (Se)	HGS-AAS/ICP	APHA-3114 B/ 3120 B
29	Silver (Ag)	AAS/ICP	APHA-3111/3120 B
30	Zinc (Zn)	AAS/ICP	APHA-3111/3120 B
31	Total Toxic Metal	Based on Calculation	-

3. Result and Discussion

SGS Pakistan (Pvt.) Ltd. conducted a comprehensive environmental monitoring at client's advised sampling points. Scope of this assessment covered monitoring of ambient air quality, weather conditions, noise level monitoring and sampling and analysis of water from advised sampling points. The monitoring and analysis results are given as **Annexure I to IV**.

The results of ambient air quality monitored for 24 hrs are given in **Annexure-II** of the report. National Environmental Quality Standards (NEQS) for Ambient Air used for comparison.

The average concentration of carbon monoxide (CO) for 08 hrs according to the National Environmental Quality Standards (NEQS) for Ambient Air should not exceed from 5.0 mg/m^3. The value obtained at monitoring site was 2.02 mg/m^3. Graph 1 shows prevailing concentrations of CO in mg/m^3 at project site during 24 hrs of monitoring.



Graph 1: CO Concentration during 24 Hrs. Monitoring

The standard value mentioned in NEQS for nitrogen dioxide NO_2 is 80 µg/m^3 and average concentrations of nitrogen dioxide NO_2 measured during 24 hrs monitoring was found 17.60 µg/m^3. According to standard the 24 hrs concentration of sulphur dioxide SO_2 in ambient air

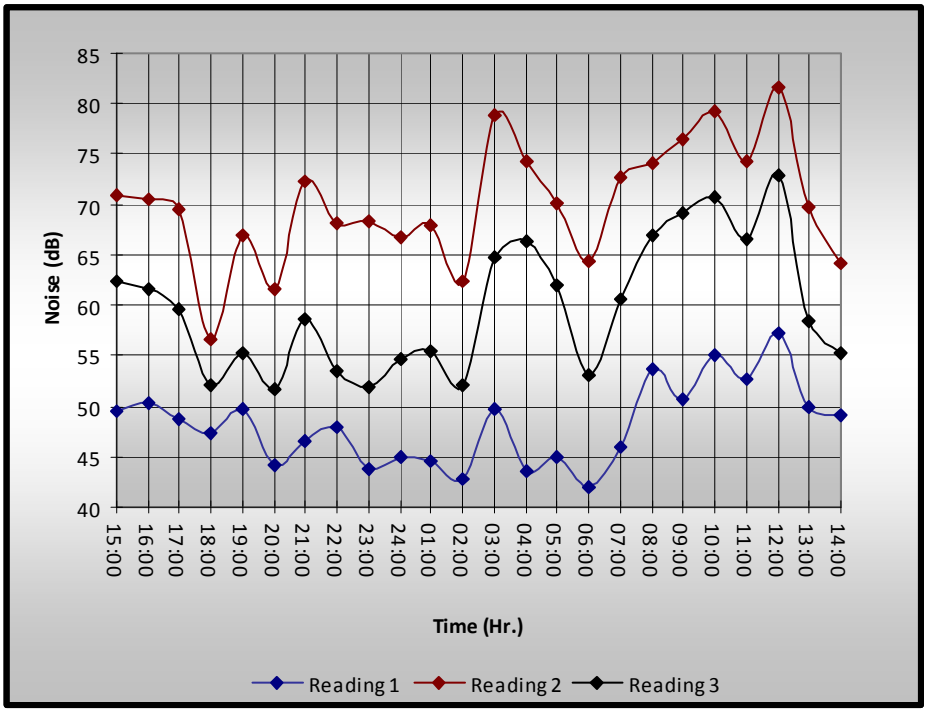
should not exceed from 120 µg/m^3 while concentration obtained during monitoring was found at 6.90 µg/m^3.

However the results of both nitrogen dioxide and sulphur dioxide were found very well within the limits defined in NEQS. The 24 hrs average particulate matter PM_{10} was found to be 219.51 g/m^3 against standards value of 250 g/m^3.

Table 8: Average Obtained Concentrations of Priority Pollutants

Parameter	Unit	Average Concentration (24 hrs. Duration)
Oxides of Nitrogen (NO_2)	µg/m^3	17.60
Sulphur Dioxide (SO_2)	µg/m^3	6.90
Carbon Monoxide (CO)	mg/m^3	2.02
Particulate Matter (PM_{10})	µg/m^3	219.51

24 Hours Noise level monitoring was conducted at Ferozabad Village. One hour noise level monitoring was conducted at power house, lehri and chechian village. Results are attached as **Annexure-III** of the report and results are compared with guidelines of IFC. **Graph-2** shows the values (Leq Reading-1, Lmax Reading-2, L90 Reading-3) obtained during noise level monitoring at Ferozabad Village.



Graph 2: Variation of Noise with Time

The limiting criteria for Ferozabad, Lehri Village, Chechian Village is Residential 55 dB (A) for day and 45 dB (A) for night and the limiting criteria for Power House is industrial 70 dB (A) for Day and Night. The average obtained during monitoring at Ferozabad are 60.54 dB (A) for day and 57.35 dB (A) for night and for Lehri and Chechian are 48.43 dB (A) and 55.93 dB (A) for day respectively and the average obtained during monitoring at Power House are 68.63 dB (A).

Four water samples comprising two surface water samples, one drinking water sample and one wastewater sample were collected from the advised sampling locations for the analysis of parameters as per contract. The analysis results are attached as **Annexure – IV** of the report. The results are compared with NEQS for drinking water while for wastewater it is compared with NEQS and IFC Guidelines for wastewater. Microbiological analysis results of drinking water sample show that the water sample is found to be unfit for human consumption due to presence of microbial contamination while chemical analysis results show that all the parameters lie well within the limited defined in National standards for drinking water quality except pH and selenium which are slightly higher than prescribed limits. Moreover the analysis results of wastewater show that all parameters are within the IFC Guidelines and NEQS limits, except iron that is slightly higher than the threshold limit defined in NEQS for wastewater.

Annexure – I

Meteorological Data

Meteorological Data

Client : **Sambu Construction Company Limited**

Sampling Point : **Power House Area near Embankment Wall**

Date of Intervention : **June 15-16, 2012**

Time	Ambient Temperature	Wind Direction	Wind Speed	Humidity	Pressure (mm of Hg)
	^{o}C		m/s	%	
16:00	31	S	2.4	42	746.4
17:00	34	S	3.6	37	745.3
18:00	36	SE	3.6	32	745.0
19:00	39	E	4.0	30	745.0
20:00	41	E	4.5	50	744.8
21:00	41	SE	6.3	55	744.9
22:00	40	S	6.8	55	744.1
23:00	40	S	5.4	58	744.1
00:00	36	SW	5.8	58	743.7
01:00	35	SW	6.4	63	743.6
02:00	35	S	3.4	68	743.3
03:00	34	W	3.0	68	743.6
04:00	33	NW	3.5	70	743.7
05:00	33	NW	2.2	72	745.5
06:00	30	W	2.4	66	745.7
07:00	34	W	2.0	65	746.3
08:00	34	SW	2.0	50	746.5
09:00	38	SW	1.8	45	746.8
10:00	38	SW	1.5	42	746.5
11:00	39	W	2.2	42	745.4
12:00	40	SW	2.2	40	745.2
13:00	42	SW	2.4	36	745.8
14:00	42	SW	1.9	36	744.1
15:00	44	SW	1.7	32	744.6

Annexure – II

Ambient Air Quality Monitoring Data

Ambient Air Quality

Client : **Sambu Construction Company Limited**

Sampling Point : **Power House Area near Embankment Wall**

Date of Intervention : **June 15-16, 2012**

Sr. #	Time	CO (mg/m^3)	NO ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)
1.	16:00	1.80	40.53	7.88	48.41	12.74
2.	17:00	1.94	27.25	20.79	48.04	9.11
3.	18:00	1.94	5.33	19.26	24.59	6.71
4.	19:00	2.00	1.47	14.56	16.03	5.13
5.	20:00	2.07	3.22	18.82	22.04	5.45
6.	21:00	2.04	1.58	16.82	18.40	5.32
7.	22:00	1.96	9.73	30.00	39.73	4.50
8.	23:00	2.23	2.02	12.86	14.88	4.49
9.	00:00	2.20	0.97	9.38	10.35	5.10
10.	01:00	2.14	0.83	7.51	8.34	4.11
11.	02:00	2.14	0.83	7.17	8.00	3.09
12.	03:00	1.98	3.95	17.26	21.21	6.69
13.	04:00	1.99	1.67	8.34	10.01	3.14
14.	05:00	2.22	0.90	7.57	8.47	2.37
15.	06:00	2.30	2.27	13.61	15.88	3.92
16.	07:00	2.08	3.57	16.65	20.22	5.84
17.	08:00	1.93	4.13	19.21	23.34	6.90
18.	09:00	1.93	5.73	27.56	33.29	11.58
19.	10:00	1.89	7.54	33.52	41.06	15.09
20.	11:00	1.95	5.54	24.72	30.26	14.74
21.	12:00	1.94	15.94	23.24	39.18	10.03
22.	13:00	1.85	10.35	22.47	32.82	9.57
23.	14:00	2.01	9.85	16.60	26.45	6.43
24.	15:00	1.97	11.54	28.49	40.03	3.58
Average Concentration		**2.02**	**7.36**	**17.68**	**25.04**	**6.90**

Annexure – III

Noise Level Monitoring Data

Noise Level Monitoring

Client : **Sambu Construction Company Limited**

Sampling Point : **Ferozabad Village**

Date of Intervention : **June 15-16, 2012**

Sr. #	Time (Hrs)	Noise Level (Leq)	Noise Level (Lmax)	Noise Level (L90)
1.	15:00	49.6	71.0	62.4
2.	16:00	50.4	70.5	61.6
3.	17:00	48.8	69.6	59.7
4.	18:00	47.4	56.7	52.0
5.	19:00	49.8	66.9	55.3
6.	20:00	44.2	61.6	51.6
7.	21:00	46.5	72.3	58.7
8.	22:00	47.9	68.1	53.4
9.	23:00	43.7	68.4	51.8
10.	00:00	44.9	66.7	54.6
11.	01:00	44.5	67.9	55.4
12.	02:00	42.8	62.4	52.0
13.	03:00	49.7	78.9	64.8
14.	04:00	43.6	74.3	66.4
15.	05:00	45.0	70.2	62.0
16.	06:00	41.9	64.3	53.1
17.	07:00	45.9	72.7	60.6
18.	08:00	53.7	74.1	67.0
19.	09:00	50.8	76.5	69.1
20.	10:00	55.0	79.2	70.8
21.	11:00	52.6	74.2	66.5
22.	12:00	57.3	81.6	72.9
23.	13:00	50.0	69.8	58.5
24.	14:00	49.2	64.2	55.3

Noise Level Monitoring

Client : **Sambu Construction Company Limited**

Sampling Duration : **One Hour**

Date of Intervention : **June 15, 2012**

Sr. #	Monitoring Points	Time	Noise Level (Leq)	Noise Level (Lmax)	Noise Level (L90)
1	Power House	10:00 – 11:00	61.4	81.6	62.9
2	Lehri Village	15:00 – 16:00	43.1	63.3	38.9
3	Chechian Village	18:00 – 19:00	53.6	73.4	40.8

Annexure – IV

Water Analysis Report

CHEMICAL LABORATORY

TEST REPORT

Job No : ENV – LHR – 380 / 2012

Client Name : Sambu Construction Company Limited

Description of Sample : Surface Water

Marking (If any) : Bong Pond **No. of Sample :** 01

Sample Condition Upon Receipt: Satisfactory **Sample Collection Date** 16-06-2012

Environmental Conditions: **Temperature :** NA **Humidity:** NA

Sr. #	Parameters	Method	Unit	LDL	Test Results
1.	Temperature (At the time of Sample Collection)	-	^{0} C	-	19.0
2.	pH @ 28.9 ^{0}C	Based on APHA-4500-H^+ B	-	0.1	7.22
3.	Biochemical Oxygen Demand (BOD_5) @ 20 ^{0}C	Based on ASTM 5210	mg/L	5.0	< 5.0
4.	Chemical Oxygen Demand (COD)	Based on APHA-5220 D	mg/L	5.0	< 5.0
5.	Total suspended solids (TSS)	Based on APHA-2540 D	mg/L	5.0	24.0
6.	Total dissolved solids (TDS)	Based on APHA-2540 C	mg/L	5.0	112.5
7.	Grease & Oil	Based on USEPA-1664	mg/L	1.0	< 1.0
8.	Phenolic comp. (As phenol)	Based on APHA-5530 D	mg/L	0.01	< 0.01
9.	Chloride (Cl)	Based on APHA-4500-Cl^- B	mg/L	0.5	3.6
10.	Copper (Cu)	Based on APHA-3111 B	mg/L	0.05	< 0.05
11.	Iron (Fe)	Based on APHA-3111 B	mg/L	0.1	0.14

LDL: Lowest Detection Limit -: Not Defined <: Less Than

CHEMICAL LABORATORY

TEST REPORT

Job No : ENV – LHR – 380 / 2012

Client Name : Sambu Construction Company Limited

Description of Sample : Surface Water

Marking (If any) : Tail Race **No. of Sample :** 01

Sample Condition Upon Receipt: Satisfactory **Sample Collection Date** 16-06-2012

Environmental Conditions: **Temperature :** NA **Humidity:** NA

Sr. #	Parameters	Method	Unit	LDL	Test Results
1.	Temperature (At the time of Sample Collection)	-	^{0} C	-	20.0
2.	pH @ 28.9 ^{0}C	Based on APHA-4500-H^+ B	-	0.1	7.45
3.	Biochemical Oxygen Demand (BOD_5) @ 20 ^{0}C	Based on ASTM 5210	mg/L	5.0	6.0
4.	Chemical Oxygen Demand (COD)	Based on APHA-5220 D	mg/L	5.0	25.0
5.	Total suspended solids (TSS)	Based on APHA-2540 D	mg/L	5.0	16.0
6.	Total dissolved solids (TDS)	Based on APHA-2540 C	mg/L	5.0	271.0
7.	Grease & Oil	Based on USEPA-1664	mg/L	1.0	< 1.0
8.	Phenolic comp. (As phenol)	Based on APHA-5530 D	mg/L	0.01	< 0.01
9.	Chloride (Cl)	Based on APHA-4500-Cl^- B	mg/L	0.5	11.06
10.	Copper (Cu)	Based on APHA-3111 B	mg/L	0.05	< 0.05
11.	Iron (Fe)	Based on APHA-3111 B	mg/L	0.1	0.12

LDL: Lowest Detection Limit -: Not Defined <: Less Than

Microbiological Analysis Report

Job No :	**ENV – LHR – 380 / 2012**		
Client Name :	**Sambu Construction Company Limited**		
Description of Sample :	**Drinking Water**		
Marking (If any) :	**Water Purification Plant**	**No. of Sample :**	**01**
Sample Condition Upon Receipt:	**Satisfactory**	**Sample Collection Date**	**16-06-2012**
Environmental Conditions:	**Temperature : NA**	**Humidity:**	**NA**

Sr. #	Parameters	Procedure	Permissible Limits	Results
01	Total Colony Count	APHA: 9215 B	< 500 cfu / ml	2.5×10^4
02	Total Coli Forms	APHA: 9222 B	0 cfu / 100ml	Absent
03	Faecal Coli Forms (E.Coli)	APHA: 9222 D	0 cfu / 100ml	Absent
04	Faecal Streptococci/ Enterococci	APHA: 9230 C	0 cfu / 100ml	Absent

cfu: colony forming unit

NOTE:
WHO/USEPA Guidelines for Drinking Water states that Total or Faecal Coli forms must be absent and are not tolerated in Potable water.

CHEMICAL LABORATORY

TEST REPORT

Job No : ENV – LHR – 380 / 2012

Client Name : Sambu Construction Company Limited

Description of Sample : Drinking Water

Marking (If any) : Water Purification Plant **No. of Sample :** 01

Sample Condition Upon Receipt: Satisfactory **Sample Collection Date** 16-06-2012

Environmental Conditions: **Temperature :** NA **Humidity:** NA

Sr. #	Parameters	Method	Unit	LDL	Test Results	Limits as per NEQS
1.	Temperature (At the time of Sample Collection)	-	^{0}C	-	24.0	-
2.	pH @ 27.7 ^{0}C	Based on APHA-4500-H^+ B	-	0.1	6.91	6.5 – 8.5
3.	Color	Visual	-	-	Colorless	≤ 15 TCU
4.	Odor	In-house/ Organoleptic	-	-	Odorless	-
5.	Turbidity	Based on APHA-2130 B	NTU	0.2	< 0.2	< 5 NTU
6.	Total dissolved solids (TDS)	Based on APHA-2540 C	mg/L	5.0	306.5	< 1000.0
7.	Total Hardness as $CaCO_3$	Based on APHA-2340 B & C	mg/L	0.5	132.0	< 500
8.	Phenolic comp. (As phenol)	Based on APHA-5530 D	mg/L	0.01	< 0.01	-
9.	Chloride (Cl)	Based on APHA-4500-Cl^- B	mg/L	0.5	79.26	< 250.0
10.	Nitrates (NO_3)	Based on APHA-4500-NO_3 D	mg/L	0.003	4.95	≤ 50.00
11.	Nitrites (NO_2)	Based on APHA-4500-NO_2 B	mg/L	0.01	< 0.01	≤ 3.0
12.	Fluoride (F)	Based on APHA-4500-F^- C	mg/L	0.01	0.10	≤ 1.5
13.	Cyanide (CN)	Based on APHA-4500-CN F	mg/L	0.01	< 0.01	≤ 0.05
14.	Cadmium (Cd)	Based on APHA-3111 B	mg/L	0.01	< 0.01	0.01
15.	Chromium (Cr)	Based on APHA-3111 B	mg/L	0.02	< 0.02	≤ 0.05
16.	Copper (Cu)	Based on APHA-3111 B	mg/L	0.05	< 0.05	2.0
17.	Lead (Pb)	Based on APHA-3111 B	mg/L	0.02	< 0.02	≤ 0.05

Sr. #	Parameters	Method	Unit	LDL	Test Results	Limits as per NEQS
18.	Mercury (Hg)	Based on APHA-3112 B	mg/L	0.001	< 0.001	≤ 0.001
19.	Selenium (Se)	Based on APHA-3120 B	mg/L	0.005	0.018	0.01
20.	Nickel (Ni)	Based on APHA-3111 B	mg/L	0.02	< 0.02	≤ 0.02
21.	Zinc (Zn)	Based on APHA-3111 B	mg/L	0.05	< 0.05	5.0
22.	Arsenic (As)	Colorimetric	mg/L	0.005	< 0.005	≤ 0.05
23.	Manganese (Mn)	Based on APHA-3111 B	mg/L	0.1	< 0.1	≤ 0.5
24.	Boron (B)	Based on APHA-3120 B	mg/L	0.005	< 0.005	0.3
25.	Barium (Ba)	Based on APHA-3120 B	mg/L	0.005	0.096	0.7
26.	Antimony (Sb)	Based on APHA-3114B / 3120 B	mg/L	0.005	< 0.005	≤ 0.005
27.	Chlorine	Based on APHA-4500-Cl G	mg/L	0.1	< 0.1	-

LDL: Lowest Detection Limit -: Not Defined <: Less Than
≤: Equal or Less Than

CHEMICAL LABORATORY

TEST REPORT

Job No : ENV – LHR – 380 / 2012

Client Name : Sambu Construction Company Limited

Description of Sample : Waste Water

Marking (If any) : Septic Tank, Labour Camp **No. of Sample :** 01

Sample Condition Upon Receipt: Satisfactory **Sample Collection Date** 16-06-2012

Environmental Conditions: **Temperature :** NA **Humidity:** NA

Sr. #	Parameters	Method	Unit	LDL	Test Results	Limits as per NEQS	IFC Standards
1.	Temperature (At the time of Sample Collection)	-	^{0} C	-	27.0	≤ 40	-
2.	pH @ 27.5 ^{0}C	Based on APHA-4500-H^+ B	-	0.1	6.89	06 – 09	06 – 09
3.	Biochemical Oxygen Demand (BOD_5) @ 20 ^{0}C	Based on ASTM 5210	mg/L	5.0	29.0	80.0	30.0
4.	Chemical Oxygen Demand (COD)	Based on APHA-5220 D	mg/L	5.0	75.0	150.0	125.0
5.	Total suspended solids (TSS)	Based on APHA-2540 D	mg/L	5.0	13.5	200.0	50.0
6.	Total dissolved solids (TDS)	Based on APHA-2540 C	mg/L	5.0	423.5	3500.0	-
7.	Grease & Oil	Based on USEPA-1664	mg/L	1.0	4.5	10.0	10.0
8.	Phenolic comp. (As phenol)	Based on APHA-5530 D	mg/L	0.01	< 0.01	0.10	-
9.	Chloride (Cl)	Based on APHA-4500-Cl^- B	mg/L	0.5	20.27	1000.0	-
10.	Fluoride (F)	Based on APHA-4500-F^- C	mg/L	0.01	0.03	10.0	-
11.	Cyanide (CN)	Based on APHA-4500-CN F	mg/L	0.01	< 0.01	01.0	-
12.	Anionic Detergents (As MBAS)	Based on APHA-5540 C	mg/L	0.1	< 0.1	20.0	-
13.	Sulphate (SO_4)	Based on APHA-4500-SO_4 C	mg/L	5.0	59.65	600.0	-
14.	Sulphide (S)	Based on APHA-4500-S2- D	mg/L	0.1	< 0.1	01.0	-
15.	Ammonia (NH_3)	Based on APHA-4500-NH_3 B	mg/L	0.1	25.1	40.0	-

Sr. #	Parameters	Method	Unit	LDL	Test Results	Limits as per NEQS	IFC Standards
16.	Cadmium (Cd)	Based on APHA-3111 B	mg/L	0.05	< 0.05	0.10	-
17.	Chromium (Cr)	Based on APHA-3111 B	mg/L	0.1	< 0.1	1.00	-
18.	Copper (Cu)	Based on APHA-3111 B	mg/L	0.05	< 0.05	1.00	-
19.	Lead (Pb)	Based on APHA-3111 B	mg/L	0.2	< 0.2	0.50	-
20.	Mercury (Hg)	Based on APHA-3112 B	mg/L	0.001	< 0.001	0.01	-
21.	Selenium (Se)	Based on APHA-3120 B	mg/L	0.005	0.027	0.50	-
22.	Nickel (Ni)	Based on APHA-3111 B	mg/L	0.1	< 0.1	1.00	-
23.	Silver (Ag)	Based on APHA-3111 / 3120 B	mg/L	1.0	< 1.0	1.00	-
24.	Zinc (Zn)	Based on APHA-3111 B	mg/L	0.05	0.12	5.00	-
25.	Arsenic (As)	Colorimetric	mg/L	0.005	0.015	1.00	-
26.	Iron (Fe)	Based on APHA-3111 B	mg/L	0.1	0.12	8.00	-
27.	Manganese (Mn)	Based on APHA-3111 B	mg/L	0.1	< 0.1	1.50	-
28.	Boron (B)	Based on APHA-3120 B	mg/L	0.005	< 0.005	6.00	-
29.	Barium (Ba)	Based on APHA-3120 B	mg/L	0.005	0.203	1.5	-
30.	Total Toxic Metal	Calculation	mg/L	-	0.218	2.0	-
31.	Chlorine	Based on APHA-4500-Cl G	mg/L	0.1	<0.1	1.00	-

LDL: Lowest Detection Limit -: Not Defined <: Less Than
≤: Equal or Less Than

Annexure – V

Standards

Standards for Drinking Water (Bacterial)

Properties/ parameters	Standard values for Pakistan	Who Standards	Remarks
All water intended for drinking (e. Coli or Thermo tolerant Coliform Bacteria)	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	Most Asian countries also follow WHO standards
Treated water entering the distribution system (e. Coli or Thermo tolerant Coliform and total coliform Bacteria)	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample	Most Asian countries also follow WHO standards
Treated water in the distribution system (e. Coli or Thermo tolerant Coliform and total Coliform Bacteria)	Must not be detectable in any 100 ml sample. In case of large supplies where sufficient samples are examined, must not be present in 95% of the samples taken through out any 12-month period	Must not be detectable in any 100 ml sample. In case of large supplies where sufficient samples are examined, must not be present in 95% of the samples taken through out any 12-month period	Most Asian countries also follow WHO standards

National Standards for Drinking Water

Properties/ parameters	Standard values for Pakistan	Who Standards	Remarks
Physical			
Colour	≤ 15 TCU	≤ 15 TCU	
Taste	Non objectionable/Acceptable	Non objectionable/Acceptable	
Odour	Non objectionable/Acceptable	Non objectionable/Acceptable	
Turbidity	< 5NTU	< 5NTU	
Total Hardness as $CaCO_3$	< 500mg/l	_____	
TDS	< 1000	< 1000	
pH	6.5-8.5	6.5-8.5	
Chemical			
Essential Inorganic	***mg/Litre***	***mg/Litre***	
Aluminium (Al)	≤ 0.2	0.2	
Antimony (Sb)	≤ 0.005 (P)	0.2	
Arsenic (As)	≤ 0.05 (P)	0.01	Standards for Pakistan similar to most Asian developing countries
Barium (Ba)	0.7	0.7	
Boron (B)	0.3	0.3	
Cadmium (Cd)	0.01	0.003	Standards for Pakistan similar to most Asian developing countries
Chloride (Cl)	< 250	250	
Chromium (Cr)	≤ 0.05	0.05	
Copper (Cu)	2	2	
Toxic inorganics			
Cyanide (CN)	≤ 0.05	0.07	Standards for Pakistan similar to most Asian developing countries
Fluoride (F) *	≤ 1.5	1.5	
Lead (Pb)	≤ 0.05	0.01	
Manganese (Mn)	≤ 0.5	0.5	
Mercury (Hg)	≤ 0.001	0.001	
Nickel (Ni)	≤ 0.02	0.02	
Nitrate (NO_3)	≤ 50	50	
Nitrite (NO_2)	≤ 3 (P)	3	

Properties/ parameters	Standard values for Pakistan	Who Standards	Remarks
Selenium (Se)	0.01 (P)	0.01	
Residual Chlorine	0.2-0.5 at consumer end 0.5-1.5 at source	————	
Zinc (Zn)	5.0	3	Standards for Pakistan similar to most Asian developing countries
Organic			
Pesticides mg/L		PSQCA No. 4639-2004. Page No. 4 Table No. 3 Serial No. 20-58 may be Consulted***	Annex II
Penolic Compounds (as Phenols) mg/L		≤ 0.002	
Polynuclear aromatic hydrocarbons (as PAH) g/L		0.01 (by GC/MS method)	
Radio Active			
Alpha Emitters bq/L or pCi	0.1	0.1	
Beta Emitters	1	1	

* Indicates priority health related inorganic constituents which need regular monitoring
*** PSQCA Pakistan Standards Quality Control Authority

National Environmental Quality Standards (NEQS) for Ambient Air

Concentration in Ambient Air				
Pollutants	**Time- Weighted Average**	**Effective from 1st July 2010**	**Effective from 1st January 2013**	**Method of measurement**
SO_2	Annual Average*	80 µg/m^3	80 µg/m^3	-Ultraviolet Fluorescence Method
	24 hrs**	120 µg/m^3	120 µg/m^3	
NO	Annual Average*	40 µg/m^3	40 µg/m^3	Gas Phase Chemiluminescence
	24 hrs**	40 µg/m^3	40 µg/m^3	
NO_2	Annual Average*	40 µg/m^3	40 µg/m^3	Gas Phase Chemiluminescence
	24 hrs**	80 µg/m^3	80 µg/m^3	
O_3	1 hr	180 µg/m^3	130 µg/m^3	Non Dispersive UV Absorption Method
Suspended Particulate Matter (SPM)	Annual Average*	400 µg/m^3	360 µg/m^3	High Volume Sampling (average flow rate not less than 1.1 m^3/minute)
	24 hrs**	550 µg/m^3	500 µg/m^3	
Respirable Particulate Matter (PM_{10})	Annual Average*	200 µg/m^3	120 µg/m^3	-β Ray Absorption Method
	24 hrs**	250 µg/m^3	150 µg/m^3	
Respirable Particulate Matter ($PM_{2.5}$)	Annual Average*	25 µg/m^3	15 µg/m^3	-β Ray Absorption Method
	24 hrs**	40 µg/m^3	35 µg/m^3	
	1 hr	25 µg/m^3	15 µg/m^3	

Lead (Pb)	Annual Average*	1.5 µg/m^3	1 µg/m^3	ASS Method after sampling using EPM 2060 or equivalent Filter paper
	24 hrs**	2 µg/m^3	1.5 µg/m^3	
Carbon Monoxide (CO)	8hrs**	5 mg/m^3	5 mg/m^3	Non Dispersive Infra Red (NDIR) Method
	1 hr	10 mg/m^3	10 mg/m^3	

*Annual arithmetic mean of minimum 104 measurements in a year, taken twice a week 24 hourly at uniform interval.
**24 hourly/ 8 hourly values should be met 98% of the in a year. 2% of the time. It may exceed but not on two consecutive days.

Noise Level Guidelines (IFC)

Receptor	Day Time 07:00-22:00	Night Time 22:00-07:00
Residential, Institutional and Educational	55	45
Industrial, Commercial	70	70

Noise Level Monitoring

Noise Level Monitoring

Ambient Air Quality Monitoring

Ambient Particulate Matter Monitoring

Exhibit 07 – Incidents Categorization

(Please see the next page)

CATEGORIZATION

- **Lost Time Injury** (LTI) occurs when a person is injured in the execution of his/her duties and as a result of this injury is unable to perform his/her regular duty for one full shift or more on the day following day which the injury was incurred.

- **Incident** is defined an unplanned event having potential for injury, ill health, damage or other loss. Incidents may involve actual or potential injury/illness, property/environment damage, or near misses.

- **Accident:** An Accident is defined as an unplanned event that causes harm to people or damage to property.

- **Near Miss** is a situation in which no injury or damage occurred but might have if conditions had been slightly different. Near misses however highlight workplace hazards and the need to initiate corrective action, e.g.: tripping without falling.

- **Medical Aid** refers to any injury not severe enough to warrant more than the day of injury off, but where medical treatment by a doctor is given.

- **First Aid** is the assistance or treatment given to a casualty for any injury or sudden illness before the arrival of an ambulance or qualified medical expert. It may involve improvising with facilities and materials available at the time.
  - Cleaning, flushing or soaking wounds on skin surface
  - Use of wound covering such as bandages, gauze pads, etc.
  - Use of non prescription medications including antiseptics
  - Visit to health care limited to observation
  - Removal of foreign bodies not embedded in the eye if only irrigation or removal with a cotton swab is required.
  - Removal of splinters of foreign material from areas other than the eyes by irrigation, tweezers, cotton swabs or other simple means.

- **Occupational Illness** is defined as a condition resulting from a worker's exposure to chemical, biological or physical agents or ergonomics in the workplace to the extent that the health of the worker is impaired. All kinds of agents are as following.

  Biological agents include such organisms as bacteria, viruses, fungus, parasites, spores and moulds.

  Chemical agents can include such things as battery acid, solvents, and pesticides.

Physical agents include various forms of energy that may harm a worker, for example, heat, cold, light, vibration, noise and radiation.

Ergonomic hazards are associated with work such as lifting or moving of heavy objects and tasks where there is excessive repetitive motion

- **Medical Treatment cases** "Medical Treatment" means the management and care of a patient to combat disease because of seasonal and habitual reasons or due to personal life style or chronic problems diagnosed by doctor.

- **Minor Injury** means an injury or illness that only causes discomfort or short-term pain, has no lasting effect, has no foreseeable potential to worsen, and was caused by trivial causes. Typical examples include paper cuts, small burns, bruises and minor scratches etc

- **Critical Injury** is defined as an injury of a serious nature that:
    a) Places life in jeopardy;
    b) Results in substantial loss of blood;
    c) Involves the fracture of a leg or arm but not a finger or toe;
    d) Involves the amputation of a leg, arm, hand or foot but not a finger or toe;
    e) Consists of burns to a major portion of the body; or
    f) Causes the loss of sight to an eye.

Exhibit 08 – Key Performance Indicators

(Please see the next page)

Monthly HSE Key Performance Indicator Report (July)

Project:NBE Hydro Electric Power Complex From 01/07/12 to 31/07/12

SR. NO	Key Performance Indicator (KPI)	Frequency/ Applicable Standard	Target	Status
1	No of LTI & I's	Monthly	0	0
2	No of hours without LTI	Monthly		4,829,730(total man hours)
3	Number of incidents at site including fatilities/ major/ minor/ first aid/near misses/ property damages etc.	Monthly	Major =0	Major=0 Occupational illness/ injury =10 First Aid= 1 Nearmisses= 3 Property damage=0
4	Investigation of incidents irrespective of their level of severity	Monthly	As & when	0
5	Number of Last work days in case of LTI & I	Monthly	0	0
6	Air emission	Annual/ Pak NEQS and IFC Standards	NEQS	Compliance
7	Noise Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
8	Water Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
9	Achievement of HSE Objectives	Quarterly	Objective 1= 100 % Objective 2= 100 %	it will be reported with MPR of September
10	Risk Assessments	Monthly	As & when	2
11	Inspection	Monthly	4	4
12	Trainings	Monthly	2	2
13	ESOHS Monthly Meeting	Monthly	1	1

Monthly ESOHS Key Performance Indicator Report

Project:NBE Hydro Electric Power Complex From 01/08/12 to 31/08/12

SR. NO	Key Performance Indicator (KPI)	Frequency/ Applicable Standard	Target	Status
1	No of LTI & I's	Monthly	0	0
2	No of hours without LTI	Monthly		5,070,850 (total man hours)
3	Number of incidents at site including fatilities/ major/ minor/ first aid/near misses/ property damages etc.	Monthly	Major =0	Major=0 Occupational illness/ injury =7 First Aid= 1 Nearmisses= 3 Property damage=0 UA/UC=12
4	Investigation of incidents irrespective of their level of severity	Monthly	As & when	1
5	Number of Last work days in case of LTI & I	Monthly	0	0
6	Air emission	Annual/ Pak NEQS and IFC Standards	NEQS	Compliance
7	Noise Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
8	Water Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
9	Achievement of HSE Objectives	Quarterly	Objective 1= 100 % Objective 2= 100 %	it will be reported with MPR of September
10	Risk Assessments	Monthly	As & when	2
11	Inspection	Monthly	5	5
12	Trainings	Monthly	1	1
13	ESOHS Monthly Meeting	Monthly	1	1

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ESOHS Key Performance Indicator Report

Project:NBE Hydro Electric Power Complex From 01/09/12 to 31/09/12

SR. NO	Key Performance Indicator (KPI)	Frequency/ Applicable Standard	Target	Status
1	No of LTI	Monthly	0	0
2	No of hours without LTI	Monthly		5,340,970 (total man hours)
3	Number of incidents at site including fatilities/ major/ minor/ first aid/near misses/ property damages etc.	Monthly	Major =0	Major Injuries= 0 Minor Injuries = 04 Occupational illness = 13 First Aid= 1 Nearmisses=4 Property damage=0 UA/UC=14
4	Investigation of incidents irrespective of their level of severity	Monthly	As & when	5
5	Number of Last work days in case of LTI & I	Monthly	0	0
6	Air emission	Annual/ Pak NEQS and IFC Standards	NEQS	Compliance
7	Noise Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
8	Water Analysis	Annual/ Pak NEQS and IFC Standards		Compliance
9	Achievement of HSE Objectives	Quarterly	Objective 1= 100 % Objective 2= 100	Objective 1= 79.25 % Objecive 2= 70 %
10	Risk Assessments	Monthly	As & when	4
11	Inspection	Monthly	3	7
12	Trainings	Monthly	1	2
13	ESOHS Update	Alternate Month	0	1
13	ESOHS Monthly Meeting	Monthly	1	1

Exhibit 10 – Annual Management Plan

(Please see the next page)

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Annual Management Plan Performance 2012

Environmental, Social, Occupational, Health and safety

	Well on Track
	Partially done
	Not done

Project: NBE Hydro Electric Power Complex

Date: 23/09/12

Sr. No	Activities	Performance Parameters	Monthly Progress Update & Timelines												Responsibility	Traffic Light
			Target Yearly	Jan	Feb	Mar	Apr	May	Jun	Ju	Aug	Sep	Oct	Nov	Dec		
1	Contractor's ESOHS Committee	To establish fix agenda for ESOHS Committee meeting.	1	1												ESOHS Officer	
		o conduct meeting every month & issue minutes do follow up with relevant people.	12	1	1	1	1	1	1	1	1	1	1	1	1		
2	Contractor's Monthly ESOHS Reports	Format attached as Appendix 1	12	1	1	1	1	1	1	1	1	1	1	1	1	ESOHS Officer	
		Reporting time line to Laraib is 7th of every month.															
3	ESOHS Key performance indicators (KPIs)	To Develop & report KPI's monthly on every 5th of current month.	12	1	1	1	1	1	1	1	1	1	1	1	1	ESOHS Officer	
		Report to LEL															
4	ESOHS Local Legislative Requirements Relevant Environmental Permits or Compliance Certificates	IEE/EIA. (ESMP) Action plan monitoring for EMP implementation.	2							1					1	ESOHS Officer	
		EPA-AJK monitoring reports															
5	H&S Risk Assessment Environmental, Chemical & Machinery Risk Assessment	As per schedule twice a month or any activity under taken will be carted for.	24	2	2	2	2	2	2	2	2	2	2	2	2	ESOHS Officer	
6	Environnemental Sampling (Air, Water, noise, Light, Ambient Air Quality)	Sampling planning for environmental parameters to be done twice for the first year and then once annually.	1						1						1	ESOHS Officer	
		Analysis for Air Pollution	1						1								

SAMBU

Annual Management Plan Performance 2012

Environmental, Social, Occupational, Health and safety

	Well on Track
	Partially done
	Not done

Project: NBE Hydro Electric Power Complex

Date: 23/09/12

Sr. No	Activities	Performance Parameters	Monthly Progress Update & Timelines												Responsibility	Traffic Light
			Target Yearly	Jan	Feb	Mar	Apr	May	Jun	Ju	Aug	Sep	Oct	Nov	Dec		
6	Environnemental Sampling (Air, Water, noise, Light, Ambient Air Quality)	Analysis for the Waste water	2						1						1	ESOHS Officer	
		Analysis for the drinking water	2						1						1		
		Analysis for the noise	1						1								
		Certified lab to conduct sampling & do testing.	As & when														
7	Environmental, Health & Safety Targets and Objectives Progress	ESOHS to prepare Environmental, Health and Safety targets and objectives.	4			1			1			1			1	ESOHS Officer	
		To record quarterly progress.															
8	Occupational Health	To conduct lab Examination of Food handlers	1						1							Medical Officer /	
		To review medical examination / tests annually conducted and recorded by the Contractor.	As & when														
		Review ill health cases by appointed Doctor of the Contractor.														ESOHS Officer	
		To do investigation of the above cases.															
		To implement developed SOP & Plan to conduct general health surveillance & lab examination of food handlers	1						1								

SAMBU

Annual Management Plan Performance 2012

Environmental, Social, Occupational, Health and safety

	Well on Track
	Partially done
	Not done

Project: NBE Hydro Electric Power Complex

Date: 23/09/12

Sr. No	Activities	Performance Parameters	Monthly Progress Update & Timelines												Responsibility	Traffic Light
			Target Yearly	Jan	Feb	Mar	Apr	May	Jun	Ju	Aug	Sep	Oct	Nov	Dec		
9	Reporting and Investigation of ESOHS Adverse Events Violations or Non-Compliance	If any investigation & reporting should be done & progress to ESOHS Committee	As & when													ESOHS Officer	
		Records to be maintained															
10	Safety Training (No. of training/Month)	Needs assessment	1													ESOHS Officer	
		One Trainings monthly as per ESOHS training schedule 2012	12	1	1	1	1	1	1	1	1	1	1	1	1		
11	ESOHS Updates/Alert Issued	Every alternate month to be issued & displayed at site & in head office.	6		1		1		1		1		1		1	ESOHS Officer	
		Action plan on recommendation to be filled by the concerned departments.															
		ESOHS to do follow up															
12	Fire Evacuation Drill	To participate in drills	10			1	1	1	1	1	1	1	1	1	1	ESOHS Officer	
13	Fire Safety & equipment checking and reporting	To check fire safety equipment and Fire Safety Plan every year, formulated by the Contractor.	12	1	1	1	1	1	1	1	1	1	1	1	1	ESOHS Officer	
14	ESOHS External Audit	External audit will be conducted by	4			1			1			1			1	ESOHS Officer	
		Lenders quarterly															
		External audit will be conducted by	As &														

SAMBU

Annual Management Plan Performance 2012

Environmental, Social, Occupational, Health and safety

	Well on Track
	Partially done
	Not done

Project: NBE Hydro Electric Power Complex

Date: 23/09/12

Sr. No	Activities	Performance Parameters	Monthly Progress Update & Timelines												Responsibility	Traffic Light
			Target Yearly	Jan	Feb	Mar	Apr	May	Jun	Ju	Aug	Sep	Oct	Nov	Dec		
14	ESOHS External Audit	AJK EPA surprise.	As & when														
		They will provide recommendations on observations found in Audit	4			1			1			1			1		
		To conduct follow up of their recommendations and implement															
15	ESOHS Internal Audit	To conducted Audit for ESOHS standards by Aug '2012.	1								1					ESOHS Officer	
		Action planning against identified gaps by Sep, 2012.										1					
		Execution of actions planned for the year by Sep, 2012.										1					
16	Quarterly ESOHS Trend Charts	To report Accidents, Near misses, UA/UC and First aid trends on Quarterly basis	4			1			1			1			1	ESOHS Officer	
17	ESOHS CAP	Total number of Observations	As required													ESOHS Officer	
18	Inspections	Three inspection at least in a month	36	3	3	3	3	3	3	3	3	3	3	3	3	ESOHS Officer	

Exhibit 11 – Risk Assessments

(Please see the next page)

HSE Risk Assessment
Dismantling of Tower Crane

Assessor Name: ESOHS Officer, Area Supervisor

Project: New Bong Escape Hydro Electric Power Complex

Date: 12/07/12

Sr. No	Activities	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Assessment for Element (As per evaluation criteria)							Control Measures
					Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Total	
1	Unstable/Soft Ground	Area Supervisor	Entanglement leading to loss of integrity of load	loss of property	2	3	2	1	3	2	**6**	Ensue the ground is stable to bear the weight of the crane and lifted load. The surface should be flat and smooth and compacted smo
			Over turn	loss of property	2	3	2	1	3	2	**6**	
2	Restricted Access- Height and Width	Area Supervisor	Entanglement leading to loss of integrity of load	loss of property	2	3	3	1	2	4	**8**	Areas should be clear, stop the movement of unnecessary vehicles and personal in the area. Tap off under side of the work area and erecect warning signs there.
			struck between	Injury	2	3	2	1	3	3	**9**	
3	Sling Handling	Area Supervisor	damaged wires	Injury	2	3	3	1	2	4	**8**	Slings should be in good conditioned and certified by third part. Choose the right sling for right job. Riggers and other workers must wear the safety items as per job requirement.
			Sharp Edges	Injury	2	3	3	1	2	4	**8**	
4	Weather condition	Area Supervisor	Wind conditions	Instability and loss of control	2	3	3	1	2	4	**8**	Immediately stop crane operation Provision of trainings on Safe lifting operation
5	Machinery and other equipment		Collapse/ Collision	Injury	2	3	3	1	3	3	**9**	Areas should be clear, stop the movement of unnecessary vehicles and personal in the area. Tap off under side of the work area and erecect warning signs there.
6	Failure of lifting equipment	Area Supervisor	Injury	Loss of Life	3	3	3	2	3	3	**9**	All lifting equipment will be certificated and inspected regularly. A copy of certification shall be retained for record keeping and reference. Slinger / Signaler will carry out visual inspection prior to use. Awareness on crane safety in toolbox talks. Ensure the Use of Proper PPE's
			Property Loss	Damage to equipment	2	3	3	1	2	4	**8**	

HSE Risk Assessment
Dismantling of Tower Crane

Assessor Name: ESOHS Officer, Area Supervisor

Project: New Bong Escape Hydro Electric Power Complex

Date: 12/07/12

Sr. No	Activities	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Assessment for Element (As per evaluation criteria)							Control Measures
					Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Total	
7	Close proximity of cranes /building	Area Supervisor	Entanglement leading to loss of integrity of load	loss of property	2	3	2	1	2	2	**4**	Areas should be clear, stop the movement of unnecessary vehicles and personal in the area. Tap off under side of the work area and erecect warning signs there.
8	Disconnecting the Electricity		Electrocution	Loss of life	2	3	3	1	3	3	**9**	Only Authorized and Qualified Electricians are allowed to perfom the electric work.
9	Dissembling the parts of crane	Area Supervisor	Fall from height	Loss of Life	2	3	2	1	3	2	**6**	Ensure the use of safety harness and other necessary PPE's. Tape off underside of wok area and erect warning signs. No one shall be allowed to work in the barricaded area
				Property Loss	2	3	2	1	3	2	**6**	
			Hit by Falling Objects	Serious Injury	3	3	3	2	4	3	**12**	Tools are to be attached to tool belts worn by the individual where practicable and safe to do so, . Only essential items to be taken up the tower crane. Safety helmets to be worn at all times other than when no danger above.
				Fatigue	2	3	2	1	3	2	**6**	
10		Area Supervisor	Tripping & Falling Over	Seious Injury/ Loss of Life	3	3	3	2	4	3	**12**	Work areas and accessways to be kept clear of unnecessary materials and equipment.
			Injury from exposure to crane machinery	Impact Injures	2	3	2	1	3	2	**6**	Ensure no loose clothing or long hair.Correct protective clothing and equipment to be used in accordance with the type of work being done. Only experienced or supervised staff to work on tower cranes.
			Wind	Collapse	3	3	3	1	3	3	**9**	Incase of heavy wind stop the work activity and loose the top boom free to move easily in the direction of wind.

HSE Risk Assessment
Erection of 132KV Electric Poles

Assessor Name: ESOHS Officer, Area Supervisor

Project: New Bong Escape Hydro Electric Power Complex

Date: 15/07/12

Sr. No	Activities	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Assessment for Element (As per evaluation criteria)							Control Measures
					Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Total	
	Excavation	Area Supervisor	Fall in Deep Trenches	Injury	2	3	2	1	3	2	**6**	Avoid close movement from deep excavation. Brricade the area with the reflective tap and isntall the safety signs showing deep excavtion ahead.
			Under ground utiilities	Loss of Life	3	3	3	1	2	4	**8**	Properly check the underground utilities like pipeline or underground electericcable before excavation.
				Property Loss	2	3	2	1	3	2	**6**	
1	Concreting for basement	Area Supervisor	Sliding of the material	Compact Injury	2	3	2	1	3	2	**6**	Make the trenches with maximum possible slop to avoid sliding of the material. Remove the loose materila along the slopes and compact the slopes very well with compactor. Ensure the use of proper PPEs' while working in deep trenches.
2	Positioning the Equipment		Lack of space	Injury	3	3	3	1	2	4	**8**	Get items moved with crane if possible
			Electrocution	Fatality	3	3	3	2	3	4	**12**	Ensure the safe distance at Least 10 ft from high tension wires. A trained signal man and qualified Operator must co ordinate each other. Ensure the use of safety shoes and other safety items at site.
3	Spotting Pole	Area Supervisor	Over turning of the Crane	Property Loss	3	3	3	2	3	4	**12**	Estimate the load and use proper crane for lifting load, Ensure the ground surface is compacted and hard before out rigging the crane.
				Loss of Life	3	3	3	2	3	4	**12**	Only authorized operator and qualified rigger are allowed to perfom the work. Keep the safe distance at least 10 ft from high tention wires.

HSE Risk Assessment
Erection of 132KV Electric Poles

Assessor Name: ESOHS Officer, Area Supervisor

Project: New Bong Escape Hydro Electric Power Complex

Date: 15/07/12

Sr. No	Activities	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Assessment for Element (As per evaluation criteria)							Control Measures
					Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Total	
4	Framing crosses, braces and arm on Pole	Area Supervisor	Lose Load	Injury	2	3	2	1	3	2	**6**	Use Proper Slings & Rigging Use Proper Tools to Align Holes Don't Stand Under Load
			Pinch Point	Injury	2	3	2	1	4	2	**8**	Don't Stick Fingers in Bolt Holes Use Proper Tools to Align Holes Use Tag Ropes to Help Control Arm
			Fall from height	Loss of Life	3	3	3	2	3	4	**12**	Only authorized workers allowed to work at height, no one climb without wearing safety harness with shock absorber and they will must hook the safety harness before starting the job. The workers with height fobia not allowed to work at heith.
				Serious injury	3	3	3	1	3	3	**9**	
			Overloading/Uncontrolled load	Injury	2	3	2	1	3	2	**6**	Must have authorized crane Operator,Use crane only within known wind tolerances and also know the weight of each lift. Slings and anchors should be properly inspected. Never Operate machine while distracted. Have an eye contact with the load.
				Fatality	3	3	3	1	3	3	**9**	
			Sling Slippage/ breakage	Serious injury	3	3	3	1	3	3	**9**	
			Injury from releasing load to soon	Injury	3	3	2	1	3	2	**6**	The riggersonly permitted to release the load and released only when adequately fixed.
				Property Loss	3	3	2	1	3	2	**6**	Slings and anchors should be properly inspected and supported

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HSE Risk Assessment

Installation of Scaffolding for Stator and Bulb

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Installation of Scaffolding		Pinch by planks, Stuck by planks and steel pipes	Multiple Injuries	2	3	3	1	3	3	**9**	Only qualified scaffolders perform the erction works. Store the pipes away from lubricants or spillage to avoid slippery surface. Always wear the gloves while handling pipes.	1	3	**3**
		Fall from height	Multiple Injuries Loss of Life	3	3	2	1	3	3	**9**	Utilize 100% fall protection arrest system. wear the gloves. Ensure the use of PPE's All scaffoldings must be secure prior to performing any work from them. Ensure the couplings and joints are adequately tight.	2	3	**6**
		Falling Objects	Multiple Injuries	2	3	2	1	3	2	**6**	No one should be allowed to work under the working area, if compulsoy must wear hard hats. Falling objects should be removed from planks	2	2	**4**
		Plateform overturning	Multiple Injuries Loss of Life	3	3	2	2	3	3	**9**	Only qualified scaffolders perform the erction works. All scaffoldings must be secure prior to performing any work from them.	1	3	**3**

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HSE Risk Assessment
Tile Works

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Lifting of heavy tiles	Area Supervisor	Back Injury	back injury	2	3	3	1	3	3	9	Bend knees to lessen pressure on the lower back. Use legs as the source of power to lift object. Solicit the help of others or employ tools if object is too heavy to be lifted by one person.	1	3	3
		Dropping of heavy objects	Foot injury	3	3	2	1	3	3	9	Get a secure hold on object. Wear gloves to aid in a secure grip. Wear steel-toed shoes, or similar.	2	3	6
		Slips and Trips	Injury	2	3	2	1	3	2	6	Evaluate condition of floor along path from origin to destination. Do not move heavy loads until floor is dry. Ensure the floor or working area is free from rubbish and debris	2	2	4
Setting heavy object down.		Back Injury	back injury	3	3	2	2	3	3	9	Bend knees to lessen pressure on the lower back. Use legs as the source of power to lift object. Solicit the help of others or employ tools if object is too heavy to be lifted by one person.	2	3	6
		Dropping of heavy objects	Foot injury	2	3	2	1	3	2	6	Get a secure hold on object. Wear gloves to aid in a secure grip. Wear steel-toed shoes, or similar.	2	2	4
		Inhalation of dust	Respiratory diseases	2	3	3	1	3	3	9	When mixing powders ensure that relevant PPE is worn (respiratory protection, gloves, eye protection.	2	2	4

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HSE Risk Assessment
Tile Works

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Grinding of Tiles	Area Supervisor	Damaged Disk	Injury	2	3	2	1	2	2	**4**	Ensure suitable storage facilities available at workplace for wheels and discs The right wheel for the right machine,	1	2	**2**
		Electric Shock	ElectorCution	3	3	2	1	3	3	**9**	Prior inspection of the tool, and poper use of PPE's. Proper training should be conducted	2	3	**6**
		Flying Objects	Eye Injuries	2	3	2	2	3	2	**6**	Eye protection. Operator to ensure that all persons are kept away from areas where sparks and dust is directed.	1	2	**2**
		Inhalation of dust	Respiratory diseases	2	3	2	1	3	2	**6**	Ensure the use of dust masks Reduce the exposure time of workers Trainings and safety awareness sessions	1	2	**2**
		Noise	Induced hearing Loss	2	3	2	1	2	2	**4**	Ensure the use of Ear muffs Reduce the exposure time of workers Trainings and safety awareness sessions	1	2	**2**
		Vibration	white Finger disease	2	3	2	1	3	2	**6**	Tool and disc sufficient for the job. Low vibration tools purchased. Reduce the exposure time of workers Trainings and safety awareness sessions	2	2	**4**

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HSE Risk Assessment
Driving at Site

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu), H/E Supervisor

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Driving at Site	Area Supervisor/ Heay Equipment (H/E) Supervisor	Over speeding	accidents, Property Damage, injuries to workers, Multiple fatalities	3	3	2	2	3	3	**9**	Display speed limits signs at site. Vehicles must be fitted with speed limiting devices if feasible. Daily pre start inspection Regular awareness and training sessions	2	3	**6**
		Speed limit not prescribed	property damage, injuries to the workers	3	3	2	1	3	3	**9**	Display speed limits signs at site. Vehicles must be fitted with speed limiting devices if feasible. Ensure pre start inspection Regular awareness and training sessions	2	3	**6**
		Mechanical failure (Break Failure)	property damage, injuries to the workers	2	3	2	1	3	2	**6**	Follow the proper maintenance schedule Ensure pre start inspection	2	2	**4**
		Carelessness of driver	accidents Property Damage Major injuries to workers	3	3	2	2	3	3	**9**	Display speed limits signs at site. Vehicles must be fitted with speed limiting devices if feasible. Daily pre start inspection Regular awareness and training sessions	2	3	**6**
		Carelessness of pedestrian	property damage, injuries to the workers	2	3	2	2	3	3	**9**	Proper awarensess and trainings. Avoid close by passing from heavy machines. Display of proper sign boards	2	2	**4**
		Driving by unauthorized person	property damage, injuries to the workers	3	3	2	2	3	3	**9**	Driverrs must possess valid driving licence for vehicle or equipments. Drivers must handover keys to the supervisor after finihsing the duty hours.	2	3	**6**

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HSE Risk Assessment

Driving at Site

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu), H/E Supervisor

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Driving at site	Area Supervisor/ Heay Equipment (H/E) Supervisor	Driver under the influence of drug and alcohol or fatigue	property damage, injuries to the workers	3	3	2	2	3	3	**9**	Follow the drug/ Alcohal policy at site	2	3	**6**
		Poor condition of roads within the site	Property Damage injuries to workers	2	3	2	1	3	2	**6**	Inpection of roads on regular basis and repairs should be done where necessary. Drivers must be adopt to road conditions.	2	2	**4**
		Poor lighting conditions at site during night	Property Damage injuries to workers	2	3	2	1	3	2	**6**	Adequate lighting at site. Signal men must wear flourescent jackets at night.	1	2	**2**
		Other vehicles or equipment working in the vicinity	Property Damage Major injuries to workers Multiple fatalities	3	3	2	2	3	3	**9**	Ensure the presence of banksman where heavy machinery is working. Heavy Equipments must be fitted with the backup alarm. Place traffic controllers (Flagmen) on site if feasible.. Arrange regular awarness and training sessions	2	3	**6**
		Lack of competency of drivers	Property Damage Major injuries to workers Multiple fatalities	3	3	2	2	3	3	**9**	Ensure the presence of banksman where heavy machinery is working. Heavy Equipments must be fitted with the backup alarm. Place traffic controllers (Flagmen) on site if feasible..	1	3	**3**

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HSE Risk Assessment

Installation of Rotor, Runner, Access Shaft and Distributor Motors

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Load lifting with crane	Area Superviosr	Over head Power lines	Multiple Injuries	3	3	3	2	3	4	**12**	Verify the location of Poer lines, keep minimum safe distance of 10 ft from power lines. Maintain spotter with no other duties than watching for interference, if power lines are within the swing radius.	2	3	**6**
		Pinch points and obstructions	Multiple Injuries Loss of Life	3	3	2	1	3	3	**9**	Never work under the direct load. Never place your hand under a load. Donot place any part of your body in a pinch point with load. Ensure the use of appropriate PPE's	2	3	**6**
		Personal Caught under load	Multiple Injuries Loss of Life	3	3	3	2	3	4	**12**	Never work under the direct load. Never place your hand under a load. Only one person to act as a signal man, however anyone can call for emergency stop Ensure the use of appropriate PPE's	1	3	**3**
		Fingers caught in wire rope and rigging	Multiple Injuries	3	3	2	2	3	3	**9**	. Use acceptable rigging practices. keep hands clear of wire rigging and rope. Ensure the use of appropriate PPE's	1	3	**3**
		Dropping load, rigging failure	Multiple Injuries Loss of Life	3	3	3	2	3	4	**12**	Inspect rigging before each use. Ensure proper rigging slection, sufficient size and strength. use acceptable rigging practices.	1	3	**3**
Load lifting with crane		Overturning of Crane	Multiple Injuries Loss of Life	3	3	3	1	3	3	**9**	Ensure pre inspection has been completed on crane prior to lift. Review load chart and ensure lift is within the capacity of crane. Never leave crane running and unattended. Do not use cell phones while operating equipment	1	3	**3**

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HSE Risk Assessment

Installation of Rotor, Runner, Access Shaft and Distributor Motors

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
Haualing Equipment		Hit by chain binder	Injuries	2	3	2	1	3	2	**6**	All loads on trailers must be securily tied down with approved rope, straps or chains.	1	2	**2**
		Dropping load,	Multiple Injuries Loss of Life	3	3	3	2	3	4	**12**	Under no circumstances shall a load be hauled without proper ties down. Before hauling the load check to be sure the load stays secure while under way. Before hauling the load make a quick walk around the vehicle to assure all tool boxes are closed and that the load is secure. Assure that the vehilce is rated for the weight that is carried on it.	2	3	**6**
Adjusting of Equipment		Dropping load	Multiple Injuries Loss of Life	3	3	3	2	3	4	**12**	Under no circumstances shall a load be hauled without proper ties down. Before hauling the load check to be sure the load stays secure while under way. Before hauling the load make a quick walk around the vehicle to assure all tool boxes are closed and that the load is secure. Assure that the vehilce is rated for the weight that is carried on it.	1	3	**3**
Adjusting of the Equigment	Area Superviosr	Fall from height		3	3	2	1	3	3	**9**	Ensure the use of safety harness at height. Unauthorized persons are not allwoed to eneter the working Zone. Safety railings must be provided at all openings. provide the safe working plateforms inside the units.	2	3	**6**

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HSE Risk Assessment

Installation of Rotor, Runner, Access Shaft and Distributor Motors

Project: New Bong Escape Hydro Electric Power Complex

Assessor Name: ESOHS Officer (Sambu),

Activity	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Base Risk							Control Measures	Residual Risk		
				Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Rating		Likelihood / Probability	Severity / Intensity	Rating
[illegible]		Heat Exhaustion		2	3	2	1	2	2	**4**	Provide heat stress training to exposed employees. Provide portable water to workers. Take breaks in cool rest areas. Allow employees to gradually get used to hot environment.	1	2	**2**
Welding	Area Superviosr	Enhalation of fumes		2	3	2	1	3	2	**6**	Ensure the use of necessary PPE's like gloves, goggles & shoes etc. arrange ventilation if needed.	1	2	**2**
		Fire		2	3	2	1	3	3	**9**	Weld only in well ventilated areas. Avoid welding on wood or oily surfaces, Ensure the presence of F/ Extinguisher at site. Ensure the use of necessary PPE's like gloves, goggles & shoes etc.	2	3	**6**

HSE Risk Assessment
Installation of Anchoring Ring

Assessor Name: ESOHS Officer (Sambu), HSE Advisor Andritz

Project: New Bong Escape Hydro Electric Power Complex

Date: 10/12/11

Sr. No	Activities	Responsibil-ity	Identified Health & Safety Hazard / Environmental Aspects	Potential Risks	Assessment for Element (As per evaluation criteria)							Control Measures
					Legal Implications	Policy Requirements	Interested Party Requirements	Public Image / Local Problems & Concern	Likelihood / Probability	Severity / Intensity	Total	
1	Working with hydraulic Crane	Area Supervisor	Collision with other vehicular traffic	Injury	2	3	2	1	3	2	6	Barriers or cones or fencing will be placed around machine operating area when necessary. Ensure adequate clearance between quipment & use the signaller for narrow spaces. Machine be driven by competent person.
				Fatality	3	3	3	1	3	3	9	
			Contact with over head obstructions	Injury	2	3	2	1	3	2	6	Machine must only be used on suitable surfaces and operatives must be in possession of necessary information etc. to enable safe
			use of Cellpohne during operation	Impact Injury	2	3	2	1	3	2	6	Never Operate machine while distracted.
			Entrapment of person in moving parts of machine	Induced hearing loss	2	3	2	1	3	2	6	Guards and fencing on moving parts must always be in place.
			Fire	Burn	2	3	2	1	3	2	6	Do not recharge the machine while smoking or near the open flame. Machine must only be used on suitable surfaces and operatives must be in possession of necessary information (manual) etc. to enable safe operation of machines. Proepr maintenance to avoid any oil spillage.
			Overturning		2	3	2	1	3	2	6	
			Oil Spillage	Soil contamination	2	3	2	1	3	2	6	
2	Working with Mobile Crane	Area Supervisor	Tilting & Swinging	Impact Injury	2	3	2	1	3	2	6	Never Operate machine while distracted. Have an eye contact with the load.
			Sling Failure	Impact Injury	2	3	2	1	3	2	6	Slings and anchors should be properly inspected

Half Yearly HSE Risk Assessment Schedule (Jul-Dec, 2012)

Project: NBE Hydro Electric Power Complex

Sr #	Month	Activity	Assessor Team
1	July	1. Dismantling of Tower Crane 2. Erection of Electric Pylons	ESOHS Officer Sambu Area Supervisor
2	August	1. Use of Vibrating Tools 2. Clinical Activities	ESOHS Officer Sambu Area Supervisor
3	September	1. Site Driving 2. Tile Works	ESOHS Officer Sambu Area Supervisor
4	October	1. Power & Control Cable Pulling 2. Installation of Trash Racks 3. Paint works	ESOHS Officer Sambu Area Supervisor
5	November	1. Parking Shelter 2. Gabions placing 3. Road Excavation	ESOHS Officer Sambu Area Supervisor
6	December	1. Opening of new built road for Public 2. Plant Operational Test	ESOHS Officer Sambu Area Supervisor

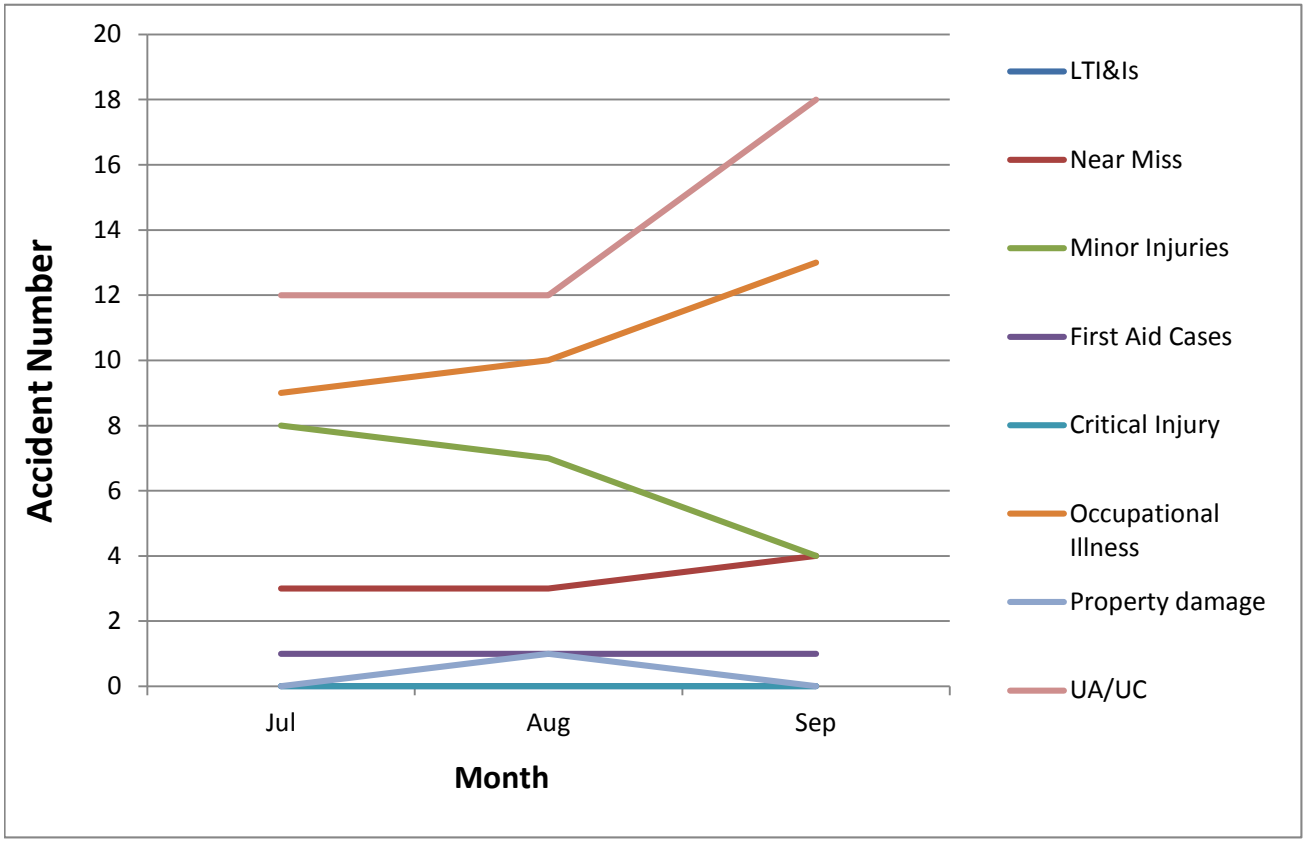
Note: Apart from the above mentioned scheduled activities, other activities as and when undertaken will be catered for and Risk Assessment prepared accordingly.

Exhibit 12 – Trend Analyses Chart

(Please see the next page)

Jul - Sep, 2012 (3rd Quarter)

	Jul	Aug	Sep
LTI&Is	0	0	0
Near Miss	3	3	4
Minor Injuries	8	7	4
First Aid Cases	1	1	1
Critical Injury	0	0	0
Occupational Illness	9	10	13
Property damage	0	1	0
UA/UC	12	12	18
Medical Treatment	69	83	68


20
18
16
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10
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6
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2
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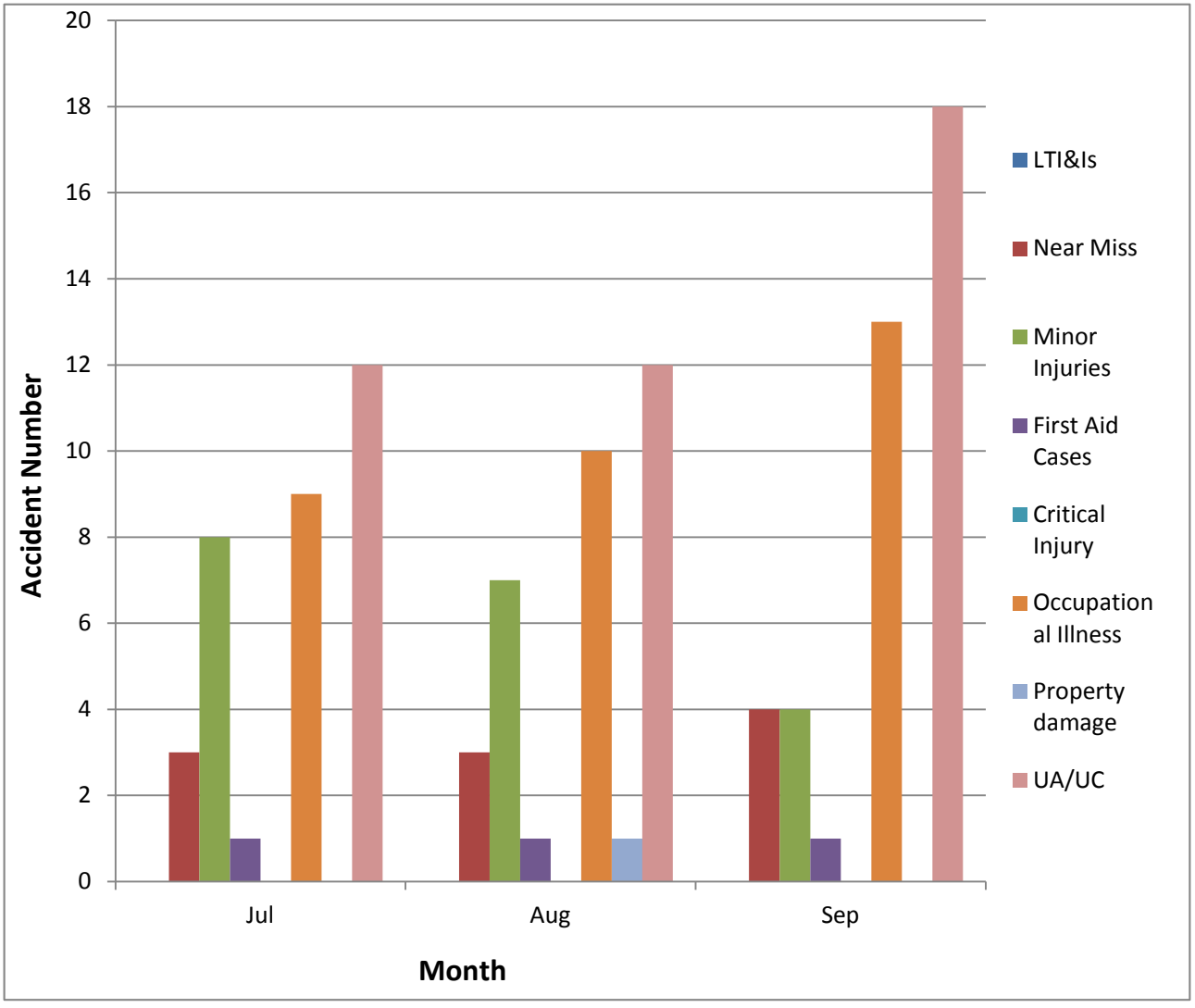
Accident Number
Jul
Aug
Sep
Month
LTI&Is
Near Miss
Minor Injuries
First Aid Cases
Critical Injury
Occupational Illness
Property damage
UA/UC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Accident Number
Jul
Aug
Sep
Month
LTI&Is
Near Miss
Minor Injuries
First Aid Cases
Critical Injury
Occupational Illness
Property damage
UA/UC

Exhibit 13 – Safety Updates

ESOHS BULLETIN

Laraib Energy Limited

LARAIB Energy Limited

UNSAFE ACTS WILL KEEP YOU IN STITCHES

DENGUE FEVER

WHAT IS DENGUE FEVER?

Dengue (pronounced den' gee) is an acute fever caused by a virus transmitted by the bite of an infected mosquito. It occurs in two forms, Dengue Fever and Dengue Hemorrhagic Fever.

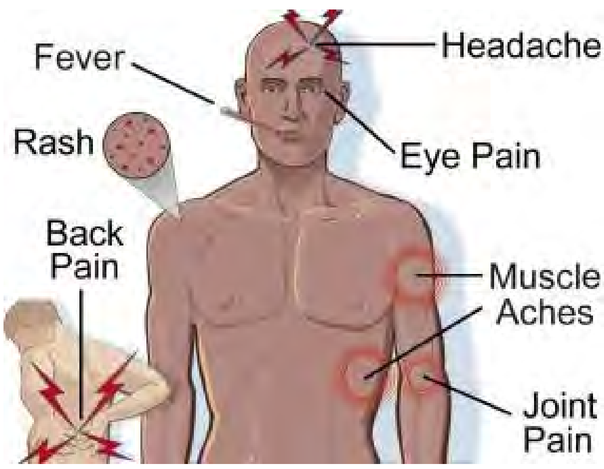
WHERE CAN OUTBREAKS OF DENGUE OCCUR?

Outbreaks of Dengue occur primarily in areas where Aedes aegypti mosquitoes live. This includes most tropical urban areas of the world. Dengue viruses may be introduced into areas by travelers who become infected while visiting other areas of the tropics where Dengue commonly exists.

Dengue cannot be spread directly from person to- person.

WHAT ARE THE SYMPTOMS OF DENGUE FEVER?

- High fever
- Severe headache (mostly in the forehead)
- Pain behind the eyes which worsens with eye movement
- Body aches and joint pains
- Nausea or vomiting



PREVENTION AND CONTROL MEASURE

Presently, the only method of controlling is to combat the vector mosquitoes. Aedes Aegypti breeds primarily in man-made containers like earthenware jars, metal drums and concrete cisterns used for domestic; water storage, as well as discarded plastic food containers, used automobile tires and other items that collect rainwater.

ڈینگی بخار

انسانوں میں ڈینگی بخار ایک مخصوص قسم کے مچھر کے کاٹنے سے منتقل ہونے والے وائرس کی وجہ سے ہوتا ہے۔ حالیہ برسوں میں ڈینگی بخار ملکی اور بین الاقوامی سطح پر صحت عامہ کا ایک بہت تشویشناک بن گیا۔ ڈینگی بخار کی دو اقسام ہیں:
ا۔ ڈینگی بخار اور ب۔ ڈینگی بخار کی خونی قسم (Dengue Hemorhhagic Fever) جس میں مسوڑھوں، ناک اور جسم کے دیگر اعضاء سے خون بہنا شروع ہو جاتا ہے۔ مزید پیچیدگی کی صورت میں ڈینگی بخار میں مبتلا مریض کا بلڈ پریشر گر جاتا ہے اور کئی دیگر امراض کی علامات ظاہر ہو جاتی ہیں۔ خون کے کم دباؤ کے باعث مریض Shock کی حالت میں جا سکتا ہے جس سے جان کو بھی خطرہ ہو جاتا ہے۔

ڈینگی کا پھیلاؤ:

ڈینگی بخار کا وائرس انسانوں تک ایک مادہ مچھر Aedes Aegypti کے کاٹنے سے پہنچتا ہے اور یوں ڈینگی بخار کا موجب بنتا ہے۔ یہ مادہ مچھر ڈینگی کے وائرس کو ایک ڈینگی سے متاثرہ انسان کے خون سے حاصل کر کے کسی دوسرے شخص کو کاٹ کر اس کے خون میں منتقل کر دیتی ہے۔ مادہ مچھر ایک دفعہ بیمار انسان کو کاٹنے کے بعد اپنی تمام عمر دوسرے انسانوں کو ڈینگی وائرس سے آلودہ کرتی ہے۔ یہ مچھر اپنے انڈوں کے ذریعے ڈینگی وائرس کو اپنی اگلی نسلوں تک پہنچاتی ہے اور اپنے انڈوں میں وائرس منتقل کرنے کی صلاحیت رکھتی ہے۔ انسان ڈینگی وائرس کی ایک بہت اچھی پناہ گاہ ہے۔

ڈینگی سے بچاؤ کے طریقے:

جدید تحقیق کے مطابق اس بیماری پر احسن طریقے سے قابو پانے کیلئے ڈینگی بخار میں مبتلا کرنے والے مچھروں کا خاتمہ ضروری ہے۔ ان مچھروں کی افزائش زیادہ تر گھروں میں پانی جمع کر کے رکھنے والے برتنوں جیسے پانی کے مٹکے پودوں کے گملے پانی کی ٹینکیاں، واٹر کولر، تیل کے کنستر، استعمال شدہ ٹائر اور وہ تمام کنٹینرز جہاں بارش کا پانی جمع ہو جائے۔ ان مچھروں کی افزائش کو روکنے کیلئے ماحولیاتی آلودگی ختم کرنے کے طریقے اپنانے ہوں گے مثلاً گھریلو کچرے کا مناسب بندوبست، جمع شدہ صاف پانی کو مچھروں سے بچانا یعنی تمام پانی کی ٹینکیاں، گھڑے اور دوسرے برتنوں کو ہمیشہ ڈھانپ کر رکھنا تا کہ مچھر پانی میں انڈے نہ دے سکیں۔ جو بعد ازاں انسانوں میں بیماری کا موجب بنیں۔ مچھر مار دواؤں کا چھڑکاؤ خاص ڈینگی بخار کا وائرس پھیلانے والا مچھر افزائش پاتا ہے۔ اگر مندرجہ ذیل علامات میں سے کوئی بھی علامت ظاہر ہو تو فوراً ڈاکٹر سے رجوع کریں۔

- تیز بخار ہونا۔
- جسم میں شدید درد
- بھوک نہ لگنا
- آنکھوں کے پیچھے شدید درد ہونا
- پانچویں یا ساتویں دن جلد پر خارش اور سرخ دھبوں کا نمودار ہونا اور بخار کا ختم نہ ہونا
- ناک یا مسوڑھوں سے خون آنا
- بار بار الٹی آنا
- کالا پاخانہ آنا
- غنودگی کا شکار ہونا
- لگاتار کراہنا
- پیٹ میں درد ہونا
- رنگت پیلی ہو جانا
- سانس میں دشواری
- بہت زیادہ پیاس لگنا (منہ خشک ہونا)
- بدن کا یک لخت سرد پڑ جانا (صرف شاک کی حالت میں)

مچھروں کی افزائش کی روک تھام:

- مچھر عام طور پر پانی اور گھروں کے گرد کچرے کے ڈھیروں میں افزائش پاتے ہیں لہٰذا ان جگہوں کی خصوصی صفائی ضروری ہے۔
- جب استعمال میں نہ ہوں تو روم کولر وغیرہ سے پانی خارج کر دیں۔ اسی طرح پانی کی بالٹی، ڈرم، ٹینکی اور دوسرے برتنوں کو ڈھانپ کر رکھیں۔
- تلف شدہ اشیاء یا برتن جن میں پانی ٹھہر سکتا خدشہ ہو مثلاً پانی کی استعمال شدہ بوتلیں، پلاسٹک بیگ، ٹین، ٹائر وغیرہ کو اکٹھا کر کے مناسب طریقے سے ٹھکانے لگا دیں۔

مچھر کے کاٹنے سے درج ذیل بیماریاں ہو سکتی ہیں

- ملیریا
- ڈینگی بخار

مچھروں سے بچاؤ کس طرح ممکن ہے

1. مچھروں کی افزائش کو روکیں

تالاب، جوہڑ، نکاسی کی نالیاں، پودوں کی کیاریوں اور گملوں پر مچھر مار ادویات کا اسپرے کریں۔

پانی کی نکاسی کی نالیوں کو صاف رکھیں

پانی کے ٹینک اور برتنوں کو ڈھانپ کر رکھیں

ہفتے میں ایک بار گلدانوں اور گملوں کا پانی ضرور تبدیل کریں

2. احتیاطی تدابیر

کھڑکیوں پر باریک جالی اور بستر کے گرد مچھر دانی کا استعمال کریں

کمرے میں مچھر مار سپرے، کوائل یا میٹ کا استعمال کریں

باہر جاتے یا سوتے ہوئے جسم کے کھلے حصوں پر مچھر بھگاؤ لوشن لگائیں

باہر جاتے یا سوتے ہوئے جسم کو جتنا ممکن ہو ڈھانپیں

ESOHS DEPARTMENT SAMBU CONSTRUCTION CO.,LTD

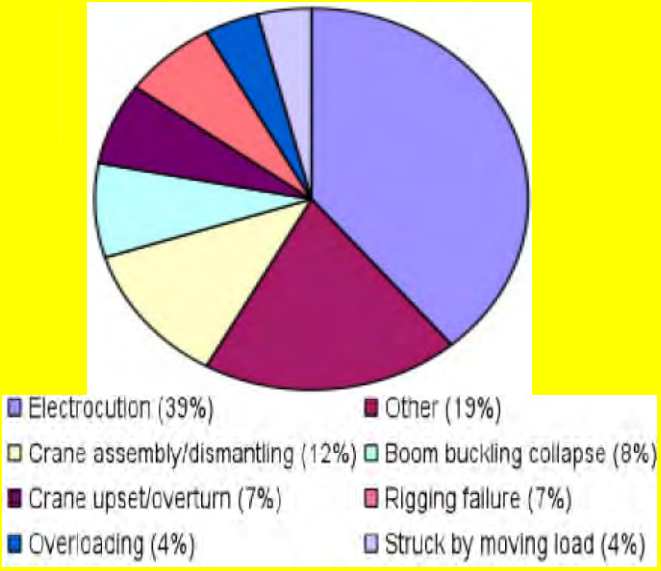
SAFETY UPDATE

PREVENTING MOBILE CRANE FROM OVER TURNING (Sep, 2012)

Cranes are the cause of hundreds of accidents in the workplace each year, but working safely with mobile cranes is easier than you might think. Anyone working with cranes needs to take safety precautions before, during and after the operation of cranes to ensure risks is kept to a minimum.

Nearly 90 crane-related fatalities occur each year at construction sites. OSHA's Integrated Management Information System (IMIS) identified that 479 accidents involves 502 fatalities from 1984 to1994.

Crane Fatalities



MOBILE CRANES OVER TURNING

Mobile cranes are likely to overturn if they

- Are overloaded
- Attempt to lift a load to an excessive radius
- Are set-up for the lift incorrectly
- Are set up on an inadequate supporting surface
- Travel with the load facing downhill
- Operate under extreme conditions

CONTROL MEASURES

- Selecting a crane with the capacity to lift the load to the maximum radius
- Maintain the crane, including calibration of the load limiting system'
- Not to over ride the load limit
- Stable surface to support the crane and outrigger loads
- Qualified and competent operator
- Correct set up for the load lifting e.g. out riggers & counter weight
- Checking the load chart to ensure that the lift is within crane capacity.
- Entering the crane configuration details into the crane's computer
- Conducting a trial lift without the load to check the maximum radius for the lift
- Lifting the load just clear of the ground and checking load is expected & within capacity.
- Checking the wind condition before conducting the lift

Exhibit 14 – Inspections

(Please see the next page)

Fire Extinguishers Inspection Record Sheet

Project: New Bong Escape Hydro Electric Power Complex Date:20-07-12

Sr. No	Type of Fire Extinguisher	Capicity/ Quantity	Location	Condition (Valid/ Expire)	Any Part that Need Attention	Corrective Action Taken
1	DCP	06 Kg	Confrence Room	Valid	Nil	
2	DCP	06 Kg	Generator Room	Valid	Nil	
3	DCP	06 kg	Workshop	Valid	Nil	
4	DCP	06 Kg	Main Store	Valid	Nil	
5	DCP	05 kg	Main Store	Valid	Nil	
6	DCP	06 kg	Block # 1 (Labour Camp)	Valid	Nil	
7	DCP	05 kg	Block # 2 (Labour Camp)	Valid	Nil	
8	DCP	06 kg	Block # 04 (Labor Camp)	Valid	Nil	
9	DCP	06 kg	Block # 1 (Local Staff Camp)	Valid	Nil	
10	DCP	06 kg	Block # 2 (Local Staff Camp)	Valid	Nil	
11	DCP	06kg	Block # 3 (Local staff Camp)	Valid	Nil	
12	DCP	06 Kg	Korean Staff Residence	Valid	Nil	
13	DCP	06 kg	Mess hall (Labour)	Valid	Nil	
14	DCP	06 kg	Mess hall (Officer)	Valid	Nil	
15	DCP	04 Kg	Fuel Station	Valid	Nil	
16	DCP	06 Kg	Fuel Station	Valid	Nil	
17	DCP	50 Kg	Fuel Station	Valid	Nil	
18	DCP	06kg	Fuel Station	Valid	Nil	

Instructions:

1 Check accessibility of Fire Extinguisher
2 Check the Pressure of Fire Extinguisher
3 Check nozel and pipe of Fire Extinguisher (are they in good condition)
4 Check the pin and seal weather they are intact or not
5 Check any dents leaks, rust, chemical deposits and other corrision sign on Fire Extinguisher
6 Shake the dry chemical Powder Fire Extinguishers after inspection
7 If Fire Extinguisher is expired report and replace it immediately

Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul										
Office Area	✓	✓										
Korean Staff Residences	✓	✓										
Work Shop	✓	✓										
Local Staff Residence # 01	✓	✓										
Local Staff Residence # 02	✓	✓										
Local Staff Mess	✓	✓										
Local Staff Residence # 03/1	✓	✓										
Local Staff Residence # 03/2	✓	✓										
Local Staff Residence # 03/3	✓	✓										
Local Staff Residence # 03/4	✓	✓										
Labour Mess Hall	✓	✓										
Local Staff Residence # 04/1	✓	✓										
Local Staff Residence # 04/2	✓	✓										
Local Staff Residence # 04/3	✓	✓										
Local Staff Residence # 04/4	✓	✓										
Local Staff Residence # 05/1	✓	✓										
Local Staff Residence # 05/2	✓	✓										

Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul										
Local Staff Residence # 05/3	✓	✓										
Local Staff Residence # 05/4	✓	✓										
Local Staff Residence # 06/1	✓	✓										
Local Staff Residence # 06/2	✓	✓										
Local Staff Residence # 06/3	✓	✓										
Local Staff Residence # 06/4	✓	✓										
Local Staff Residence # 07/1	✓	✓										
Local Staff Residence # 07/2	✓	✓										
Local Staff Residence # 07/3	✓	✓										
Local Staff Residence # 07/4	✓	✓										
Local Staff Residence # 08/1	✓	✓										
Local Staff Residence # 08/2	✓	✓										
Local Staff Residence # 08/3	✓	✓										
Local Staff Residence # 08/4	✓	✓										
Local Staff Residence # 09/1	✓	✓										
Local Staff Residence # 09/2	✓	✓										
Local Staff Residence # 09/3	✓	✓										
Local Staff Residence # 09/4	✓	✓										

Inspection Checklist

Project: New Bong Escape Hydro Electric Power Complex

Date: 15/07/12

Area to be Inspected: Scaffolding (Power house)

Inspected by:Site Engineer, ESOHS Officer

Sr. No	Description	Y	N	Comments	Action Taken
1	Is the scffolding being erected under the direction of competent person?	Y		Qualified Engineer is supervising the erection & dismantling of scaffolding	
2	Are footings of scaffold sound & rigind, not set on the soft ground or resting on blocks?	Y		Footing on solid concrete bed.	
3	Is the scaffold level?	Y		Scaffold is erected on concrete and levelled.	
4	Are all braces, bearers and clamps secured, all sections pinned or appropriately secured?	Y		All the braces and clamps found secured	
5	Are scaffold equiped with guard rails consisting of toprail (38"-45" from platfrom) & mid railing (centre of top railing and platform)?	Y		Proper guard raiing & platforms exists.	
6	Are scaffolds adequately braced horizontally and vertically?	Y		All scaffolds are properly braced horizentally and vertically.	
7	Are the load bearing scaffold poles (ladder steps) not curved.	Y		Damaged ladder has been removed with the new one.	
8	Does uncleated plank extend the end support a minimum of six inches.	Y			
9	Where planks are overlapped are they lapped over the supports?	Y			
10	Are the top and bottom surfaces of the plank visible and free from paint and other opaque finishes?	Y		All planks are free from any paint and opaque finishing	
11	If scaffold components of different manufacturers are used, do they fit together without force and has a competent person determined that they are safe for use?	Y		Mostly the scaffold of one manufacturer is being used at site.	
12	Have all components been inspected for defects such as broken welds, corroded members, and missing locks, bent or dented pipes?	Y		All components of scaffold found satisfactory.	
13	Are guardrails and midrails installed on all open sides and open ends of the platform?	Y		Guard railing and Midrailing are found satisfactory	
14	Have cross braces been prohibited as a means of access?	Y		Tool box talk is also coducted on safe access.	
15	Are tools, material, and debris removed from scaffold to prevent an accumulation?	Y		No one is allowed to place their tools unattended at platform.	
16	Are the ladders specifically designed for use with the type of scaffold used?	Y		All items are of same manufacturer.	
17	Are the rungs of ladder at least 8 inches in length?	Y		Proper Korean manufactured ladders are being used.	
18	Have all planks been properly secured to the scaffold structure to prevent them blowing off in the event of high winds?	Y		All planks are tied at both ends to secure them blowing off.	
19	Has it prohibit the use of ladders and other devices to increase working heights on platforms.	Y		Platforms are not used to extend the height.	
20	Has the Safety briefing made to all people working on / for scaffolding?	Y			
21	Are all employees aware not to use a scaffold with broken or missing parts	Y		Tool box talks are provided on scaffolding regualarly	
22	Are all employees aware that before moving the scaffolds there are no power lines or other obstructions overhead?	Y		No over head power lines near the Power house.	
23	Are employee not allowed to work at plat forms during high winds and bad weather?	Y		During bad weather no one is allwoed to work there.	

Fire Extinguishers Inspection Record Sheet

Project: New Bong Escape Hydro Electric Power Complex Date:30/08/12

Sr. No	Type of Fire Extinguisher	Capicity/ Quantity	Location	Condition (Valid/ Expire)	Any Part that Need Attention	Corrective Action Taken
1	DCP	06 Kg	Confrence Room	Valid	Nil	
2	DCP	06 Kg	Generator Room	Expire	Nil	Dispatched for Refilling & replaced with new one
3	DCP	06 kg	Workshop	Expire	Nil	Dispatched for Refilling & replaced with new one
4	DCP	06 Kg	Main Store	Valid	Nil	
5	DCP	05 kg	Main Store	Valid	Nil	
6	DCP	06 kg	Block # 1 (Labour Camp)	Valid	Nil	
7	DCP	05 kg	Block # 2 (Labour Camp)	Expire	Nil	Dispatched for Refilling & replaced with new one
8	DCP	06 kg	Block # 04 (Labor Camp)	Valid	Nil	
9	DCP	06 kg	Block # 1 (Local Staff Camp)	Valid	Nil	
10	DCP	06 kg	Block # 2 (Local Staff Camp)	Valid	Nil	
11	DCP	06kg	Block # 3 (Local staff Camp)	Valid	Nil	
12	DCP	06 Kg	Korean Staff Residence	Valid	Nil	
13	DCP	06 kg	Mess hall (Labour)	Expire	Nil	Dispatched for Refilling
14	DCP	06 kg	Mess hall (Officer)	Valid	Nil	
15	DCP	04 Kg	Fuel Station	Valid	Nil	
16	DCP	06 Kg	Fuel Station	Expire	Nil	Dispatched for Refilling & replaced with new one
17	DCP	50 Kg	Fuel Station	Valid	Nil	
18	DCP	06kg	Fuel Station	Valid	Nil	

Instructions:

1 Check accessibility of Fire Extinguisher
2 Check the Pressure of Fire Extinguisher
3 Check nozel and pipe of Fire Extinguisher (are they in good condition)
4 Check the pin and seal weather they are intact or not
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Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul										
Office Area	✓	✓										
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Local Staff Residence # 03/3	✓	✓										
Local Staff Residence # 03/4	✓	✓										
Labour Mess Hall	✓	✓										
Local Staff Residence # 04/1	✓	✓										
Local Staff Residence # 04/2	✓	✓										
Local Staff Residence # 04/3	✓	✓										
Local Staff Residence # 04/4	✓	✓										
Local Staff Residence # 05/1	✓	✓										
Local Staff Residence # 05/2	✓	✓										

Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul										
Local Staff Residence # 05/3	✓	✓										
Local Staff Residence # 05/4	✓	✓										
Local Staff Residence # 06/1	✓	✓										
Local Staff Residence # 06/2	✓	✓										
Local Staff Residence # 06/3	✓	✓										
Local Staff Residence # 06/4	✓	✓										
Local Staff Residence # 07/1	✓	✓										
Local Staff Residence # 07/2	✓	✓										
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Local Staff Residence # 07/4	✓	✓										
Local Staff Residence # 08/1	✓	✓										
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Local Staff Residence # 08/3	✓	✓										
Local Staff Residence # 08/4	✓	✓										
Local Staff Residence # 09/1	✓	✓										
Local Staff Residence # 09/2	✓	✓										
Local Staff Residence # 09/3	✓	✓										
Local Staff Residence # 09/4	✓	✓										

Inspection Check List

Project: New Bong Escape Hydro Electric Power Complex

Inspected by: ESOHS Officer, Medical Officer

Area to be Inspected: Hygienes of Food Handlers

Inspection Date: 13/08/12

Sr. No	Description	Y	N	Comments	Action Taken
1	Do all kitchen staff fulfilled the requirements of the Medical Officer.	Y			
2	Is any evidence of reported sickness among kitchen staff to the concerned person?	Y		The medical examinations were conducted in May 2012 and no severe illness observed.	
3	Has monthly checking of nails/hands of kitchen staff been done?	Y		Monthly inspections are carried out in routine	
4	Are daily hygiene practices monitored by the concerned person and all corrective actions have been completed?	Y		Camp supervisor daily monitor all the cooking staff.	
5	Is the kitchen staff been provided with warm water and soap/liquid hand wash for personal hygiene?	Y		Separate hot and cold water facility is available in kitchens.	
6	Do the food handlers wash their hands as often as necessary?	Y		Doctor briefs them regularly about hand washing techniques.	
7	Is all jewellery including watches removed prior to commencing direct food handling?	Y			
8	Is there any evidence of smoking in food preparation areas?	Y	ü	"No Smoking" safety signs have been displayed in the mess halls.	
9	Do kitchen personnel wear appropriate uniform like protective clothing and protective head coverings during food preparation?	Y		Aprons and head cover have been provided to the kitchen staff.	
10	All staff understands their responsibilities with regards to reporting of illness?	Y			
11	Is sick staff excluded from working inside the kitchen with food?	Y		No such sickness is reproted in the current month.	
12	Is there a first-aid box available/ wounds are covered with coloured, water proof dressings?	Y		First Aid Box available in the labor camp near the mess hall.	
13	Is staff aware of food safety practices and their responsibilities?	Y		Food safety procedure has been discussed with the food handlers & also displayed on notice boards	
14	Is staff aware they must not be at work when they may be suffering from a food borne illness or condition?	Y			
15	Are kitchen staffs trained on proper hand washing?	Y		Proper hand washing techniques have been discussed and HSE up dates on hand washing techniques is displayed in mess halls.	
16	Is staff aware of food hygiene through awareness sessions?	Y			
17	Are kitchen staffs trained on proper use and storage of chemicals/ detergents?	Y		No detegents or chemicals are stored in kitchens.	
18	Is any training/awareness sessions' record available?	Y		Refrence to Pervious MPRs	
19	Are training schedule present?	Y			
20	Are food handlers' trained on use of fire extinguishers?	Y		Refrence to MPR April	

Inspection Check List (Crane)

Project: New Bong Escape Hydro Electric Power Complex | Inspected by: ESOHS Officer, Site Engineer

Owned by: Arabia company | Inspection Date: 17/08/12

Sr. No	Description	Status	Remarks
1	Does the crane have a valid inspection certificate?	Yes, Valid certificates are available	
2	Are the Slings, Shackle and other accessories certified?	Yes	
3	Is there potential of serious process equipment incident from a falling load or boom?	Falling load potentian occurs	Preventive measure are applied as indicated in Risk Assesment
4	Non-essential personnel have been cleared from work site and area barricaded.	Non- essential personals are not allowed to enter in the area, where crane operation in progress	
5	Is crane operated hold valid operating certificate?	Valid Operatin certificates are checked	
6	Is crane operation near high tension over head electrical lines?	No	
7	Is area free from flammable?	Yes	
8	Is hazard identification/Risk assessment done?	Done	
9	Has safety talk been conducted?	Safety talks conducted with the crae Operators and people working in the area	

Note	
1	Qualified personnel must do all crane operation.
2	Never tie wire rope into knots, never alter the riggin equipment
3	Minimum clearance of boom from power line is 10 ft but try to maintain maximum clearance if possible
4	Standard hand signal should be used for directing hoisting and lifting operations
5	Assess the risk with the envolvement of department concerned.

Vehicle Inspection Checklist (Dump Truck)

Project: New Bong Escape Hydro Electric Power Complex Date: 08-08-12

Machine Make / Model: Hino Pak					**Unit No: 13**
Fluid Levels					
P	Motor Oil	P	Rear End	P	Air Filter
P	Radiator	P	Brake Fluid	P	Windshield Washer
P	Power Steering	P	Greasing Required	M	Oil Filter Changed
Driver's Compartment					
P	Sun Visors	P	Horn & Switches	P	Steering Power Assist
P	Windshield Wipers	P	Air Leakage	P	Speedometer
P	Side Windows	P	Beam Indicator	P	Steering Column Security
P	Pedal Pads	P	Air Pressure Gauge	P	Fire Extinguisher
P	Seats & Seatbelts				
Body Exterior					
P	Head Lamp Operation/Aim	P	Clearance Lamps	P	Tail Lamps
P	Stop Lamps	M	Turn Signal Lamps	P	Marker Lamps
P	Hazard Lamps	P	Reflex Reflectors	P	Tire Pressure
P	Paint	P	Body & Doors	P	Fenders/Mud Flaps
Under The Hood					
P	Hood	P	Air Compressor Belt	P	Air Compressor
P	Power Steering System	P	Fuel Pump and System	P	Battery & Wiring
P	Air Filter	P	Fan & Belt	P	Carburetor
P	Cooling System	P	Windshield Washer Pump	P	Exhaust System
Undercarriage					
P	Pin & Bushing Wear	P	Frame Rails	P	Springs

Vehicle Inspection Checklist (Dump Truck)

Project: New Bong Escape Hydro Electric Power Complex Date: 08-08-12

Machine Make / Model: Hino Pak **Unit No: 13**

P	Link Wear	P	Shock Absorbers	P	Muffler
P	Roller Wear	P	Oil Pan	P	Pittman Arm
P	Roller Guards	P	Drag Link	P	Axles
P	Track Wear	P	Tie Rod	P	Suspension
Brake, Tires, and Wheels					
P	Brake Components	M	Tire Wear	P	Road Clearance
P	Spring Caging Bolts	P	Brake Drum Condition	P	Brake Lining Thickness
P	Disc Brakes	P	Brake Lines & Hoses	P	Jack
P	Tire Iron	P	Tire Pressure	P	Park Brake
P	Wheel Bearings	P	Vacuum System, Reserve	P	Emergency Brake
P	Spare Tire	N/A	Chains	P	Brake Operation

Rating Legend:	N/A - Not applicable	P - Passed in good working condition
	M - Passed but required maintenance	R - Rejected, Repair Necessary

Equipment Passed: YES	Equipment Not Passed:

Work Required	Assigned To	Completion (Date/Time)
Maintain Signal Lamp and replace Filter oil	Mr. Nazim Hussain	12/8/2012
Refill the Empty Fire Extinguisher	Mr. Nazim Hussain	14/08/12

Signatures

ESOHS Supervior:		Workhsop Supervisor:

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Fire Extinguishers Inspection Record Sheet

Project: New Bong Escape Hydro Electric Power Complex Date: 03/09/12

Sr. No	Type of Fire Extinguisher	Capicity/ Quantity	Location	Condition (Valid/ Expire)	Any Part that Need Attention	Corrective Action Taken
1	DCP	06 Kg	Confrence Room	Valid	Nil	
2	DCP	06 Kg	Generator Room	Valid	Nil	
3	DCP	06 kg	Workshop	Valid	Nil	
4	DCP	06 Kg	Main Store	Valid	Nil	
5	DCP	05 kg	Main Store	Valid	Nil	
6	DCP	06 kg	Block # 1 (Labour Camp)	Valid	Nil	
7	DCP	05 kg	Block # 2 (Labour Camp)	Valid	Nil	
8	DCP	06 kg	Block # 04 (Labor Camp)	Expire	Nil	Dispatched for Refilling
9	DCP	06 kg	Block # 1 (Local Staff Camp)	Valid	Nil	
10	DCP	06 kg	Block # 2 (Local Staff Camp)	Valid	Nil	
11	DCP	06kg	Block # 3 (Local staff Camp)	Valid	Nil	
12	DCP	06 Kg	Korean Staff Residence	Valid	Nil	
13	DCP	06 kg	Mess hall (Labour)	Valid	Nil	
14	DCP	06 kg	Mess hall (Officer)	Valid	Nil	
15	DCP	04 Kg	Fuel Station	Valid	Nil	
16	DCP	06 Kg	Fuel Station	Valid	Nil	
17	DCP	50 Kg	Fuel Station	Expire	Nil	Dispatched for Refilling
18	DCP	06kg	Fuel Station	Valid	Nil	

Instructions:

1 Check accessibility of Fire Extinguisher
2 Check the Pressure of Fire Extinguisher
3 Check nozel and pipe of Fire Extinguisher (are they in good condition)
4 Check the pin and seal weather they are intact or not
5 Check any dents leaks, rust, chemical deposits and other corrision sign on Fire Extinguisher
6 Shake the dry chemical Powder Fire Extinguishers after inspection
7 If Fire Extinguisher is expired report and replace it immediately

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Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul	17-Aug	19-Aug	22-Sep	25-Sep						
Office Area	✓	✓	✓	✓	✓	✓						
Korean Staff Residences	✓	✓	✓	✓	✓	✓						
Work Shop	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 01	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 02	✓	✓	✓	✓	✓	✓						
Local Staff Mess	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 03/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 03/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 03/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 03/4	✓	✓	✓	✓	✓	✓						
Labour Mess Hall	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 04/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 04/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 04/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 04/4	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 05/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 05/2	✓	✓	✓	✓	✓	✓						

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Fogging/ Spraying Record

Project: New Bong Escape Hydro Electric Power Complex

Area	July 2012		Aug 2012		Sep 2012		Oct 2012		Nov 2012		Dec 2012	
	15-Jul	16-Jul	17-Aug	19-Aug	22-Sep	25-Sep						
Local Staff Residence # 05/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 05/4	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 06/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 06/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 06/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 06/4	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 07/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 07/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 07/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 07/4	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 08/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 08/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 08/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 08/4	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 09/1	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 09/2	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 09/3	✓	✓	✓	✓	✓	✓						
Local Staff Residence # 09/4	✓	✓	✓	✓	✓	✓						

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Scaffolding Inspection Checklist

Project: New Bong Escape Hydro Electric Power Complex

Date: 11/09/12

Area to be Inspected: Scaffolding (Power house)

Inspected by:Site Engineer, ESOHS Officer

Sr. No	Description	Y	N	Comments	Action Taken
1	Is the scffolding being erected under the direction of competent person?	Y		Qualified person is supervising the erection & dismantling of scaffolding	
2	Are footings of scaffold sound & rigind, not set on the soft ground or resting on blocks?	Y		Footing on solid concrete bed.	
3	Is the scaffold level?	Y		Scaffold is erected on concrete and levelled.	
4	Are all braces, bearers and clamps secured, all sections pinned or appropriately secured?		N	Some braces and clamps obsreved loose	Area supervisor advised for immediate corrective action
5	Are scaffold equiped with guard rails consisting of toprail (38"-45" from platfrom) & mid railing (centre of top railing and platform)?		N	Railing missing at downstream units	Corrective action had been taken by area supervior
6	Are scaffolds adequately braced horizontally and vertically?	Y		All scaffolds are properly braced horizentally and vertically.	
7	Are the load bearing scaffold poles (ladder steps) not curved.		N	Ladder observed damage	It has been replaced next day of inspection
8	Does uncleated plank extend the end support a minimum of six inches.	Y			
9	Where planks are overlapped are they lapped over the supports?	Y			
10	Are the top and bottom surfaces of the plank visible and free from paint and other opaque finishes?	Y		All planks are free from any paint and opaque finishing	
11	If scaffold components of different manufacturers are used, do they fit together without force and has a competent person determined that they are safe for use?	Y		Mostly the scaffold of one manufacturer is being used at site.	
12	Have all components been inspected for defects such as broken welds, corroded members, and missing locks, bent or dented pipes?	Y		All components of scaffold found satisfactory.	
13	Are guardrails and midrails installed on all open sides and open ends of the platform?	Y		Guard railing and Midrailing are found satisfactory	
14	Have cross braces been prohibited as a means of access?	Y		Tool box talk is also coducted on safe access.	
15	Are tools, material, and debris removed from scaffold to prevent an accumulation?	Y		No one is allowed to place their tools unattended at platform.	
16	Are the ladders specifically designed for use with the type of scaffold used?	Y		All items are of same manufacturer.	
17	Are the rungs of ladder at least 8 inches in length?	Y		Proper Korean manufactured ladders are being used.	
18	Have all planks been properly secured to the scaffold structure to prevent them blowing off in the event of high winds?	Y		All planks are tied at both ends to secure them blowing off.	
19	Has it prohibit the use of ladders and other devices to increase working heights on platforms.	Y		Platforms are not used to extend the height.	
20	Has the Safety briefing made to all people working on / for scaffolding?	Y			
21	Are all employees aware not to use a scaffold with broken or missing parts	Y		Tool box talks are provided on scaffolding regualarly	
22	Are all employees aware that before moving the scaffolds there are no power lines or other obstructions overhead?	Y		No over head power lines near the Power house.	
23	Are employee not allowed to work at plat forms during high winds and bad weather?	Y		During bad weather no one is allwoed to work there.	

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Inspection Checklist

Project: New Bong Escape Hydro Electric Power Complex

Date: 26/09/12

Area to be Inspected: Scaffolding (Power house)

Inspected by:Site Engineer, ESOHS Officer

Sr. No	Description	Y	N	Comments	Action Taken
1	Is the scffolding being erected under the direction of competent person?	Y		Qualified person is supervising the erection & dismantling of scaffolding	
2	Are footings of scaffold sound & rigind, not set on the soft ground or resting on blocks?	Y		Footing on solid concrete bed.	
3	Is the scaffold level?	Y		Scaffold is erected on concrete and levelled.	
4	Are all braces, bearers and clamps secured, all sections pinned or appropriately secured?	Y		All the braces and clamps found secured	
5	Are scaffold equiped with guard rails consisting of toprail (38"-45" from platfrom) & mid railing (centre of top railing and platform)?	Y		Proper guard raiing & platforms exists.	
6	Are scaffolds adequately braced horizontally and vertically?	Y		All scaffolds are properly braced horizentally and vertically.	
7	Are the load bearing scaffold poles (ladder steps) not curved.	Y		Damaged ladder has been removed with the new one.	
8	Does uncleated plank extend the end support a minimum of six inches.	Y			
9	Where planks are overlapped are they lapped over the supports?	Y			
10	Are the top and bottom surfaces of the plank visible and free from paint and other opaque finishes?	Y		All planks are free from any paint and opaque finishing	
11	If scaffold components of different manufacturers are used, do they fit together without force and has a competent person determined that they are safe for use?	Y		Mostly the scaffold of one manufacturer is being used at site.	
12	Have all components been inspected for defects such as broken welds, corroded members, and missing locks, bent or dented pipes?	Y		All components of scaffold found satisfactory.	
13	Are guardrails and midrails installed on all open sides and open ends of the platform?		N	Guard railing missing	Advised the area supervisor for immediate action
14	Have cross braces been prohibited as a means of access?	Y		Tool box talk is also coducted on safe access.	
15	Are tools, material, and debris removed from scaffold to prevent an accumulation?	Y		No one is allowed to place their tools unattended at platform.	
16	Are the ladders specifically designed for use with the type of scaffold used?	Y		All items are of same manufacturer.	
17	Are the rungs of ladder at least 8 inches in length?	Y		Proper Korean manufactured ladders are being used.	
18	Have all planks been properly secured to the scaffold structure to prevent them blowing off in the event of high winds?		N	One End of the plank found untied	It was tied the same time
19	Has it prohibit the use of ladders and other devices to increase working heights on platforms.	Y		Platforms are not used to extend the height.	
20	Has the Safety briefing made to all people working on / for scaffolding?	Y			
21	Are all employees aware not to use a scaffold with broken or missing parts	Y		Tool box talks are provided on scaffolding regualarly	
22	Are all employees aware that before moving the scaffolds there are no power lines or other obstructions overhead?	Y		No over head power lines near the Power house.	
23	Are employee not allowed to work at plat forms during high winds and bad weather?	Y		During bad weather no one is allwoed to work there.	

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Hygienes of Food Handlers

Project: New Bong Escape Hydro Electric Power Complex

Inspected by: ESOHS Officer, Medical Officer

Area to be Inspected: Hygienes of Food Handlers

Inspection Date: 13/09/12

Sr. No	Description	Y	N	Comments	Action Taken
1	Do all kitchen staff fulfilled the requirements of the Medical Officer.	Y			
2	Is any evidence of reported sickness among kitchen staff to the concerned person?	Y		The medical examinations were conducted in May 2012 and no severe illness observed.	
3	Has monthly checking of nails/hands of kitchen staff been done?	Y		Monthly inspections are carried out in routine	
4	Are daily hygiene practices monitored by the concerned person and all corrective actions have been completed?	Y		Camp supervisor daily monitor all the cooking staff.	
5	Is the kitchen staff been provided with warm water and soap/liquid hand wash for personal hygiene?	Y		Separate hot and cold water facility is available in kitchens.	
6	Do the food handlers wash their hands as often as necessary?	Y		Doctor briefs them regularly about hand washing techniques.	
7	Is all jewellery including watches removed prior to commencing direct food handling?	Y			
8	Is there any evidence of smoking in food preparation areas?	Y		"No Smoking" safety signs have been displayed in the mess halls.	
9	Do kitchen personnel wear appropriate uniform like protective clothing and protective head coverings during food preparation?	Y		Aprons and head cover have been provided to the kitchen staff.	
10	All staff understands their responsibilities with regards to reporting of illness?	Y			
11	Is sick staff excluded from working inside the kitchen with food?	Y		No such sickness is reproted in the current month.	
12	Is there a first-aid box available/ wounds are covered with coloured, water proof dressings?	Y		First Aid Box available in the labor camp near the mess hall.	
13	Is staff aware of food safety practices and their responsibilities?	Y		Food safety procedure has been discussed with the food handlers & also displayed on notice boards	
14	Is staff aware they must not be at work when they may be suffering from a food borne illness or condition?	Y			
15	Are kitchen staffs trained on proper hand washing?	Y		Proper hand washing techniques have been discussed and HSE up dates on hand washing techniques is displayed in mess halls.	
16	Is staff aware of food hygiene through awareness sessions?	Y			
17	Are kitchen staffs trained on proper use and storage of chemicals/ detergents?	Y		No detegents or chemicals are stored in kitchens.	
18	Is any training/awareness sessions' record available?	Y		Refrence to Pervious MPRs	
19	Are training schedule present?	Y			
20	Are food handlers' trained on use of fire extinguishers?	Y		Refrence to MPR April	

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CHECKLIST FOR ELECTRIC PANELS / SUB PANELS

Project: NBE Hydro Electrical Power Complex

Date: 25/09/12

DB. NO.	STATUS OF DBs														
	LOCATION	CLOSABLE	LOCKABLE	PAINTED	MAKE	RATING	WATER PROOFING	INDICATION LAMP	VOLTMETER	BODY EARTH	HAZARD SIGNS	CBs TAGGING	ELCBs		RECEPTACLES VOLTAGE IDENTIF
													INSTALLED	INSERVICE	
1	P.H Main Gate	√	×	√	TECH MENS	200A	√	√	√	×	√	√	5	4	√
2	P.H Main Gate	×	×		TECH MENS	250A	√	√	×	×	√	√	8	8	×
3	G. I. S Gate	√	√	√	TECH MENS	200A	√	√	×	×	√	√	8	4	×
4	W/ Shop 245 level	√	√	√	TECH MENS	100A	√	√	×	×	√	√	5	4	×
5	Hatch Cover # 01	×	×	√	TECH MENS	200A	√	√	√	×	√	√	8	8	×
6	Transformer Room	√	√	√	TECH MENS	60A	√	√	×	×	√	√	3	3	×
7	Unit # 04	√	×		TECH MENS	63A	√	×	√	×	√	√	6	6	×
8	Hatch Cover # 04	×	×	√	TECH MENS	200A	√	√	√	×	√	√	3	2	√
9	Gallery Unit# 04	√	√	√	TECH MENS	160A	√	×	×	×	√	√	5	3	×
10	Stop Log Unloading	×	×	√	TECH MENS	200A	√	√	√	×	√	×	5	5	×
11	D/S Unit # 01	√	√	√	TECH MENS	200A	√	×	√	×	√	√	5	2	×
12	U/S Unit # 01	×	×	√	TECH MENS	200A	√	√	√	×	√	√	5	3	×
13	Main Gate (Dewatering)	√	×	√	TECH MENS	200A	√	√	×	×	√	×	10	7	×
14	D/s Unit # 04	×	×	×	TECH MENS	63A	√	×	×	×	√	×	5	5	×
15	Main Gate (Road)	√	√	√	TECH MENS	200A	√	×	×	×	√	×	7	4	×

INCHARGE ELECTRICAL

ESOHS OFFICER

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Crane Inspection CheckList

Model= Nissan Kato E-1455 Date:26/09/12

Project: NBE Hydro Electric Power Complex Location:Headrace

Sr. No	Items	Status	Remarks
1	Does the crane have a valid inspection certificate?	Yes	Valild upto 2013/06/19
2	Are the Slings, Shackle and other accessories certified?	Yes	Checked and observed satisfatory
3	Is there potential of serious process equipment incident from a falling load or boom?	Yes	No such potential of process equipment incident
4	Non-essential personnel have been cleared from work site and area barricaded.	Yes	Yes, Restricted unauthorized entrance in working zone
5	Is crane operator hold valid operating certificate?	Yes	Yes, valild certificates have been witnessed.
6	Is crane operation near high tension over head electrical lines?	No	Yes, some activities brought near heavy tension wires
7	Is area free from flammable?	Yes	No flamables are observed there
8	Is hazard identification/Risk assessment done?	Yes	it has been conducted and submitted earlier.
9	Has safety talk been conducted?	Yes	Safety talks on safe crane operations have been conducted
10	Others:	Nil	

Note:

1. Heavy Equipment (H/E) Department will inspect all hoisting and rigging equipment and fills this checklist.
2. Qualified personnel must do all crane operation.
3. Never tie wire rope into knots, never alter the rigging equipment.
4. Minimum clearance of boom from power lines is 10 feet but try to maintain maximum Clearance if possible.
5. Standard hand signal should be used for directing hoisting and lifting operations.
6. Risk assessment is the responsibility of process department with coordination of all

IS Operation Allowed?

Section Chief

ESOHS Officer

SAMBU

Crane Inspection CheckList

Model= Nissan Kato C-3999 Date:26/09/12

Project: NBE Hydro Electric Power Complex Location:Headrace

Sr. No	Items	Status	Remarks
1	Does the crane have a valid inspection certificate?	Yes	Valild upto 2013/06/19
2	Are the Slings, Shackle and other accessories certified?	Yes	Checked and observed satisfatory
3	Is there potential of serious process equipment incident from a falling load or boom?	Yes	No such potential of process equipment incident
4	Non-essential personnel have been cleared from work site and area barricaded.	Yes	Yes, Restricted unauthorized entrance in working zone
5	Is crane operator hold valid operating certificate?	Yes	Yes, valild certificates have been witnessed.
6	Is crane operation near high tension over head electrical lines?	No	Yes, some activities brought near heavy tension wires
7	Is area free from flammable?	Yes	No flamables are observed there
8	Is hazard identification/Risk assessment done?	Yes	it has been conducted and submitted earlier.
9	Has safety talk been conducted?	Yes	Safety talks on safe crane operations have been conducted
10	Others:	Nil	

Note:

1. Heavy Equipment (H/E) Department will inspect all hoisting and rigging equipment and fills this checklist.
2. Qualified personnel must do all crane operation.
3. Never tie wire rope into knots, never alter the rigging equipment.
4. Minimum clearance of boom from power lines is 10 feet but try to maintain maximum Clearance if possible.
5. Standard hand signal should be used for directing hoisting and lifting operations.
6. Risk assessment is the responsibility of process department with coordination of all

IS Operation Allowed?

_____ Section Chief

_____ ESOHS Officer

SAMBU

Excavators Inspection Checklist

Project: NBE Hydro Electric Power Complex	Equipment No # 11- 345DL			Date: 21/09/12
Points to Check	**Condition**			**Remarks**
	S	**U**	**N/A**	
1 General				
1.1 Engine with normal smoke	S			
1.2 Battery Securing arrangement	S			
1.3 Hydraulic System	S			
1.4 Leakage Points in Fuel & Lubrication	S			
1.5 Steering Wheel	S			
1.6 Fuel tank & system properly secured	S			
1.7 Body Condition	S			
2 Horn				
2.1 Reverse horn	s			
2.2 Main horn	S			
3 Lights				
3.1 Head lights	S			
3.2 Tail lights	S			
3.3 Break lights			N/A	
3.4 Reverse lights			N/A	
3.5 Hazard lights	S			
3.6 Signal indicators			N/A	
3.7 Parking lights			N/A	
3.8 Cabin lights	S			
4 Brakes				
4.1 Plate System Brakes	S			
4.2 Hand Braks			N/A	
5 Guages				
5.1 Speedometer			N/A	
5.2 Fuel gauge	S			
5.3 Charger	S			
5.4 Oil gauge	S			

SAMBU

Excavators Inspection Checklist

Project: NBE Hydro Electric Power Complex	Equipment No # 11- 345DL			Date: 21/09/12
Points to Check	**Condition**			**Remarks**
	S	**U**	**N/A**	
6 Seat Belts				
6.1 Two Poins	S			
6.2 Three Points			N/A	
7 Mirrors				
7.1 Rear view	S			
7.2 Side view	S			
7.3 Windscreen	S			
7.4 Rear Cabin Glass	S			
7.5 Window Glasses	S			
7.6 Wipers & washers	S			
8 Tools				
8.1 Jack			N/A	
8.2 Wheel Spanner			N/A	
8.3 Tool Box	S			
9 Documents				
9.1 Registration	S			
9.2 Observation Book	S			
9.3 Test Certificates	S			
9.4 Driver's License	S			
9.5 Sambu Logo	S			
10 Loose Items				
10.1 In Driver's Cabin	S			
10.2 In load carrying Sec.			N/A	
10.3 First Aid Kit		U		First aid kits are available at site
10.4 A/C System	S			

S = Satisfactory
U = UnSatisfactory
N/A = Not Applicable

Checked by: _____ Verified by: _____

SAMBU

Kitchen Hygiene and Sanitory Inspection Checklist

Project: NBE Hydro Electric Power Complex

Date:15/09/12

Sr. No	Activities / area	Satisfactory	Un Satisfactory	Proposed corrective action in case of unsatisfactory	Tentative Date of completion	Status to date	Remarks
1	General House Keeping	√	–				
2	Food is properly stored & protected from contamination.	√	–				Storeable items are properly stored on racks in lockable rooms
3	Food stored area is clean	–	√	Remove the rubbihs from store	18/09/12	Ok	some rubbish was found inside the store.
4	Raw food s & vegetable are washed before serving.	–	–				It is monitored by camp supervisor
5	Refrigeration is maintained at below 40 degrees and the freeze at 0 ^{0}F.	√	–				Refrigerators are working properly
6	Food is being bought from reliable supplier.	√	–				Local market, marts and shopping centers
7	Work surface are washed & clean after using.	√	–				Mess halls are washed once a day and cleaned after each use
8	All small equipment utensils including cutting board are cleaned before using.	√	–				Yes, A number of safety talk on heath hygiene and washing have been conducted.
9	Sink is properly set up for washing.	√	–				Yes
10	Kitchen dust bin are emptied as necessary.	√	–				After each use, it is emptied
11	Lighting condition	√	–				Enough lighting is available
12	Table & chairs arrangement	√	–				Desks and tables are available in labor mess hall
13	fan working properly.	√	–				yes, it is working properly
14	Drinking water test are carried out	√	–				As per Mgmt plan, tests are carried out and found satisfactory.
15	Pipe line of drain water in kitchen are free of any kind of choking	√	–				Drainage pipe lines are properly working

_____ Inspection By

_____ ESOHS Officer

Exhibit 15 – Audits

(Please see the next page)

Inspection Check List

Project: New Bong Escape Hydro Electric Power Complex | Inspected by: ESOHS Officer, Medical Officer

Area to be Inspected: Hygienes of Food Handlers | Inspection Date: 17/07/12

Sr. No	Description	Y	N	Comments	Action Taken
1	Do all kitchen staff fulfilled the requirements of the Medical Officer.	Y			
2	Is any evidence of reported sickness among kitchen staff to the concerned person?	Y		The medical examinations were conducted in May 2012 and no severe illness observed.	
3	Has monthly checking of nails/hands of kitchen staff been done?	Y		Monthly inspections are carried out in routine	
4	Are daily hygiene practices monitored by the concerned person and all corrective actions have been completed?	Y		Camp supervisor daily monitor all the cooking staff.	
5	Is the kitchen staff been provided with warm water and soap/liquid hand wash for personal hygiene?	Y		Separate hot and cold water facility is available in kitchens.	
6	Do the food handlers wash their hands as often as necessary?	Y		Doctor briefs them regularly about hand washing techniques.	
7	Is all jewellery including watches removed prior to commencing direct food handling?	Y			
8	Is there any evidence of smoking in food preparation areas?	Y	ü	"No Smoking" safety signs have been displayed in the mess halls.	
9	Do kitchen personnel wear appropriate uniform like protective clothing and protective head coverings during food preparation?	Y		Aprons and head cover have been provided to the kitchen staff.	
10	All staff understands their responsibilities with regards to reporting of illness?	Y			
11	Is sick staff excluded from working inside the kitchen with food?	Y		No such sickness is reproted in the current month.	
12	Is there a first-aid box available/ wounds are covered with coloured, water proof dressings?	Y		First Aid Box available in the labor camp near the mess hall.	
13	Is staff aware of food safety practices and their responsibilities?	Y		Food safety procedure has been discussed with the food handlers & also displayed on notice boards	
14	Is staff aware they must not be at work when they may be suffering from a food borne illness or condition?	Y			
15	Are kitchen staffs trained on proper hand washing?	Y		Proper hand washing techniques have been discussed and HSE up dates on hand washing techniques is displayed in mess halls.	
16	Is staff aware of food hygiene through awareness sessions?	Y			
17	Are kitchen staffs trained on proper use and storage of chemicals/ detergents?	Y		No detegents or chemicals are stored in kitchens.	
18	Is any training/awareness sessions' record available?	Y		Refrence to Pervious MPRs	
19	Are training schedule present?	Y			
20	Are food handlers' trained on use of fire extinguishers?	Y		Refrence to MPR April	

Internal Audit Schedule 2012

Sr. No	Area	Date	Time	Auditee	Audit Team
1	Site Clinic & First Aid Facilities	15/8/2012	1000 hrs	Dr. Asif Maqsood	Muhammad Azam Fawad Ahmad
2	Residences and Mess Halls	23/8/2012	1000 hrs	Fawad Ahmd	Muhammad Azam Asad Abbas Naqvi
3	Fuel Station	30/08/12	1000 hrs	Tauqeer Ahmad	Muhammad Azam Fawad Ahmad
4	Electrical Installations	08/09/12	1000 hrs	Zahid Iqbal	Muhammad Azam Muhammad Sohail
5	Ware house/ Stores	10/09/12	1000 hrs	Kamran Akram	Muhammad Azam Muhammad Sohail
6	Workshop/ Maintenance Yard	13/09/12	1000 hrs	Hafiz Abid	Muhammad Azam Muhammad Sohail
7	Scrap Yards	15/09/12	1000 hrs	Abdul Latif	Muhammad Azam Muhammad Sohail
8	Batch Plant	18/09/12	1000 hrs	Hafiz Abid	Muhammad Azam Muhammad Sohail
9	Document Review	25/09/12	1000 hrs	Muhammad Azam	Muhammad Azam Muhammad Sohail
10	Security Arrangements	27/09/12	1000 hrs	Assad Abbas Naqvi	Muhammad Azam Muhammad Sohail

Medical/ First Aid Facilities

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Admin Officer

Sr. No	Reference	Action Items	Comments
1.	Health and Safety Program 16.1	Does the company's policy available to provide & maintain adequate first aid, medical services in the clinic.	Yes First Aid Policy is displayed in the Clinic.
2.	Health and Safety Program 16.1	Does policy communicated to workforce and displayed at important places.	It is communicated through the tool box talks.
3.	Health and Safety Program 16.2	Does adequate size of first Aid Facility available at site.	Yes
4.	Health and Safety Program 16.2	Does the facility accessible t o all employees working at site.	Yes, it is accessible to all employees working at site.
5.	Health and Safety Program 16.2	How many medical staff has been appointed on site?	One qualified Doctor along with male nurse is present on site.
6.	Health and Safety Program 16.3	Does Equipped Ambulance available at site	Yes
7.	Health and Safety Program 16.4	Does the medical evacuation plan established and drills carried out.	It has been established and drill also been carried out. (Refer to MPR)
8.	Health and Safety Program 16.4	Is the Clinic being managed by doctor/male nurse at all times?	Male Nurse is available for 24 hrs at site.
9.	IFC guideline 3.7	Does the List of nearby hospitals and its contact numbers available at site?	List of important numbers is displayed in the Clinic and a Sign board with important numbers is also posted at site.
10.	General EHS guidelines by IFC	Has a leaflet giving general information on First Aid displayed at important locations.	It has been displayed on HSE notice boards in mess halls.
11.	Health and Safety Program 16.6	Is the first aid record being maintained at site clinic?	Yes

Medical/ First Aid Facilities

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Admin Officer

12.	Health and Safety Program 16.7	Are the first aid cases properly reported in the specified "First Aid Form"?	Refer to MPR of June & July 2012.
13.	General EHS guidelines by IFC	Has the Doctor and staff trained in first aid?	Yes , A training was conducted on First Aid and Fire Fighting at site by Rescue 1122 a government run organization
14.	General EHS guidelines by IFC	Doctor involved in first aid training & health lectures?	Yes
15.	ESMP	Does anti Snake venom available at site clinic and has the Doctor got training on using anti snake venom?	Not Available, Only First Aid will be provided at site and then it will be referred to DHQ Hospital Mirpur.
16.	Health Surveillance Program	Are all new staff medically checked before employment?	Yes, Record is available at site clinic.
17.	General EHS guidelines by IFC	Are First aid kits provided in adequate numbers?	Each first aid kit is available at Residential area, Ambulance, site and clinic.
18.	General EHS guidelines by IFC	Are First aid kits are adequately stocked?	Yes, Status of medicine in box is also noted and placed inside the Box.
19.	General EHS guidelines by IFC	Does an adequate number of staff/ workers trained to provide first aid?	A number of First Aid trainings have been conducted at site. Refer to MPR July 2012
20.	General EHS guidelines by IFC	Do the First aid kits checked regularly & replenished directly after use?	Yes. Medicine status of first aid box is maintained and available in the First aid box.
21.	General EHS guidelines by IFC	Has any refresher course arrange at site for First Aiders.	A government run organization Rescue 1122 organized First Aid training at site.
22.	General EHS guidelines by IFC	Are the Basic first aiders identified by wearing coveralls with First Aid badges?	Cover all for first aider is availbe only inside the clinic.
23.	General EHS guidelines by IFC	Does Emergency room dedicated only for emergencies?	Yes,

Medical/ First Aid Facilities

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Admin Officer

24.	General EHS guidelines by IFC	Is Stretcher available?	Yes
25.	General EHS guidelines by IFC	Is Refrigerator available for storing life saving drugs?	Yes
26.	General EHS guidelines by IFC	Is Anti snake venom present?	No, Only first aid is provided at site clinic.
27.	General EHS guidelines by IFC	Does the door of clinic large enough for stretcher?	Yes
28.	General EHS guidelines by IFC	Is the Clinic well ventilated?	Yes
29.	General EHS guidelines by IFC	Is the area of clinic sufficient for examination & consultation of patients?	Yes
30.	General EHS guidelines by IFC	Wash hand basin with running water available.	Yes, hot water facility available in clinic.
31.	General EHS guidelines by IFC	Adequacy of control of medical supplies	

Comments/ Other:

It has a good compliance level and health facility awareness level is also satisfactory. A qualified doctor along with the male nurse is available at site round the clock. Adequate numbers of first aid boxes are available at site. In order to manage any emergency a well equipped ambulance is available at site.

Most of the site staff is aware about how to provide first aid in any emergency. Record of First Aid and Fire Fighting trainings show the awareness level to face any kind of emergency, further a sign poster with all important number is also displayed in front of offices. The provision of health facilities categorically mentioned in the “Health and Safety Program” and “General EHS Guidelines by IFC” has observed satisfactory.

Fuel Station

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Admin Officer

Sr. No	Reference	Action Items	Comments
1.	Health and Safety Program 16.1	Induction, and training provided to Fuel handlers	Yes, it has already been reported with previous MPR.
2.	Health and Safety Program 16.1	Have hazards been identified	Hazard Identification and Risk Assessment has been conducted and already reported.
3.	Health and Safety Program 16.2	Any risk assessment has been done	Hazard Identification and Risk Assessment has been conducted and already reported.
4.	Health and Safety Program 16.2	Adequate security of the area	Fuel storage area is completely fenced with barbered wire.
5.	Health and Safety Program 16.2	PPE suitable, cleaned and maintained	Yes
6.	Health and Safety Program 16.3	Measures to control spills and leaks during transfer	Dip trays arranged there to control the spillage.
7.	Health and Safety Program 16.4	Emergency management plan has been established and placed in Fuel station	Yes
8.	IFC guideline 3.7	Emergency contact numbers are available	List of important numbers is displayed there and a Sign board with important numbers is also posted at site.
9.	General EHS guidelines by IFC	Spill control plan	It has been displayed on HSE notice boards in mess halls.
10.	Health and Safety Program 16.6	Adequate fire protection system-adequately installed, tested and maintained	Fire Extinguishers are placed there in order to face any emergency.
11.	Health and Safety Program 16.7	Incident Investigation Procedures present on Fuel Station	Yes, It is available

Fuel Station

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Admin Officer

12.	General EHS guidelines by IFC	Safe operating procedures provided by Management	SOP to control spills and leaks has been developed and displayed at fuel stations. More over empty oil cans are used as a dip tray to control spillage during transfer.
13.	General EHS guidelines by IFC	Fuel area is properly barricade	Yes
14.	ESMP	Fuel storage area clean and free of debris	Not Available, Only First Aid will be provided at site and then it will be referred to DHQ Hospital Mirpur.
15.	Health Surveillance Program	''No Fire / Smoking'' & ''No Entry for Unauthorized Personnel'' posters displayed	Yes, Record is available at site clinic.
16.	General EHS guidelines by IFC	Warning sign boards mounted near fuel station	Each first aid kit is available at Residential area, Ambulance, site and clinic.
17.	General EHS guidelines by IFC	Foam / Powder fire extinguishers/ CO_2	Yes, Status of medicine in box is also noted and placed inside the Box.
18.	General EHS guidelines by IFC	Storage tanks: i. Are of good construction, sealed & not liable to leak	A number of First Aid trainings have been conducted at site. Refer to MPR July 2012
19.	General EHS guidelines by IFC	ii. Are electrically earthed and grounded	Yes. Medicine status of first aid box is maintained and available in the First aid box.
20.	General EHS guidelines by IFC	iii. Have capacity written on tanks	A government run organization Rescue 1122 organized First Aid training at site.
21.	General EHS guidelines by IFC	iv. Have air space of minimum 2.5% of capacity of tanks provided for expansion	Cover all for first aider is availbe only inside the clinic.
22.	General EHS guidelines by IFC	Procedures in place for spillage prevention during refueling and maintenance such as oil changes	Yes,

Fuel Station

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Admin Officer

23.	General EHS guidelines by IFC	Fuel transfer pump for vehicle re fuelling - no leaks.	Yes
24.	General EHS guidelines by IFC	All personnel employed in connection with storage area trained in procedures for handling fuel	Yes
25.	General EHS guidelines by IFC	Equipment & set-up inspected by Chief Mechanic/ workshop supervisor before any fuel transfer	No, Only first aid is provided at site clinic.
26.	General EHS guidelines by IFC	Report of installation of underground fuel storage tank	Yes
27.	General EHS guidelines by IFC	Emergency procedures displayed in fuel station	Yes
28.	General EHS guidelines by IFC	Fuel spill response program	Yes
29.	General EHS guidelines by IFC	Emergency shutdown marked	Yes, hot water facility available in clinic.

Comments/ Other:

It has a good compliance level and health facility awareness level is also satisfactory. A qualified doctor along with the male nurse is available at site round the clock. Adequate numbers of first aid boxes are available at site. In order to manage any emergency a well equipped ambulance is available at site.

Most of the site staff is aware about how to provide first aid in any emergency. Record of First Aid and Fire Fighting trainings show the awareness level to face any kind of emergency, further a sign poster with all important number is also displayed in front of offices. The provision of health facilities categorically mentioned in the “Health and Safety Program” and “General EHS Guidelines by IFC” has observed satisfactory.

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	General regulatory framework	
	Have the international/national/local regulatory frameworks been reviewed?	Sambu have reviewed applicable National Labour Laws.
	Are mandatory provisions on workers' accommodation identified?	Keeping in view the National Labour Laws, the Contractor have identified the mandatory provision including safe food, safe drinking water, hygienic conditions, accommodation and sufficient wage.
	Assessing the need for workers' accommodation	As the Contractor is following the applicable National Labour Law, so no need assessment is necessary.
	Availability of the workforce	
	Has there been an assessment of workers' availability in the neighbouring communities?	As the Project Site location have history of people belonging to UK, and no skilled worker can be found out. Therefore, the Contractor has outsourced the semi skilled and unskilled jobs to the local people.
	Has there been an assessment of the skills and competencies of the local workforce and how do those skills and competencies fit the project's need?	As the Project Site location have history of people belonging to UK, and no skilled worker can be found out. Therefore, the Contractor has outsourced the semi skilled and unskilled jobs to the local people.
	Has there been an assessment of the possibility of training a local workforce in order to fulfil the project's needs?	Every employed person has been provided with the trainings as per the training Calendar after conducting need assessment. Moreover, daily toolbox talks are also been conducted depending on the nature of the job.
	Availability of housing	
	Has there been a comprehensive assessment of the different type of housing available in the surrounding communities prior to building any workers' accommodation?	As per the Revised IEE, workers involvement in the community is not allowed.

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	For a larger project: is that assessment included in the Environmental and Social Impact Assessment?	As per the Revised IEE, workers involvement in the community is not allowed.
	Has there been an assessment of the impact on the communities of using existing housing opportunities?	The detailed assessment and mitigation measures have been incorporated in Revised IEE.
	Have measures to mitigate adverse impacts on the local housing market been identified and included in the Environmental and Social Action Plan (ESAP) or other relevant action plan?	The detailed assessment and mitigation measures have been incorporated in Revised IEE and also included in the ESMP.
	Assessing impacts of workers' accommodation on communities	
	Has a community impact assessment been carried out as part of the Environmental and Social Assessment of the overall project with a view to mitigate the negative impacts of the workers' accommodation on the surrounding communities and to enhance the positive ones?	The detailed assessment and mitigation measures have been incorporated in Revised IEE.
	Have the potential health and safety impacts and consequences of land acquisition and involuntary resettlement occurring during the construction phase of the workers' accommodation been included in the assessment?	The detailed assessment and mitigation measures have been incorporated in Revised IEE under heading of Resettlement Entitlement Framework (REF).
	Have the impacts of workers' accommodation on community infrastructures, services and facilities been included in the assessment?	Yes
	Have the impacts on local community's businesses and local employment been included in the assessment?	The detailed assessment has been incorporated in Revised IEE.
	Have general impacts of workers' accommodation on communities' health, (notably the increased risk of road accidents and of communicable diseases), and community social cohesion been included in the assessment?	Yes
	Does the assessment include appropriate mitigation measures to address any adverse impacts identified?	Yes

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	Types of workers' accommodation	
	Has consideration been given to provision of family accommodation?	The priority for males is given as heavy work is going during construction phase.
	Are individual accommodations comprising bedrooms, sanitary and cooking facilities provided as part of the family accommodation?	Family accommodations are not allowed, only bachelor accommodations are provided at site.
	Are adequate nursery/school facilities provided?	Families are not allowed at site, so no schooling facility is provided at site.
	Is special attention paid to providing adequate safety to children?	No family Resides at site
	National/local standards	
	Have the relevant national/local regulations been identified and implemented?	As per IFC standard.
	General living facilities	
	Is the location of the facilities designed to avoid flooding or other natural hazards?	By designing facility on the dike with appropriate height.
	Are the living facilities located within a reasonable distance from the worksite?	Yes
	Is transport provided to worksite safe and free?	Project work site is not too far from the accommodation.
	Are the living facilities built using adequate materials, kept in good repair and kept clean and free from rubbish and other refuse?	Inspections have been carried out by Camp Boss.
	Drainage	
	Is the site adequately drained?	Proper drainage and sewerage system exists there.
	Heating, air conditioning, ventilation and light	
	Depending on climate are living facilities provided with adequate heating, ventilation, air conditioning and light systems including	Senior staff has been provided with adequate heating, ventilation, air conditioning and light systems including emergency

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	emergency lighting?	lighting. However, labours have been provided with ventilation, room fans and adequate lights.
	Water	
	Do workers have easy access to a supply of clean/ potable water in adequate quantities?	Yes, all workers have easy access to portable water.
	Does the quality of the water comply with national/local requirements or WHO standards?	It has been confirmed by conducting water analysis twice a year, current analysis has been conducted in June 2012 and test results found satisfactory..
	Are tanks used for the storage of drinking water constructed and covered to prevent water stored therein from becoming polluted or contaminated?	Regular inspection are being conducted and reported with MPRs.
	Is the quality of the drinking water regularly monitored?	The Contractor has submitted EMP mentioning monitoring frequency of all Environmental parameters and is being implemented.
	Wastewater and solid waste	
	Are wastewater, sewage, food and any other waste materials adequately discharged in compliance with local or World Bank standards and without causing any significant impacts on camp residents, the environment or surrounding communities?	Yes, A local contractor has hired to pick all non recyclable waste; it dumps the waste at designated area by Mirpur Municipality. Waste water analysis has been conducted and test analysis found within the limits.
	Are specific containers for rubbish collection provided and emptied on a regular basis?	SWM plan has been established and implemented.
	Are pest extermination, vector control and disinfection undertaken throughout the living facilities?	Regular fogging has been accomplished.
	Rooms/dormitories facilities	
	Are the rooms/dormitories kept in good condition?	Yes
	Are the rooms/dormitories aired and cleaned at regular intervals?	Regular inspection has been accomplished by Camp Boss of

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
		the Contractor.
	Are the rooms/dormitories built with easily cleanable flooring material?	Yes
	Are the rooms/dormitories and sanitary facilities located in the same buildings?	Yes, Each block contains sanitary facilities in the same building.
	Are residents provided with enough space?	As per IFC standard.
	Is the ceiling height high enough?	As per IFC Standard.
	Is the number of workers sharing the same room/dormitory minimised?	Yes, Maximum eight workers are allowed to share the room
	Are the doors and windows lockable and provided with mosquito screens when necessary?	Doors and windows lockable but mosquitoes screens are not available
	Are mobile partitions or curtains provided?	Same gender is living in the sharing rooms.
	Is suitable furniture such as table, chair, mirror, bedside light provided for every worker?	Necessary furniture has been provided to all labour staff.
	Are separate sleeping areas provided for men and women?	Contractor not allowed female staff
	Bed arrangements and storage facilities	
	Is there a separate bed provided for every worker?	Yes
	Is the practice of “hot-bedding” prohibited?	Yes
	Is there a minimum space of 1 metre between beds?	Yes
	Is the use of double deck bunks minimised?	Double deck bunks are not provided at site.
	When double deck bunks are in use, is there enough clear space between the lower and upper bunk of the bed?	Double deck bunks are not provided at site.
	Are triple deck bunks prohibited?	Yes, not allowed

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	Are workers provided with comfortable mattresses, pillows and clean bed linens?	Staff is provided with these facilities where as labourers are provided only beds and steel carts.
	Are the bed linen washed frequently and applied with adequate repellents and disinfectants (where conditions warrant)?	Yes
	Are adequate facilities for the storage of personal belongings provided?	Yes
	Are there separate storages for work clothes and PPE and depending on condition, drying/airing areas?	Separate place has been assigned by the Contractor for placing PPEs.
	Sanitary and toilet facilities	
	Are sanitary and toilet facilities constructed from materials that are easily cleanable?	Yes
	Are sanitary and toilet facilities cleaned frequently and kept in working condition?	Cleaning is ensured on daily basis
	Are toilets, showers/bathrooms and other sanitary facilities designed to provide workers with adequate privacy including ceiling to floor partitions and lockable doors?	Yes
	Are separate sanitary and toilet facilities provided for men and women?	Contractor not allowed female staff
	Are there an adequate number of toilets and urinals?	Yes
	Are toilet facilities conveniently located and easily accessible?	Toilet facilities are attached with each block.
	Is the shower flooring made of anti-slip hard washable materials?	Yes
	Is there an adequate number of hand wash basins and showers/ bathrooms facilities provided?	Yes
	Are the sanitary facilities conveniently located?	Yes
	Are shower facilities provided with an adequate supply of cold and hot running water?	Officer’s washrooms and labours wash rooms have facility of both hot and cold water.

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	Canteen, cooking and laundry facilities	
	Are canteen, cooking and laundry facilities built with adequate and easy to clean materials?	Yes
	Are the canteen, cooking and laundry facilities kept in clean and sanitary condition?	Yes
	If workers cook their own meals, is kitchen space provided separately from the sleeping areas?	No such cooking facility is allowed, all workers use mess facility for meal.
	Laundry facilities	
	Are adequate facilities for washing and drying clothes provided?	Yes
	Canteen and cooking facilities	
	Are workers provided with enough space in the canteen?	Yes
	Are canteens adequately furnished?	Yes
	Are kitchens provided with the facilities to maintain adequate personal hygiene?	Yes
	Are places for food preparation adequately ventilated and equipped?	Yes
	Are kitchen floor, ceiling and wall surfaces adjacent to or above food preparation and cooking areas built in non-absorbent, durable, non-toxic, easily cleanable materials?	Yes
	Are wall surfaces adjacent to cooking areas made of fire-resistant materials and food preparation tables equipped with a smooth, durable, non-corrosive, non-toxic, washable surface?	Brick kiln walls are made and Fire Extinguishers are also placed to face any emergency.
	Are adequate facilities for cleaning, disinfecting and storage of cooking utensils and equipment provided?	Yes
	Are there adequate sealable containers to deposit food waste and other refuse? Is refuse frequently removed from the kitchen to avoid	Yes, Plastic and steel drums are placed to deposit the food waste and are cleaned on regular basis.

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	accumulation?	
	Standards for nutrition and food safety	
	Is there a special sanitary process such as the WHO "5 keys to safer food" implemented in relation to food safety?	Safe food is being provided as per Pakistani standard.
	Does the food provided contain appropriate nutritional value?	Yes
	Does the food provided take into account workers' religious/cultural backgrounds?	Safe food is being provided as per Pakistani standard.
	Medical facilities	
	Are first aid kits provided in adequate numbers?	Yes, almost four first aid kits are provided at different locations
	Are first-aid kits adequately stocked?	Yes
	Are there an adequate number of staff/workers trained to provide first aid?	Yes
	Are there any other medical facilities/services provided on site? If not, why?	A qualified doctor is available at site clinic, clinic is furnished with all basic medical needs.
	Leisure, social and telecommunications facilities	
	Are basic social collective spaces and adequate recreational areas provided to workers?	Yes
	Are workers provided with dedicated places for religious observance?	Yes
	Can workers access a telephone at an affordable/public price?	Offices of the Contractor have telephone facility.
	Are workers provided with access to internet facilities?	Offices of the Contractor have internet facility.
	Management and staff	
	Are there carefully designed worker camp management plans and	Yes

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	policies especially in the field of health and safety (including emergency responses), security, workers' rights and relationships with the communities?	
	Where contractors are used, have they clear contractual management responsibilities and duty to report?	Yes
	Does the person appointed to manage the accommodation has the required background, competency and experience to conduct his mission and is he/ she provided with the adequate responsibility and authority to do so?	Camp boss has a sound experience of previous projects to manage the accomdations
	Is there enough staff to ensure the adequate implementation of housing standards (cleaning, cooking and security in particular)?	Yes, Enough cleaning staff is available for cleaning, cooking and security.
	Are staff members recruited from surrounding communities?	Almost 41% local community is working at site
	Has the staffs received basic health and safety training?	Safety and health trainings are conducted and reported with each MPR.
	Are the persons in charge of the kitchen particularly trained in nutrition and food handling and adequately supervised?	Yes
	Charging fees for accommodation and services	
	Are the renting arrangements fair and transparent?	No fees have been deducted from any employee regarding accommodation.
	Are workers provided with adequate information about payment made?	Yes
	Are food and other services provided for free or reasonably priced, that is, not above the local market price?	Reasonable prices have been deducted. However, The Contractor has provided fuel and crockery and cooking staff free of any charge.
	Is the payment in kind for accommodation and services prohibited?	Yes, Accommodations are free of any cost
	Health and safety on site	

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	Have health and safety management plans including electrical, mechanical, structural and food safety been designed and implemented?	Health and safety Program have been established by the Contractor and implemented accordingly.
	Has the accommodation manager a duty to report to the health authority specific diseases, food poisoning or casualties?	Yes
	Is there an adequate number of staff/workers trained in providing first aid?	Yes
	Has a specific and adequate fire safety management plan been designed and implemented?	Fire safety drill plan has been established and implemented accordingly.
	Is guidance on alcohol, drug and HIV/AIDS and other health risk-related activities provided to workers?	Awareness sessions have been conducted through tool box talks.
	Are contraception measures (condoms in particular) and mosquito nets (where relevant) provided to workers?	No
	Do workers have an easy access to medical facilities and medical staff, including female doctors/nurses where appropriate?	Yes
	Have emergency plans on health and fire safety been prepared?	Yes
	Depending on circumstances, have specific emergency plans (earthquakes, floods, tornadoes) been prepared?	Specific plans have not been formulated; all of them are the part of Emergency Evacuation Plan.
	Security on workers' accommodation	
	Has a security plan including clear measures to protect workers against theft and attack been designed and implemented?	Yes, it has been established and implemented accordingly.
	Has a security plan including clear provisions on the use of force been designed and implemented?	Yes
	Have the backgrounds of security staff been checked for previous crimes or abuses?	Before hiring as employee, Security clearance is obtained from local notables and police station.
	Has the recruitment of security staff from both genders been considered?	The Contractor hired only male staff
	Have security staffs received clear instruction about their duty and	Manager Security provides them the brief instructions about

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	responsibility?	their duties.
	Have security staff been adequately trained in dealing with domestic violence and the use of force?	Retired Army Soldiers are hired as security guards, and they are briefed by Manager Security on regular basis.
	Do security staff have a good understanding about the importance of respecting workers' rights and the rights of the surrounding communities and adopt appropriate conduct?	Yes
	Do workers and communities have specific means to raise concerns about security arrangements and staff?	Yes, Community can put their complaints in the complaint register placed at main gate.
	Workers' rights, rules and regulations on workers' accommodation	
	Is an adequate transport system to the surrounding communities provided?	No
	Is freedom of association expressly respected?	Yes
	Are workers' religious, cultural and social backgrounds respected?	Yes
	Are workers made aware of their rights and obligations and provided with a copy of the accommodations' internal rules, procedures and sanction mechanisms in a language or through a media they understand?	They are briefed at site in the medical induction.
	Are house regulations non discriminatory, fair and reasonable?	Yes
	Are regulations on alcohol, tobacco and third parties' access to the camp clear and communicated to workers?	No smoking sign boards are displayed in the camp area, in case of any guest, the host has an obligation of prior information to security staff
	Management of community relations	
	Have community relation management plans addressing issues around community development, community needs, community health and safety and community social and cultural cohesion been designed and implemented?	Community complaint register have been placed by the Contractor and complaints are incorporated accordingly.

Workers Accommodation

(IFC Standards)

Project: NBE Hydro Electric Power Complex

Audit Team: ESOHS Officer, Medical Officer

Reference	Parameters	Comments
	Do community relation management plans include the setting up of liaison mechanisms to allow a constant exchange of information and consultation of the surrounding communities?	The Contractor is not allowed to indulge directly with the local community. In case of any community grievance, the information is conveyed to liaison officer of the Client
	Is there a senior manager in charge of implementing the community relation management plan?	The Contractor is not allowed to indulge directly with the local community. In case of any community grievance, the information is conveyed to liaison officer of the Client
	Is there a senior manager in charge of liaising with the surrounding communities?	The Contractor is not allowed to indulge directly with the local community.
	Are the impacts generated by workers' accommodation periodically reviewed, mitigated or enhanced?	Yes
	Are community representatives provided with easy means to voice their opinions and lodge complaints?	The client has established the community grievance committee, in which locals are representing the nearby community.

Audit Check list for workshop

Project: NBE Hydro Electric Power Complex
Date: 25/09/12
Auditors: ESOHS Offcers Sambu & Laraib
Auditee:Electrical Incharge

Action Items	Comments	References	Follow up
Is Workshop maintained in neat and tidy manner and that waste oil, rags and other flammable materials are removed at the end of each shift or as necessary.	workshop is cleaned on daily basis at the end of each shift	HSE Program 7.6.7	
Are Maintenance crews properly trained for the use of fire extinguishers on the work place?	Yes, Refer to previous MPR's	HSE Program 7.6.7	
Are flammable liquids stored safely, in a neat and tidy manner with adequate HSE sign provided?	Although no highly flammable material is there, however lubricants are stored at a separate place	HSE Program 7.6.7	
Are Flammable liquids not used for cleaning purpose?	Not in use	HSE Program 7.6.7	
is the Battery recharging being conducted in well ventilated separate areas, with no smoking sign and fire extinguishers in place.	" No Smoking" signs are placed inside the workshop, and recharging is conducted in a ventilated area.	HSE Program 7.6.7	
Are fire extinguishers checked monthly?	Yes, Refer to each MPR.	HSE Program 7.6.7	
Is the workshop declared restricted smoking areas.	Smoking is not allowed there	HSE Program 7.6.7	
Are fire extinguishers placed at areas where one can foresee that fire problem can be caused.	Fire Extinguishers are available in workshop and properly inspected.	HSE Program 7.6.8	
Are Fire Brigade numbers and other emergency contact numbers are displayed at workplace	Emergency Contact numbers are displayed at site, moreover such sign board is also displayed infron of office	HSE Program 7.6.9	
Is the scrap removed to scrap designated container.	Scrab is dumped inside the designated container	HSE Program 7.6.9	
ǁIs there an adequate arrangements of safety signages to educated and warn the workers regarding site activities	A number of sign posters are displayed in workshop to educate the workers.	HSE Program 7.7	
Are the cutting and welding performed where sparks and cutting slag fall on cylinders.	During such activities cylinders are moved to other side.	HSE Program 7.7	
Check the work area for combustible material and possible inflammable vapours.	No such combustible and flammable liquids are stored in the workplace.	HSE Program 7.7	
Do the gas cylinders stored outside in the locked designated area when not in use.	Gas cylinders are stored in well ventilated are with overhead protection.	HSE Program 8.2	
Do the empty and filled cylinders stored separately in the desginated areas, away from fuel, combustible materials and away from vehicle path	Separate area have been designated for placing of empty and filled cylinders.	HSE Program 8.2	

Audit Check list for workshop

Project: NBE Hydro Electric Power Complex | Date: 25/09/12

Auditors: ESOHS Offcers Sambu & Laraib | Auditee:Electrical Incharge

Did the Oxygen and acetylene cylinders secure in an upright position at all times during storage and exercising.	No,filled cyllinders were placed in unsafe manner, it should be in proper cage and chained.	HSE Program 8.3.3	
Are cylinders stored in a well-ventilated area, outside with overhead protection from the weather.	Gas cylinders are stored in well ventilated are with overhead protection.	HSE Program 8.3.3	
Do the Type ABC fire extinguishers available whenever oxyacetylene cutting being done.	ABC type Fire Extinguishers are placed at workplace	HSE Program 8.3.3	
Do the suitable personal protective equipments available at workplace for staff working at workshop	Compliance of PPE's not satisfactory, some of the workers witnessed without safety shoes.	HSE Program	
Do the lubricants and used oil stored at cemetented containement dyke ?	Yes, but now some drums are placed on ground	HSE Program	
Storage of fuels/oils/chemical in covered areas	Yes it is stored in the covered aeas	HSE Program	
Has concrete pad constructed for maintenance of machinary and vehicles.	Yes, it had been constructed.	HSE Program	
Does the oil soaked soil replaced with the fresh soil.	No, It needs to remove with the fresh soil	HSE Program	
Do the Vehicles and Equipments not repaired in the field i.e. presence of repairing/oil change bay is necessary there.	Only small repairing for crawling machines is conducted in field occasionally.	HSE Program	

Comments/Recommendations:

Following are the recommendation required urgent considerations

The compressed gas cylinders were observed stored in usafe manner, it needs to be proper placing inside the cages tied with chain.

Scrap container has been filled with multiple types of waste, it needs to be auctioned on urgent basis.

Oil soaked soil in the lubricant storage areas should be replaced with the fresh soil

Used lubricant barrals should be auctioned on urgent basis as it causing the oil spillage in the area..

illegitimate parking of motorcycles in the workshop requries to be prohibit on urgent basis.

Audit Check list for Warehouse

Project: NBE Hydro Electric Power Complex
Auditors: ESOHS Offcers Sambu & Laraib

Date: 20/09/12
Auditee:Electrical Incharge

Action Items	Comments	References	Follow up
Are Inductions and trainings provided to staff handling and storage of materials inside the ware house?	Yes, Refer to MPR's	HSE Program	
Are warehouses premises properly lightened during day and night?	yes	HSE Program	
Are exits clearly marked and clear of obstructions?	Yes	HSE Program	
Are the warehouse walkways clear of storage?	Yes	HSE Program	
Are pallets, racks and shelving in good condition, undamaged?	Yes	HSE Program	
Are materials secure and not leaning off the edges of the racks?	Yes	HSE Program	
Is the notice board available in warehouse?	Notice boards are avaialble	HSE Program	
Are Material Safety Data Sheets (MSDS) available and accessible?	Andritz ware house missing of MSDS of the chemicals.	HSE Program	
Do employees know where the MSDS are located?	Notice boards are avaialble for this purpose.	IFC guidelines	
Are labels on containers visible and in good condition?	Labels are visible.	HSE Program	
Is there a spill plan available in case of spillage?	No such plan is witnessed in warehouses.	IFC guidelines / HSE program	
Is there adequate equipment to minimize employee lifting of heavy or awkward objects?	Heavy Equipments are not handled manually.	IFC guidelines/ HSE program	
Are fire extinguishers accessible?	Yes	IFC guidelines/ HSE program	
Have fire extinguishers been checked monthly?	No check list found there	IFC guidelines/ HSE program	
Are flammable and combustible materials stored in a separate flammable storage facility?	Flammable material is stored in separate container but no fire extinguisher is placed there.	IFC guidelines/ HSE program	

Audit Check list for Warehouse

Project: NBE Hydro Electric Power Complex
Auditors: ESOHS Offcers Sambu & Laraib

Date: 20/09/12
Auditee:Electrical Incharge

Are Flammable liquids stored at an adequate distance from camp area.	Yes	IFC guidelines/ HSE program	
Are Flammable liquids stored safely, in a neat and tidy manner with adequate HSE signs provided?	No such sign board is witnessed there.	IFC guidelines/ HSE program	
Is any hot work permitted in the area where inflammable liquids stored?	No hot work is allowed in such areas.	IFC guidelines/ HSE program	
Are all kinds of shrubs/ dry grass removed near any storage area?	Yes, storage facilities are clear of shrubs and dry grass	IFC guidelines/ HSE program	
Is Smoking prohibited in wares house and "no smoking" signs placed in warehouses?	Yes, Sign boards are displayed there.	IFC guidelines/ HSE program	
Have the Trainings for fire prevention and suppression techniques been provided to ware house staff?	Yes, Refer to MPR's	IFC guidelines/ HSE program	
Are emergency numbers like hospitals, Fire brigade and Police displayed on notice boards?	Not displayed in Andritz ware house.	IFC guidelines/ HSE program	
Are electrical outlets, junction boxes and other electrical components properly covered?	Electrical Boxes observed properly covered with electric hazard sign displayed there.	IFC guidelines/ HSE program	
Are Materials properly stored, stacked or piled away from power lines and to prevent any kind of electric shock hazard.	yes	IFC guidelines/ HSE program	
Does the Good housekeeping practiced at all times, Tripping hazards and slippery conditions eliminated.	No such observation is witnessed there	IFC guidelines/ HSE program	
Are updated first aid box as per Doctor Recommendation available there	Not available in Sambu Ware house where as updated First Aid list is not available with Andritz warehouse.		

Comments/Recommendations

It has a compliance level at some extent and health facility awareness level is also satisfactory. But the followings are the recommendations

Material safet data sheets (MSDS) of all chemicals must be available there and store keeper should be aware of it.

The packaging waste like wood, paper and plastic sheets should not be stored inside the ware house as it increases the potential for fire incidents.

Fire Extinguishers should be inspected on monthly basis, inspection checklist should be availble there.

Spill plan and emergency numbers must be displayed at notice board and ware house staff should have the knowledge to control spillage.

Audit Check list for Electrical Installation

Proljject: NBE Hydro Electric Power Complex
Date: 08/09/12
Auditors: ESOHS Offcers Sambu & Laraib
Auditee:Electrical Incharge

Action Items	Comments	References	Follow up
Proper grounding of Generators	All power generators are properly grounded	Manufacturers guidelins	
Are all power, flexible cables and outgoing power cables routed properly?	yes		
Are all Generators properly sheltered and barricaded.	Proper shelter is provided by construction brick kiln rooms.		
Hearing protection sign displayed.	Yes		
High voltage signage displayed.	Yes		
Filled fire extinguishers available near generators.	Yes		
Oil leakage from the generator	No leakage is observed, the rooms were observed neat and clean.		
Generators room clear of debris and storable items	Some debris, hand shovels and other construction material found inside the generator rooms	HSE Program	
Drip Trays / other means of spill containment available	Dip tray is available with the mobile refueling vehicle.	HSE Program	
Are all boxes and cabinets labeled?	All electrical power tools and electrical appliances carry ELCB & color coding	IFC guidelines	
Are all equipment doors of original design	All outgoing circuits provided with circuit breakers and receptacles shall be the grounding type.	HSE Program	
Have high voltage signs been posted?	The distribution panels in open sky missing signs.	IFC guidelines / HSE program	
Are signs of restricted access to room in place?	Yes, such signs are displayed at each generator room.	IFC guidelines/ HSE program	
Does Emergency lights work properly?	Yes	IFC guidelines/ HSE program	
Is there adequate ventilation for heat load?	Yes, Generator rooms have proper ventilation	IFC guidelines/ HSE program	

Audit Check list for Electrical Installation

Proljject: NBE Hydro Electric Power Complex | Date: 08/09/12

Auditors: ESOHS Offcers Sambu & Laraib | Auditee:Electrical Incharge

Are all seals tight and properly fitted?	No spillage is observed	IFC guidelines/ HSE program	
Are no wires exposed on openings?	Yes	IFC guidelines/ HSE program	
Are all controls functioning properly?	Yes	IFC guidelines/ HSE program	
Do electrical cords hang on pipes, nails and hooks?	Yes	IFC guidelines/ HSE program	
Are all electric Panels in easy access?	Yes	IFC guidelines/ HSE program	
Are all Power cords arranged in a neat and safe manner?		IFC guidelines/ HSE program	
Are all electric panels properly closeable and lockable	No, Some of the panels need proper maintenance.	IFC guidelines/ HSE program	
Are all irons other electric appliances unplugged at the end of the day?	Yes	IFC guidelines/ HSE program	
Are all Power outlets and electrical devices properly covered?	Electrical panels in the open sky and looks with no water proofing, needs corrective action.	IFC guidelines/ HSE program	
Are all power panels easily accessible in all dormitories?	Yes	IFC guidelines/ HSE program	
Are Only qualified and authorized electricians allowed to service and repair electrical appliances, tools and equipment?	Yes, qualified electricians are deputed to repair electrical appliances at site.	IFC guidelines/ HSE program	

Comments/ Others:

It has a compliance level at some extent and health facility awareness level is also satisfactory. But the followings are the recommendations

Signage should be in accordance with international standards and be well known to, and easily understood by workers, visitors and the general public as appropriate.

Local made distribution system should be immediately replaced by installing proper distribution panels/ boards.

DB's should be free of electric shock potential by arranging fire proof panel sheet inside it to avoid electrocution.

Hazardous areas (electrical rooms, Generator rooms, etc), installations, materials, safety measures, etc. should be marked appropriately.

Marking all energized electrical devices and lines with warning signs

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
National/local standards				
Have the relevant national/local regulations been identified and implemented?	Y			IFC regulations are being followed
General living facilities				
Is the location of the facilities designed to avoid flooding or other natural hazards?	Y			-
Are the living facilities located within a reasonable distance from the worksite?	Y			-
Is transport provided to worksite safe and free?		N		No transport facility provided by contractor because accommodation is just beside the site.
Are the living facilities built using adequate materials, kept in good repair and kept clean and free from rubbish and other refuse?	Y			Workers accommodation is built with concrete.
Drainage				
Is the site adequately drained?	Y			-
Heating, air conditioning, ventilation and light				
Depending on climate are living facilities provided with adequate heating, ventilation, air conditioning and light systems including emergency lighting?		N		Heater is not allowing at accommodations keeping in view any fire incident.
Water				
Do workers have easy access to a supply of clean/ potable water in adequate quantities?	Y			3 water cooler has been installed with water treatment plant and treated water is available for everyone at site.
Does the quality of the water comply with national/local requirements or WHO standards?	Y			-

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are tanks used for the storage of drinking water constructed and covered to prevent water stored therein from becoming polluted or contaminated?	Y			-
Is the quality of the drinking water regularly monitored?	Y			Quality of water has tested as per management plan (Bi-Annual).
Wastewater and solid waste				
Are wastewater, sewage, food and any other waste materials adequately discharged in compliance with local or World Bank standards and without causing any significant impacts on camp residents, the environment or surrounding communities?	Y			Waste Bin are placed at different location for waste collection.
Are specific containers for rubbish collection provided and emptied on a regular basis?	Y			-
Are pest extermination, vector control and disinfection undertaken throughout the living facilities?				-
Rooms/dormitories facilities				
Are the rooms/dormitories kept in good condition?	Y			-
Are the rooms/dormitories aired and cleaned at regular intervals?	Y			-
Are the rooms/dormitories built with easily cleanable flooring material?	Y			-
Are the rooms/dormitories and sanitary facilities located in the same buildings?	Y			-
Are residents provided with enough space?	Y			-
Is the ceiling height high enough?	Y			-
Is the number of workers sharing the same room/dormitory minimized?		N		Currently 10-15 people sharing single room whereas the IFC standard is maximum 2-8 per can sharing a room.

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are the doors and windows lockable and provided with mosquito screens when necessary?	Y			Lockable widows are available but mosquito screen is not provided by the contractor.
Are mobile partitions or curtains provided?			N/A	Accommodation is built with concrete this point is not applicable.
Is suitable furniture such as table, chair, mirror, bedside light provided for every worker?	Y			Only steel cart and cupboard is provided by contractor
Are separate sleeping areas provided for men and women?			N/A	Contractor have only male employee So this point is not applicable.
Bed arrangements and storage facilities				
Is there a separate bed provided for every worker?	Y			-
Is the practice of "hot-bedding" prohibited?	Y			-
Is there a minimum space of 1 meter between beds?		N		Space is not according to standard.
Is the use of double deck bunks minimized?			N/A	Double/Triple deck bunks are not used in workers accommodation.
When double deck bunks are in use, is there enough clear space between the lower and upper bunk of the bed?			N/A	not applicable
Are triple deck bunks prohibited?			N/A	not applicable
Are workers provided with comfortable mattresses, pillows and clean bed linens?		N		Only steel cart and cupboard is provided by contractor
Are the bed linen washed frequently and applied with adequate repellents and disinfectants (where conditions warrant)?		N		-
Are adequate facilities for the storage of personal belongings provided?	Y			-

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are there separate storages for work clothes and PPE and depending on condition, drying/airing areas?	Y			Only cupboards are provided by contractor.
Sanitary and toilet facilities				
Are sanitary and toilet facilities constructed from materials that are easily cleanable?	Y			-
Are sanitary and toilet facilities cleaned frequently and kept in working condition?	Y			-
Are toilets, showers/bathrooms and other sanitary facilities designed to provide workers with adequate privacy including ceiling to floor partitions and lockable doors?	Y			-
Are separate sanitary and toilet facilities provided for men and women?			N/A	Contractor have only male employee So this point is not applicable.
Toilet facilities				
Is there an adequate number of toilets and urinals?	Y			-
Are toilet facilities conveniently located and easily accessible?	Y			-
Showers/bathrooms and other sanitary facilities				
Is the shower flooring made of anti-slip hard washable materials?	Y			-
is there an adequate number of hand wash basins and showers/bathrooms facilities provided?	Y			-
Are the sanitary facilities conveniently located?	Y			-
Are shower facilities provided with an adequate supply of cold and hot running water?	Y			-
Canteen, cooking and laundry facilities				

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are canteen, cooking and laundry facilities built with adequate and easy to clean materials?	Y			Facility of Laundry is provided to staff only, not for workers.
Are the canteen, cooking and laundry facilities kept in clean and sanitary condition?	Y			-
If workers cook their own meals, is kitchen space provided separately from the sleeping areas?			N/A	Self Cooking is not allowed in worker accommodation.
Laundry facilities				
Are adequate facilities for washing and drying clothes provided?			N	Not available.
Canteen and cooking facilities				
Are workers provided with enough space in the canteen?	Y			-
Are canteens adequately furnished?	Y			-
Are kitchens provided with the facilities to maintain adequate personal hygiene	Y			-
Are places for food preparation adequately ventilated and equipped?	Y			-
Are kitchen floor, ceiling and wall surfaces adjacent to or above food preparation and cooking areas built in non-absorbent, durable, non-toxic, easily cleanable materials?	Y			-
Are wall surfaces adjacent to cooking areas made of fire-resistant materials and food preparation tables equipped with a smooth, durable, non-corrosive, non-toxic,	Y			-
Are adequate facilities for cleaning, disinfecting and storage of cooking utensils and equipment provided?	Y			-
Are there adequate sealable containers to deposit food waste and other refuse? Is refuse frequently removed from the kitchen to avoid accumulation?	Y			Food waste is removed on alternative days But container are not sealable.
Standards for nutrition and food safety				

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Is there a special sanitary process such as the WHO "5 keys to safer food" implemented in relation to food safety?	Y			-
Does the food provided contain appropriate nutritional value?	Y			-
Does the food provided take into account workers' religious/cultural backgrounds?	Y			-
Medical facilities				
Are first aid kits provided in adequate numbers?	Y			-
Are first-aid kits adequately stocked?	Y			-
Is there an adequate number of staff/workers trained to provide first aid?	Y			-
Are there any other medical facilities/services provided on site? If not, why?	Y			-
Leisure, social and telecommunications facilities				
Are basic social collective spaces and adequate recreational areas provided to workers?	Y			Television facility is provided to workers accommodation.
Are workers provided with dedicated places for religious observance?	Y			-
Can workers access a telephone at an affordable/public price?		N		Contractor is not provided the telephone facility because almost all worker have their own mobile phone.
Are workers provided with access to internet facilities?		N		-
Managing workers' accommodation				
Management and staff				

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are there carefully designed worker camp management plans and policies especially in the field of health and safety (including emergency responses), security, workers' rights and relationships with the communities?	Y			-
Where contractors are used, have they clear contractual management responsibilities and duty to report?	Y			-
Does the person appointed to manage the accommodation have the required background, competency and experience to conduct his mission and is he/ she provided with the adequate responsibility and authority to do so?	Y			-
Is there enough staff to ensure the adequate implementation of housing standards (cleaning, cooking and security in particular)?	Y			-
Are staff members recruited from surrounding communities?	Y			-
Have the staff received basic health and safety training?	Y			-
Are the persons in charge of the kitchen particularly trained in nutrition and food handling and adequately supervised?	Y			-
Charging fees for accommodation and services				
Are the renting arrangements fair and transparent?			N/A	Not applicable because contractor provide free accommodation to the workers.
Are workers provided with adequate information about payment made?			N/A	-
Where appropriate, are renting arrangements and regulations clearly included in workers' employment contracts?			N/A	-
Are food and other services provided for free or reasonably priced, that is, not above the local market price?	Y			-
Is the payment in kind for accommodation and services prohibited?	Y			-

SAMBU

LARAIB Energy Limited

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Health and safety on site				-
Have health and safety management plans including electrical, mechanical, structural and food safety been designed and implemented?	Y			-
Has the accommodation manager a duty to report to the health authority specific diseases, food poisoning or casualties?	Y			-
Is there an adequate number of staff/workers trained in providing first aid?	Y			-
Has a specific and adequate fire safety management plan been designed and implemented?	Y			-
Is guidance on alcohol, drug and HIV/AIDS and other health risk-related activities provided to workers?	Y			-
Are contraception measures (condoms in particular) and mosquito nets (where relevant) provided to workers?			N/A	-
Do workers have an easy access to medical facilities and medical staff, including female doctors/nurses where appropriate?	Y			Only male Doctor and nurse is currently working at site Because contractor have only male employee.
Have emergency plans on health and fire safety been prepared?	Y			-
Depending on circumstances, have specific emergency plans (earthquakes, floods, tornadoes) been prepared?	Y			-
Security on workers' accommodation				
Has a security plan including clear measures to protect workers against theft and attack been designed and implemented?	Y			-
Has a security plan including clear provisions on the use of force been designed and implemented?	Y			-
Have the backgrounds of security staff been checked for previous crimes or abuses?	Y			-

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Has the recruitment of security staff from both genders been considered?			N/A	-
Have security staffs received clear instruction about their duty and responsibility?	Y			-
Have security staff been adequately trained in dealing with domestic violence and the use of force?	Y			-
Are body searches only performed in exceptional circumstances by specifically trained security staff of both genders?			N/A	-
Do security staff have a good understanding about the importance of respecting workers' rights and the rights of the surrounding communities and adopt appropriate conduct?	Y			-
Do workers and communities have specific means to raise concerns about security arrangements and staff?	Y			-
Workers' rights, rules and regulations on workers' accommodation				
Are limitations on workers' freedom of movement limited and justified?	Y			-
Is an adequate transport system to the surrounding communities provided?		N		-
Is the practice of withholding workers' ID papers prohibited?		Y		-
Is freedom of association expressly respected?		Y		-
Are workers' religious, cultural and social backgrounds respected?	Y			-
Are workers made aware of their rights and obligations and provided with a copy of the accommodations' internal rules, procedures and sanction mechanisms in a language or through a media they understand?		N		-
Are house regulations non discriminatory, fair and reasonable?	Y			-

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Are regulations on alcohol, tobacco and third parties' access to the camp clear and communicated to workers?	Y			-
Is a fair and non-discriminatory procedure to implement disciplinary procedures, including the right for workers to defend themselves, set up?	Y			-
Consultation and grievance mechanisms				
Have mechanisms for workers' consultation been designed and implemented?	Y			-
Are workers provided with processes and mechanisms to articulate their grievances in accordance with PS2/PR2?	Y			They are communicated.
Have workers subjected to disciplinary proceedings arising from conduct in the accommodation had access to a fair and transparent hearing with the possibility to appeal the decision?	Y			-
Are there fair conflict resolution mechanisms in place?	Y			-
In cases where serious offences occur, are there mechanisms to ensure full cooperation with police authorities?	Y			-
Management of community relations				
Have community relation management plans addressing issues around community development, community needs, community health and safety and community social and cultural cohesion been designed and implemented?	Y			-
Do community relation management plans include the setting up of liaison mechanisms to allow a constant exchange of information and consultation of the surrounding communities?	Y			-
Is there a senior manager in charge of implementing the community relation management plan?	Y			-

Audit Checklist For Workers Accomodation

Standards for workers' accommodation	Y	N	N/A	Comments
Is there a senior manager in charge of liaising with the surrounding communities?	Y			-
Are the impacts generated by workers' accommodation periodically reviewed, mitigated or enhanced?	Y			Worker accommodation is almost 1500 ft away from the community.
Are community representatives provided with easy means to voice their opinions and lodge complaints?	Y			-
Is there a transparent and efficient process for dealing with community grievances, in accordance with PS1/PR10?	Y			-

PROJECT SECURITY AUDIT CHECKLIST

Audit Team:
Major® Assad Abbas Naqvi (Manager Security) Mr. Mohammad Azam (ESOHS Officer)

Audit Area/Location:
Security Measures of Project Site

Security audit is limited to the Korean Staff, Pakistani Staff, Foreigners at Site, Storage area, Project Site and Accommodation .

Audit Date:
Sep 29, 2012

Purpose of Audit:
The purpose of this audit is to conduct an assessment of security standards being practiced and all aspects relating to security are being observed in true spirits or not. Another purpose is to ensure that all relevant corrective security actions are implemented and documented for future references.

Scope of Audit:
Site Security of Sambu Construction Company Ltd at New Bong Escape.

PARAMETERS	YES	NO	COMMENT
1.0. SECURITY BARRIERS AT PROJECT SITE			
1.1. Is strong barriers installed at main entrances to covered/check unwanted entries?	✓		
1.2. Are barbed wire/ fence placed to guard/ stop the entries to the Project site?	✓		
1.3. Are security guards manning the barriers on 24 hourly bases?	✓		

1.4. Are security guards mentally and aesthetically in good condition to perform active duty?	✓		
1.5. Is the Project Site secure place for the foreigners?	✓		Trained Security Guards & Police force employed for the protection of site and intelligence agencies also providing protective information cover, making site safe working environment for the foreigners.
1.6. Are awareness/warning signs boards' fixed near the main gate which can caution/guide the visitor?	✓		
1.7. Are the entry points well established to check the security without any hesitation?	✓		
1.8. Is Security Observation Post on vantage points have been established?	✓		
1.9. Are security search lights installed for the best visibility at site, living areas, on working bound and plants/ workshops etc?	✓		
1.10. Is record of all entries/complaints made at the barrier or not?	✓		Entry Register and Exit Register are placed at entry gates.
2.0. PROJECT SITE SECURITY			
2.1. Is Sambu responsible for security at site and made security plan?	✓		
2.2. Have security guards checked their weapons and found them in firing condition?	✓		Security Guards check their weapons after every Month.
2.3. Are security guards patrolling the site area and submit report?	✓		
2.4. Is CC cameras installed at site to check the footage?		✓	Security Guards are placed to cover this deficiency and Guards are better choice.
2.5. Is store area labelled and notified for security?	✓		

2.6. Is the area around project site being monitored according to the plan?	✓		Increased security strength at site and placing strong barriers at entrance and exits.
2.7. Is there any transport for security to move frequently at site?	✓		
2.8. Is visitor record maintained and visitor pass issued?	✓		Proper register is maintained with time and time, ID and address is noted and issued visitor's card given and ID card of the visitor is kept at the entrance gate.
2.9. Is intelligence agencies also monitor the employees and keep surveillance?	✓		Security meeting with Army, Police and local Administration is done to exchange the view and share latest information.
3.0. ENROLMENT PROCEDURE			
3.1. Is the Verification done according to the Performa devised at company level?	✓		This verification Performa is duly completed by police, area notable, and Councillor of the Guard's constituency and assures the good character of Guard and same after view is attached with the enrolment file.
3.2. Is Company ID cards maintained for Guards? staff	✓		
3.3. Is Record of all employees made at company level and their presence/ absentee in order to check security of personals?	✓		
3.4. Is Proper record of enrolments maintained?	✓		All the enrolments files are kept under custody of HR department. Also same procedure is adopted for the security guards.
3.5. Is ID card, Photo and other information received when new enrolments are done?	✓		
4.0. VISITORS AT SITE			
4.1. Is there any record for the visitors?	✓		Proper registers are made and after noting down the details then the visitor is allowed to enter.
4.2. Is there any checking at gate or anyone can enter the site?	✓		After ensuring the registration and the officer whom the visitor wants to meet, then issued with the visitor's card.

4.3. Is complainant visitor also allowed at site entrance?	✓		Complainant applications are received at gate, contents are endorsed in the complaint register and application is rooted according the procedure and the chain. However after receipt of the application then applicant can meet the management.
5.0. STORAGE OF MATERIALS			
5.1. Are Specific places made for the storage of material and informed the security for the safe custody?	✓		
5.2. Are the out of bound places barricaded for restricted entries?	✓		
5.3. Are the store protected from fire and arrangements made?	✓		ESOHS officer has ensured all arrangements.
5.4. Is there any record of material maintained at entry points?	✓		Each item/ quantity noted and written in the register and ensured that these stores reach at the proper place.
5.5. Is the security coordinate safe move of the store to site and have track of the vehicles coming to project site for delivery?	✓		Safe guard of site and vehicles and stores are ensured by putting security guards.
6.0. ENTRY POINTS AT SITE			
6.1. Are entry points adequately blocked with strong barriers?	✓		Proper solid blocking system has been formulated and implemented on Site.
6.2. Are all possible practical and reasonable measures been implemented to minimize the entries?	✓		Awareness through toolbox talk and displaying Policy to execute responsibility.
6.3. Are the bins securely closed when transporting waste within the facility?	✓		
6.4. Are all people aware of using entry points only?	✓		
6.5. Are awareness made to all employees that living areas are restricted for visitors?	✓		Whenever guest comes at site their record is maintained at gate. Proper guest room for the guest is maintained.

6.6. Is the project site made prohibited for the visitors and is there any security guard to stop?	✓		
6.7. Are securities lights effectively giving clear vision to see the area/ material being guarded?	✓		
6.8. Have training/toolbox talks for security guards been conducted on Project Site?	✓		Training and toolbox talk is given on every Monday at 07:00 hrs.
7.0. CONTACT LIST OF THE HIGH OFFICIALS			
7.1. Is up to date contact list maintained high officials dealing with the security?	✓		Contact lists are available with security office/ post, moreover all the numbers are written on board and affixed in front of office block.
7.2. Is there any meeting with the government departments dealing the security of foreigner?	✓		
7.3. Have ever government official visit project site for the surveillance?	✓		
8.0. CAMP SECURITY			
8.1. Is there any camp supervisor looking after the camp?	✓		
8.2. Is there any barrier exist at entry points?	✓		Strong barriers and established and put more security guards for checking.
8.3. Is guest record maintained by camp supervisor?	✓		Whenever guest comes at site their record is maintained at gate. Proper guest room for the guest is maintained. Camp Boss also has information about these guests.
8.4. Is security check made in the dormitories and staff living area?	✓		
9.0. VEHICLE ENTRING SITE			
9.1. Is Security Pass and stickers issued to the vehicles daily entering project site?	✓		

9.2. Is there Record of vehicles entering project site?	✓		
9.3. Is there any parking place for vehicles coming to project site?	✓		
9.4. Is the vehicle checked entering site area?	✓		
9.5. Is there any device with which vehicles can be checked	✓		
9.6. Is there any record of vehicles for client, consultant, and subcontractor?	✓		
10.0. RADIO COMMUNICATION			
10.1. Is there any radio communication established at project site?	✓		No radio communication, intercom facility among security does exist.
10.2. Have any communication with the security guards?	✓		Its only cell phone and intercom facilities available.
10.3. Is Communication with Police and Administration established?	✓		Weekly meeting are held administration and army on security matters.

Conclusion:

It can rightly be concluded that effort made for the security at project site pays in a shape that you save guard live for your love ones who are waiting for you. All security arrangements are found satisfactory and all the major concerns have been dealt with by Sambu.

Reference Documents:

1. Health and Safety Plan.
2. Security Plan

Exhibit 16 – Objectives and Targets

(Please see the next page)

MANAGEMENT BY OBJECTIVES (MBOs)

Objectives and Targets

Year: 2012 (Third Quarter)

Location/Department: **NBE Hydro Electric Power Complex**

Sr No.	*Description of Objective*	*Tasks, Strategies, Actions Involved In the Completion of Objectives*	*Responsibility Assigned To*	*Target Time/Period*	*Weightage Assigned (%age)*	Quarterly Monitoring				
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total
01	LTI&I should be reduced not to cross the limit of zero (0) accidents per 1 million working hours.	Maintaining high standards for ESOHS awareness, personal discipline and individual accountability by adhering to a comprehensive and documented system of ESOHS;	Mr. Shin Mr. Azam	Jan-Dec	15	3.75	3.75	3.75		79.25
		Prepare Annual ESOHS plan & Effective implementation of Annual plan & prepare progress report monthly	Mr. Azam	Jan-Dec	15	3.75	3.75	3.75		
		Conduct risk assessment & Prepare risk register of project activities. Suggest Controls for significant ESOHS risks	Mr. Azam	Jan, April & Oct	15	3.75	3.75	3.75		
		Carry out training need assessment & Prepare annual training calendar.	Mr. Azam	Jan	4	4.00	-	-		
		Conduct training as per training calendar	Mr. Azam	Jan-Dec	15	3.75	3.75	3.75		
		Constitute ESOHS Committee and fix Agenda of meeting	Mr. Azam	Jan	5	5.00	-	-		
		Hold regular meetings on fix Agenda. Review and comment (if any) from circulated MOM by employer.	Mr. Azam	Jan-Dec	15	3.75	3.75	3.75		
		Conduct internal Audit/Inspection to anticipate new HSE NCs or observations as per SOP No. 0019.	Mr. Azam	Jan-Dec	8	2.00	2.00	2.00		
		Fencing of Key Project Area,i.e fencing of main entrance, camp area, fuel station, generators, and DTL workshop	Mr. Shin	Feb	8	8.00	-	-		

MANAGEMENT BY OBJECTIVES (MBOs)

Objectives and Targets

Year: 2012 (Third Quarter)

Location/Department: **NBE Hydro Electric Power Complex**

Sr No.	*Description of Objective*	*Tasks, Strategies, Actions Involved In the Completion of Objectives*	*Responsibility Assigned To*	*Target Time/Period*	*Weightage Assigned (%age)*	Quarterly Monitoring				
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total
02	Environmental fine to be ZERO per month	Follow IEEreport for environmental management plan & implement the plan & report progress	Mr. Azam	Feb	20	5.00	5.00	5.00		70
		Prepare & disseminate HSE update /Alerts as per annual plan	Mr. Azam	Mar	10	2.50	2.50	2.50		
		Conduct monitoring of air, water and noise at site as per revised ESMP	Mr. Shin Mr. Azam	May & December	20	-	10	-		
		Prepare and implement solid waste management plan	Mr. Azam	May	20	5.00	5.00	5.00		
		Prepare and implement oil spill response plan	Mr. Azam	As per Mgt. decision	20	5.00	5.00	5.00		
		Placing of Community Complaint Register. Regular checking Regular counter check by LEL Ensure all complaints are being addressed.	Mr. Azam	Jan	10	2.50	2.50	2.50		

Total Weight age: 200
Total Achieved : 149.25
Objectives achieved percentage: 74.63 %

Exhibit 17 – Near Misses

(Please see the next page)

Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Khalil*	Occupation/Job Title: *Site Engineer*	
Location: *Lining slab down stream*	Date Reported: *09/ 08/ 2012*	Time: *0845 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

Site Engineer tripped on steel mesh at lining slab but remained safe by holding the hand of his collegue.

*According to detail Site Engineer Mr. Khalil was assigned the inspection of steel mesh laid at the lining slab floor at downstream. The size of the mesh holes was almost 6"*6 covering an area of 20'*30'. He was pacing on mesh without noticing the loose laces knot of safety shoes. One of the laces of right foot untied and trapped under the other foot. He stumbled but he regained his balance with no harm done by holding the hand of his coworker who was along with him during inspection.*

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	✓ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	❑ Not following appropriate procedures
	❑ Inappropriate conduct
	❑ Hazardous personal attire

❑Fire and explosion hazards ❑ Inadequate warning systems ❑ Irate client/employee action ❑ Adverse weather ❑ Other (explain):	❑ Other (explain)

Corrective Action

As a corrective action he was advised as following

- *Always use the personal protective equipments properly*
- *Tie the laces double knot to avoid any tripping hazard, Use of sticking laces minimize the chances of loosing of knot.*

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		10/08/2012
Mr. Park Kesio		10/08/2012

Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Muhammad Rafique*		Occupation/Job Title: *Tea boy*
Location: *Tea room*	Date Reported: *28/ 08/ 2012*	Time: *1545 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

Tea boys slipped on the spilled coffee in tea room but not injured.

According to details on August 27, 2012 hrs Mr. Rafique was washing cups and glasses in the tea room when his foot slipped on the spilled coffee but he remained safe from falling by balancing him by holding the corner of the sink. Some member of the staff spilled a little amount of coffee on floor while pouring in cups; he left the scene without reporting anything on floor. The floor was smooth and flat as marble tiles were surfaced there at floor.

As the tea boy reached there to wash crockery and utensils at sink inside the tea room, his foot slipped at the spillage but he remained safe as he hold the corner of the sink. The incident would be the severe if fall happened.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
✓ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	❑ Not following appropriate procedures
	❑ Inappropriate conduct
	❑ Hazardous personal attire

❑Fire and explosion hazards ❑ Inadequate warning systems ❑ Irate client/employee action ❑ Adverse weather ❑ Other (explain):	❑ Other (explain):

Corrective Action

- *As a corrective measure tea boy was advised to avoid spillage at floor, in case anything is spilt, then it should be cleaned up immediately to avoid slips.*
- *A Tool Box Talk was conducted on the slip hazard, cleaning staff was advised to keep the offices floors clean and dry to prevent any king of injury.*

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		28/08/2012
Mr. Park Kesio		28/08/2012

Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Tahir*		Occupation/Job Title: *Electrician*
Location: *Unloading bay*	Date Reported: *07/ 08/ 2012*	Time: *1350 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

A worker slipped from ladder while descending the ladder with mechanical tools in his hand, but he managed to avoid falling by holding the safety railing along ladder.

According to details Mr. Tahir an electrical helper assigned to carry some portable tools at ground floor level 245m from unloading bay. Over the course of morning he made several trips for carrying different items down in the gallery and other places using the same ladder. Around 1620 hrs he was descending the ladder with holding electrical equipment in his both hand, his foot slipped from ladder but he managed to balance himself by holding the side railing. In this disorder he lost the grip over the equipment that fell on the ladder step and late it fell on the ground, nobody was there under ladders.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	✓ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective	✓ Not following appropriate procedures
	❑ Inappropriate conduct

equipment	❑ Hazardous personal attire
❑Fire and explosion hazards	❑ Other (explain)
❑ Inadequate warning systems	
❑ Irate client/employee action	
❑ Adverse weather	
❑ Other (explain):	

Corrective Action

A tool box talk was conducted on ladder safety and the following briefing was conducted

- *Make sure that only one person at a time is on the ladder.*
- *When ascending or descending the ladder, maintain three points of contact. For example, two feet and one hand or two hands and one foot must be in contact with the ladder at all times.*
- *Keep your body centered between the ladder stiles.*

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		10/08/2012
Mr. Park Kesio		10/08/2012

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Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Muhammad Mansab*		Occupation/Job Title: *Tea boy*
Location: *Head race*	Date Reported: *05/ 09/ 2012*	Time: *0700 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

A labor tripped over on uneven ground at headrace being agile and empty handed he regain his balance with No harm done.

According to details on Sep 03, 2012 hrs Mr. Mansab was coming on his duty in the morning. He was in hurry and rushing to the site when his foot slipped on an uneven surface. He was agile with both hands empty due to which he regains his balance and remained safe to fell on the ground. If it might happened the consequences would be the different.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
✓ Slip/trip hazards	✓ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	✓ Not following appropriate procedures
❑Fire and explosion hazards	❑ Inappropriate conduct
	❑ Hazardous personal attire
	❑ Other (explain):

SAMBU

❑ Inadequate warning systems ❑ Irate client/employee action ❑ Adverse weather ❑ Other (explain):
Corrective Action
• *As a corrective measure the surface was graded and leveled with the grader, later it was compacted properly with the help of roller.* • *He was advised to avoid unnecessary rushing that may cause any tripping or falling hazard.*

Persons Conducting Investigation:		
Name	Signature	Date
Muhammad Azam		05/09/2012
Mr. Park Kesio		05/09/2012

SAMBU

Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Aslam*	Occupation/Job Title: *ESOHS Officer*	
Location: *Office building*	Date Reported: *11/ 09/ 2012*	Time: *1545 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

A labor almost tripped over an electrical cord plugged into an outlet stretched across the walkway. But he remains safe & unhurt.

According to details Sep 09, 2012 a laborer Mr. Aslam was shifting floor tiles from one ground floor to the Second floor. He tripped over an electrical cord plugged into an outlet stretched across the walkway. The chord was being used for providing supply to the power tools used for grinding works. He was holding floor tiles and could not properly judge the stretched wire across the walk way that caused tripping hazard.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
✓ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
✓ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	❑ Not following appropriate procedures
	❑ Inappropriate conduct
	❑ Hazardous personal attire

❑Fire and explosion hazards	❑ Other (explain)
❑ Inadequate warning systems	
❑ Irate client/employee action	
❑ Adverse weather	
❑ Other (explain):	

Corrective Action

Following corrective actions were taken

1. *Housekeeping of the area was ensured to minimize the tripping hazard, loose cables were removed from the passage,*
2. *Workers were advised to have close eyes on hazards in the area and report to their supervisor.*

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		11/09/2012
Mr. Park Kesio		11/09/2012

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Near Miss Report

Injured/ Involved Persons		
Name: *Mr. Khalid*		Occupation/Job Title: *Welder*
Location: *Power house*	Date Reported: *19/ 09/ 2012*	Time: *1400 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

A worker slipped from stairs while descending the ladder with mechanical tools in his hand, but he managed to avoid falling by holding the safety railing alongside the stair.

According to detail on 18th of the current month Mr. Khalid was assigned the welding activity in the power house, After lunch break he was late from his duty and was rushing to his job, while he was ascending the ladder his food slipped over the step of the ladder, luckily he managed to avoid falling by holding the railing alongside the stairs. He remained safe and unhurt. He has been working here for last two years and is well aware about work activities in area. He did not notice the mud beneath his shoes, it caused the slipping of hit foot, he remained safe and unhurt by holding side railing of the ladder.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	✓ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective	❑ Not following appropriate procedures
	❑ Inappropriate conduct

equipment	❑ Hazardous personal attire
❑Fire and explosion hazards	❑ Other (explain)
❑ Inadequate warning systems	
❑ Irate client/employee action	
❑ Adverse weather	
❑ Other (explain):	

Corrective Action

As a corrective action training on ladder safety and work at height has been carried out to make the workers aware the hazards and to prevent them from injuries or any mishap in future.
Further he was advised to make sure that only one person at a time is on the ladder.
When ascending or descending the ladder, maintain three points of contact. For example, two feet and one hand or two hands and one foot must be in contact with the ladder at all times. Keep your body centered between the ladder stiles.

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		19/09/2012
Mr. Park Kesio		19/09/2012

Near Miss Report

Injured/ Involved Persons		
Name: *Mr. M. Sohail*	Occupation/Job Title: *ESOHS Officer*	
Location: *Transformer area*	Date Reported: *06/ 09/ 2012*	Time: *1230 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

Laraib ESOHS Officer tripped over the ply wood near the main hole of oil storage tank at level 260, he managed to balance himself and remained safe.

According to details on Sep 04, 2012 ESOHS Officer Laraib Mr. Sohail was on routine inspection of site along with ESOHS officer Sambu. When they reached the transformer area level 260m, Mr. Sohail observed the manhole of the oil storage tank uncovered. He moved over the ply woods to have a look inside the manhole when he tripped with the loose cable there; he managed to balance himself and remained safe and unhurt.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	❑ Improper body position/posture
✓ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
✓ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
❑ Inadequate ventilation	❑ Altering or modifying equipment
❑ Excessive noise	❑ Not using personal protective equipment or failing to use it properly
❑ Inadequate or improper protective equipment	❑ Not following appropriate procedures
	❑ Inappropriate conduct
	❑ Hazardous personal attire

SAMBU

❑Fire and explosion hazards	❑ Other (explain)
❑ Inadequate warning systems	
❑ Irate client/employee action	
❑ Adverse weather	
❑ Other (explain):	

Corrective Action

Following corrective actions were taken

1. *Housekeeping of the area was ensured to minimize the tripping hazard, loose cable were removed from the passage,*
2. *Manholes were covered with the plywood sheets on the same day to reduce the falling hazard, and it was replaced with the permanent steel covers after few days.*

Persons Conducting Investigation:

Name	Signature	Date
Muhammad Azam		06/09/2012
Mr. Park Kesio		06/09/2012

Exhibit 18 – First Aid Cases

(Please see the next page)

First Aid Report

Injured/ Involved Persons		
Name: Mr. Mushtaq Maseeh		Job Title: Steel Fixer
Witnesses		
Name: Mr. Tahir Mehmood		Job Title: Site Supervisor
Location: Left Embankment wall	Date Reported: *11/ 07/ 2012*	Time: *0815 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

A Steel fixer left hand middle finger stuck between steel rods as a result he got cut wound. As a first aid a pressure was applied over the wound with a handkerchief at site and then he was brought to site clinic where doctor cleaned the wound and applied dressing with some pain killer tablets

According to details on July 09, a steel fixer Mr.Mushtaq was busy in steel binding at left side embankment wall. He was holding a lengthy steel bar with one hand when it twisted on one side due to heavy load. He tried to hold it by getting the support of another steel bar already erected there, in this struggle his left hand squeezed between two bars. As a result his middle finger suffered minor wound and it started bleeding. He was wearing hand gloves due to which severity of the injury remained lowest..

As a fist aid, site supervisor Mr. Tahir applied the pressure over wound to stop bleeding with his handkerchief and then he was sent to site clinic. Doctor cleaned his wound and applied anti septic dressing and also administer him some pain killers. After dressing he was again on his job on the same day..

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	✓ Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
	❑Using equipment improperly
	❑ Altering or modifying equipment
	❑ Not using personal protective equipment or failing

❑ Inadequate or excessive illumination ❑ Inadequate ventilation ❑ Excessive noise ❑ Inadequate or improper protective equipment ❑ Fire and explosion hazards ❑ Inadequate warning systems ❑ Irate client/employee action ❑ Adverse weather ❑ Other (explain):	to use it properly ✓ Not following appropriate procedures ❑ Inappropriate conduct ❑ Hazardous personal attire ❑ Other (explain):

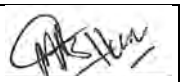
Corrective Action

- A tool box talk was conducted on the safety measures regarding steel works and all workers were advised to ensue the use of safety shoes and hand gloves while working with steel bars.

Reported by:

Medical Officer	Dr. Muhammad Asif		

Review by:

ESOHS Officer	Muhammad Azam		
Site & ESOHS Manager	Mr. Park Kessio		

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First Aid Report

Injured/ Involved Persons		
Name: Mr. Shoa		Job Title: Engineer
Witnesses		
Name: Mr. Nawaz		Job Title: Foreman
Location: Power house	Date Reported: *30/ 09/ 2012*	Time: *1045 hrs*

Describe what happened and, if applicable, describe injury. Attach an accident/incident diagram, if appropriate:

On 30th of the current month a Chinese national engineer got forehead injury, he was provided first aid at site where his colleague applied pressure on his wound by applying pressure on his wound with bandage, and then he was brought to site clinic for further assistance.

According to details Andritz Hydro's employee Mr. Shoa was busy in inspection work at transformer area. He bowed his head to inspect the underneath of the transformer when his forehead hit to the transformer. As a result he sustained a minor cut and it started bleeding. His coworker tied a bandage to put the pressure on his wound to stop the bleeding. Later he was brought to site clinic where doctor cleaned his wound and applied dressing. He was wearing the safety harness but he could not imagine the extended corner of the equipment that caused the minor cut.

Causes: Check (✓) all that are applicable

Conditions	**Practices**
❑ Congestion or restricted action	✓Improper body position/posture
❑ Poor housekeeping; disorderly workplace	❑ Tasks not varied/micro breaks not taken
❑ Slip/trip hazards	❑ Unnecessary rushing
❑ Lack of or inappropriate furniture/equipment	❑ Improper lifting
❑ Design or arrangement of furniture/equipment	❑ Unsafe loading/placement
❑ Defective furniture, tools, equipment or materials	❑ Using defective equipment
❑ Inadequate or excessive illumination	❑ Using equipment improperly
	❑ Altering or modifying equipment
	❑ Not using personal protective equipment or failing

SAMBU

❑ Inadequate ventilation	to use it properly
❑ Excessive noise	✓ Not following appropriate procedures
❑ Inadequate or improper protective equipment	❑ Inappropriate conduct
❑ Fire and explosion hazards	❑ Hazardous personal attire
❑ Inadequate warning systems	❑ Other (explain):
❑ Irate client/employee action	
❑ Adverse weather	
❑ Other (explain):	

Corrective Action

- Area supervisor was advised to provide safety talks on safe work practices.

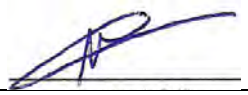
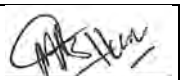
Reported by:			
Medical Officer	Dr. Muhammad Asif		
Review by:			
ESOHS Officer	Muhammad Azam		
Site & ESOHS Manager	Mr. Park Kessio		

Exhibit 19 – CO2 Displacement

(Please see the next page)

The project activities, sources of potential CO_2 emission and its corrective/preventive mitigation measures are summarized below;

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
1	Excavation of Headrace Channel.	Use of excavation machinery	**Brand New Machinery:** 1. The Contractor has delivered brand new machinery to the Project Site, hence mitigating the potential source of emission of CO_2 in the atmosphere. **Regular servicing of the Machinery:** 2. As pro-active approach, the Contractor is conducting regular tuning/servicing of the machinery, again mitigating the potential source of CO_2 evolution.
		Tree removal	**Tree Plantation Plan:** The clearance of Headrace channel involved removal of 508 trees, which can increase the concentration of CO_2 in the Project Site atmosphere. Therefore, as corrective approach, Tree Plantation Plan has been developed and will be implemented as soon as practically possible.

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
			However, presently ornamental plants have been grown alongside the office area for maximization of CO_2 sequestration on the Project Site.
		Solid Waste Disposal	**Waste Management Plan:** The cutting of trees, shrubs and left over on headrace channel will produce solid waste. The open dumping of the above mentioned items have the potential to evolve and accumulate CO_2 in the atmosphere. To avoid open dumping of the shrubs and left over on the Project Site, Waste Management plan have been established and implemented. One such practice dealing with this issue is handing over of shrubs and left over to local recycling contractor, as trees have been taken up by the Government Department.
2	Excavation and construction of Powerhouse	1. Use of excavation machinery 2. Use of Construction machinery comprising of concrete mix, Dumpers, Excavators, Crane etc	**Brand New Machinery:** 1. The Contractor has delivered brand new machinery to the Project Site, hence mitigating the potential source of emission of CO_2 in the atmosphere.

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
			Regular servicing of the Machinery: 2. As pro-active approach, the Contractor is conducting regular tuning/servicing of the machinery, again mitigating the potential source of CO_2 evolution.
		Solid Waste Disposal	**Waste Management Plan:** The Site clearance for Powerhouse involved cutting of shrubs and left over, producing solid waste. The open dumping of the above mentioned items have the potential to evolve and accumulate CO_2 in the atmosphere. To avoid open dumping of the shrubs and left over on the Project Site, Waste Management plan have been established and implemented. One such practice dealing with this issue is handing over of shrubs and left over to local recycling contractor.
			Air Quality Monitoring: Considering pro-active approach, the Contractor has conducted Air Quality Monitoring in the Powerhouse area in May.

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
			2010. The results illustrated the concentration of CO_2 within the permissible limits as set by Pakistan NEQS and IFC Standards Moreover, Air Quality Monitoring plan for the Construction phase has been established and implemented on the Project Site.
3	Excavation of Tailrace channel	Use of excavation machinery	**Brand New Machinery:** 1. The Contractor has delivered brand new machinery to the Project Site, hence mitigating the potential source of emission of CO_2 in the atmosphere. **Regular servicing of the Machinery:** 2. As pro-active approach, the Contractor is conducting regular tuning/servicing of the machinery, again mitigating the potential source of CO_2 evolution.
		Tree removal	**Tree Plantation Plan:** The clearance of Tailrace area involved removal of approximately 1200 trees, which can increase the concentration of CO_2 in the Project Site atmosphere. Therefore, as corrective approach, Tree Plantation Plan has

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
			been developed and will be implemented as soon as practically possible. However, presently ornamental plants have been grown alongside the office area for maximization of CO_2 sequestration on the Project Site
			Air Quality Monitoring: Considering pro-active approach, the Contractor has conducted Air Quality Monitoring in the Tailrace area in May 2010. The results illustrated the concentration of CO_2 within the permissible limits as set by Pakistan NEQS and IFC Standards Moreover, Air Quality Monitoring plan for the Construction phase has been established and implemented on the Project Site.
4	Construction of office area and Labor camp	Use of excavation machinery	**Brand New Machinery:** 1. The Contractor has delivered brand new machinery to the Project Site, hence mitigating the potential source of emission of CO_2 in the atmosphere.

Sr.No.	Project Activities	Source of Potential CO_2 emission	Corrective/ Preventive Actions
			Regular servicing of the Machinery: 2. As pro-active approach, the Contractor is conducting regular tuning/servicing of the machinery, again mitigating the potential source of CO_2 evolution.
		Solid Waste Disposal after construction	**Solid Waste Management Plan:** After the construction and execution of office and camp area, solid waste comprising of food waste, plastic waste, paper, cardboard etc will be generated. The open dumping of the above mentioned items will be the source of CO_2 emission. Therefore, Solid Waste Management plan has been developed and implemented by composting the food waste and handling of the recyclables to the local Contractor.