Electromechanical contractor management plan

EC-ESHSMP – Part 2 & 3

Sectorial Technical Plan (STP)
Site Specific Plan (SSP)

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REGIONAL RUSUMO FALLS HYDROELECTRIC PROJECT

RUSUMO POWER COMPANY LIMITED (RPCL)

Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU)

CONTRACTOR: ANRITZ Hydro

CONSULTANT: AECOM ARTELIA
CP2 has made a remarkable effort in the preparation of Part 2 of the ESHS MP by developing good practices applicable for some STPs. However, OE notes:

1-the missing of some STPs that are required in the specifications namely: (i) Erosion and Sediment control (ESHs spec.11), (ii) Spoil disposal Management (ESHs spec.12), (iii) Occupational Health and Safety (OHS) Management (ESHs spec. 23), (iv) Recruitment and Labor Management (ESHs spec. 25) and, (v) ESHS Training (ESHs spec. 27). Referring all time to Part 1 for some STPs is NOT in keeping with the spirit of the ESHS specifications which provided Part 1, Part 2 and Part 3 in the CP2 ESHS MP; Each of the parties aiming specific objectives. It is requested to develop these sections in the final version of ESHS MP. OE and client recommend the contractor to prepare those aspects to comply with the specification before to start the work.

2-that, in general, the description of the STPs do not comply with the provisions of the ESHS specifications 4.9 (objectives of the SSP, Reminder ESHS specifications, links to other STPs, Identifications of construction activities with potential risks, description of basic ESHS best practices ( see 4.9.1 to 4.9.5). It is requested to rephrase the description of the STPs to meet the specifications;

3- In additional, CP2 ESHS MP part 2 lacks some site management tools that will be required before works start: (i) contract of subcontracting company for Waste transport and disposal for industrial waste, medical waste (incineration in a referral hospital), vector control, restoration of workers on site ...), (ii) human resources management documents to be approved by Labor Inspectors (code of conduct, model of employment contract, classification of workers, wage scale, ...), (iii) the ESHS the team must in respect of the specification included in Bid Document. The CVs of the team must be presented to OE/Client, (iv) the operational recruitment procedures are not specified in this document (place of recruitment, advertisements, criteria, medical check up, Safety Induction, ...), (v) the document does not give any relevant information about the Medical Center, its equipment and team, (vi) the list of equipment required for water, air and noise analysis and the applicable standard is not annexed in this part 2 of the ESHS MP.

4-In any case, OE/Client reserves the right to allow or not to start the work if some key tools are not in place The OE strongly recommends CP2 to mobilize its ESHS team in advance to finalize the above-mentioned basic documents that will be needed to start work.

5-For other comments, see below

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**MODIFICATIONS TABLE**

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1 Project Information relevant to Health, Safety and Environmental Management

1.1 Introduction

ANDRITZ HYDRO is well aware of his responsibilities for health, safety and environment and therefore does all its best to protect the environment and take care of the health and safety of his employees and affected persons on site.

Together with other documents like the HSE Plan, the Environmental Protection Plan and the Environmental Risk Assessment this document describes the way ANDRITZ HYDRO deals with his responsibilities.

1.2 Project Description

Project: Rusumo Falls
Employer: Rusumo Power Company Limited (RPCL)
Owners Engineer: AECOM Consultants Inc.
Site Location: Latitude: -2.3823379; Longitude: 30.7832596

The new hydro-power station of Rusumo Falls will be located on the Kagera River, about 2 km downstream of the confluence of the rivers Ruvubu and Kagera, at the border between Rwanda and Tanzania.

The project is driven by the investment program of the Nile Basin Initiative, the “Nile Equatorial Lakes Subsidiary Action Program (NELSAP)”, on behalf of RPCL as a joint development of the three African nations – Burundi, Rwanda and Tanzania.

1.3 Scope of work

At the Rusumo Falls Hydropower Plant site ANDRITZ HYDRO has the following scopes of Work:

- Installation of three 27.5 MW vertical Kaplan turbines and auxiliaries
- Installation of the Generators
- Installation of the Electrical Power Systems (EPS)
- Installation of the Power-house cranes
- Installation of the Draft tube gates and stop logs
- Installation of the Control and protection systems of the hydropower plant

1.4 Validity

This specific EC-ESHSMP is applicable to the processes site assembly and commissioning.

It is valid for the scope of works and supplies by ANDRITZ HYDRO for the hydroelectric power plant Rusumo Falls.

Chapters to be modified during the project course do not invalidate the general outlines of this plan. Updates will be edited in later revisions or in edited annexes.

1.5 General requirements

The draft EC-ESHSMP shall be submitted to AECOM not less than 30 days before the start of any construction works on any worksite. Comments from AECOM shall be provided to the Contractor within 15 days after reception of the draft version of the EC-ESHSMP. Final version shall be submitted to AECOM not later than 10 days before the effective start of the works.
The EC-ESHSMP is structured into 3 parts:

Part 1: Master Document, which defines the Contractor’s general environmental and social commitments in terms of organization and production: personnel with roles and responsibilities, mobilized resources, site procedures, communication, management of non-conformities, documents and data management, auditing;

Part 2: Sectorial Technical Plans (STPs), which detail the ESHS best practices on the worksites to satisfy the present specifications

Part 3: Site Specific Plans (SSPs) which define, for each worksite, the ESHS measures implemented by the Contractor.

Parts 1 and 2 of the EC-ESHSMP shall be finalized and non-objected by the Owners Engineer prior to start any work on sites. Part 3 shall be prepared site by site, depending on a general site opening program established by the Contractor. Start of works on a specific worksite shall be authorized by the OE only after non-objection of the related SSP to be submitted by the Contractor not later than 30 days before the scheduled start of works.

1.6 Legal requirements, international standards and contractual agreements

The main laws, standards and contractual documents to be considered in the implementation of the Project are:

- N° 04/2005 of 08/04/2005 Organic Law determining the modalities of protection, conservation and promotion of environment in Rwanda
- N° 13/2009 of 27/05/2009 Law regulating labour in Rwanda
- Ministerial order n°02 of 17/05/2012 determining conditions for occupational health and safety
- Water and sanitation sector strategic plan 2013/14 - 2017/18 (republic of Rwanda - ministry of infrastructure)

- Environmental management system (ISO 14001)
- Occupational health and safety management system (OHSAS 18001)

1.7 Responsibilities

The responsible Persons for Health, Safety and Environment at the Rusumo Falls Hydropower Plant site for ANDRITZ HYDRO will be:

Andritz Hydro ESHS Manager / ESHS Inspector

not nominated yet

Mobile:

Please can you submit the names on complete organisation chart of the ESHS team, refer to CP2_EHS Spec 3.2 to 3.6 (ESHS Manager, Environmental and Social Engineer, Safety Engineer, ESHS inspectors...) which will be mobilized on site.
2. **Erosion and sediment control plan**

This STP on Erosion and Sedimentation Control Plan is totally deficient compared to the provisions of the specifications. It is requested to develop it according to the provisions 11.1 to 11.8 of the ESHS specifications. CP2 can not at this stage demonstrate that there will be no erosion and sedimentation at (i) CP2 area (site installation), (ii) workers Camps during operation, (iii) Switchyard and Power House ....

3.1 **Waste arising on site**

A construction site always produces several kinds of waste. For the mentioned tasks the following materials do occur:

This STP lacks (i) a proposal for a subcontract for the disposal of non-reusable on-site industrial waste to an approved supply chain (see ESHS specifications 14.3.14) and (ii) exact location accuracy, landfill design and management (see ESHS specifications 14.3.2 to 14.3.11).

- **Storage areas**
  - Packing materials (timber, plastic, paper, cardboard, shred)
  - Used materials (paste, grease, paints, lubricants, oil, remains of oil, sprays)
  - Domestic waste from resting rooms

- **Installation areas**
  - Packing materials (timber, plastic, paper, cardboard, shred, metal wires and cut cables)
  - Installation remains (steel, shred, metal wires and cut cables, empty cylinders, welding electrodes)
  - The arising waste is divided into hazardous waste and non-hazardous waste. Treatment, collection, and disposal of hazardous waste is described in the Hazardous products and waste management plan.

3.2 **Information and documentation**

All staff of ANDRITZ HYDRO and sub-contractors will be taught the necessary behaviour and procedures in the induction, environmental lectures and toolbox talks.

Purchase and transport of any material to the site is documented by the ANDRITZ HYDRO site office and the sub-contractors site office. The ESHS Manager / ESHS Inspector will list the materials and stipulate the place of storage and the PPE to be used.

The ESHS Manager / ESHS Inspector will also list and document the collection and disposal of materials and products to be removed from site.

During his daily site walk the ESHS Manager / ESHS Inspector will observe the collection and amounts of waste. If necessary he will take all measures to clean the area and collect waste separated.

After the end of the installation ANDRITZ HYDRO will survey the installation areas to find, remove or clean any remains.

3.3 **Collection and storage of waste**

All materials will be collected separately in different containments and bins. The containments will be signed to distinguish the different types of waste.

Domestic waste is collected in closed bins to avoid odour and vermin. Collection points are installed at the tea room of the office area and at each office, restroom and working area.

Paper, cardboard and plastic is collected separately in boxes at the office areas and in containers at the working areas.
Proposal: Waste collecting containments will be identified by the standard colours used in Rwanda / Tanzania or following colours:

- Paper Waste - green
- Steel Waste - blue
- Timber Waste – white
- Plastic Waste – green
- Hazardous Waste – red
- Garbage – (black) bins

All containments are emptied to the main collection point at the installation area regularly.

The main collection point is situated at the installation area where five collecting sections for paper, plastic, steel, small timber, large timber, residuals and hazardous waste are installed. The area and the sections are divided by masonry walls and concrete floor.

All waste water from toilets and sanitary facilities is collected in septic tanks until transport if not treated on site.

3.4 Reduction, re-use and recycling

ANDRITZ HYDRO strives to minimize waste for environmental reasons as well as for financial reasons. Therefore reduction, re-use and recycling have a high importance on site.

Where possible, wrapping of materials and transported products will be reduced to a minimum.

Metal shred and steel are valuable materials for ANDRITZ HYDRO and are collected separately for return, use or sale.

Timber is used to produce timber boxes, racks, furniture, signs or several other products needed on site. If too small timber will be sold or given away for agricultural shredding or use as firewood.

Plastic, paper and cardboard is collected separately for recycling in the industry, e.g. paper or plastic mills or organic treatment plants.

Electronic devices contain several valuable parts like reclaimable resources and are collected for recycling.

3.5 Waste quantities

ANDRITZ HYDRO keeps records of all materials and quantities of waste on site. The following separate fractions are recorded and collected for further re-use, recycling or land-filling:

- Timber [m³]
- Steel [tons]
- Paper and cardboard [tons]
- Plastic [kg]
- Domestic waste and garbage [tons]
- Ink cartridges [units]

3.6 Waste disposal

Where unavoidable and not re-usable, waste is collected for disposal to an authorized landfill or will be recycled by authorized companies.

Appendix 01: Map of Waste collection points (will be submitted later)

This area must be fenced and well controlled 24/7 basis by guard. The presence of register at the entrance to record the wastes get in and get out. This waste disposal area shall be located at least 2km from the nearest village and 100m from a stream and in flood zone. Please refer to CP2_ESHS spec 14.3.6 and 14.4
4 Hazardous products and waste management plan

4.1 Hazardous materials on site

This STP on the Hazardous Products and Waste Management Plan does not give us information on (i) medical waste management as stipulated in the ESHS specifications, (ii) the subcontract to be signed with a reference hospital for these wastes.

In the ESHS specifications, it is written in 15.7.4 that "The contractor shall identify the appropriate hospital and sign an agreement with the hospital for incineration of medical waste". It is asked to give a precision in the final version.

- keeping the minimum quantity of hazardous substances necessary
- storing of incompatible substances separately
- taking steps to prevent release or leakage of dangerous substances
- keeping a spill kit near to storage areas, and ensuring staff are trained in what to do in the event of a spill
- cleaning up any leaks or spills that occur
- using appropriate precautions when handling substances - for example, wearing protective clothing or ensuring adequate ventilation
- ensuring employees who store and handle dangerous substances are properly trained
- checking containers used for short-term storage are properly labelled

If storing chemicals or dangerous substances that could create a fire or explosion, it must be ensured that flammable substances are correctly stored in suitable containers and are not stored near to a source of ignition such as a heater.

It's also best practice to:

- place stores of liquid above ground where they're unlikely to be damaged, e.g.: away from traffic routes
- avoid overfilling of container
- supervise deliveries
- maintain gauges, valves and pipework
- monitor usage - unexpectedly high use may indicate a leak
- have procedures for dealing with emergency leakages
- use a secondary containment system such as a drip tray or bund wall (a storage area designed to prevent liquids escaping)

It has to be differentiated between hazardous materials which are used for work and hazardous products as a residue of work with hazardous materials.

To fulfill the contractual duties and the scope of work the use of some hazardous materials will be necessary and the production of some hazardous products will occur. These include the following hazardous materials and products:

**Welding:**

- materials: Argon, Oxygen, non-stick agents, sprays
- products: welding fumes, used welding electrodes

**Installation of gates and machines:**

- materials: oil, lubricants, grease, paints
products: spilled oil, used oil, remains of oil, lubricants, grease and paint

Installation of electrical equipment:
Materials: - metal wires
Products: - copper, remains of cut wires

Office area:
Materials: - ink cartridges, ink powder, batteries, electronic (computer) parts, bulbs

Spillage:
Materials: - contaminated Soil, contaminated containments, contaminated shred or oil binding materials

All hazardous materials will be identified with signs and labels according to CLP/REACH. The full list of materials and products used by ANDRITZ HYDRO on site will be listed acc. R HY HSM 002 2.

4.2 Information and documentation

Purchase and transport of any material to the site is documented by the ANDRITZ HYDRO site office and the sub-contractors site office. The ESHS Manager / ESHS Inspector will be informed if any hazardous materials will come to site. He will list the materials and stipulate the place of storage and the PPE to be used.

The ESHS Manager / ESHS Inspector will also list and document the collection and disposal of materials and products to be removed from site.

A register is maintained of all chemicals kept on site. The Material Safety Data Sheet (MSDS) of all used hazardous materials are saved at the ANDRITZ HYDRO server and the sub-contractors server as pdf-files in the register of all chemicals and the relevant documents will also be collected in paper at the workshop areas and available to everyone working there.

During his daily site walk the ESHS Manager / ESHS Inspector will observe any leakages and contaminations that may not have been reported. If necessary he will take all measures to clean the area and dispose any contaminated material or soil. Any environmental incident will be reported to the ANDRITZ HYDRO Site Manager and the Employer.

After the end of the construction ANDRITZ HYDRO will survey the installation areas to find, remove or clean any remaining material.

4.3 Storage of hazardous materials

All hazardous materials will be stored in locked storage areas. Fluid materials will be stored in leak-proof containments within dykes according to the MSDS and the results of the ANDRITZ HYDRO risk assessment Combined storage will be done according to Table A.

At some installation areas locked containers are positioned. The base of those containers is constructed as a leak proof trough. The container will be signed as a chemical storage and has ventilation openings.
Table A: combined storage of hazardous materials

<table>
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<th>Hazard Symbol</th>
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<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Group 2 and 3</td>
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<td>X</td>
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<tr>
<td>Aerosols / aerosol cans</td>
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<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Cardboard, paper or the like</td>
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</table>

X – prohibited  O - acceptable

4.4 Use of hazardous materials

The use of hazardous materials, signage and the use of PPE will be done according to the description in the MSDS and the results of the ANDRITZ HYDRO risk assessment. The correct treatment and handling will be trained in lectures and toolbox talks.

The risk assessments will be done by the ESHS Manager / ESHS Inspector with help of the ANDRITZ home office HSE coordinator before the start of the site. Any additional risk assessments or necessary changes will also be done by these persons if necessary.

4.5 Dealing with products of hazardous materials

Special treatment and safety procedures will be done according to the description in the MSDS and the results of the ANDRITZ HYDRO risk assessment. The correct dealing will be trained in toolbox talks.

As the content of the MSDS is trained in toolbox-talks in the workers mother tongue all workers will understand how to deal with the substances.

All hazardous liquids will be stored in areas within an imperviously dyke.

All staff will be made aware of this procedure during the induction.
4.6 Disposal of hazardous materials and products

The disposal of hazardous materials and products will be done according to the law. All materials will be collected on site and be transported and disposed by authorized organisations.

Empty chemical containers will be removed from site and either:

- Returned to the supplier (where possible) or
- Disposed of in accordance with the relevant legislation

Liquids and remains of liquids will be stored in the leak proof chemical storage containers while other materials will be stored at the waste collection point where one section is prepared for this.

Ink cartridges will be replaced by the supplier agent, other hazardous materials will be transported to an authorized landfill.

Contaminated soil is sent to soil treatment units at cement factories or petroleum refinery plants.

4.7 Health and safety procedures

Additional PPE like safety gloves, goggles or respirators will be used according to the description in the MSDS and the results of the risk assessment. At all storage and working areas first aid boxes and fire extinguishers will be available.

5 Spill Emergency preparedness and response plan

5.1 Emergency procedures

This STP on Emergency Preparedness and Response Plan, which refers to Part 1 of the ESHS, does not provide information on (i) training program for the contract staff and subcontractor with detailed roles and distributions of responsibilities (ESHS specification 17.5.3), (ii) the identification procedure of potential risk of environmental and safety emergencies in each worksites.

To protect soil, the Kagera River and groundwater any spills will be covered by the following procedures:

- No hazardous material will be stored within 50 meters of a waterway.
- Only the minimal amount of any hazardous material will be stored
- The spilled material has to be identified immediately and the ESHS Manager / ESHS Inspector and ANDRITZ HYDRO Site Manager have to be notified.
- Subcontractors are to notify ANDRITZ HYDRO site personnel.
- Personal Protective Clothing as described in the MSDS has to be used.
- The relevant clean up procedure as described in the MSDS to clean the pavement, shoulders and other affected areas and structures has to be used.
- Oil-binding material will be stored on each crane and at the chemical store
- Small materials like small amounts of contaminated soil, contaminated shreds or oil-binding material will be collected in bins until transportation to a licensed landfill.
- Large amounts of contaminated soil will be digged off with the help of civil works and collected in large containers for disposal. Contaminations on the Kagera River will also be solved by the help of civil works.
- Dispose of material has to be done by a licensed contractor.
- Records of disposal have to be collected on site.
- If any major incident occurs local fire brigade will be called for help.

Please also refer to the emergency procedures as described in ESHSMP – part 1.
6 Water management plan

6.1 Objectives and Targets

This STP Water Management Plan should be subdivided into two (Wastewater Management and Water Quality Monitoring).

6.2 The document does not provide the following information: (i) the frequency (including weekly) of analysis performed and the parameters controlled, (ii) the analytical methods used for the control of each parameter, (iii) standards define by the Rwanda Standards Bureau or Tanzania Standard Bureau, (iv) implementation or not of oil separator for gray water from canteens and strom water fuel / oil storage areas, workshops, garage ... The document does not say clearly if a laboratory will be established on the site or not. See ESHS specifications 16.3, 16.5, 16.7, and 18.1

- Storage of chemicals in closed and leak proof containments and in dykes with 110% capacity
- Availability of oil binding materials
- Use of sewage, cesspits or septic tanks
- Use of car washing facilities
- Fast procedure in case of spillage or leakage
- Practice of emergency drills to exercise fast reaction
- Review, maintenance and repair of leaking water and sewage pipes
- Collection and safe disposal of used engine oil, hydraulic oils, oils and grease traps
- Avoidance of depositing materials into the Kagera river

6.3 Waste water on site

A construction site always produces several kinds of waste. For the mentioned tasks the following materials do occur:

Sanitary facilities

Waste water

Washing areas

Washing water (sand, sediments, oil)

When required to wash out areas appropriate constructed and situated wash out areas including sedimentation or collecting tanks will be used when washing down plant and equipment.

6.4 Water quality monitoring program

6.4.1 Possible influences to the environment

Within the ANDRITZ HYDRO scope of work there are several risks to influence the environment.

- Use of water and discharge of waste water
- Production and disposal of waste – see “Waste Management Plan”
- Use and disposal of hazardous materials – see “Hazardous Materials Management Plan”
- Influence of works (e.g. contaminated soil or water)

The influences are monitored by several measures. In case of any deviations ANDRITZ HYDRO will take arrangements to solve the problem and fulfil legal requirements again.
6.5 Information and documentation

All environmental inspections and monitoring measurements will be documented and if stipulated by law or the contract the results will be forwarded to the employer and the authorities.

In case of deviations or environmental incidents ANDRITZ HYDRO will also inform the employer of the results and the intended or already implemented arrangements.

6.6 Environmental inspections and monitoring

Monitoring of Water Supply

ANDRITZ HYDRO gets his raw water and potable water for showers, kitchen and sinks from a prepared well or from the river Kagara incl. treatment facility. ANDRITZ HYDRO takes care of any measurements and quality monitoring controls.

Additional measuring of the consumption at water points used by ANDRITZ HYDRO at the camp, will be done on a monthly basis by ANDRITZ HYDRO.

Monitoring of Waste Water

All waste water from the areas e.g. toilets and sanitary facilities is collected in septic tanks until transport and treatment by a certified licensed organisation.

There will be no additional monitoring of this waste water by ANDRITZ HYDRO.

6.7 Reporting results

The results of measurements will be distributed for information with the monthly report. An assessment of the data is a part of the monthly HSE coordination meetings. If any corrective action is necessary reasonable measures have to be installed.

7 Air emissions and dust control plan

This STP on Air Emission and dust control plan lacks a precision on (i) the list of equipment needed to make measurements of air quality and dust, (ii) the parameters to be analyzed, (iii) the qualification of the person in charge of monitoring these air parameters.

Also CP1 can already annex the standards of reference, the procedures of the measurements of the quality of the air, calibration of the equipments...

- Induction of staff to teach knowledge and awareness
- Use of new or service-controlled cars, vehicles, machines and plants
- Use of PPE
- Use of vehicles following new ecological and environmental standards, e.g. particle filter and catalytic converters
- Use of machines and plants with low dust and smoke emissions
- Slow driving on unpaved roads
- Watering of soil in case of works producing much dust
- Use of welding systems with low smoke and dust emissions
- Minimization of necessary welding points
- Use of fluorocarbon free blowing agents or refrigerants
- Use of materials and equipment with low Ozone Depletion Potential (ODP) and low Greenhouse Warming Potential (GWP)
- Avoidance of burning combustible materials or waste
7.3 Possible influences to the environment
Within the ANDRITZ HYDRO scope of work there are several risks to influence the environment.
- Influence of traffic (e.g. noise and dust) – see “On-site traffic and access management plan”
- Influence of works (e.g. noise, vibrations, dust)

The influences are monitored by several measures. In case of any deviations ANDRITZ HYDRO will take arrangements to solve the problem and fulfill legal requirements again.

7.4 Information and documentation
All environmental inspections and monitoring measurements will be documented and if stipulated by law or the contract the results will be forwarded to the employer or the authorities.

In case of deviations or environmental incidents ANDRITZ HYDRO will also inform the employer of the results and the intended or already implemented arrangements.

7.5 Environmental inspections and monitoring
7.5.1 Environmental Inspections
The ANDRITZ HYDRO ESHS Manager / ESHS Inspector will do daily inspection site walks with the help of a check list. If any problems are spotted he will order corrective actions and supervise the fulfilling.

There will also be monthly site walks of the HSE team of the employer together with the contractor and periodic site walks of the Site Manager together with the ESHS Manager / ESHS Inspector.

7.5.2 Monitoring of Air Quality, Dust, Particulates and Welding Fumes
The air quality, dust and particulates are monitored every two months at the installation area.
Welding fumes are monitored every month at working area.
The protocols of all measurements will be part of the monthly report.

7.6 Reporting results
The results of measurements will be distributed for information with the monthly report. An assessment of the data is a part of the monthly HSE coordination meetings. If any corrective action is necessary reasonable measures have to be installed.

8 Noise and vibration control plan
8.1 This STP on Noise and Vibration Control Plan lacks a precision on (i) the description of the device that will be used for the measurement of noise, (ii) the qualification of the person in charge of noise measurement.

8.2 Also CP1 can already annex reference standards, measurement procedures, calibration of equipment.
- Use of noise reduced and vibration reduced cars, vehicles, machines, tools and plants
- Use of PPE
- Use of noise encapsulated systems
- Construction of sound barriers
- Sufficient distance of working activities to housing areas where possible
- Reduction of daily noise exposure to below 85 dB(A) [80 see specifications]
- Limitation of high noise activities to day time
8.3 Possible influences to the environment

Within the ANDRITZ HYDRO scope of work there are several risks to influence the environment.

- Influence of traffic (e.g. noise and dust) – see “On-site traffic and access management plan”
- Influence of works (e.g. noise, vibrations, dust)

The influences are monitored by several measures. In case of any deviations ANDRITZ HYDRO will take arrangements to solve the problem and fulfil legal requirements again.

8.4 Information and documentation

All environmental inspections and monitoring measurements will be documented and if stipulated by law or the contract the results will be forwarded to the employer or the authorities.

In case of deviations or environmental incidents ANDRITZ HYDRO will also inform the employer of the results and the intended or already implemented arrangements.

8.5 Environmental inspections and monitoring

8.5.1 Environmental Inspections

The ANDRITZ HYDRO ESHS Manager / ESHS Inspector will do daily inspection site walks with the help of a check list. If any problems are spotted he will order corrective actions and supervise the fulfilling.

There will also be monthly site walks of the HSE team of the employer together with the contractor and periodic site walks of the Site Manager together with the ESHS Manager / ESHS Inspector.

8.5.2 Monitoring of Noise and Vibrations

Noise and vibrations are monitored every month.

8.6 Reporting results

The results of measurements will be distributed for information with the monthly report. An assessment of the data is a part of the monthly HSE coordination meetings. If any corrective action is necessary reasonable measures have to be installed.

9 Site decommissioning and rehabilitation plan

9.1 ANDRITZ HYDRO facilities on site

ANDRITZ HYDRO uses the following facilities and buildings on site:

- Office and storage yard,
  - Equipped Warehouse and Tool store (closed & open)
  - Equipped Offices
  - First Aid Station
  - Hazardous waste area & Waste collection area
  - Containers with Material and Tools
  - Guard house
  - Parking areas
  - Concreted foundations
  - Sanitary facilities
  - Septic tank (steel tank)
  - Water supply lines
  - Sewage pipes
  - Lighting poles
  - Electrical power supply station and lines
  - Fences
- Camp area,
  - Equipped Accommodations, Recreation Facilities, Laundry, Canteen, etc.
  - Waste collection area
  - Guard house (masonry building)
  - Parking areas
  - Concrete foundations
  - Sanitary facilities
  - Septic tank (steel tank)
  - Water tanks and supply lines
  - Sewage pipes
  - Septic Tank
  - Lighting poles
  - Electrical power supply station and lines
  - Fences

- Operational areas,
  - Tool Containers
  - Small site Office Containers

Will be defined at site in agreement between OE / CP1 Contractor / ANDRITZ HYDRO

9.2 Measures after site closure

This STP on the Occupational Health and Safety Management Plan is totally deficient compared to the ESHS specifications 23. It is requested to develop it according to the provisions 23.1 to 23.15 of the ESHS specifications. Part 1 to which this document refers does not meet the requirements of the specifications.

CP2 should in particular commit and indicate good practices (i) on the convention to be signed with a reference hospital (23.7.5 and 23.11.1), (ii) on the need for an on-site medical ambulance (23.11.11), (iii) the establishment of a Medical Center, its equipment, (iv) on the recruitment of medical team including a Physician, Nurse and Paramedic, (iv) on Emergency Medecin Evacuation Procedure (23.11.1), (v) on the organization of the workers' vaccine (23.13.2), (vi) ...

11 Occupational health and safety management plan

Please see EC-ESHSMP – Part 1.

12 Worker camps management plan

12.1 Work place conduct

This STP on the Worker Camps Management Plan deserves to be reworded by incorporating: (i) the rule and regulation (code of conduct) which is applicable to resident (ESHS spec 24.1 and 24.38), to be approved by Labor Inspector, (ii) the subcontract with a certified company for vector control (spec 24.21), (iii) the number of workers per chamber (spec.24.7), (iv) the Grievance Redress Mechanism (GRM), (iv) the accommodations conditions provided to the workers.

Refer to ESHS spec 24.1 to 24.39
12.2 Restriction of movement

Safety of our personnel is ANDRITZ HYDRO’s utmost priority and therefore any known restriction of movement for security/safety reasons, dangerous local practices, criminal behavior and health issues, etc., that may cause harm, distress or worse should be known to all site personnel.

Our personnel should be made aware of these issues during the Site Induction, general safety meetings, toolbox talks and informed of new issues. As such the Site Manager should make a document highlighting restrictions or recommendations for the general safety of our personnel. These rules should be displayed on the Site Notice Boards. However there may be culturally sensitive issues that would be inappropriate for public display and this should be taken into consideration. If it is deemed necessary this may involve disciplinary action taken against individuals who knowingly flaunt these rules or recommendations.

12.2.1 Arrangements for Site Security

Unauthorized persons are forbidden to enter the site. Details of barriers, signs and security organization have to be planned by the Site Manager in agreement with the Employer and agreed before mobilization of the site. Minimum requirements are:

- Permanent and temporary gate passes shall be issued to all personnel in accordance with the site specific requirements.
- No vehicles may be operated on site unless with a valid entry pass.
- Every person employed on site shall strictly comply with the gate control procedure and shall fully co-operate for the implementation of such procedures.
- An identification badge showing corporate name and name shall be worn.
- Material entry or removal permits shall, if so required, be obtained for all equipment and/or materials which are to be brought into or taken away from the Project site.
- Any damage, loss or theft shall be immediately reported to the Site Manager.

12.3 Accommodation, offices & Break Rooms

Accommodation, offices and break room are to be treated with respect, kept clean and maintained in an operational condition.

12.3.1 Site Facilities

Provisions accommodations, offices, workshops, toilets and washing facilities offices etc. have to be provided as necessary and planned before site mobilization. Overview and details are shown in the site facility plan similar to Appendix 02.

13 Recruitment and labour management

In principal the local law regulating labour in Rwanda and Tanzania and the specification of Contract Part 2: Employers Requirements, Div-6: Environment, Social, Health & Safety, Clause 25 are valid.

This STP on recruitment is totally deficient compared to the provisions of the specifications. It is requested to develop it according to ESHS specifications 4.9.1 to 4.9.5.

CP2 should in particular commit and indicate good practices (i) on the obligation to open a recruitment center in Kirehè and Ngara, (ii) to submit the model contracts to the approval of the labor inspector, (iii) not to organize recruitment on the site, (iv) sign a convention with a reference hospital on the medical check up (v) to provide 3 free meals to resident workers, (v) to organize the induction training on safety, environment. This section of the document should be developed before any recruitment.

or construction area. This transport is done by foot, cars, motorcycles and small busses.

At the peak time of work approximately 150 persons will be transported daily to and from the site by car or bus.
14.1.2 Transport of Material
The transport of material comprises all kind of transportation, e.g. stoplogs, gates, machines, tools, plants and equipment. The kind of vehicles used depends on the type, weight and size of material. Part of this will be done by heavy haulage.

Typical vehicles are trucks and articulated lorries.

So far no river transportation is planned or expected. Therefore the mentioning of river transportation is only listed to complete possible transportation systems. If any river transportation will be necessary ANDRITZ HYDRO will adapt accordingly.

14.1.3 Internal Transport
The transport of material comprises all kind of transportation, e.g. stoplogs, gates, machines, tools, plants and equipment. The kind of vehicles used depends on the type, weight and size of material. Part of this will be done by heavy haulage.

Typical vehicles are trucks and articulated lorries for huge items and fork lifts or pickups for the internal transport of smaller items.

During the construction period a maximum load of about 90 tons will be transported within the construction site.

ANDRITZ HYDRO uses the following vehicles:
- Cars
- Pickups
- Buses
- Fork lifts
- Cranes and mobile Cranes
- Low Bed Trailer
- Long Trailer

The list is completed with the vehicles and trucks used by external transportation companies.

14.2 Arrangements for site access
Transportation of persons, material and equipment will be done by land.

Transport deliveries to site shall be by means of National high ways and roads.

Access to site by land, both of equipment and materials necessary to the construction and to be delivered at site, shall be through dedicated site access points at the RN3 road.

14.3 Road Traffic
14.3.1 National Roads
General highways and roads shall be used for equipment and / or material deliveries to Rusumo Falls

14.3.2 Local Roads
From the national road RN3 to Rusumo Falls site area major local roads will be used.

14.3.3 Speed Limits
The speed limits vary from 40 km/h for local roads to 60 km/h for national roads depending on the location as well as on road conditions, width and kind of vehicle.

As all drivers have national driver licenses they do know the allowed speed limits.

14.4 Organization of transport
All Transportation will be done by sub-contractors or suppliers. Heavy haulage transports will be done by a special transportation company which is very experienced in this kind of transportation.

The company will be responsible for the transportation and the compliance with national rules and laws. Well before the start the haulier will review the transportation route and examine all critical points like bridges or low and tight accesses. He will contact the responsible traffic police organisation and take all
measures to secure bridges, slopes or other perils, post flagmen, organize transportation dates and inform all involved parties about the transport well in advance.

The roads to be used will be decided by the transportation company in accordance of the transported material and security situation.

The haulier will also support or organise the transportation of materials within the site area, e.g. from the lay down area to the point of installation. He will take special care to embankments, slopes and curve radii.

If any traffic problems like road blocks or diversions will be necessary the Employer will be informed at least 24 hours in advance by email.

14.5 Construction traffic rules

14.5.1 General

In principal all official traffic laws are applicable to the site traffic as well.

Rules and regulations governing the organization and conduct of site operations are applicable to all staff and operatives of all contractors. Those rules apply to all construction traffic.

14.5.2 Site installations - Main gates entrance

All vehicles entering the site installations are subject to site security passes control. No access will be allowed to or movements within the site installations without pass.

Any vehicles shall respect all traffic code signs installed at site, such as directional traffic ways, stops, 20 km/h speed limit, parking areas etc, all over the site.

To better control traffic, all plant drivers and operators, require a specific permit issued by the ANDRITZ HYDRO Site Manager. Also, internal trainings to promote safe driving behaviour shall be performed at site.

14.5.3 Signs, flagmen, barriers, lighting at site

To facilitate traffic at site, regular traffic signs shall be posted at each sensitive location, such as main site exit /entrance, crossroads, deviation, unidirectional ways, etc.

Flagmen shall be placed where pertinent, and at temporary cofferdam accesses.

Barriers shall be placed when and where necessary, to prevent access to dangerous areas, such as trenches, sensitive equipment etc.

Over loads shall be prohibited, and visual controls shall be done. In case of doubt, action towards the driver shall be taken to avoid circulating at site.

14.5.4 Arrangements for notifying and liaising with the responsible traffic police organization

Current transportations dealing with the project and taking the national roads, are subject to the national code of conduct, only. If specific transports, such as heavy or large loads, are scheduled, the road shall be surveyed prior transportation. Personnel shall be placed, such as flagmen, where necessary.

Notification to the Traffic Police Representative, regarding heavy transports, shall be under the responsibility of the transportation company and the ANDRITZ HYDRO Site Manager.

14.5.5 Arrangements and procedures for maintaining safe public access and travel on land in the vicinity of the site, concerning pedestrians, livestock, carts, bicycles, motorcycles, motorized vehicles

Safe public accesses on land in the vicinity of the site main entrance shall be clearly designed on shop drawings, showing specific accesses for pedestrians, motorized vehicles or machines, others.

14.5.6 Systems for ensuring compliance with the approved measures

To ensure compliance with the approved measures, regular safety meetings shall be organized in order to make drivers & operators aware about the present Traffic Management Plan and in general, with traffic rules. National traffic code shall be reminded to all, and corresponding level of sanction to be applied shall be explained to all in case of pick out infractions.
Infractions shall be recorded by the safety officer, for both corrective action and follow-up. Sanctions shall be under the responsibility of the ANDRITZ HYDRO Site Manager.

15 ESHS training

This STP on ESHS Training is totally deficient compared to the provisions of the specifications. It is requested to develop it according to ESHS specifications 4.9.1 to 4.9.5. Part 1 to which reference is made does not meet the specifications

- Appendix 01: Map of Waste collection points (will be submitted later)
- Appendix 02: Site facility plan