

Environmental Monitoring Report

Semi-annual report
January - June 2023

August 2023

Kyrgyz Republic: Toktogul Rehabilitation Phase 2 Project

Prepared by the Open Joint Stock Company Electric Power Plants, with the assistance of the Project Implementation Consultant Tractebel Engineering - Coyne Et Bellier (France) in association with Endustriel Elektrik Maden LLC (Kyrgyz Republic).

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Abbreviations

ADB	Asian Development Bank
ACM	Asbestos Containing Material
CC	Construction Contractor
EADB	Eurasian Development Bank
EMP	Environmental Management Plan within IEE
EHS	Environment, Health and Safety
EPP/OJSC EPP	Open Joint Stock Company «Electric Power Plants»
ES	Environmental Specialist
GE	General Electric
GRM	Grievance Redress Mechanism
HPP	Hydropower Plant
MAC	Maximum Allowable Concentration
IEE	Initial Environmental Examination
IPID	Investment Projects Implementation Department within EPP
RCI	Republic Centre of Immunoprophylaxis
KPI	Key Performance Indicator
PIC	Project Implementation Consultant
PIU	Project Implementation Unit within EPP for 'Power Sector Rehabilitation Project'
PFAS	Personal Fall Arrest System
PPE	Personal Protective Equipment
SAEMR	Semi-annual Environmental Monitoring Report
SAEPF	State Agency of Environmental Protection and Forestry
SSEMP	Site-Specific Environmental Management Plan
ZMEC and SM Powertech	Consortium of Zhejiang Machinery and Equipment I/E Co. Ltd and SM Powertech Co. Ltd.

1. INTRODUCTION

1.1. Preamble

1. This report represents the Semi-Annual Environmental Monitoring Report (SAEMR) for Toktogul Hydropower Plant Rehabilitation Phase 2 Project (Project).
2. This report is the 14th SA EMR for the Project and covers operations conducted from January 2023 to June 2023.

1.2. Headline Information

3. The general objective of the rehabilitation works is to improve the technical and operational performances of Toktogul HPP. Considering the strategic importance of Toktogul HPP for the stability of the national and regional grid, there are two main objectives that can be identified:
 - To recover a proper reliability and availability of the plant,
 - To increase the capacity of the power plant.
4. The Initial Environmental Examination (IEE) of the Project with Environmental Management Plan (EMP) was prepared in July 2014 and approved by ADB and then by the State Agency of Environmental Protection and Forestry (SAEPF) on 15 December 2014, the State Environmental Approval No04.01-28/428 dated 15.12.2014 (Annex 1).
5. As originally planned, the Phase 2 required completely rehabilitating/replacing the Units n°2 and n°4 with their auxiliary systems and was divided into the two following lots:
 - Package 1 of Phase 2 concerns the Rehabilitation of Gates & Hydraulic Steel Structures (International competitive bidding, single stage, one envelope).
 - Package 2 of Phase 2 concerns the rehabilitation of the two units 2 and 4 (International competitive bidding, two stages with pre-qualification, and two envelopes) and their auxiliary systems.
6. Decision was made to group in a single phase the rehabilitation of 4 units and to replace the existing units by completely new units with the exception of the main embedded parts, which leads to include the rehabilitation of gates and Hydraulic Steel Structures related to the 4 units in Package 1 as well as the replacement of the 4 units in Package 2. Works of rehabilitation of units 1 and 3 relate to Toktogul HPP Rehabilitation Phase 3 Project. Thus, Toktogul HPP Rehabilitation Phase 2 Project consists of following packages:
 - Package 1 concerns the Rehabilitation of Gates & Hydraulic Steel Structures; and
 - Package 2 concerns the rehabilitation of 4 units and to replace the existing units by completely new units and was divided into two lots:
 - ✓ Lot 1: Rehabilitation of Toktogul powerhouse by replacing 2x300 MW turbine generator unit 2 and 4 and associated auxiliary systems;
 - ✓ Lot 2: Rehabilitation of Toktogul powerhouse by replacing 2x300 MW turbine generator unit 1 and 3 and associated auxiliary systems.
7. The Contract for Package 1 has been awarded to the Consortium of Zhejiang

Machinery and Equipment I/E Co Ltd. and SM Powertech Co, Ltd (ZMEC and SM Powertech), and the Contract Agreement was signed by EPP and the Contractor on 30 May 2019. The design review of Contractor submittals by PIC is on-going. Package 1 works include the rehabilitation and replacement of these components:

- Units intake trash racks;
- Units intake maintenance gates;
- Units intake emergency gates and their hoist;
- Units downstream maintenance stoplogs;
- Units steel penstock;
- Spillway stoplog roller gates;
- Maintenance Bottom Water Outlet gates;
- Emergency Bottom Water Outlet gates and their hoist;
- Service Bottom Water Outlet radial gates and their hoist;
- Bottom Water Outlet steel penstock;
- Dam Gantry crane;
- Bottom Water Outlet Gate chamber crane;
- Unit Downstream Stoplog chamber crane.

8. The Contract for the Package 2 of Phase 2 and Phase 3 has been awarded to the Consortium of the legal entities of GE Hydro France and GE Renewable Switzerland GmbH (GE) and the Contract Agreements were signed by EPP and the Contractor on 9th February 2018. Works of Package 2 include the rehabilitation and replacement of these components:

Lot 1: Unit 2 and Unit 4 and part of the common auxiliaries:

- Turbines;
- Governing Systems;
- Low Pressure Compressed Air System;
- Cooling Water System;
- Drainage and Dewatering System;
- Powerhouse Travelling Cranes;
- Generators;
- Excitation Systems;
- Generator Fire Fighting System;
- Generator Cooling System;
- Generator Neutral Grounding System;
- Unit Control System;
- Unit Monitoring System;
- Unit Protection System;
- Plant Control and Monitoring System and SCADA System;
- Plant Fire Fighting System;
- Plant Lighting System;
- Miscellaneous Auxiliary Transformers;
- Isolated Phase Bus Ducts;
- MV Switchgears;
- 400 V AC Station Distribution System;
- DC System;
- Emergency Diesel Generator;
- Mandatory and recommended spare parts;

Lot 2: Unit 1 and Unit 3 and part of the common auxiliaries:

- Turbines;
 - Governing Systems;
 - High Pressure Compressed Air System;
 - Cooling Water System;
 - Generators;
 - Excitation Systems;
 - Generator Fire Fighting System;
 - Generator Cooling System;
 - Generator Neutral Grounding System;
 - Unit Control System;
 - Unit Monitoring System;
 - Unit Protection System;
 - Isolated Phase Bus Ducts.
9. The design works by the Contractors and design review of Contractors' submittals by PIC are currently under process, while the manufacturing of approved equipment is also on-going.
 10. Works for Package 2 at site were started in October 2019.
 11. Works for Package 1 at site were started in January 2020.
 12. A case of force majeure due to Covid-19 was declared in February-March 2020 by both Package Contractors. During reporting period, the Contractors updated their health and safety management system so as to implement construction works in compliance with all relevant government regulations and guidelines on Covid-19 prevention and control. The closure of borders as well as ban on international travels, especially in regard to China where the pandemic started and where most equipment is being manufactured, has put a strain on the manufacturing and delivery schedule. After temporarily stopping site works due to Covid-19 pandemic issues, works for both Package 2 and Package 1 at site were recommenced in September-October 2020.
 13. A trial run of Unit 4 was on 30 November 2022. Completion Certificate of Unit 4 was issued on 11 January 2023 under the Contractor's observation.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1. Project Description

14. The Toktogul Dam is a concrete gravity dam, with a height of 215 m, and is equipped with a large hydropower plant of 1200 MW capacity. The Toktogul hydropower plant (HPP) provides 40% of the average Kyrgyz Republic electricity output. The dam's construction began in 1960 and the hydropower plant was put into services in 1975.
15. The Toktogul HPP plays a major role on Kyrgyz Republic electrical grid and on the Central Asian power system, providing energy and frequency regulator services. It is equipped with 4 vertical Francis units of 300 MW each and has never been significantly rehabilitated since its commissioning.
16. The Kyrgyz Republic has received a funding from the Asian Development Bank (ADB) and the Eurasian Development Bank (EADB) for the Phase 2 of Toktogul HPP Rehabilitation Project. The executing agency of this project is the Open Joint-Stock Company Electric Power Plants (EPP).
17. An Initial Environmental Examination (IEE) was developed for the rehabilitation of Toktogul HPP, phase 2 Project ADB-TA-8434 on request of ADB. An approval was delivered by the State Agency on Environment Protection and Forestry on the 15th of December 2014 No 04.01-28/428. This documentation and its translation in English are presented in Annex 1.
18. An Initial Environmental Examination (IEE) was amended for the rehabilitation of Toktogul HPP, phase 2 Project ADB-TA-8434 and sent to ADB for review in November 2022. An approval is pending.



Figure 1. Toktogul hydropower plant dam

19. Rehabilitation studies and rehabilitation works at Toktogul HPP are divided into 3 phases. Construction activities of Phase 2 Project started in October 2019. Toktogul HPP Rehabilitation Phase 3 Project currently consists of the replacement of Unit 1 and Unit 3 of Toktogul HPP and Dam monitoring system works.

2.2. Project Contracts and Management

20. The objective of the executing agency EPP is to improve the technical and operational performance of the Toktogul HPP and to contract the rehabilitation of the Toktogul HPP on an Engineering Procurement and Construction scheme. The Project Implementation Consultant works with the Investment Project Implementation Department (IPID) of EPP.
21. The IPID is one of the EPP's departments specially assigned for implementation of projects funded by international development organizations such as ADB and World Bank (WB), etc.
22. The head of IPID is Mr. Dyikanbai Bolotbekov since November 2022 who reports directly to the General Director of EPP. The IPID is the main contact point for working communication between EPP and ADB. The IPID coordinates the consultants and contractors.
23. The IPID head reports directly to the General Director of EPP. The IPID is the main contact point for working communication between EPP and ADB, and EADB. The IPID coordinates the consultants and contractors.
24. The IPID, assisted by the PIC, submits necessary project plans, tender evaluation reports, progress reports, applications for withdrawal of funds, and any other required reports to ADB, EADB and the Government.
25. Within IPID, EPP has established a dedicated Project Implementation Unit (PIU) in February 2013 for implementing concerned components of the "Power Sector Rehabilitation Project. Toktogul HPP Rehabilitation Phase 1" and "Toktogul HPP Rehabilitation Phase 2, Phase 3 Projects". IPID administers all consulting and procurement contracts on behalf of EPP. It is responsible for bid evaluation, contract award, construction supervision, and report to the Government, ADB, and EADB.
26. Mr. Orozbek Mamyrov was appointed as a head of PIU in April 2023 who reports directly to the General Director of EPP (email: piu2@es.kg) (previous head of PIU Mr. Azizbek Kurmanbaev who had been appointed in June 2022, quit the company in March 2023).
27. The Environmental Specialist of PIU EPP Toktogul HPP Rehabilitation Project Phases 1,2, and 3 is Ms. Jyldyz Moldosanova (email: piu2@es.kg).
28. PIC of EPP for Toktogul HPP Rehabilitation Phase 2 Project is Tractebel Engineering-Coyne Et Bellier (France) in association with Endustriel Elektrik Maden LLC (Kyrgyz Republic). In this sense, the national and international team of consultants are assisting EPP as Project Implementation Consultant (PIC) on the rehabilitation of Toktogul HPP Phase 2 Project. The international key personnel: Project Team Leader is Mr. Charles Reggy; HSE Experts are Mr. Jean Luc Pigeon and Mrs. Isabelle Cantin. The national key staff includes: Deputy Team Leader Mr. Marat Abdykasymov, HSE specialist Ms. Burul Alymkulova.
29. As indicated above, the International Environmental Specialists of PIC Tractebel are Mr. Jean-Luc Pigeon (email: jean-luc.pigeon@tractebel.engie.com) and Mrs. Isabelle Cantin (email: isabelle.cantin@tractebel.engie.com); national health, safety and environment specialist Ms. Burul Alymkulova (email: alymkulova11.b@gmail.com).
30. The Construction Contactor of the Contract for the Package 1 of Phase 2 Project is

the Consortium of ZMEC and SM Powertech. The Contractor’s Environmental Specialist is Mr. Sultan Kalpakov (email:vlad@smpowertech.co.kr).

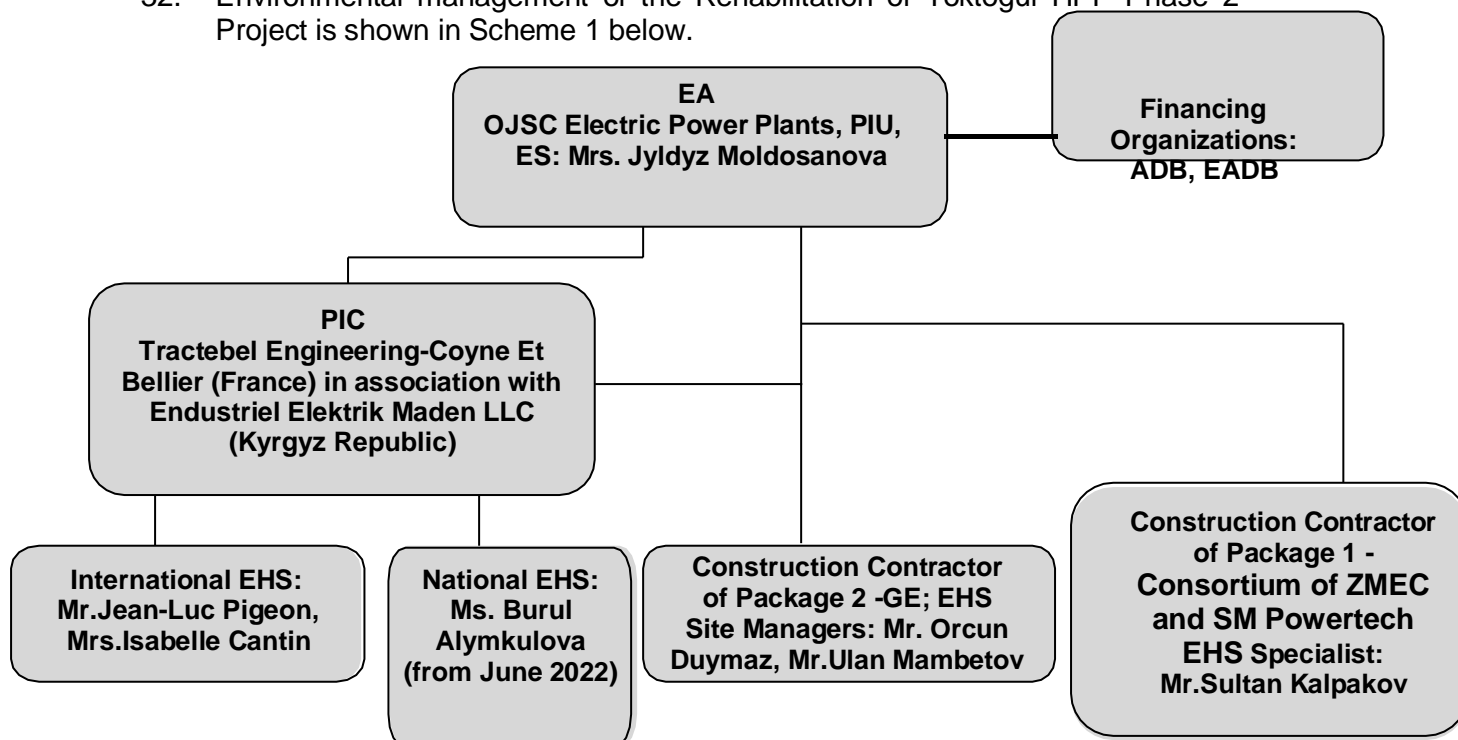
31. Construction Contactor of the Contract for the Package 2 of Phase 2 Project is the Consortium of the legal entities of GE Hydro France and GE Renewable Switzerland GmbH (GE). GE’s HSE Managers at site are Mr. Orcun Duymaz (email:orcun.duymaz@ge.com) and Mr. Ulan Mambetov (ulan.mambetov@ge.com).

A list of Project Contracts under implementation of Toktogul HPP Rehabilitation Phase 2 Project is given at below Table 1.

Table 1. Project Contracts under implementation of Toktogul HPP Rehabilitation Phase 2 Project

Contracts	Title	Construction Contractors
D-15-30/176 dated 30 May 2019	Package No. 1: Toktogul Powerhouse Rehabilitation – Design, Supply, Installation, Pre-commissioning and Commissioning	Consortium of Zhejiang Machinery and Equipment I/E Co. Ltd and SM Powertech Co. Ltd
D-15-22/68 dated 9 February 2018	Package No. 2, Lot I: Toktogul Powerhouse Rehabilitation – Design, Supply, Installation, Pre-commissioning and Commissioning (units 2 and 4)	Consortium of GE Hydro France and GE Renewable Switzerland
D-15-22/69 dated 9 February 2018	Package No. 2, Lot II: Toktogul Powerhouse Rehabilitation – Design, Supply, Installation, Pre-commissioning and Commissioning (units 1 and 3)	

32. Environmental management of the Rehabilitation of Toktogul HPP Phase 2 Project is shown in Scheme 1 below.



Scheme 1: Environmental management of the Rehabilitation of Toktogul HPP Phase 2 Project as of June 2023

33. EPP PIU Environmental specialist has developed the list of main documents to be included into Track Documentation System. This list is attached in Annex 2.
34. Summary of Civil Works Contracts and works' progress is shown in table

Table 2. Summary of Civil Works Contracts and works' progress

Package/Lot	Scope	Contractor	Signed Date	Approval Date			Name of personnel		Civil Works		Overall Progress as of	
				SSEM P	COVID-19 HSMP	ERP	Environmental officer	Health and Safety officer	Start Date	End Date	31 Dec 2022	30 June 2023
Package 1	Toktogul HPP gates and hydraulic steel structures rehabilitation	Consortium of ZMEC and SM Powertec	30 May 2019	Dec 2019	Aug 2020	Feb 20 20	Mr. Kalpakov S.		Jan 20 20	-	90.8 ¹ %	92.8 ² %
Package 2: Lot 1	Toktogul HPP's Units 2 and 4 rehabilitation	Consortium of GE Hydro France and GE Renewable Switzerland	12 Feb 2018	Dec 2019	Dec 2020	Dec 20 20	Mr. Duymaz O., Mr.Mambetov U.		Oct 2019	-	66 ³ %	70 ⁴ %
Lot 2	Toktogul HPP's Units 1 and 3 rehabilitation		12 Feb 2018						-	-	-	-

2.3. Project Activities during reporting period

35. All works take place within the fenced area of Toktogul HPP. All rehabilitation measures are implemented within the facilities and building constructions of the EPP. Area of Toktogul HPP is secured and no admittance except business.
36. Activities implemented by **CC SM-ZMEC of package 1** of the Project during the reporting period are summed up below:

Q1 & Q2 2023:

January

Gantry crane at the dam crest:
Sandblasting cleaning completed
Bottom outlet aeration pipe:
Welding of aeration pipe flanges
Assembly of brackets
Assembly of clamp benders
Unit-1 Draft tube gate:
Dismantling of clamping bars and rubber seals
Dismantling the buffer beams
Dismantling the rollers
Sandblasting cleaning of the gate completed 30m2
Sandblasting cleaning of the gate

¹ Monthly report - December 2022 of Construction Contractor ZMEC

² Monthly report - June 2023 of Construction Contractor ZMEC

³ Monthly Progress Report No.40 – December 2022 of Construction Contractor GE

⁴ Monthly Progress Report No.46 – June 2023 of Construction Contractor GE

Grinding work.

-Cleaning of abrasive waste.

Priming and painting of the gate.

Vulcanization of rubber seals.

Installation of buffer beams.

-Installation of clamping bars and rubber seals.

Sandblasting cleaning of embedded parts.

Priming and painting of embedded parts.

February 2023

Gantry crane at the dam crest:

- Dismantling of scaffolding for sandblasting, priming and painting.

- Cleaning of 13 tons of abrasive waste in tunnel at dam crest completed.

- Checking the electrical network of the gantry crane.

- Installation of buffer beams.

- Installation of a windows for the operator cabin.

- Checking of hydraulic cylinder HPU of traverse system.

Bottom outlet aeration pipe:

- Welding of aeration pipe flanges

- Assembly of brackets

- Assembly of clamp benders

- NDT of welded joints

- Welding of supports and clamps for bottom outlet aeration pipe

- Preparatory work for installation of bottom outlet aeration pipe and for the diving works.

- Installation of scaffolding

- Diving team mobilization at site.

Unit-1 Draft tube gate:

- Cleaning of 10 tons of abrasive waste.

- Lowering of the gate into slots.

- Sandblasting cleaning of the gate.

- Dismantling of buffer beams.

- Dismantling of clamping bars and rubber seals.

- Vulcanization of rubber seals.

- Sandblasting cleaning.

- Grinding work.

- Installation of clamping bars and rubber seals.

- Installation of buffer beams.

- NDT inspection of the gate welds.

-Sandblasting cleaning, priming and painting of embedded parts.

-Cleaning of abrasive waste

-Installation of draft tube gate into slots.

Unit-2 maintenance gate of the inlet of the penstock:

Installing and Dismantling works of maintenance gate lifting beams.

Installing of the pool Unit-2 draft tube maintenance gate.

-Inspection of the gate.

-Installation of pools at the draft tube

Other work:

- Transportation of container from 16th area to the dam crest.

- Transportation of materials to a new warehouse.

- Construction of small warehouses at dam crest.

-Connecting electrical panels and transformer as a preparation for work on the draft tube gate at the elevation 710m

March

Gantry crane at the dam crest:
Inspection of the gantry crane traverse system tracks.
Leveling gear racks and rails.
Inspection of traverse system HPU hydraulic cylinder.
Bottom outlet aeration pipe:
Diving work:
Preparatory work of diving team for the installation of the brackets of bottom outlet aeration pipe.
Welding of bottom outlet aeration pipe's flanges.
Anchoring in concrete and installing a brackets and bottom outlet aeration pipes
Bottom outlet maintenance gate:
Reinforcement of the gate - preparation of edges for welding and installation of a reinforcement plate
Unit-2 draft tube maintenance gate.
Testing the gate for leakage.
Painting of the gate overhead crane.
Unit-2 draft tube maintenance gate.
- Cable routing.
- Installation of ventilation pipes from the Unit-3 penstock at elevation 710 to the elevation 732).

April

Diving works:
Anchoring in concrete and installing brackets (above water level)
Installations of aeration pipe of Bottom Outlet complete
- Reinforcement of the Bottom Outlet gate:
Preparation of reinforcing plate edges for welding.
Installation of reinforcing plates complete.
- Aeration pipe of Unit-3:
Installation of scaffolding above the aeration pipes and installation of rails (for a wheelbarrow) for garbage removal the aeration pipe
Sandblasting cleaning
Primary applying
- Draft Tube gate of Unit-3:
Installation of pool
Leakage test of gates
Dismantling of pool after leakage tests
- Emergency Intake gate of Unit-3 860 elevation:
Fixing of link bars of Emergency Intake gate of Unit-3 with using I-beams (for installation the hydraulic cylinder)
Preparatory work for the dismantling of the Emergency Intake gate of Unit-3 premises
Dismantling of the premises Emergency Intake gate of Unit-3
- Water filling system of Unit-3
Dismantling works (dismantling of hydraulic valves, non-rising valve, flange insert and flange with pipe)
- Maintenance gate of Unit-3:
Slag applying to maintenance gate by divers (eliminations of comments)
Installation of the maintenance gate and link bars
- Preparation works for Unit-3:
Laying electric cables.
Assembly of electrical panels.
- Penstock of Unit-3:
Installation of pools at elevations 814m.
Transportation of scaffolding to Penstock of Unit-3 at elevation 710m.
Installation of scaffolding.
Installation of OSB partition (for dust protection).

Installation of I-beams (to reinforce scaffolding).

- Elevation 732 m:

Installation of ventilation pipes from elevation 710 m to elevation 732 m complete.

- Other works:

Preparing and shipping empty cans for disposal

Manufacture of a device for dismantling the support wheels of Emergency Intake gate

Installation of electrical panels on the dam crest of THPP

May

Preparatory work for the installation of a (new) aeration pipe for Bottom Outlet on the dam crest of THPP

Installation of brackets and connection of flanges of aeration pipes.

-Diving works

Anchoring in concrete and installing brackets above water level

Installation of aeration pipe of Bottom Outlet

Drilling of the wall for the installation of the aeration pipe is 1 meter

- Reinforcement of the Bottom Outlet gate

Welding work of reinforcing plates

Priming and painting reinforcement plates

-Aeration pipe of Unit-3 «A» and «B» side

Sandblasting cleaning complete

Primary applying complete

- Emergency Intake gate of Unit-3 «A» and «B» side on the elevation 860m.

Dismantling of link bars

Dismantling of hydraulic cylinder and top covers

Dismantling of gate

Sandblasting, priming and painting of «A» side of embedded parts

Application of the first coat of paint on the embedded parts of «B» side

Oil drain from dismantling hydraulic cylinders

Dismantling of the premises of Emergency Intake gate

Dismantling of the HPU-2 tank and reserve tank

Draining oil from the HPU-2 tank and reserve tank

Dismantling of support-wheels, clamp plates and rubber seals from the Emergency Intake gate

Handover of the dismantled equipment of the Emergency Intake gate of Unit-3

- Water Filling system of Unit-3

Dismantling work (dismantling of hydraulic valve, mechanical valve, compensator and flange with pipe)

- Penstock of Unit-3

Installation of scaffolding

Sandblasting and priming of block «C»

Sandblasting and priming of block «A»

- Penstock of Unit-2

Sandblasting, priming and painting of the outside of Penstock completed 100%

37. Activities completed by **CC GE** during the reporting period are summed up below (main site activities during the period):

Q1 & Q2 2023:

January

Works on units:

Generator:

- Preparation of materials and equipment

- U-2 Rotor spider assembly

Turbine:

- U-2 Bottom ring delivery to the erection bay
- U-2 Head Cover delivery to the erection bay
- U-2 Head Cover cleaning
- U-2 Bottom Ring assembly
- U-2 cleaning of Bottom Ring steam housings
- U-2 Turbine shaft delivery to the erection bay

Commissioning:

- Outstanding points clearance
- Vibromonitoring system training

Other:

Preservation of equipment at warehouse

February

Works on units:

Generator:

- U-2 Rotor spider assembly and welding
- Preparation of materials and equipment U-2 Upper bracket cooling pipe pre-installation on the warehouse

U-2 Upper bracket cooling pipe pre-installation on the warehouse

- NDT of U-2 Rotor spider
- U-2 Top Cover and Slip Ring Cover pre-assembly on the warehouse
- Preparation of materials and equipment
- Installation of Rotor lead on NDE Shaft
- NDE Shaft tilting
- Painting of the Rotor spider welded seams

Turbine:

- U-2 Head Cover cleaning
- U-2 Head Cover assembly and tightening
- U-2 Bottom Ring radial sealing installation
- U-2 Bottom Ring parts tightening
- U-2 Bottom Ring steam housings cleaning
- U-2 Bottom Ring steam housings installation
- U-2 Turbine shaft cleaning
- U-2 Runner delivery to the erection bay
- U-2 Runner cleaning

U-2 Runner and Shaft coupling

- Clumping of U-2 Runner and Shaft coupling studs
- Installation of the Stay ring flanges on the Head Cover
- Preparation works on the Servomotors
- Shaft seal support preparation

MBOP:

- Installation of piping supports for cooling system on el. 707
- Breaking of the concrete for piping of cooling system on el. 708
- Installation of the permanent supports for common compressed air supply piping on el. 710.00 – 760.00
- Transportation of the main cooling system valve (DN350) for Unit-2 to el. 708.00

EBOP:

- Installation of cable trays on el. 825.00
- Pre-assembly of supports for electrical auxiliaries on the U-2 lower bracket
- Pre-assembly of supports for electrical auxiliaries on the U-2 lower Bracket
- Cable trays delivery to HPP
- Preparation works for asbestos removal activities on el. 726

Commissioning:

- Outstanding points clearance

Other:

Preservation of equipment at warehouse

March

Receipt of equipment

- deliveries TOK-T291, TOK-B292, TOK-II-B039, TOK-II-B036

Works on units:

U-2 Take Over

Generator:

- U-2 Upper bracket cooling pipe pre-installation on the warehouse
- U-2 Top Cover and Slip Ring Cover pre-assembly on the warehouse
- Adjustment and enlargement of the holes for anchoring bolts on the U-2 Lower bracket (warehouse area)
- Preparation of materials and equipment
- Preparation of the scaffolding around U-2 Upper bracket
- Dismantling of Top cover
- Dismantling of Upper bearing
- Dismantling of the Trust block
 - Dimensional check of the Rotor spider
- Dismantling – lower bearing
- Dismantling – excitation cables
- Dismantling of the Upper bracket
- Dismantling of the poles connection
- Dismantling of air coolers
- Lifting Rotor out of the generator pit
- Dismantling of the platform inside the GEN pit (between GEN and TUR pits)
- Dismantling of the Stator segments
- Installation of the scaffolding for Rotor disassembly on the erection bay
- Cleaning of the Rotor on the erection bay
- Disassembly of the Rotor on the erection bay

Turbine:

- Preparation of false guide vanes holding tools in Head cover
- LOTO application according to LOTO procedure
- Preparation of el. 726 and el. 718
- Preparation of sandblasting equipment
- Installation of Air Filtration Line to Spiral Case
- Installation of umbrella platform after Unit-2 Take Over
- Dismantling works in TUR pit after Unit-2 Take Over
- Dismantling of HPU piping after Unit-2 Take Over
- Preparation works on the Servomotors
- Preparation of sandblasting equipment
- Installation of Air Filtration Line to Spiral Case
- Dismantling works in TUR pit (shaft seal, distributor parts etc.)
- Dismantling of HPU piping
- Scaffolding installation in the Draft tube
- Sandblasting of welding seams in Spiral case
- Dismantling works in TUR pit (shaft seal, distributor parts etc.)
- GEN and TUR shafts uncoupling
- Dismantling of HPU
- Scaffolding installation in the Draft tube
- Pre-Installation of HPU on the erection bay
- Preparation for installation of supporting ring for Draft tube liner
- NDT of welding seams in Spiral case
- Dismantling works in TUR pit (shaft seal)
- Installation of supporting ring for Draft tube liner
- Lifting out of the TUR pit – operating ring
- Lifting out of the TUR pit – TUR bearing support
- Lifting out of the TUR pit – servomotors
- Lifting out of the TUR pit – Head cover
- Lifting out of the TUR pit – guide vanes

- Dismantling works in TUR pit (bottom ring)
- Scaffolding installation in the Draft tube
- Installation and Welding of Draft tube liners
- Lifting out of the TUR pit – Runner with shaft
- Measurements of the Stay ring embedded parts
- Delivery and assembly of HPU accumulators

MBOP:

- Installation of piping supports and pipeline for cooling system on el. 707.00 – 710.00
- Installation of the permanent supports for common compressed air supply piping on el. 710.00 – 760.00
- Delivery from warehouse of the main cooling system valve (DN350) for Unit-1 to el. 726.00
- Installation of shaft seal cooling filters on el. 713
- Installation of the piping supports and piping for shaft seal cooling on el.713
- Dismantling of Piping in Filter Room (el. 713)
- Dismantling of Piping in Pressure Reducer Room (el. 710)
- Installation of the piping supports and piping for cooling filters on el.713
- Installation of the piping supports and piping for shaft seal cooling on el.713
- Welding of the carbon steel flanges to the embedded pipes on el. 710 – 713
- Dismantling of the T-2 Firefighting system on el. 726 and on el. 760
- Dismantling of the existing old pipe No. 23 (dewatering of the penstock) on el. 708

EBOP:

- Cable trays delivery to HPP
- Installation of cable trays on el. 825.00
- Pre-assembly of supports for electrical auxiliaries on the U-2 lower bracket
- Pre-assembly of supports for electrical auxiliaries on the U-2 upper Bracket
- LOTO application according to LOTO procedure
- Dismantling - IPB
- Dismantling - Control System
- Dismantling - Excitation Cubicles
- Dismantling – IPB – neutral side
- Dismantling – IPB – phase side
- Dismantling – IPB – UAT side
- Dismantling – Excitation Cubicles
- Dismantling – IPB – main transformer room
- Preparation for installation of IPB supports on el. 718
- Dismantling – cables and cable trays on el. 718
- Installation – cable trays on el. 718
- Repair of the old IPB opening in the wall on el. 718
- Asbestos removal activities on el. 718 and el. 726

Other:

Preservation of equipment at warehouse

Unit-4 Punch List elimination activities (replacement of nuts on the eccentric pins in the distributor)

April

Works on unit2:

Generator:

Preparation of materials and equipment.

Disassembly of the Rotor on the erection bay.

Installation of scaffolding in GEN pit with confined space arrangement.

Cleaning of the GEN pit.

Tilting of the Rotor hub with a shaft.

Breaking of the concrete for the main cooling collector.

Repair of the walls in the GEN pit.

Measurements of the sole plates (Lower bracket and Stator).

Sole plates grinding after measurements.

Transfer of the Rotor spider from the Right bank to the Left bank.
Installation of the central support for the Rotor assembly.
Cleaning, installation, and adjustment of the wedge carriers.

Turbine:

Sandblasting of Spiral case.
NDT of welding seams in Spiral case.
Welding of Draft tube liners.
Sandblasting and painting of the Stay ring area.
NDT of the Stay ring area (after sandblasting).
Preparation for installation of the HPU piping.
Drilling in the penstock for the pressure taps installation.
Drilling of the Draft tube liners for fixation.
Installation of the HPU piping.
Sandblasting and painting of the TUR pit liner.
Cleaning of the TUR pit and Stay ring after sandblasting.
Preparation for embedded parts machining.
Assembly and installation in the TUR pit of machining equipment.

MBOP:

Installation of piping supports and pipeline for cooling system on el. 710 (in pressure reducing room).
Installation of the piping supports and piping for cooling filters on el.713.
Welding of the carbon steel flanges to the embedded pipes on el. 713.
Pressure tests of the T-2 Firefighting system pipes on el. 726.
Installation of the firefighting system in the Transformer-2 oil cooling room on el. 721.
Installation of the cooling system in the Transformer-2 oil cooling room on el. 721.
Installation of the main cooling piping from the penstock to the cooling filters on el. 707 - el.710.
Installation of the piping support and piping for HPU cooling system on el.721 – el.726.

EBOP:

Installation of IPB – main transformer room on el. 726.
Installation of IPB on el.718 – GCB room.
Installation of IPB on el.718 – UAT room.
Installation – cable trays on el. 718.
Base frame installation for the cubicles in the excitation room on el. 719.
Asbestos removal activities on el. 718.
Wall opening for IPB in the GCB room on el. 718.
Installation of cable trays el.713.
Installation of Excitation system cubicles el.719.
Installation of IPB phase side el.718.
Installation of IPB neutral side el.718.
Installation of cable trays U-2 Cable gallery el.724.
Commissioning: Clearance of outstanding items.
Other: Preservation of equipment at warehouse.

May

Works on unit 2:

Generator:

Preparation of materials and equipment.
Rotor rim lamination stacking of the first package.
Adjustment of the wedge carriers.
Rotor rim lamination cleaning.
Lowering of the Stator segments into the GEN pit.
Stator assembly.
Stator winding.
HV test of the Stator bottom bars.
Welding of the main cooling collector in the GEN pit.
Welding of oil piping on the Upper bracket in the warehouse area.

Final Measurements of the wedge carriers.
Stator final clamping and shape measurements.
Turbine:
Installation and welding of the HPU piping and piping supports.
Embedded parts machining (Bottom ring sitting surface, lower labyrinth sitting surface, stay ring flange sitting surface).
Installation of boss on the penstock for common Cooling water supply.
Preparation of the Draft tube for the painting.
Installation of the inflatable seal on the shaft seal support.
Pressure test of the inflatable seal.
Preparation of the TUR guide bearing support.
Draft tube liners anchoring.
Servomotors base plates preparation in TUR pit.
Pressure test of the embedded pipes for draft tube outlet pressure tabs.
Preparation of the Draft tube and Stay ring for the painting.
MBOP:
Installation of piping supports and pipeline for cooling system on el. 710 (in pressure reducing room).
Installation of the piping supports and piping for cooling filters on el.713.
Installation of the cooling system in the Transformer-2 oil cooling room on el. 721.
Installation of the main cooling piping from the penstock to the cooling filters on el. 707 - el.710.
Installation of the piping support and piping for GEN FF system on el.718 (outside GEN pit).
Installation of the Firefighting piping in the dosing room on el. 760.
Diving works on the downstream.
Preparation for the pressure test of pipeline for cooling system on el. 710 (in pressure reducing room).
Installation of the instrumentation for cooling system in the Transformer-2 oil cooling room on el. 721.
Installation of the piping for GEN FF system on el.718 (outside of GEN pit).
Installation of the piping for T-2 oil cooling system in the corridor on el.710.
Pressure test of pipeline for cooling system on el. 710 (in pressure reducing room).
Pressure test of piping for T-2 oil cooling system in the corridor on el.710.
EBOP:
Welding of IPB enclosures – Main Transformer room T-2 on el. 726.
Welding of IPB enclosures – GCB room on el. 718.
Welding of IPB enclosures – Aux Transformer room T-51 on el. 718.
Installation – cable trays on el. 718.
Installation of IPB tap-off to excitation transformer el.718.
Installation of adaptor and IPB on neutral side on el. 718.
Pulling of power cables and control cables for Unit-2.
Termination of power and control cables for Unit-2.
Installation of grounding busbars on el. 713-718.
Installation of electrical instrumentation on Stator.
Commissioning: Clearance of outstanding items.

June

Works on unit2:

Generator:

Preparation of materials and equipment.

Rotor rim lamination cleaning.

Rotor rim lamination stacking of the first, second, third, and fourth packages.

Clamping of rims first, second, third, and fourth packages and measurements.

Stator winding assembly (wedging, brazing, blocking, and lashing).

Installation of the circular connection, adjusting, and brazing.

Welding of the main cooling collector in the GEN pit.

Welding of oil piping on the Upper bracket in the warehouse area.

Turbine:

Installation and welding of the HPU piping and piping supports.

Painting of Draft tube and Stay ring.

Preparation of Bottom ring, lower labyrinth, Upper Steam hosing, and Stay ring base plate for installation.

Installation of the control panel and piping for penstock and Winter Kennedy pressure taps on el.708 and el. 718.

Lowering of the Bottom Ring and the lower labyrinth.

Installation and tack welding of the stay ring flange.

First lowering and extraction of the Head Cover.

Welding of the stay ring flange.

Drilling and taping of the holes for the lower labyrinth clamping.

Delivery and preparation of the guide vanes on the erection bay.

MBOP:

Pressure test of pipelines for the cooling system on el. 710-713 and el. 707-713.

Installation of the piping for the GEN FF system on el. 718 (outside of GEN pit).

Pressure test of HPU cooling pipeline DN25 on el. 718.

Installation of the valve for the Main water supply of the cooling system from the penstock on el.708.

Installation of pipeline for the Main water supply of the cooling system on el. 708-707.

Pressure test of the Firefighting piping T-2 and Transformer oil cooling system in the dosing room on el. 760.

Cleaning of embedded pipes (No. 61, No. 83 & No. N271).

Preparation for pressure test of the embedded pipe No. 23 for dewatering of the penstock on el.708.

Final assembly of the cooling system pipeline after the pressure tests on el. 707-713.

EBOP:

Welding of IPB enclosures - GCB room on el. 718.

Installation of CTs inside IPB phase side on el. 718.

Installation of adaptor and IPB on the neutral side on el. 718.

Installation of cable trays on el. 718, el. 724, and el. 713.

Installation of grounding busbars on el. 710-707.

Pulling and termination of power and control cables for Unit-2.

Installation of electrical instrumentation on the Stator.

GCB movement.

Installation of the neutral grounding cubical on el. 718.

2.4 Description of any changes to Project Design

38. No changes to Project Design that impact from HSE point of view.

2.5 Description of Any Changes to Agreed Construction methods

39. There were no changes to agreed construction methods.

2.6 Manpower on site

40. Accommodation is strictly prohibited on site for Contractor's personnel. Contractors' site personnel live at Kara-Kul (or in dedicated places, see below) which is 4 km away from the Toktogul HPP. Construction Contractors' personnel use a staff canteen, toilets of Toktogul HPP building.

41. According to the CC SM-ZMEC daily reports, the amount of personnel present on site per Contractor/Subcontractor during the reporting period is shown in the

below Table 3.

Table 3. Minimum /maximum number of personnel for the Package 1

2023	Indirect manpower	Direct manpower
January	11	34
February	10	28
March	12	41
April	13	52
May	11	78
June	11	81

42. According to the **CC GE weekly reports**, the amount of personnel present on site per Contractor/Subcontractors during the reporting period is shown in the Table 4. The number of personnel for this period is relatively less than for the previous period.

Table 4. Minimum /maximum number of personnel for the Package 2

2023	GE	Tajik SGEM	VERSHINA (ambulance / doctor)	Vermeulen	WWTech
January	17	30	2		
February	20	116	2		
March	22	164	2	22	
April	24	190	2	20	5
May	24	195	2	18	5
June	28	195	2	18	

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1. General description of environmental safeguard activities

43. The Environmental Management of the works related to each Package is documented in different plans, which were discussed and validated by PIU for each Package (Refer to Annex 2 for more details).
44. Workers from both Contractors have been provided with PPE and implemented works according to health and safety requirements and regulations. EHS routine inspections by PIC international expert and local EHS specialist confirmed this point.
45. The SM-ZMEC Construction Manager and the HSE Specialist are conducting daily visual environmental control.
- Introduction briefing on site is provided daily for all workers.
 - HSE specialists provide trainings and daily briefings.
 - Method Statements and Risk Analysis have been applied according to each activity.
 - Regular EHS controls have been conducted on contractor activities by PICs national HSE.
46. Environmental safeguard activities completed by GE include the following and are detailed in the following sections:
- GE Site EHS Manager and supervisors perform daily site inspections. They conduct regular inductions to their personnel to sensitize them to EHS risks and housekeeping.

- Toolbox talks are conducted.
- All new workers were trained to overall Project EHS rules and specifically to Covid-19 measures.
- Method Statements and Risk Analysis have been conducted prior to each planned activity.
- Regular EHS controls have been conducted on contractor activities by PIC HSE.

3.2. Site Audits

47. Site audit was conducted by international EHS manager of PIC Tractebel, Jean-Luc Pigeon in February 2023.
48. During reporting period regular site audits were conducted by national EHS specialist of PIC Tractebel who works at the project site full time.
49. Environmental Specialist of PIU/EPP conducted site visits in May and June 2023. Site visits and audits is shown in Table 5.

Table 5. Site visits and audits

Organization	Purpose	Performed by	Date	Audit Findings (in short)
PIC Tractebel	Regular site audit	Jean-Luc Pigeon	February, 2023	Preparation for asbestos removal/clearance works in good level.
PIU EPP	Participation in Project Review Mission and Safeguard Review Mission of ADB	EPP: ES Mrs.Jyldyz Moldosanova	16 May, 2023	Asbestos waste in bags were left by CC GE in open air near designated containers at storage area. Work personnel worked using PPE.
PIU EPP	Quarterly monitoring of safeguard measures implementation. Participation in Project Review Mission of ADB	EPP: ES Mrs.Jyldyz Moldosanova	20-21 June, 2023	Waste management was fully implemented. Bags with asbestos waste were put into designated containers. HSE measures are being implemented.

50. Detail information of audit findings of the Environmental Specialist of PIU is

given below.

51. Package 1 Phase 2, CC ZMEC

Rehabilitation work is carried out strictly on the allotted area of the Cascade of Toktogul HPP according to design and schedule of work. Health and safety measures were fully implemented by CC ZMEC of Package 1. Each worker was provided with appropriate PPE. No accident was occurred during reporting period. Meetings with HSE specialist of CC ZMEC were held with discussion of health, safety and environment measures implementation at the field office of CC ZMEC.

52. Work areas were fenced and clean (Figure 2). Morning exercise and briefing before starting work on the requirements of safety and ecology of construction and installation personnel is conducting on a daily basis.



Figure 2. Work areas of CC ZMEC were fenced and clean (Status in May 2023)



Figure 3. Work staff of CC ZMEC after briefing with Safety poster in work area (Status in June 2023)

53. Appropriate informative signs were placed at work areas. It should be noted the informative signs related to HSE issues at site of the contractor ZMEC are enough and very informative (Figure 4). Work staff is fully equipped with PPE (Figure 3). Construction and installation works were carried out in compliance with HSE requirements.



Figure 4. HSE informative signs are placed in all work areas of CC ZMEC (Status in June 2023)

54. Construction waste was transported to the designated storage area No.3 of Cascade of Toktogul HPP. Domestic waste was removed to official landfill according to an agreement. The used abrasive was packed in special bags and placed in a designated place by the Customer on the dam crest and further removed to the certified landfill in accordance with agreement (Figure 5).

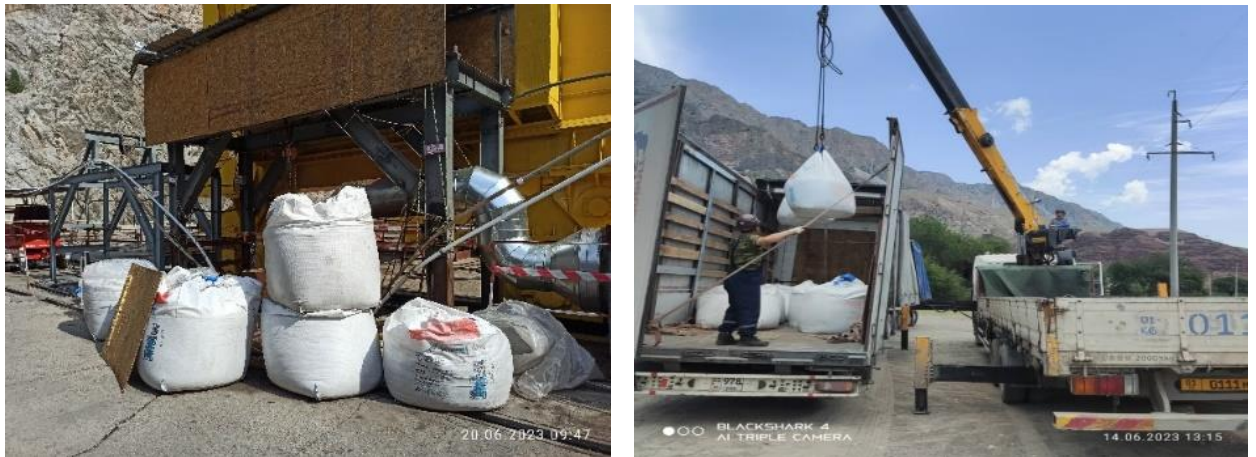


Figure 5. Removing of abrasive waste from site of CC ZMEC (Status in June 2023)

55. Chemicals/painting were stored with secondary protection at site (Figure 6). Access to firefighting equipment was easily available to the workers working in the area (Figure 7). Portable toilets are available for workers working in the area (Figure 8).



Figure 6. Chemicals/painting were stored with secondary protection at site of CC ZMEC (Status in May and June 2023)



Figure 7. Firefighting equipment of CC ZMEC at site (Status in June 2023)



Figure 8. Portable toilets are available for workers working in the area of CC ZMEC (Status in June 2023)

56. Workers are fully equipped with appropriate PPE (Figure 9).



Figure 9. Work staff of CC ZMEC implementing works wearing PPE (Status in June 2023)

57. Package 2 Phase 2, CC GE

During reporting period CC GE carried out construction works which were checked for health, safety and environment requirements compliance.

58. Rehabilitation work is carried out strictly on the allotted area of the Toktogul HPP in machine hall and storage areas which are fenced and has paramilitary guard. Construction works were conducting in compliance with health and safety measures by CC GE and its sub-contractors (Figure 17). Appropriate PPEs were provided to work staff. No accident was occurred during reporting period. Meetings with HSE specialists of CC GE were held with discussion of health, safety and environment measures implementation at the field office of CC GE.

59. First aid kits are available for workers of CC GE working at project areas (Figure 10).



Figure 10. First aid kits are available for workers of CC GE at site (Status in May 2023)

60. HSE informative signs were placed in all project areas of CC GE.



Figure 11. HSE informative signs of CC GE at site areas (Status in June 2023)

61. Work areas of CC GE in machine hall of Toktogul HPP was fenced (Figure 12). Working personnel worked with full PPE. Emergency eye wash stations are available to the workers working in the area (Figure 13, Figure 16).

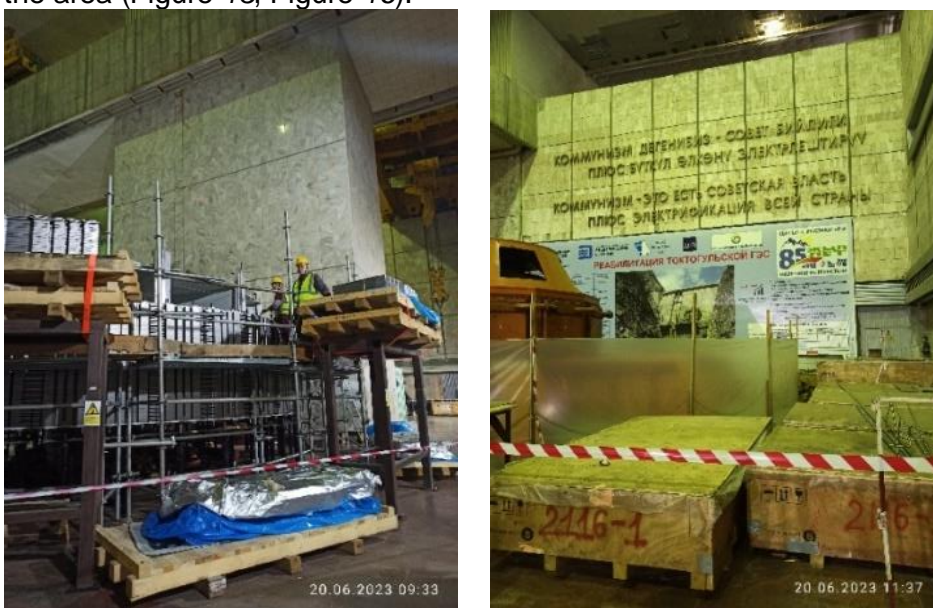


Figure 12. Fenced work areas of CC GE in machine hall of Toktogul HPP (Status in June 2023)



Figure 13. Emergency eye wash stations are available to the workers of CC GE at site (Status in June 2023)

62. Dedicated fire extinguishers have been installed. Argon cylinders, empty cylinders have been properly stored with informative boards (Figure 14, Figure 15).



Figure 14. Fire extinguishers installed at CC GE storage site (Status in June 2023)



Figure 15. Storage of empty cylinders of CC GE at site (Status in June 2023)

63. Work staff of CC GE is fully equipped with PPE (Figure 16).



Figure 16. Work staff of CC GE working in compliance with HSE requirements, wearing PPE (Status in May 2023)



Figure 17. Work area of CC GE in machine hall of Toktogul HPP (Status in May 2023)

64. Storage area of asbestos containing waste was checked.

Asbestos containing waste was collected in double bags/asbestos marked bags at asbestos cleaning area of Toktogul HPP, and transported to the designated storage area of Toktogul HPP. There were designated containers for asbestos containing bags at the storage area. But in 16 May of 2023, bags were left next to the containers in open air (Figure 18.).



Before

Figure 18. Openly stores asbestos waste bags at Toktogul HPP storage area (Status in 16 May 2023).



After

Figure 19. Asbestos bags were transferred to designated containers (Status in May 2023)

65. Immediately the openly stored asbestos bags were transferred to containers and kept under lock and key by the Cascade of THPPs and CC GE responsible staff (After

66. Figure 19).

67. Broken area in machine hall section of Toktogul HPP was a tripping hazard. It is a site area of CC GE. Immediately that broken area was repaired and fixed by a team of CC GE under HSE manager supervision of CC GE (Figure 21).



Before

Figure 20. Broken floor area in the Machine Hall of Toktogul HPP (Status in May 2023)



After

Figure 21. Repaired floor area in Machine hall of Toktogul HPP (Status in May 2023)

68. Dismantled equipment is stored at designated storage area of Toktogul HPP. It is a partially asphalted, fenced, secured area and no admittance except business. Site visits did not reveal any oil spills under dismantled equipment (Figure 22).



Figure 22. Storage area of dismantled equipment of Toktogul HPP (Status in June 2023)

69. Accommodation place of TajikSGEM personnel, a contractor of CC GE was checked as well. TajikSGEM personnel lives in a dedicated accommodation place. Two old buildings on the Toktogul HPP storage territory have been refurbished with the canteen. The camp has all the conditions for living (Figure 23).



Figure 23. Camp of the TajikSGEM, a contractor of CC GE (Status in June 2023)

70. During Project Review and Safeguard Review Missions of ADB the meeting was held in the conference room in Toktogul HPP building with representatives of ADB, EBD, EPP/PIU, Cascade of Toktogul HPPs, CC GE, CC ZMEC, PIC Tractebel on 16 May, 2023. The implementation of contract agreements with construction contractors GE and ZMEC, of whole project activities; problems and solutions; environment, health and safety compliance, recommendations to improve safeguard compliance etc. were discussed (Figure 24).



Figure 24. Meeting at Toktogul HPP during Project Review Mission of ADB (Status in May 2023)

3.3. Issues tracking (Based on Non-Conformance Notices and HSE events)

Package 1 – SM-ZMEC

71. During the reporting period, one non-conformity report (NCR) was issued regarding the air pollution due to the sandblasting works of Unit 3 penstock on elevation 707. Sandblasting works were implemented by CC SM ZMEC (Figure 25).
72. Contractor of Package 2, GE has sent an official email with compliance to the Employer dated 23.06.2023. Due to sandblasting, which led to the dust pollution of the elevations 707m, 710m and 713m it complicated the work of TajikSGEM employees and caused to stop of works on above-mentioned elevations.



Figure 25. Polluted air on elevation 707 m during sandblasting works of CC ZMEC (Status in June 2023)

73. The non-conformance was eliminated, and there were no open issues requiring corrective actions. CC ZMEC took appropriate measures on that issue: cleaned the polluted areas and used a plastic film while sandblasting works and installed additional

ventilation system (Figure 33).

74. Weekly reports established by CC GE include the following indicators in terms of HSE events for the 6-months period:

Table 6. GE EHS indicators

Indicators	Nb from week 3 to week 24
Fatality (Level A)	0
Significant / Major Injury (Level B)	0
Lost Time Incident	0
Near Miss	3
Medical Treatment Case (MTC)	0
First aid Case (FAC) – Level D	0
Occupational illness/ disease	0
Health and Hygiene Inspection	120
Environmental Incident	0
Potential Severe Event	0
Fire/ explosion	0
Stop Work / Weather	0
Stop Work / EHS	46
Warning letter	6
COVID19 Exposure (officially announced by KG Government)	281
COVID cases	34
First Aid Case for Customer personnel	0

Source: GE Weekly Reports Week 2023-3 and Week 2023-24

Level A: Fatality

Level B: Permanently disabling work-related injury or hospitalization

Level C: OSHA or Locally recordable injury/illness or Work-related medical response event that requires assistance from external emergency responders

Level D: First-Aid Case

75. A summary of Stop works is as follows: At level 726 for turbine shaft preparation works it has been observed that the area without fire extinguisher, without fire watcher, without fire blankets (welding partitions), the work has been stopped to correct ; personnel has been without PFAS; personnel used uninspected hammer drill, with no hearing protection; work in a dark space without lighting; scaffolding erection in the draft tube was performed without properly qualified rope access personnel/no emergency rescue team and equipment available; hot works stopped due to no hot work permit has been issued etc.
76. EHS routine inspections were performed by PIC HSE national specialist with CC GE HSE specialists during the reporting period. Minor issues related to wastes and site property were observed. PPE were worn by workers, safety signs were present, as well as safety materials.
77. Near Miss accidents during reporting period, there were three incidents: two considered as near miss and one level D (First Aid case). Details are given below:
- On 2 February 2023 around 04:00 am during the planned outage to inspect the control systems, it has been observed that there is a faulty signal coming from brake limit switches, which was blocking the start-up of the Unit 4. As the CC GE

commissioning team and the Cascade of Toktogul HPPs' supervisors were at the level 726m on control panels, the Cascade of Toktogul HPPs' supervisors requested CC GE supervisor to accompany them to inspect the brake limit switches and brake pads at level 718m in generator pit under rotor as the unit was on standby. There was a noise coming during the stoppage of the Unit 4. Personnel of CC GE and the Cascade of Toktogul HPPs went into the generator pit to inspect the limit switches. CC GE supervisor had not been applied LOTO before entering Unit 4 and had not been requested to apply GE PTW. The fault was corrected. The specialist of the Cascade of Toktogul HPPs requested the start of Unit 4 from Employer's control room to check the brake pads to understand the source of the noise. The CC GE and the Employer supervisors had been on standing on the generator pit entrance doors to identify the source of noise if it's related to brake pads. As the noise source was not identified, the team closed the doors and left the area to level 726m control panels.

- On 4 May 2023 – potential asbestos remnants on the floor at around 1:25pm CC GE site personnel were making walkdown. During inspection of cooling water room have been identified asbestos remnants on the floor on the walkway on elevation 713m – (white material) asbestos plastering insulation debris.
- On 19 April 2023 - Level D (First Aid case) — superficial finger scratch Subcontractor Electrical BOP (Balance of Plant) team was working in excitation room installing excitation cubicles (weight ~300 kg). While installing the cubicle, one of the employees wanted to push the cubicle for 1-2 cm to fine adjust its place. Injured person (IP) was pushing cubicle with his back. IP fingers were under the cubicle. Coworker pushed the cubicle from the side at the same time. Fingers were pinched between cubicle and steel frame. Due to strong movement of cubicle, IP got superficial injury of his fingers – intermediate phalanges of his right hand. ISOS (CC GE's contractor) doctor performed first aid. The worker was sent to the hospital by site ambulance. Xray was performed. According to a hospital doctor conclusion and X-ray result - no serious injury was identified. IP came back to work in the same day.

3.4. Trends

- 78. No statistics proposed by CC SM-ZMEC.
- 79. During the reporting period there were 46 stop works related to EHS issues by CC GE. Since February 2023, preparatory work was begun and active construction work already has been begun since March 2023.

3.5. Unanticipated Environmental Impacts or Risks

- 80. During reporting period, all COVID-19 restrictions were removed.
- 81. Required protective masks, antiseptic, body temperature measuring instruments, informative boards are still available at site by both construction contractors and used by the work staff accordingly. A total of 34 COVID-19 positive cases were detected since January 2023 by CC GE. Package 1 Contractor ZMEC did not have any Covid-19 cases during the reporting period.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1. Overview of Monitoring Conducted during Current Period

- 82. According to IEE/EMP, it was and it is not planned to measure instrumentally parameters

of air, water or noise. But CC GE conducted the instrumental air analysis for asbestos content during asbestos cleaning works at Toktogul HPP (please see Section 4.2). Results of the air analysis were within MAC.

83. IEE/EMP states workers are obliged to wear ear protectors where 85 dB(A) are exceeded (referring to World Bank/IFC General EHS guidelines, 2007). Both contractors provided ear protectors to their work personnel during noise generating activities such as sandblasting works, grinding works and conducted the instrumental noise measurement (please see Section 0).
84. All works took place within the fenced and guarded area of Toktogul HPP or within existing buildings. All access roads already existed and are paved. Thus, terrestrial flora and fauna are not affected by the rehabilitation works.
85. Construction works have to comply with national HSE regulations, ADB and IFC standards. All HSE rules, requirements, and regulations were compiled during reporting period.
86. EHS reports providing:

Package 1 – CC SM-ZMEC

87. EHS monthly reports were delivered by CC ZMEC for the periods of January, February, March, April, May, June 2023.

Package 2 – GE

88. EHS monthly reports were delivered by CC GE for the periods of January, February, March, April, May, June 2023.
89. Weekly reports were delivered presenting HSE statistics and key EHS highlights for the reporting period.

4.2. Summary of Monitoring Outcomes

90. Results of instrumental monitoring of air quality for asbestos content, implemented by asbestos cleaning contractor of CC GE, showed absence of asbestos, i.e. within MAC (please see Section 0).
91. According to the instrumental measurement of noise level at working areas of CC GE, excessive noise was only at level 718m. (89-90 dB) and at level 710m (90 dB) (please see Section 0).

4.3. Material Resources Use

92. Monitoring of material resources use such as electricity and water is complex due to the lack of separate counters for Contractors.
93. It should be noted that a closed cycle sandblasting system was installed by Package 2 Contractor GE to prevent excessive water consumption and to reduce waste water generation. System is used in airtight tent with air suction system equipped with air filters to provide clean air.

4.4. Chemicals

Package 1 – CC SM-ZMEC

94. Storage of chemicals, mainly paintings and solvents were equipped with secondary containments (Figure 26). Anti-spill material, sand, was available at storage area.



Figure 26. Secondary containment of chemicals at storage area of CC ZMEC (Status in January 2023)

95. Cars are serviced at specialized service stations and refueled at local gas stations by agreement with the Contractors.
96. Used oil is poured over in iron trays and then transferred in a 'prepared area' before transfer to the Employer.
97. No chemical spills were observed.

Package 2 – CC GE

98. Chemicals started being stored from October 2020.
99. A list of chemicals for generator was established in October 2020 and SDS were collected in English and placed in the stored areas. There is a container with chemicals fully equipped in the warehouse.
100. In the Toktogul HPP, chemicals are stored in locked cabinets, the keys of which are kept by the person in charge. There is also inventory list of chemicals and SDSs for each.
101. No chemical spills were reported as of the date of the report (Cumulated environmental incidents = 0). Spills kits are present.





Figure 27. Chemical storage area of CC GE at site (Status in February 2023)

102. The PIC Tractebel national EHS routine inspection conducted in this reporting period led to the following observations:

- Chemical management: the chemical register shows the different hazards of each chemical.
- The dashboards at the chemical's storages display the storage compatibility matrix.
- Chemicals are stored in closed cabinets on retentions with inventory lists and SDSs for each chemical.
- All oil storages at site has secondary containment.

4.5. Asbestos Management

Package 2 – GE

103. Certified asbestos removal company Vermeulen (Netherlands) has been contracted by CC GE to perform asbestos clearance works for Unit 2 dismantling works in this reporting period. Anthesis was the 3rd party expert, on behalf of CC GE; monitoring and controlling all asbestos works including Method Statements and Risk Assessments. Anthesis directly reported to GE site management and for all works Final Approval was on CC GE.

104. Vermeulen was re-mobilized in February 2023 with completion of asbestos cleaning works in June 2023. Totally 25 personnel were assigned for asbestos works in 2023.

105. CC GE asbestos management responsibility by parties is shown below.

Selection of asbestos management responsibility by parties:

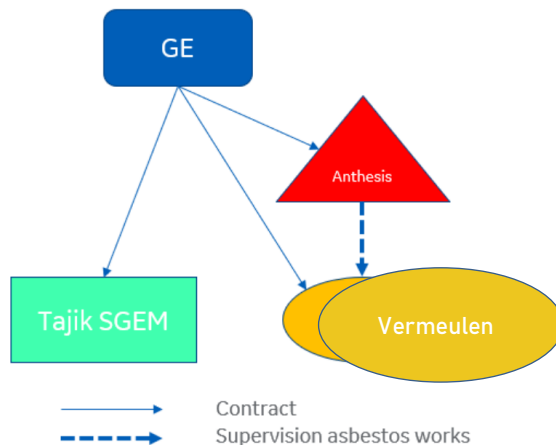


Figure 28. Asbestos management responsibilities by parties of CC GE
 (Status in February-June 2023)

106. According to the Asbestos Containing Material Management Plan and Lead Management Plan rev6., during mobilization stage, it was planned to perform variety asbestos wipe/ bulk/ air sampling during the asbestos removal works, cleaning activities, screen-off activities. Vermeulen performed regular air measurements in the Toktogul HPP to identify if there was no air contamination. The asbestos removal company performed asbestos sampling according to its internal procedures and laboratory standards, therefore all reports were submitted to the GE for follow-up process. Vermeulen had the mobile laboratory (HPR Expertise) on the site and lab technician, who carried out sampling and analyzing. Air sample analysis was done in accordance with ISO 14966:2019 and ISO 16000-27:2014.
107. Total 136 air samples were taken and analyzed for asbestos content, out of them: 9 failed, 8 overloaded and 119 passed. The failed results were received due to the concrete breakage works. As the instrumental results showed, air samples were not contaminated with asbestos. All results of air analysis were within the MAC.
108. During the reporting period Vermeulen scope was as below:
- Upper Bracket/Lower bracket asbestos cleaning for dismantling;
 - Rotor/Stator asbestos cleaning for dismantling;
 - Asbestos cleaning of the generator pit;
 - Asbestos cleaning of the Unit 2 cables including the cable trenches and shafts.
109. Work method as was described in the ACMMP was followed-up. Containment (encapsulation) of the work area entirely by plastic sheets was necessary so that the asbestos fibers in the air were contained (Figure 29). The workforce used full asbestos PPE and other protection measures. Vermeulen provided training only for their personnel.

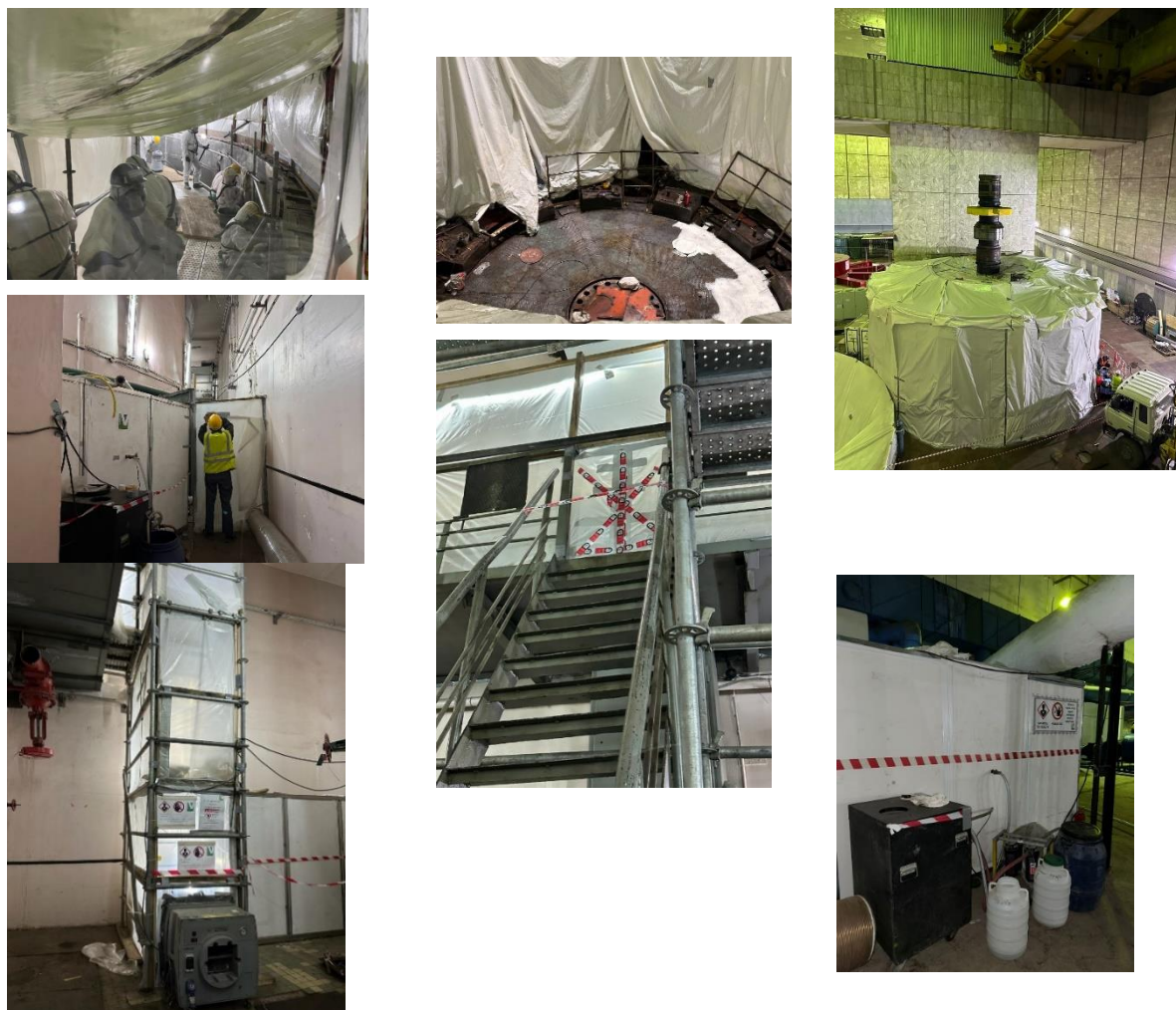


Figure 29. Confinement / isolation of existing asbestos areas and organization of work area of CC GE (Status in April 2023).

110. Areas were split in 3 categories with different strategies for cost and schedule optimization: 1) confinement / isolation of existing asbestos to allow adjacent work (performed by asbestos removal company); 2) work in asbestos environment under full asbestos PPE and necessary preparations to not create a further spread (under Asbestos Consultant control); 3) decontamination by Vermeulen.

4.6. Waste Management

Package 1 – SM-ZMEC

111. Construction and household waste were collected in specially designated areas and disposed at the official landfill of Kara-Kul in accordance with an agreement with the Cascade of Toktogul HPPs. The dismantled equipment and spare parts, as well as wood waste and waste collected during diving operations, used abrasive slag, armature, pieces of iron, logs were temporarily stored on the crest until they are removed by special equipment in the presence of representatives of the Employer and construction contractor.
112. Drained used oil, as well as construction debris, is collected in specially designed areas and transported to the designated storage area at site 16 of Toktogul HPP, where specially

prepared oil storage is located. It is a covered, well-ventilated area with a concrete foundation.

113. During the implementation of the project, domestic, construction, non-toxic and toxic industrial wastes (anti-corrosion paint, old oil) are generated.

- Scrap metal is handed over to Cascade of Toktogul HPPs after complete dismantling of the gantry crane equipment;
- Non-toxic construction waste is placed in a warehouse specially designated by the Cascade of Toktogul HPPs (Base N3) for further sorting for reuse;
- Disposed amount of empty painting cans were 1849 kg. Empty paint cans were removed on 11 May 2023 in accordance with an Agreement between CC SMP&ZMEC and specialized licensed local company “Eco Complex” (Figure 30) (Annex 3).
- Domestic waste was removed from the site and disposed of in accordance with agreement between SM Powertech and Cascade of Toktogul HPP for the removal of solid waste.
- Abrasive waste - after full use was disposed of in a landfill according to the agreement. During the reporting period, CC ZMEC disposed abrasive waste **in the amount of 192 tons** (Figure 31).



Figure 30. The empty paint cans of CC ZMEC were transferred for disposal (Status in May 2023)



Figure 31. Temporary storage of abrasive waste at site of CC ZMEC and transportation for disposal (status in May-June 2023).

Package 2 - CC GE

- 114. Domestic wastes were segregated, collected in waste bins and transported to the landfill according to the Agreement with the Employer.
- 115. Hazardous waste started being reported in November 2020. They were segregated. Used oil was collected in drums and stored in secondary containment. Wastewater was stored in 2 x 5 m3 tanks and suction truck has been contracted for wastewater disposal.
- 116. Medical waste was generated as such: 9,425 kg from January 2023. Medical waste is delivered to central city hospital for disposal according to KR legislation.
- 117. CC GE HSE management improved their waste management practice. All segregated waste is placed in proper bins, and used oils are collected in barrels and transferred to the Employer.
- Waste register: CC GE transmitted the waste register for the reporting period as follows:

Table 7: CC GE Waste register for the reporting period

Asbestos waste	7950/167	kg/EA
Domestic waste	16780	kg
Metal waste	13880	kg
Tyres wastes	20	kg
Contaminated PPE	2850	kg
Waste cables	3320	kg
Waste oil	950	kg
Wood	26180	kg
Paper	700	kg
Household	900	kg
Contaminated package	63	kg

- 118. Asbestos containing waste/dismantled parts of equipment/used PPE were put in proper waste bags and placed at the dedicated Customer storage area of Toktogul HPP. Asbestos storage is under the Customer responsibility. All waste bags with asbestos stored in the containers, which are sealed (Figure 32).





Figure 32. Collection of ACM waste bags and storage of asbestos waste at the designated storage area (Status in June 2023)

119. A letter was sent to EPP by the Department of Disease Prevention and State Sanitary-Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic (KR) on December 22, 2021, No.08/2-5-3360: “According to article 6 of the Law of KR No.89 dated 13.11.2001 “On industrial and consumer waste”, facilities for temporary storage of hazardous waste are determined at the territory of industrial entities, and stationary storage facilities, disposal of hazardous waste are at intended landfill. As there is no intended/special landfill for hazardous waste in the country at present, industrial waste is stored at the territory of industrial entities or it could be transported out of the country with regard to the rules of Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.” (**Annex 6**).
120. Based on this, ACM waste will be stored at the Employer storage area until the legal rules are updated. The Employer keeps this issue under control. Conditions of reuse of some contaminated material should also be studied, including safety measures.

4.7. Noise, dust, air quality

121. The nearest community is located at almost 4 km of the site. It is considered the neighboring communities cannot be affected by noise and dust. The construction contractors are obliged to take care that workers wear ear protectors where noise exceeds 85dBA. Ear protections are effectively worn in some situations, but noise is not planned to be monitored by IEE of the Project.

Package 1 – CC SM-ZMEC

122. A short-term effect on the atmospheric air is generated by the contractor's transport and lifting equipment (crane truck and manipulator), which is used to move people and during the delivery, unloading and assembly of equipment at the construction site. The engines work for a short time, at the time of movement and construction work.
123. To reduce of air pollution during the sandblasting works CC ZMEC installed additional ventilation system from penstock on elevation 707 m to the draft tube stop log maintenance gate room on elevation 732 m.



Figure 33. Additional ventilation system of CC ZMEC (Status in June 2023)

Package 2 – CC GE

124. During welding to prevent metal fumes and odor, air suction fans are in use by CC GE.
125. For sandblasting activities, specific respiratory system and ear plugs are used by the personnel, sandblasting equipment was selected according to international standards and local regulations regarding the noise level.
126. CC GE has a noise map for each elevation (Figure 34). They have inspection sheet on place; they measure level of noise every week.

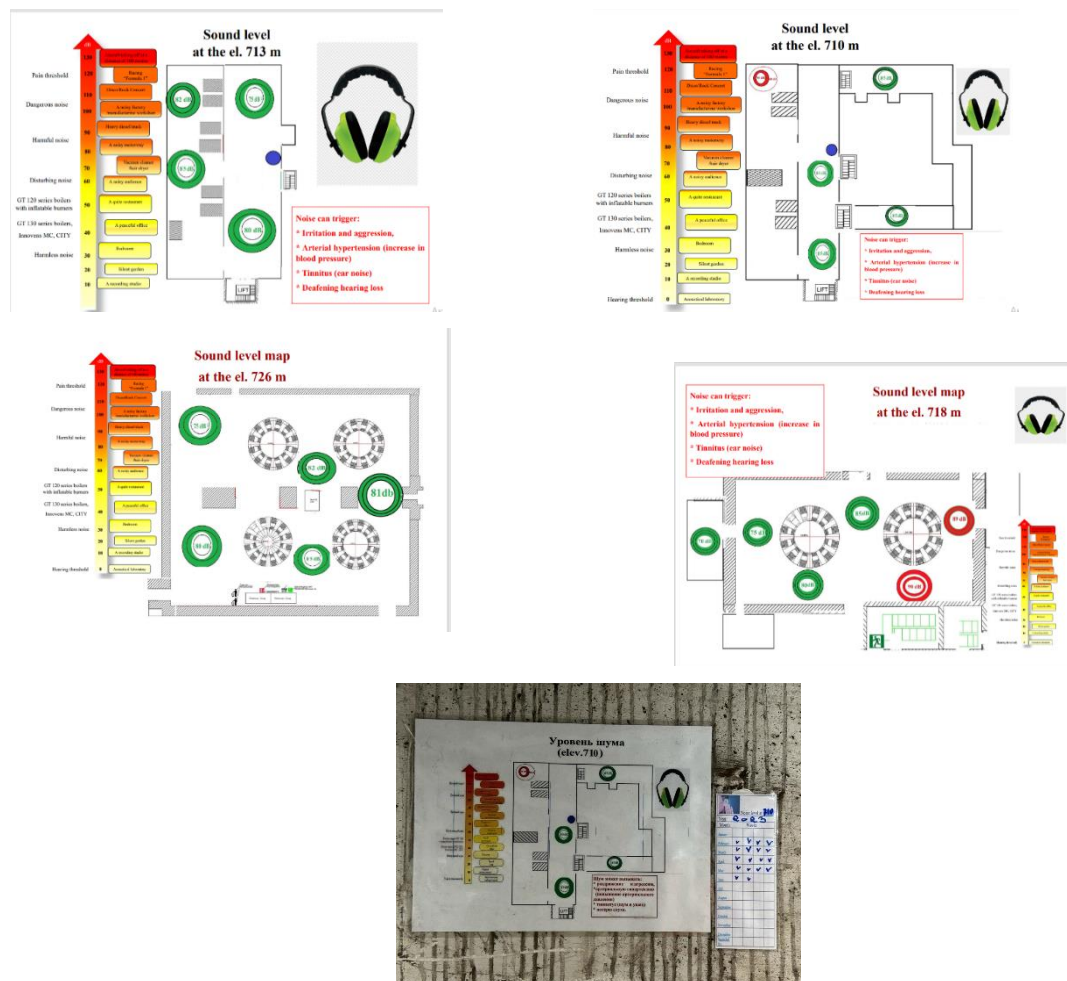


Figure 34. CC GE's noise maps for each elevation (Status in May 2023)

127. During the asbestos clearance works, the asbestos cleaning company “Vermeulen” (contracted company by CC GE) preformed different types of air sampling methods (wipe, air & adhesive). 136 air samples were taken and analyzed for asbestos content, out of them: 9 failed, 8 overloaded and 119 passed. The failed results were received due to the concrete breakage works. As the instrumental results showed, air samples were not contaminated with asbestos. All results of air analysis were within the MAC.

4.8. Health and Safety

4.8.1. Community Health and Safety

128. International SOS (Save our Ship) (ISOS) doctor was mobilized on site since middle of January 2023, a contractor of CC GE. Preparation works in terms of medical structure was done. HIV/STD awareness program restarted. First participants of refresher courses were the Employer employees, Contractor staff and local community. During this period, 11 lectures were held by ISOS and 409 people attended and have received all necessary information about STI, STD AND HIV/AIDS safety precautions. Informative materials have been distributed (Figure 35, Table 8).
129. The general first aid training for students and teacher in school were performed as additional preventive program to educate local population in terms of provision of first aid treatment in case of domestic or daily incidents. This possibility was identified to

improve training level of local population and lectures were made with practical exercises directly at school.

Table 8. A list of HIV/AIDS Awareness training sessions held

№	Awareness training sessions for:	Date	Number of attendees
1	Local community	10.02.2023	26
		10.02.2023	15
		10.02.2023	34
		10.02.2023	24
2	Employer	23.01.2023	16
		26.01.2023	23
3	Contractor/Subsontractors	10.02.2023	16
4	Local community	10.03.2023	91
		23.03.2023	36
		12.04.2023	44
		11.05.2023	67
		13.06.2023	17
	Total		409



Figure 35. HIV, first aid training sessions for the local community (Status in February-June 2023).

4.8.2. Worker Health and Safety

Package 1 – CC SM-ZMEC

130. During reporting period, no changes were made to the HSE Plan. Full PPE have been provided to all personnel.
131. The state of emergency for coronavirus infection in the Kyrgyz Republic is canceled from November 1, 2022. The corresponding decision was signed by the Chairman of the Cabinet of Ministers of the Kyrgyz Republic Akylbek Zhaparov.
132. HSE briefing is carried out before starting work and throughout the entire project.
133. The working personnel is briefed on a daily basis on safety measures with issuance of a work permit after the briefing
134. Working hours: day shift from 8 am to 6 pm, night shift from 6 pm to 3 am. Sunday is a day off.
135. Workers have lunch at a local restaurant in Kara-Kul. No accommodation at site: Around ten expatriates live in a rented house in Karakul whereas workers were hired among the local population at Kara-Kul.
136. First aid kits are available at site area.



Figure 36 Morning exercise of the employees of CC ZMEC (status in February 2023).

Package 2 – CC GE:

137. Working area inside of Toktogul HPP demonstrated that all the safety requirements are met by the working personnel. The construction sites looked clean and well organized.
138. During the reporting period, 423 employees sought medical help for various reasons not related to workplace injuries and 1 employee with superficial finger scratch. More details were provided in Section 3.3. Log out/tag out (LOTO) system and procedure are well implemented.
139. In order to maintain the psycho-moral state of employees and relieve stress, the team conducts periodic yoga training together with the doctor and yoga instructor at the site after work (Figure 37).



Figure 37. Yoga for employees of CC GE on International Yoga Day (Status in June 2023).

4.9. Emergency Response

Package 1 – CC SM-ZMEC:

140. CC ZMEC did dive works at Toktogul HPP – debris removal. Dive team consisted of 5 divers and equally dedicated support personnel and trained rescue diver.
141. Information regarding emergency procedures is given in the method statement corresponding to the activity. Training was given before start of work. Also, refreshed knowledge of workers how to escape from penstock in case of fire (2 elevations for way-out).
142. Emergency planning: 2 muster points are identified at the tunnel and downstairs.

Package 2 – CC GE:

143. One week of June 2023 was declared the EHS week. CC GE HSE team conducted daily toolbox talks for employees on the different EHS topics.
144. No chemical spill has been reported.
145. Spill kits were present at site.
146. To prevent the fire risk, fire blankets and fire extinguishers were in place during welding activities conducted for crane refurbishment. In addition, all welding machines are periodically inspected and calibrated.
147. The emergency response plan was explained during EHS inductions. Last update of the emergency response plan during the reporting period was in January 2023. Updates of escape routes were incorporated.
148. There are 3 muster points and one alternative in case of flood.
149. During reporting period, CC GE conducted 5 Emergency drills (Figure 38).



Figure 38. Emergency drill of CC GE (status in May 2023)

4.10. Grievance Redress Mechanism

150. ADB's safeguard policies require that any persons, who may undergo under the adverse effects of the Project activities, must be informed in advance about possibilities of making complaints through Grievance Redress Mechanism (GRM), if the Project activity generates any negative impact on their health or create certain inconveniences for their livelihoods. GRM was developed within the scope for preparing the IEE and EMP. This GRM shall be maintained during the whole duration of the Project's implementation. It describes the mechanism how to redress the affected peoples' (AP) grievances in a timely and effective manner.
151. For successful implementation of Toktogul HPP Rehabilitation Phase 2 and 3 Projects funded by ADB, the Employer OJSC EPP issued the Order No.18 dated 28.01.2020 "For Grievance Redress Mechanism" for prompt consideration of grievance and appeals of citizens on the Projects, and according to legislation of the Kyrgyz Republic, ADB Policy Safeguards (2009) and the Policy ADB accountability mechanism (2012.). The Grievance Redress Group and Grievance Redress Mechanism were created.
152. GRM has been fully implemented and managed by PIU. GRM Log Books were arranged. Both Construction Contractors have GRM Log Books at field/offices at sites (Figure 39). Compliance Books in the field offices of the Construction Contractors are easily accessible (Status in June 2023)
153. From information transmitted by CC GE and CC ZMEC in their reports (including check at site for ZMEC), no complaint has been raised during reporting period, neither by workers nor by the population. GRM log books were filed up appropriately (Figure 39).

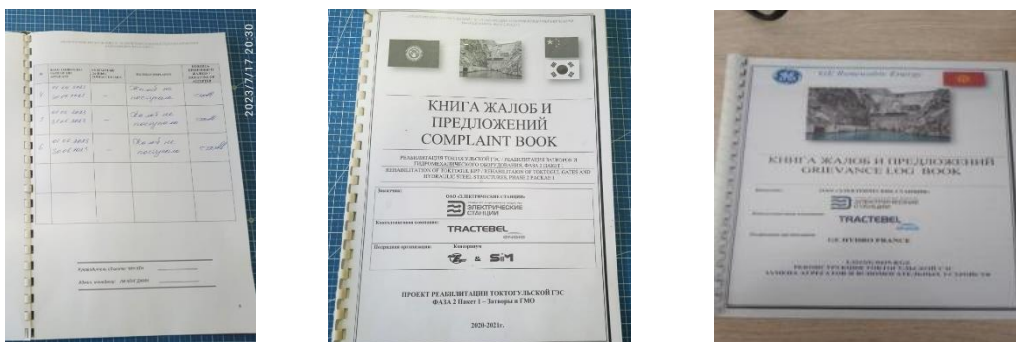


Figure 39. Compliance Books in the field offices of the Construction Contractors are easily accessible

(Status in June 2023)

4.11. Training

Package 1 – CC SM-ZMEC

154. On-site induction training was provided for all workers. HSE Specialists provided trainings and daily briefings.

Package 2 – CC GE

155. GE EHS training activities are reported in the below tables.

TRAINING GRAND TOTAL	
Total Attended	Total Man Hours
2540	7816

Tech. Training Attended Total	2222
--------------------------------------	------

New Hire Induction+ New Hire Refreshing+Visitor Attended Total	551
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Tech. Training Manhours Total	4138
--------------------------------------	------

New Hire Induction+ New Hire Refreshing+Visitor Attended Total	###
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HSE TRAINING STATISTICS				
Target	Jan/23	10.345		
0.005				
		Attended	Training Time	Man Hours
HSE TRAININGS				
NEW HIRE INDUCTION		480	8	3,840
VISITOR INDUCTION		71	1	71
MANUAL HANDLING		-	2	-
LIFE CRITICAL ACTIVITIES		0	1	-
WORKING AT HEIGHTS		479	4	1,916
CULTURAL DIVERSITY & GENERAL RULES		0	1	-
CONFINED SPACE		479	2	958
HEAT & SUN		0	1	-
HSE LEADERSHIP TIER III		0	8	-
TIER II HSE LEADERSHIP		0	8	-

HAND & POWER TOOLS	0	2	-
OTHER	1,264		1,264
TOTAL	2,222		4,138

December 2022		2023 Total		Since Project Start	
GE	200	GE	1,547	GE	1,747
Subcon	200	Subcon		Subcon	
Total	400	Total	1,547	Total	1,747

156. During the reporting period, Asbestos awareness training was conducted by PIC Tractebel and CC GE’s supervisor of asbestos works Anthesis for Toktogul HPP staff on 26 of June, 2023. This training included general international and national law frameworks, health and safety requirements for asbestos handling, storage and disposal, and asbestos related diseases (Figure 40).



Figure 40. Training on asbestos awareness for Toktogul HPP staff (Status in June 2023)

5. FUNCTIONING OF THE SSEMP

5.1. SSEMP Review

157. Construction Contractors have largely implemented the requirements set out in their SSEMPs. Their activities have increased progressively with all related HSE mitigations.
158. The implementation status of each mitigation is being assessed based on the information reported by each contractor and by the PIC specialists. Monthly reports also include the status of implementation of each mitigation.

Package 1 – CC SM-ZMEC

159. Construction Supervisor and HSE Specialist SM-ZMEC performed daily visual inspections of the environment and work areas.
160. The general manager is responsible for waste management and a complaints mechanism.
161. The following points were confirmed:
- Two specialists are present within the HSE team and one master on the shift, who responsible for EHS issues;
 - Weekly EHS meetings are held;
 - HSE dashboards are present;

- Method statements frame high risk activities;
- No HSE incident, non-compliance, nor near miss have been emitted since the beginning of the works;
- Permits to work are prepared and signed;
- EHS inductions are completed (register available).
- Daily EHS toolbox talks are conducted;
- Only one confined space is identified: the penstock of Unit-3;
- Sand is available in the working areas to be used as spill kit;
- Lone work is strictly forbidden;
- Equipment maintenance: 3 vehicles in good condition are used by CC SM-ZMEC;
- Monthly reports on SSEMP implementation are provided to PIU and PIC.

Package 2 – CC GE

162. The HSE team is staffed with a site lead manager and 2 supervisors for CC GE, and 2 HSE specialists from the subcontractors.
163. A doctor is on site with an ambulance and a defibrillator (Since October 2020). Anti-COVID equipment is still largely available at site.
164. The Site HSE Manager conducted site inspections. He regularly gave induction briefings to his staff.
165. The indicators for trainings, inspections, toolbox talks and other controls are presented in the Table 9 for the reporting period.

Table 9: GE Indicators: EHS actions

Indicators	Nb from week 3 to week 24
Safety Rewards	0
Training Hours (Specific)	0
EHS Inspections	127
Self-Assessment Compliance	2
Emergency Drill	5
Toolbox Talks	132
Alcohol & Drug Scan	2238

Source: GE Weekly Reports Week 2023-3 and Week 24

166. PPR (method statement) and risk analysis are carried out prior to each planned activity.
167. Regular HSE monitoring is carried out in relation to the Contractors' activities.
168. The following points were confirmed:
 - Weekly EHS meetings are held;
 - Permits to Work identifying clearly EHS risks and impact are used and the Lockout-Tagout (LOTO) process has been implemented;
 - PPE: Generic and specific PPE are used;
 - Spill management: Spill kits are available. No leaking equipment was observed. Containment is present for hazardous liquid materials;

- Hazardous activities concern hot works, work at height, scaffolds, electrical works, lifting operations, confined spaces (the Draft tube and penstock), portable power tools, asbestos, Lead, diving;
 - Lone work is strictly forbidden. No ATEX areas are identified at the site. No excavations are conducted;
 - Equipment maintenance: 6 cars were bought by CC GE and are weekly controlled;
 - Monthly reports on SSEMP implementation are provided to PIU and PIC.
169. During inspections, the following documentation was available at site for consultation:
- HSE non compliances, incidents, investigation reports and implemented preventive and corrective actions (GENSUITE register);
 - Workers (including subcontractors);
 - Chemicals register and SDSs,
 - Waste register,
 - Training matrix listing all trainings and HSE inductions (GENSUITE tool and EXCEL file, attendance forms);
 - Internal EHS inspections and audits;
 - Register of inspections of all engines (Excel file);
 - Log book of grievances from workers and neighboring populations;
 - List of first aiders;
 - Toolbox talks register.
170. CCGE conducts full quarterly audits of each contractor on six general EHS topics (Work Type Based Questions, Safety Culture, EHS Training, Audit Findings, EHS Incidents, Subcontractor Management). Results of the last audits were regularly communicated to PIC and are as follows for key subcontractors:
- March 2023: Score of 78.4%, June 2023: Score of 84%.
171. For the reporting period two internal audits were conducted by CC GE in March and June 2023 and led to the following observations:
- Chemicals Management Good storage conditions in powerhouse and warehouse: cabinets & containers fully equipped; with secondary containment, all chemicals properly labelled, segregation matrix, air conditioning with temperature follow-up, protection from rainwater, etc).
 - Cable management, lifelines, safety signs, EHS boards containing all necessary information, also good improvement in the dropping objects prevention.
172. The improvement opportunities identified by CC GE are the following ones: HRO confined spaces, scaffoldings, risk assessment, emergency lighting, and some emergency response equipment are missing in the subcontractor camp & GE warehouse.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1. Good Practice

173. Asbestos cleaning work performed by CC GE's contractor Vermeulen (Netherlands) is a good practice in Toktogul HPP Rehabilitation Project. Such kind of work has been done second time in Toktogul HPP at international level in compliance with international rules and regulations. Asbestos supervision was performed by Anthesis (third party) – authorized supervision company of CC GE.
174. Chemical management, warehouse and storage by CC GE were at good level.

6.2. Opportunities for Improvement

175. Personal Protective Equipment by each worker must be under control.
176. Continual improvement of the HSE performance can be enhanced by the construction contractors.
177. Improvement of sandblasting and painting works process in the penstocks Unit-3 to avoid air pollutions and smell on elevations 707m, 710m and 713 m.
178. Improvement of works at height by using a full set of harnesses by CC ZMEC.
179. Improvement of domestic waste collection on the Dam crest by CC ZMEC.
180. Measure noise level on working areas by CC SM-ZMEC.

7. SUMMARY AND RECOMMENDATIONS

181. The site activities at Toktogul HPP were implemented by both contractors with the mitigations on which they committed in their SSEMPs and Health and Safety Plans. These mitigations were closely monitored by PIU and PIC Consultants.
182. 3 near-miss EHS accidents happened at site during reporting period.
183. Recommendations are provided as a corrective action plan in Table 10.

Table 10. Corrective action plan

№	Issues	Responsible company	Implementation due date	Comments
1	To improve housekeeping in warehouse on the Dam crest	CC SM-ZMEC	From July 2023	
2	Appropriate sort and organize a chemical/fuel and gas/oxygen cylinders according to the hazard matrix.	CC SM-ZMEC	From July 2023	
3	All locations of chemical storages (including fuel/diesel) and loading / unloading areas are identified, and storage conditions are in line with the specificities of each chemical to prevent spills, fires or explosions.	CC SM-ZMEC	From July 2023	
4	Instrumental measurement of noise level on working areas	CC SM-ZMEC	From July 2023	
5	Improvement of sandblasting and painting works process in the penstocks to avoid air pollutions and smell.	CC SM-ZMEC	During appropriate works	
	The inspection registers with related observed non- conformities and corrective actions.	CC SM-ZMEC	From July 2023	
6	The chemicals register, the respect of compatibility storage conditions for hazardous materials, the presence of retentions and information on hazards at each storage.	CC SM-ZMEC	From July 2023	
7	Lifting support. Supports used for equipment were not compliant.	CC GE	From July 2023	
8	Confined Space Rescue plan not present at the workplace & too generic	Both CC	From July 2023	
9	Electrical cabinet/boxes and portable power distribution carts are protected and not damaged	Both CC	From July 2023	
10	Scaffoldings condition improved but is still not reaching the expectations of EHS requirements and generating falling risk.	Both CC	From July 2023	
11	Site does not have any emergency lighting. In case of electrical shut-down, no lighting will be present.	Both CC	From July 2023	
12	Complete a training matrix for all the staff contracted and subcontracted for all trainings. Monitor, check and timely renew the certificates of employees of contractor and subcontractors.	Both CC	From July 2023	

ANNEXES

Annex 1: Approval of the SAEPF on IEE developed for Phase 2 Project

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ОКМӨТҮНӨ КАРАШТУУ КУРЧАП ТУРГАН ЧӨЙРӨНҮ КОРГОО ЖАНА ТОКОЙ ЧАРБАСЫ МАМЛЕКЕТТИК АГЕНТТИГИ		ГОСУДАРСТВЕННОЕ АГЕНТСТВО ОХРАНЫ ОКРУЖАЮЩЕЙ СРЕДЫ И ЛЕСНОГО ХОЗЯЙСТВА ПРИ ПРАВИТЕЛЬСТВЕ КЫРГЫЗСКОЙ РЕСПУБЛИКИ
720001, Бишкек ш. Токтогул көч. 228 тел. (996-312) 352727, факс: 353102, 353094 e-mail: nature_kg@mail.ru, eekg@aknet.kg, www.nature.kg Барыштын кайы КРБ, ЖИН: 02001200610051 у/к: 129052238181004, БИК: 129052, Банк: Бишкек Филиалы ААК «РСК-Банк» ОКПО: 23994204 0253101 2		720001, г. Бишкек, ул. Токтогула, 228 тел. (996-312) 352727, факс: 353102, 353094 e-mail: nature_kg@mail.ru, eekg@aknet.kg, www.nature.kg Первомайский РОК, ИНН: 02001200610051 р/с: 129052238181004, БИК: 129052 Банк: Бишкекский Филиал ОАО «РСК-Банк» ОКПО: 23994204 0253101 2

95.92.2017-ж. № 04-01-28/428

Утверждаю
заместитель директора
Государственного агентства
охраны окружающей среды
и лесного хозяйства
при Правительстве КР
_____ А.А. Рустамов
« 28 » сентября 2014 г.



**ЗАКЛЮЧЕНИЕ
ГОСУДАРСТВЕННОЙ ЭКОЛОГИЧЕСКОЙ ЭКСПЕРТИЗЫ**
к Отчету «Предварительная Экологическая Оценка (ПЭО)
Реабилитация Токтогульской ГЭС, Фаза 2» Проекта реабилитации
Энергетического Сектора. АБР-ТА-8434 (KGZ)

На рассмотрение в Государственное агентство охраны окружающей среды и лесного хозяйства при Правительстве Кыргызской Республики (далее – ГАООСЛХ) на государственную экологическую экспертизу представлен Отчет «Предварительная Экологическая Оценка (ПЭО) Реабилитация Токтогульской ГЭС, Фаза 2» Проекта реабилитации Энергетического Сектора. АБР-ТА-8434 (KGZ), разработанное компанией «Фиктнер» в 2014 году по заданию АБР и ОАО «Электрические станции».

Предварительная Экологическая Оценка (ПЭО) Реабилитация Токтогульской ГЭС, Фаза 2 Проекта реабилитации Энергетического Сектора АБР-ТА-8434 (KGZ) состоит из следующих основных разделов:

1. Краткий обзор.
2. Политические, Правовые и Административные Рамки.
3. Описание Проекта.
4. Описание Окружающей Среды.
5. Ожидаемые Экологические Последствия и Смягчающие Меры.
6. Анализ Альтернатив.
7. Раскрытие Информации и Консультации.
8. Механизм Рассмотрения Жалоб.
9. План Управления Окружающей Средой.

06108

10. Заключение и Рекомендации.

11. Приложения.

График реализации: Начало строительства будет начато во второй половине 2016 года и продлится до 2020/2021 гг.

Описание Проекта и Возможные Воздействия

В ходе работ на Токтогульской ГЭС предусмотрены следующие мероприятия:

- замена/реабилитация двух турбин;
- замена/реабилитация и модернизация двух генераторов;
- замена двух основных трансформаторов, связанных с двумя турбинами/генераторами;
- замена систем управления агрегатами для двух блоков;
- замена систем защиты блока, в том числе соответствующего трансформатора, шлейфа и ограждения для двух блоков;
- замена блока электрических и механических вспомогательных систем (распределительное устройство МВ и НН, система охлаждения, дренажные и водо-насосные системы и т.д.) для двух блоков (по блокам);
- реабилитация гидравлических стальных конструкций и гидромеханического оборудования на выпуске и ниже по течению;
- реабилитация гидравлических стальных сооружений и гидромеханического оборудования (напорных водоводов, донных выпускных отверстий, кранов и т.д.).

Проект реабилитации Токтогульской ГЭС является уникальным проектом и жизненно важным звеном по регулированию частоты напряжения системы трансмиссии на 500 кВ, соединяющий страны Центральной Азии. Мощности ГЭС были хорошо построены, но многие компоненты в данное время нуждается замене для поддержания генерирующей целостности. Следовательно, не существует никакой другой реальной альтернативы, кроме той, которая заключается в последовательной замене изношенного оборудования, и соответствующей поддержке строительных конструкций и установленного оборудования.

Согласно Оценке, следующие возможные воздействия на окружающую среду могут быть связаны с перечисленными реабилитационными мероприятиями:

- возможным отключением электроэнергии в ходе строительства;
- утилизацией старого масла (около 180 тонн, не содержащих ПХД, согласно проведенного анализа);
- вопросами соблюдения техники безопасности и здравоохранения во время строительства;
- увеличением движения грузовиков в период строительства через населенные пункты; транспортировкой тяжелого оборудования, строительных материалов и отходов;
- утилизацией железа / стали (почти 4 тысячи тонн), и других отходов;

- строительными отходами, образовавшихся в результате строительных работ, и некоторых бытовых отходов, образовавшихся в результате жизнедеятельности рабочих.

В рамках ПЭО предусмотрено выявление воздействий предлагаемого проекта на окружающую среду, и определение соответствующих превентивных действий и мер по их смягчению для предотвращения, минимизации или исключения ожидаемых неблагоприятных воздействий. Потенциальное экологическое воздействие от реализации проекта будет носить локальный и временный характер. Для смягчения воздействия на окружающую среду разработан План Управления Окружающей Средой (ПУОС), где предусмотрены сбор, хранение и реализация металлолома, а также повторное использование масла из оборудования, подлежащего замене и др.

В период подготовки Отчета проведены общественные консультации и встречи с общественностью г.Каракуль Джалал-Абадской области, где рассмотрены, в основном, вопросы по проблемам отходов и как с ним справиться. В итоге все поддержали необходимости реабилитационных мер, предусмотренные Проектом АБР по реабилитацию Токтогульской ГЭС.

Рассмотрев представленные материалы, Государственное агентство охраны окружающей среды и лесного хозяйства при Правительстве Кыргызской Республики выносит положительное заключения государственной экологической экспертизы к Отчету «Предварительная Экологическая Оценка (ПЭО) Реабилитация Токтогульской ГЭС, Фаза 2» Проекта реабилитации Энергетического Сектора. АБР-ТА-8434 (KGZ).

При этом необходимо:

- в период реализации проекта ОАО «Электрические станции» обеспечить своевременное представление отчетов в установленной форме по вопросам охраны окружающей среды и оплаты нормативных платежей за загрязнения окружающей среды в Джалал-Абадское территориальное управления ГАООСЛХ.

- перед началом работ необходимо уведомить Джалал-Абадское ТУ ГАООСЛХ.

В случае невыполнения заключения государственной экологической экспертизы и проведения работ не по проектным решениям, заключение автоматически теряет силу.

Председатель экспертной комиссии,
начальник управления государственной
экологической экспертизы и природопользования
(УГЭЭП)

Жумабеков К.К.

Члены экспертной комиссии:

Начальник Отдела УГЭЭП

Рыспеков А.А.

Главный специалист УГЭЭП

Сарыбаев И.М.

Informal Translation

Approval of the SAEPP on IEE developed for the Project Phase 2.

STATE AGENCY OF ENVIRONMENT PROTECTION AND FORESTRY UNDER THE
GOVERNMENT OF THE KYRGYZ REPUBLIC

December 15, 2014, No.04-01-28/428

I approve

Deputy Director of the State Agency on Environment Protection and
Forestry under the KR Government
/Seal affixed/ signed/ A.A. Rustamov

December 15, 2014

**APPROVAL
OF THE STATE ENVIRONMENTAL EXPERT REVIEW**

to the Report “Initial Environmental Examination (IEE), Rehabilitation of
Toktogul HPP, Phase 2” of the Energetic Sector Rehabilitation Project
ADB-TA-8434 (KGZ)

The Report “Initial Environmental Examination (IEE), Rehabilitation of Toktogul HPP, Phase 2” of the Energetic Sector Rehabilitation Project AБP-TA-8434 (KGZ) developed by Fichtner in 2014 on request of ADB and “Electric Power Plants” OJSC was submitted to the State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic to carry out state environmental expert review.

The Initial Environmental Examination (IEE) of the Rehabilitation of Toktogul HPP, Phase 2” of the Power Sector Rehabilitation Project ADB-TA-8434 (KGZ) consists of the following major sections:

1. Summary
2. Political, Legal and Administrative Frameworks
3. Description of the Project
4. Description of Environment
5. Expected environmental impacts and mitigation measures
6. Analysis of alternatives
7. Disclosure of information and consultation
8. Grievance Redress Mechanism
9. Environment Management Plan
10. Conclusion and Recommendations
11. Annexes

Implementation schedule: The construction shall start in second half of 2016 and last until 2020/2021.

Description of the Project and possible impacts:

The following activities will be carried out in the course of works at Toktogul HPP:

- replacement/rehabilitation of two turbines;
- replacement/rehabilitation and upgrading of two generators;
- replacement of two main transformers associated with two turbines / generators;

- replacement of unit control systems for two units;
- replacement of unit protection systems, including relevant transformer, loop and fencing for two units;
- replacement of a unit of electrical and mechanical auxiliary systems (MV and LV switchgears, cooling system, drainage and water-pumping systems, etc.) for two units (for units);
- rehabilitation of hydraulic steel structures and hydromechanical equipment at the outlet and downstream;
- rehabilitation of hydraulic steel structures and hydromechanical equipment (pressure conduits, bottom outlets, taps, etc.).

Toktogul HPP Rehabilitation Project is a unique project and a vital link for regulation of voltage frequency of 500 kV transmission systems, which connects the Central Asian countries. Capacity of HPP was well built, but many components should be currently replaced to maintain generating integrity. Consequently, there is no other realistic alternative but one that suggests consistent replacement of worn-out equipment and relevant maintenance of engineering structures and installed equipment.

According to Examination, the following possible impacts on the environment may be associated with rehabilitation activities listed above:

- possible power outage during construction;
- disposal of old oil (about 180 tons that do not contain PCBs according to conducted analysis);
- issues of occupational health and safety compliance during construction;
- increase in truck movements through settlements during construction period; transportation of heavy equipment, building materials and debris;
- disposal of iron / steel (almost 4000 tons) and other wastes;
- construction debris generated because of construction work, and some domestic waste generated because of daily living activities of workers.

As a part of IEE it is provided for to identify proposed Project impacts on the environment and to plan appropriate preventive actions and mitigation measures to prevent, minimize or eliminate expected adverse effects. Potential environmental impact of the Project will be of local and temporary nature. To mitigate the impact on the environment, there is developed Environmental Management Plan (EMP), which provides for collection, storage and sale of scrap metal and re-use the oil from equipment to be replaced etc.

Public consultations and public meetings were conducted in Karakul Town of Jalal-Abad oblast when the Report was being prepared. Participants of those consultations and meetings mainly considered waste related matters and methods of coping with them. Eventually everybody came to conclusion that rehabilitation measures provided by the ADB Project on rehabilitation of Toktogul HPP were necessary.

Having considered submitted materials, the State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic issue's positive opinion on the State Environmental Expert Review to the Report "Initial Environmental Examination (IEE), Rehabilitation of Toktogul HPP, Phase 2" of the Energetic Sector Rehabilitation Project ADB- TA-8434 (KGZ).

At the same time, it is required that:

- "Electric Power Plants" OJSC must ensure that reports on environment protection are timely submitted and statutory payments for environmental pollution are timely paid to the Jalal-Abad Territorial Department of SAEPP during implementation of the Project.

- Jalal-Abad Territorial Department of SAEPF must be notified before beginning of work. If the conclusion of the State Environmental Expert Review is not complied with and if works are not executed according to design decisions, the conclusion shall automatically become void.

Chairman of Experts Commission,
Head of Department of the State Environmental
Expert Review and Environmental Management
(DSEEREM)
/signed/
K.K. Jumabekov

Members of Experts Commission: Head of the Division of DSEEREM

/signed/

A.A. Ryspekov

Chief Specialist of DSEEREM
/signed/
I.M. Sarybaev

Annex 2: The list of main documents on Environmental Safeguard Toktogul HPP Rehabilitation Phase 2 Project as of June 2023

No	Document title	Prepared by	Date of approval
Basic Documentation:			
1.	IEE / Initial Environmental Examination KGZ: Toktogul HPP Rehabilitation Phase 2 Project	Project Implementation Consultant/PIC Fichtner	July 2014 https://www.adb.org/sites/default/files/project-document/81731/46348-003-iee-01.pdf
2.	Conclusion of the State environmental expert review on IEE developed for the Project Phase 2.	State Agency of Environmental Protection and Forestry of the Kyrgyz Republic	December 2014
Reports:			
3.	Semi-annual Environmental Monitoring Report covering July-December 2016 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	January 2017 https://www.adb.org/sites/default/files/project-document/225671/46348-003-emr-01.pdf
4.	Semi-annual Environmental Monitoring Report covering January – June 2017 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	July 2017 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en.pdf
5.	Semi-annual Environmental Monitoring Report covering July - December 2017 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	July 2017 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_0.pdf
6.	Semi-annual Environmental Monitoring Report covering January – June 2018 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	July 2018 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_1.pdf
7.	Semi-annual Environmental Monitoring Report covering July - December 2018 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	February 2019 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_1.pdf
8.	Semi-annual Environmental Monitoring Report covering January – June 2019 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	August 2019 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_3.pdf

No	Document title	Prepared by	Date of approval
9.	Semi-annual Environmental Monitoring Report covering July - December 2019 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	December 2019 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_4.pdf
10.	Semi-annual Environmental Monitoring Report covering January – June 2020 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	September 2020 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_5.pdf
11.	Semi-annual Environmental Monitoring Report covering July – December 2020 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	February 2021 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_6.pdf
12.	Semi-annual Environmental Monitoring Report covering January-June 2021 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	September 2021 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_6.pdf
13.	Semi-annual Environmental Monitoring Report covering July-December 2021 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	February 2022 https://www.adb.org/sites/default/files/project-documents/49013/49013-002-emr-en_2.pdf
14.	Semi-annual Environmental Monitoring Report covering January-June 2022 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	September 2022 https://www.adb.org/sites/default/files/project-documents/49013/49013-002-emr-en_3.pdf
15.	Semi-annual Environmental Monitoring Report covering July-December 2022 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	May 2023 https://www.adb.org/sites/default/files/project-documents/46348/46348-003-emr-en_9.pdf
16	Semi-annual Environmental Monitoring Report covering January-June 2023 developed for Toktogul HPP Rehabilitation Project Phase 2	OJSC Electric Power Plants with the assistance of PIC Tractebel	<i>Present report</i>
Other documentations:			
13.	Sample results (Asbestos Risk Assessment Survey. Rehabilitation of Toktogul HPP Phase 2 Project)	PIC Tractebel	December 2016
14.	Asbestos Management Plan (Rehabilitation of Toktogul HPP Phase 2 Project)	PIC Tractebel	December 2016

No	Document title	Prepared by	Date of approval
15.	Asbestos Survey Report (Rehabilitation of Toktogul HPP Package 2 Phase 2 Project)	CC GE	April 2019
16.	Site Specific Environmental Management Plan Rev 6 (SSEMP) (Rehabilitation of Toktogul HPP Package 2 Phase 2 Project)	CC GE	December 2019
17.	Health and Safety Plan Rev 1 (Rehabilitation of Toktogul HPP Package 2 Phase 2 Project)	CC GE	November 2019
18.	Asbestos Containing Material Management Plan (ACMMP) Rev 6 (Rehabilitation of Toktogul HPP Package 2 Phase 2 Project)	CC GE	May 2021
19.	Overhead crane area cleaning method statement Rev 2 (Rehabilitation of Toktogul HPP Package 2 Phase 2 Project)	CC GE	October 2019
19	Project Emergency Response Plan Rev C	CC GE	December 2020
20	Transportation Management Plan	CC-GE	Not approved
21.	Site Specific Environmental Management Plan Rev F (SSEMP) (Rehabilitation of Toktogul HPP Package 1 Phase 2 Project)	CC ZMEC and SM Powertech	December 2019
22.	Health and Safety Plan Rev C (Rehabilitation of Toktogul HPP Package 1 Phase 2 Project) Including Covid-19 procedure	CC ZMEC and SM Powertech	August 2020
23	Project Emergency Response Plan Rev D	CC ZMEC and SM Powertech	February 2020
24	Project Site Specific COVID-19 Plan Rev12	CC GE	April 2022

Annex 3: The Act of Disposal of Waste (CC ZMEC)

	<p>Kyrgyz Republic Limited liability Company: "Eco Complex" Bishkek, micro district 8, building 34 tel: +996 558081518, +996501180852 Eco Complex Email: ecocomplex18@yandex.ru</p>
<p>Ex. No. 361 of "11".05.2023</p>	
<p style="text-align: center;">The act of disposal</p>	
<p>Given, Representative Office of LLC "SM Powertech Co. Ltd" in the Kyrgyz Republic, in accordance with the Agreement No. 40/2023 dated 20.04.2023 that the LLC "Eco Complex" disposed of the following waste:</p>	
<p>- Waste of paint and varnish materials (empty paint containers) - 1849 kg</p>	
<p>Composition of the commission:</p>	
<ul style="list-style-type: none">• Director of LLC "Eco Complex":• "SM Powertech Co. Ltd", project manager:• "SM Powertech Co. Ltd", manager:• Branch of OJSC "Electric Power Plant" Cascade THPP,	<p>Dzhumaliev N.D. Lee Kyungjin Abdyrazakov A.Z.</p>
<p>engineer of production and technical department:</p>	<p>Ismailov E.E.</p>
<p>Director of LLC "Eco Complex"</p>	<p>Dzhumaliev N.D.</p>



Annex 4. Photo records of HSE related works for Package 2 Phase 2 Project at Toktogul HPP:



Figure 41. Relocation of disassembled equipment from Unit 2 to the Employer's storage (Status in April 2023).





Figure 42. Removal of asbestos-containing debris and asbestos clearance work (Status in March, April 2023).



Figure 43. Asbestos cleaning the ventilation system cable gallery (Status in April 2023)

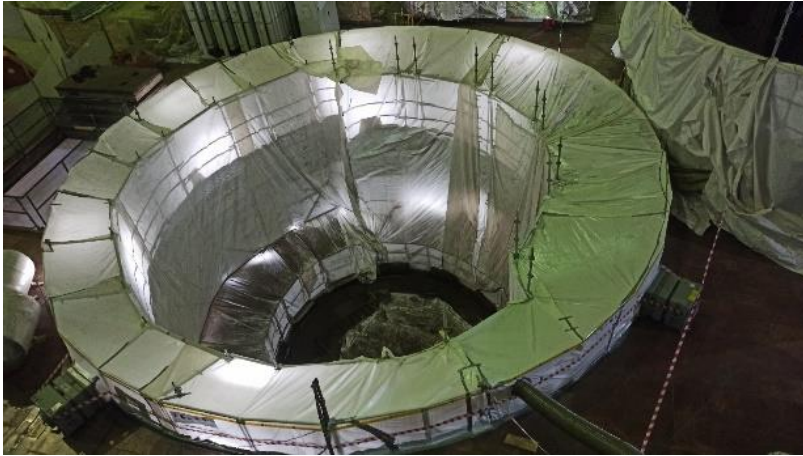


Figure 44. High pressure steam cleaning of the generator pit (Status in April 2023).



Figure 45. Welding works of the pipe line flanges at the level of 740m (Status in April 2023)

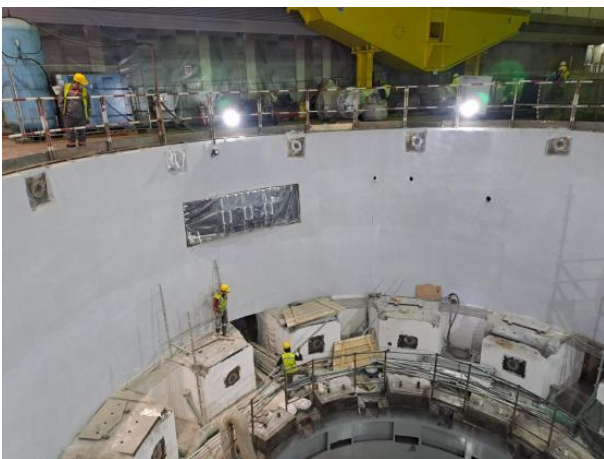


Figure 46. Dismantling scaffolding inside the generator shaft (Status in May 2023)

Annex 5. Photo records of HSE related works for Package 1 Phase 2 Project at Toktogul HPP:



Figure 47. Sandblasting treatment of penstock of Unit 3. Transportation of abrasive debris to the landfill. (Status in May-June 2023).

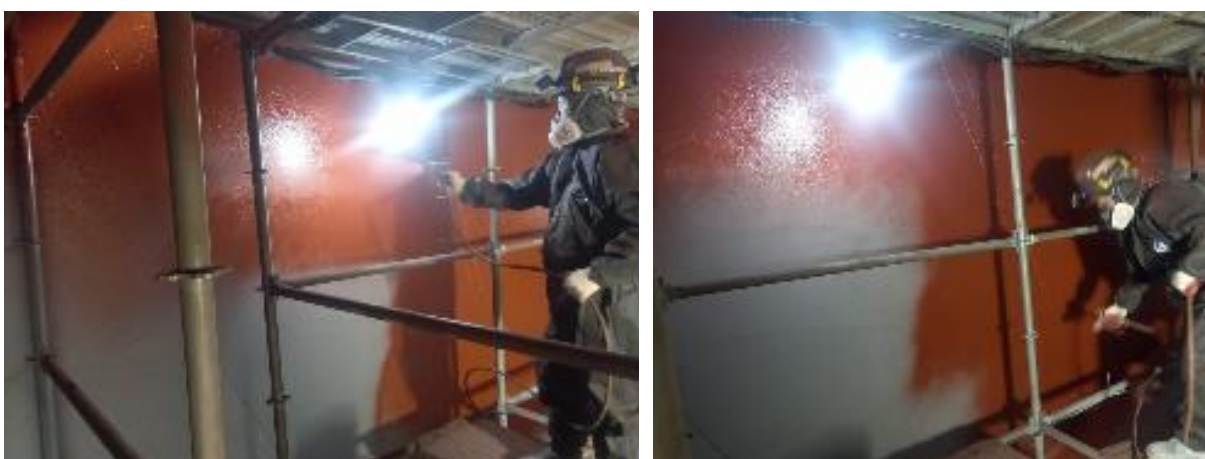


Figure 48. Painting works proceeding of penstock U3 (Status in April 2023)



Figure 49. Diving work – installation of aeration pipes of a deep spillway under water (Status in April 2023)



Figure 50. Preparatory work for sandblasting in the Unit 3 conduit (Status in April 2023)

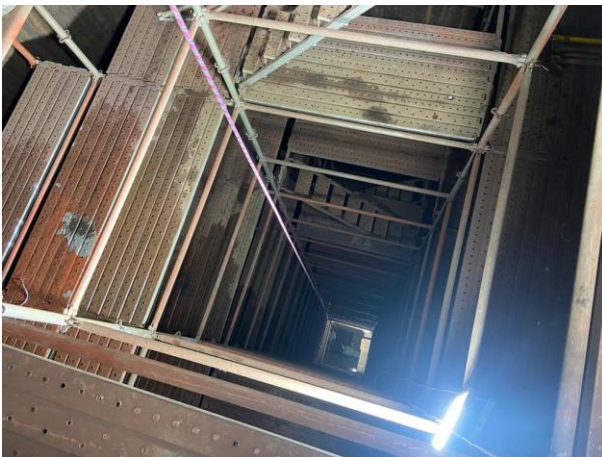



Figure 51. A safety barrier was installed for the construction of scaffolding in the conduit of Unit 3 (Status in May 2023)

Annex 6: Official letter of the Department of Disease Prevention and State Sanitary Epidemiological Surveillance about Asbestos disposal

<p>КЫРГЫЗ РЕСПУБЛИКАСЫНЫН САЛАМАТТЫК САКТОО МИНИСТРЛИГИ</p> <p>Ооруларды алдын алуу жана мамлекеттик санитардык-эпидемиологиялык козомөлдөө департаменти</p> <p>720033, Бишкек шаары, Фрунзе көчөсү, 535 Факс: (0312) 323214, тел. (0312) 323201 E-mail: dgsenkg@mail.ru ИУКК 02055809 ИСН 02909199210120 Биринчи май районунун МСИ 004 Бишкек ш. Борбордук Казынасы Э/С 4402011101003302 БИК 440001</p>		<p>МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ КЫРГЫЗСКОЙ РЕСПУБЛИКИ</p> <p>Департамент профилактики заболеваний и государственного санитарно-эпидемиологического надзора</p> <p>720033, г. Бишкек, ул. Фрунзе, 535 Факс: (0312) 323214, тел. (0312) 323201 E-mail: dgsenkg@mail.ru ОКПО 02055809 ИНН 02909199210120 ГНИ Первомайского района 004 г. Бишкек Центральное Казначейство Р/С 4402011101003302 БИК 440001</p>
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<input type="checkbox"/>	<u>22/12/21</u> № <u>07/3-5-3360</u>	Открытое акционерное общество «Электрические станции»
На № _____	от _____	

На № 15-11/11-2167
от 18.11.21 г.

Департамент профилактики заболеваний и госсанэпиднадзора
Министерства здравоохранения Кыргызской Республики, рассмотрев письмо
сообщает.

Вопросы образования, сбора, хранения, использования,
обезвреживания, транспортирования и захоронения отходов производства и
потребления, а также государственное управление, надзор и контроля в
области обращения с отходами, регулируется Законом Кыргызской
Республики от 13 ноября 2001 года № 89 «Об отходах производства и
потребления». Так же постановлением Правительства Кыргызской
Республики от 15 января 2010 года № 9 «Об утверждении классификатора
опасных отходов и методических рекомендаций по определению класса
опасности отходов» утвержден Классификатор опасных отходов, где
согласно наименованию отходов в п.17 вошли отходы строительства и
разрушения, загрязненные асбестами. Следует отметить, что
асбестосодержащие отходы относятся к опасным видам отходов. Статьей 10
вышеназванного Закона и постановлением Правительства Кыргызской
Республики от 28.12.2015 года № 885 «Об утверждении Порядка обращения с
опасными отходами на территории Кыргызской Республики» утвержден
порядок обращения с опасными отходами на территории Кыргызской
Республики, который предназначен для юридических и физических лиц,
деятельность которых связана с процессами обращения с опасными
отходами.

Определение количества опасных отходов на объектах временного
хранения и складирования производится в соответствии с Порядком
обращения с отходами производства и потребления в Кыргызской
Республике, утвержденным постановлением Правительства Кыргызской
Республики от 5 августа 2015 года № 559.

Необходимо отметить, что СанПиН 2.2.3.013-03 «Работа с асбестом и асбестосодержащими материалами», имеет рекомендательный характер, и согласно действующих нормативных правовых актов порядок обращения отходов, включая их утилизацию, не требует согласования с органами госсаннадзора. В настоящее время согласно структуры Кабинета Министров Кыргызской Республики, вопросы обращения отходов, включая хранения и утилизацию, возложены на Министерство природных ресурсов, экологии и технического надзора Кыргызской Республики.

Так же согласно ст.6 Закона Кыргызской Республики от 13.11.2001 года № 89 «Об отходах производства и потребления» определены объекты временного хранения и складирования опасных отходов на территории промышленного предприятия и объекты стационарного складирования и захоронения опасных отходов (полигоны). Так как в республике отсутствует полигон для захоронения опасных отходов, в настоящее время отходы на промышленных предприятиях хранятся на территории самого предприятия или при соблюдении требований Базельской Конвенции о контроле за трансграничной перевозкой опасных отходов и их удалением, могут быть вывезены за пределы республики.

Директор



С.А. Абдыкадыров

Исп. Сарыева Г.А.
323215

Informal translation

**Ministry of Health of the Kyrgyz Republic
Department of Disease Prevention and State Sanitary-Epidemiological Surveillance**

Date: 22.12.2021
No.08/2-5-3360

OJSC Electric Power Plants

Ref. No.15-11/U-2167 dated 18.11.2021

After considering of your letter, The Department of Disease Prevention and State Sanitary-Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic (KR) informs the following.

Issues of formation, collection, storage, using, disposal, transportation of industrial and consumer waste, and also the state management, supervision and control of waste management is regulated by the Law of the KR No.89 dated 13 November 2001 “On industrial and consumer waste”. A Classifier of hazardous waste was approved by the Governmental Regulation No.9 dated 15 January 2010 “On approval of hazardous waste classifier and guidelines for determining of waste hazard class”, and according to name of waste, waste of construction and destruction decontaminated with asbestos was included in paragraph 17. It should be noted, asbestos containing waste is classified as hazardous waste. In accordance with paragraph 10 of above-mentioned Law and Governmental Regulation No.885 dated 28.12.2015 “On approval of procedure of handling hazardous waste at the territory of the Kyrgyz Republic”, the procedure of handling hazardous waste in the Kyrgyz Republic was approved, which is intended for legal entities and individuals whose activities related to hazardous waste.

Determination of amount of waste at temporary storage is made according to the Procedure of handling industrial and consumer waste in the Kyrgyz Republic approved by the Governmental regulation of the Kyrgyz Republic No.559 dated 5 August 2015.

It should be mentioned, The Sanitary Norms and Rules 2.2.3.013-03 “Work with asbestos and asbestos containing materials” is in the form of recommendation and according to current legislative acts, a procedure of handling waste including its utilization, does not require an agreement with the state surveillance authorities. At present and according to a structure of Cabinet of Ministers, waste issues including storage and utilization are transferred to the Ministry of natural resources, ecology and technical supervision of KR.

Also, according to article 6 of the Law of KR No.89 dated 13.11.2001 “On industrial and consumer waste”, facilities for temporary storage of hazardous waste are determined at the territory of industrial entities, and stationary storage facilities, disposal of hazardous waste are at intended landfill. As there is no intended/special landfill for hazardous waste in the country, at present industrial waste is stored at the territory of industrial entities or it could be transported out of the country with regard to the rules of Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

Director

/signed/

S.A. Abdykadyrov