DAM REHABILITATION AND IMPROVEMENT PROJECT
DRIP PHASE II (Funded by World Bank)

KADAMPARAI DAM

TN12HH0081

ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

REVISED IN DECEMBER 2024

Tamil Nadu Green Energy Corporation Limited (TANGECL)

IMPORTANT NOTE

This ESMP is prepared with management plans for all relevant ESSs.

Dam specific inputs and Management Plans of Kadamparai dam used in this ESMP is purely for guidance purposes.

This ESMP shall be updated with sub-project specific data / ESDD outcomes/management plans as identified in ESDD for preparing sub-project Dam specific ESMP, as applicable.

ACRONYMS

AIDS:	Acquired immune deficiency syndrome
BOCW:	Building and Other Construction Workers
COVID:	Corona Virus Disease
CoC:	Code of Conduct
CPCB:	Central Pollution Control Board CPR: Cardio Pulmonary Resuscitation
CPMU:	Central Project Management Unit
CWC:	Central water Commission
DCP:	Dry Chemical Powder
DDMA:	District Disaster Management Authority
DG:	Diesel Generator
DRIP:	Dam Rehabilitation and Improvement Project
DSRP:	Dam Safety Review Panel
EAP:	Emergency Action Plan
EHS:	Environment Health and Safety
EMC:	Engineering and Management Consultant
ESCP:	Environment and Social Commitment Plan
ESDD:	Environmental and Social Due Diligence
ESF:	Environmental and Social Framework
ESHS:	Environmental, Social, Health and Safety
ESI:	Employee's State Insurance
ESIA:	Environmental and Social Impact Assessment
ESMF:	Environmental and Social Management Framework
ESMP:	Environmental and Social Management Plan
ESS:	Environmental and Social Standard
GBV:	Gender Based Violence
GRM:	Grievance Redressal Mechanism
HIV:	Human immunodeficiency virus
IA:	Implementation Agency
IEC:	Information Education and Communication
IFC:	International Finance Corporation

LMP:	Labour Management Procedure
LPG:	Liquefied Petroleum Gas
NDMA:	National Disaster Management Authority
NGO:	Non-Governmental Organization
OHS:	Occupational Health & Safety
PDO:	Project Development Objective
PF:	Provident Fund
PIU:	Project Implementation Unit
PPE:	Personal Protective Equipment
PPEQMP:	Pollution Prevention And Environment Quality Management Plan
PST:	Project Screening Template
PUC:	Pollution under Control
QPR:	Quarterly Progress Report
RTI:	Right to Information
SCADA:	Supervisory Control and Data Acquisition
SDMA:	State Disaster Management Authority
SEAH:	Sexual Exploitation, Abuse and Harassment
SEF:	Stakeholder Engagement Framework
SEP:	Stakeholder Engagement Plan
SOP:	Standard Operating Procedure
SPMU:	State Project Management Unit
ST:	Schedule Tribe
TDP:	Tribal Development Plan
WB:	World Bank
WBG:	World Bank Group
WBGEHS:	World Bank Group's Environment Health And Safety
WRD:	Water Resources Department

CHAPTER 1: PROJECT OVERVIEW AND FINDINGS OF ESDD

1.1. PROJECT OVERVIEW

The Dam Rehabilitation and Improvement Project Phase II and Phase III (DRIP Phase I & Phase II), initiated by Ministry of Jal Shakti through Central Water Commission, is with an objective to cover more States and more dams (after DRIP Phase I) across India to improve the safety and operational performance of these selected dams. This new Scheme will further strengthen the efforts of Government of India beyond ongoing DRIP Phase I. The project would continue to finance structural improvements along with dam safety institutional strengthening which shall break with the prevailing build-neglect-rebuild approach by giving greater emphasis to establishing innovative financing mechanism for regular O&M and dam rehabilitation, enhancing State capabilities to manage these critical assets through institutional strengthening, and introducing risk-informed dam safety management. The project development objective (PDO) is to increase the safety of selected dams and to strengthen institutional capacity for dam safety in participating States. The project components are as follows:

Component 1: Rehabilitation and Improvement of Dams and Associated Appurtenances, focusing on structural and non-structural measures at selected project dams. The proposed interventions will include, but not be limited to, around 35-40 kind of rehabilitation activities as done in ongoing DRIP. In addition, all important non-structural activities will also be taken up. In addition to these interventions, the project will require each rehabilitated dam to have basic instrumentation and could also support the development of additional systems to detect and respond to risks promptly, such as flood forecasting systems, early warning systems, data management and analysis software, and standardized dam safety instrumentation (i.e., Supervisory Control and Data Acquisition [SCADA]).

Component 2: Dam Safety Institutional Strengthening, focusing on regulatory and technical frameworks for dam safety assurance. The activities to be carried out will include, but not be limited to, targeted training nationally and internationally to all partner agencies, development of Management Information Systems (MIS) and other programs to capture and analyze data for long-term planning and guiding of dam operations; support to the further development within CWC of the Dam Health and Rehabilitation Monitoring Application (DHARMA) program, support to the revision of existing guidelines on dam safety and preparation of new guidelines, as needed; rapid risk screening of dams, stakeholders consultation meetings for dissemination of prepared emergency action plans, updation of seismic hazard mapping of country, capacity building of academic and central institutions, public outreach programs, construction supervision & quality assurance activities etc.

Component 3: Incidental Revenue Generation for sustainable operation and maintenance of dams; in order to ensure long term sustainability of operations & maintenance of existing dams, it is proposed to encourage the dam owners to explore the incidental revenue generation through innovative ideas i.e. Development of tourism, fisheries, secondary sources of power generation (hydel as well as solar), water recreation activities etc. and divert some part of this generated revenue for O&M of a given dam. Few pilot dams can be selected to experiment this innovation.

Component 4: Project Management; the overall responsibility for project oversight and coordination will rest with the CDSO of CWC. This Organisation will act as the Central

Project Management Unit (CPMU). The CPMU will be assisted by a management and engineering consulting firm. Each state and other agency will establish a Project Management Unit (SPMU) attached to the Chief Engineer's (CE) office in charge of the SDSO or any such similar arrangement in power utilities. This Unit will have direct responsibility for the coordination and management of the project at state level.

Component 5: Contingency Emergency Response Component.
The primary beneficiaries of the project are the communities that live in dam breach flood inundation areas and the communities that depend on water, irrigation and electricity services provided by the dams that could be compromised by poor dam performance or failure. The Project will be taken up in 19 states covering 300 dams.

1.2. OBJECTIVE AND CONTEXT OF ESMP

A project level ESMF has been prepared and disclosed. In compliance with the ESMF, Environmental and Social Due Diligence has been carried out employing E&S risk screening templates. ESMF mandates that for all Low and Moderate Risk projects, a standard ESMP shall be prepared, which will be updated based on the sub project specific activities. Accordingly, this Standard ESMP is prepared describing the process to manage the impacts identified during the ESDD. The ESMP also determines the implementation schedule, roles and responsibilities, reporting and monitoring requirements. The management plans included in this ESMP outline the environmental and social mitigation measures and management controls to be implemented in compliance with the E&S commitments.
This ESMP is a live document and is subjected to periodic review and updates. The Implementation Agency and contractors are primarily responsible for the implementation of the ESMP. Environmental and social management plans covering various phases, prepared as part of this ESMP shall be updated in line with the dynamics of project progress and stakeholder engagement inputs. If during the operationalization of this ESMP, new conditions emerge and risks and impacts differ from that identified in the ESDD, a new ESMP may be prepared adapting to the new conditions.

1.3. SUB PROJECT DESCRIPTION– KADAMPARAI DAMI

The Kadamparai dam was constructed across Kadamparai stream (a tributary to River Aliyar) in Anaimalai hills in Coimbatore district (57 Km from Pollachi town) by Tamilnadu Electricity Board for Hydro Power Generation .This dam is a masonry gravity dam with earthen flanks on both sides. It acts as an upper storage dam. The dam was constructed to serve as "Storage cum Forebay" for power generation at Kadamparai Underground Power house (4x100MW). The tail water from Kadamparai PH flows into Upper Aliyar reservoir. It then flows into Aliyar reservoir of TNWRD, through a tunnel, after generating 60 MW of power at Aliyar Power house.

The Kadamparai Dam was constructed during the period from 1979-1984 in Anaimalai Hills at a latitude 10° 23' 35" N and longitude 77° 02' 41" E.

Salient features of the project area are reported below:

1.	River	Kadamparai

2.	Location of the Dam	The Kadamparai dam was constructed across Kadamparai stream (a tributary to river Aliyar). This dam is located at 57km away from Pollachi town of Coimbatore District, Tamil Nadu.
3.	Latitude	10° 23' 35"N
4.	Longitude	77° 02' 41" E
5.	Total Catchment area	22.79 sq. Km.
6.	Maximum Flood discharge	517.80 cumec; Revised to 777.94 cumec
7.	Revised design flood (PMF)	632 cumecs
8.	Type of dam	Masonry Gravity with earthen flanks
9.	Height of dam	67.50 m
10.	Scheme work commenced on	1979
11.	Works completed on	1984
12.	Reservoir capacity	Gross capacity : 30.85.M.cum Effective capacity : 26.85 M.cum
13.	Water spread area	1.17 sq.km
14.	Total length of masonry dam	788.00 m
	Length of masonry dam	478.00 m
	Length of Earthen flank-Left	165.00 m
	Length of Earthen flank-Right	145.00 m
15.	Length of spillway	31.50 m
16.	Crest level of spillway	+ 1143.00 m
17.	Maximum water level	+ 1149.00m
18.	FRL	+ 1149.00 m
19.	Deepest Bed level	+ 1087.00m
20.	Top width of dam	4.50m
22.	Spillway	Lift type (Radial)
23.	Spillway gate	3 Nos. 8.50 X6.00 m
24.	Top level of Non-spillway	+ 1151.00m
25.	Length of Non-spillway	762.50 m
26.	Sluice sill level	+ 1093.00m
27.	Size of sluice vent	Service gate(1.525mx2.125m), Emergency gate(1.525mx2.805m)
28.	Discharging capacity	19.40 cumecs
29.	Minimum draw down level	+ 1112.00 m

View of Downstream face of the Dam

View of Kadamparai Dam Reservoir

1.4. PROPOSED INTERVENTIONS/ ACTIVITIES AND INTENDED OUTCOMES

Dam Safety Review Panel (DSRP) constituted by CWC, Government of India has inspected and made a review of Kadamparai dam on 20/01/2021 and recommended measures to improve the safety and performance of dam and associated appurtenances in a sustainable manner and also to strengthen the dam safety institutional set-up.

The objectives of the project are to be achieved through investments for physical and technological improvement activities, managerial upgrading of dam operations, management and maintenance, with accompanying institutional reforms. The project will improve the safety and operational performance of dam and mitigate risks to ensure safety of downstream population and property. The following rehabilitation proposals as described in the PST have been formulated based on DSRP recommendations and these proposals form the basis for preparation of present ESDD report.

BASIC FACILITIES

1. Cleared/ restored the existing chutes and horizontal drains.
2. Stilling basin repair works after draining the water.
3. Dam top and police guard room colour washing.
4. Dam top and gallery electrification and lightings.
5. Repairs to dam maintenance staff quarters (3 blocks of 4F type) at KPH camp.
6. Guard room building renovation including toilet facilities.
7. Providing security gates at both ends of dam and for gallery.
8. Replacement of damaged drinking water pipeline and providing new 100mm dia MS pipe and provision for mechanized rapid sand filter / ultra-water filtration tower.
9. Increase the height of dwarf wall behind Attakatti IB dining hall for ensuring safety.

SPECIAL REPAIR TO MASONRY POTION OF DAM

i) Drilling and grouting inside drainage gallery between CH-560m to 636m.

ii) Drilling and grouting from top of dam between CH-636m to 643m.

iii) Water washing with high pressure for cleaning of spillway glacis of dam.

iv) Reaming of all choked vertical and foundation drainage shafts.

v) Providing V-Notch at Left flank toe drain to measure the seepage.

vi) Removal of calcination from wall, gutter and floor of drainage gallery.

SPECIAL REPAIR TO MASONRY POTION OF DAM

i) Supplying and laying of CCGM to arrest the leakage in earthen embankments.

ii) Providing and laying M-20 grade PCC for anchoring CCGM at bottom

iii) Excavation in all type of soil and rock for anchoring the CCGM.

GEOPHYSICAL SCANNING

i) 2D Electrical Resistivity Imaging- To get a picture of internal resistivity distribution of the embankments, identifying areas of water saturation, if any.

ii) Seismic Refraction/ Tomography in Longitudinal section & Cross Section - To understand the zones of deterioration in masonry dam (from top of dam to soffit of drainage gallery).

iii) Conducting Multichannel analysis of surface waves (MASW) of longitudinal section of Masonry dam (from drainage gallery floor to foundation rock) as one of the geophysical scanning technique for evaluating the elastic condition (stiffness) of the ground.

ELECTRICAL AND MECHANICAL WORKS

i) Repair to shutters and replacement of gate seals

ii) Complete overhauling of gate hoisting mechanism.

iii) Replacement of gate hoisting structure platform with new chequered plates.

iv) Provide electrification and lighting to dam top and gallery.

CENTRAL OFFICE BUILDING AT ATTKATTI

i) Construction of central office building at Attakatti to a plinth area of 768 Sqm.

Scope of ESMP for various contractors:-

The applicability of scope of ESMP to various contract agencies would be as per the official scope of work defined in the signed contract agreement.

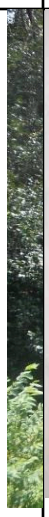
Figures 1.1 and 1.2 provide photographs of key infrastructure proposed for rehabilitation works and also major interventions locations.

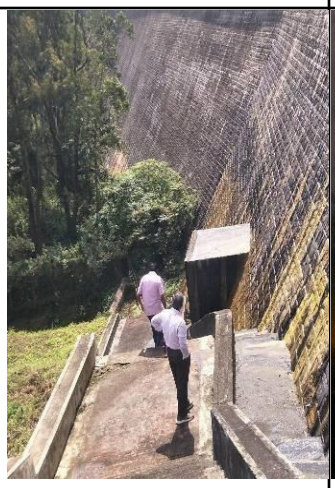
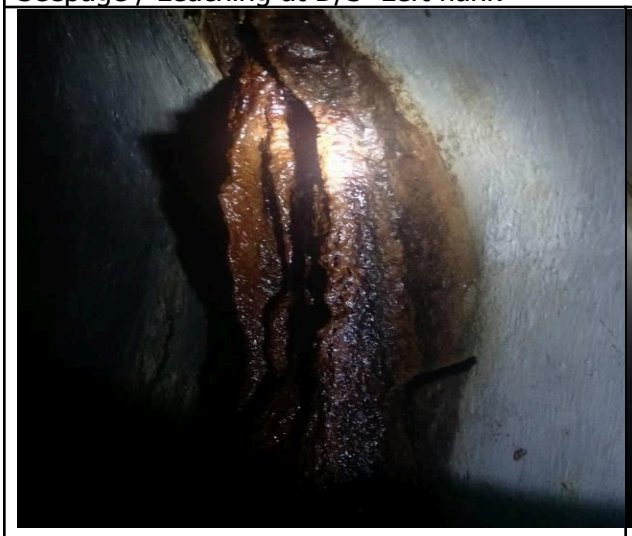
Settlement at Right flank of Masonry and Earthen bund junction portion

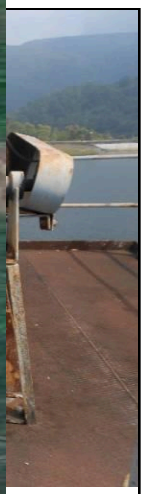
Settlement at top portion of Dam in Right flank

Settlement to CR Masonry Rip Rap at left flank of U/S side of DAM

Water Leakage at the right Flank Dam Toe.



Turfing Area at Left flank D/S	Chocked Vertical Shaft No.14 (View inside Drainage Gallery)
	
Seepage / Leaching at D/S Left flank	Water Seepage in Vertical Shaft No.7
	
Earth Sludge coming out through Vertical shafts at Blocks 11 & 12	Formation of Calcination inside DG Vertical Shaft



Reinforcement protrutions from Spillway piers	Corroded Chequered Plate and Steel Boxes of Head Race Tunnel Gate mechanism

Figure 1.1: Selected Photographs of Improvement / Intervention area

Figure 1.2: Project Area showing major intervention locations of Kadamparai Dam

1.5 ESDD FINDINGS AND KEY IMPACTS TO BE ADDRESSED

ESDD has been carried out considering the above proposals / interventions. The screening and site assessment exercise has identified the nature of risk and impacts, with level of risk and the outcomes are documented in ESDD report. As per ESDD exercise the risks /impacts identified are related to labour employment and working conditions, pollution generation from rehabilitation work and impact on physical environment, SEA/SEAH and GBV risks. These risks are low to moderate and localised, short term and temporary in nature which can be managed following management plans and guidelines. The summarised environmental and social risks of identified activities with level of risk is presented in ESDD report.

Environment risks of air, water, noise; land use, soil and resource use for most of the activities are moderate as well as social risks of labour. Environment risks of pollution downstream and upstream is categorised as Moderate for some of the activities along with that of labour camp. Risk of all other activities has been

identified as Low. These risks are low to moderate and localised, short term and temporary in nature.

As per ESMF, Occupational Health and Safety (OHS) risk is envisaged across the project interventions / dams, a separate OHS plan in accordance with WBG Environmental Health and Safety (ESHS) Guidelines and Good Practice Note on Environmental, Health, and Safety approaches for Hydropower Projects (2018) shall be applicable to all sub-projects. Hence it was not being considered under screening criteria. Occupational health and safety is considered an important requirement and shall be managed as per OHS plan and will be part of Contractor's ESMP.

Based on ESDD findings, WB Environmental & Social Standards (ESS) applicability analysis and recommended management plan is given at Table 1.1.

Table 1.1 WB-ESS Applicability Analysis and Recommended management plan

WB-ESS	Recommended Management Plan	Applicability To Kadamparai Dam
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Gender Based Violence or SEA/SH related actions	Applicable
ESS2: Labour and Working Conditions	Labour Management Procedure including Occupational health and Safety	Applicable
ESS3: Resource Efficiency, Pollution Prevention and Management	Pollution Prevention and Environment Quality Management Plan including Muck/Debris Management	Applicable
ESS 4: Community Health and Safety	Community Health and Safety Plan	Applicable
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Resettlement Action Plan/ Livelihood improvement Plan	Not Applicable
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural resources	Biodiversity Conservation Plan	Not Applicable
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Tribal Development Plan	Not Applicable
ESS 8: Cultural Heritage	Cultural Heritage Protection Plan	Not Applicable
ESS 10: Stakeholder Engagement Plan	Stakeholder Engagement Plan	Applicable

The above recommended plans are discussed in detail in Chapter 2.

CHAPTER 2: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLANS

The E&S management plans prepared for the risks and impacts identified as part of ESDD are presented hereunder. Each plan includes mitigation measures specific to the risks and impacts and where applicable, sets out the framework for other plans and procedures to be developed later in the Project. Constructions contractors will develop and implement their own site specific C-ESMPs.

2.1 GENDER BASED VIOLENCE OR SEA/SH RELATED ACTIONS (ESS1)

The following key actions are to be ensured during implementation:

S. No.	Key Action to address GBV/SEA/SH Risks	By Whom	Remarks
1	Clearly define SEA/SH requirements in Bid-documents and also the requirement for a CoC which addresses SEA/SH, using Standard WB procurement documents	SPMU	*Refer Annexure No.3 for CoC sample format*
2	Operationalize or constitute Internal Complaints Committee as per Prevention of Sexual Harassment at Workplace procedure	SPMU	*Refer Annexure No.3 for ICC*
3	Implement appropriate project-level activities such as: Separate, safe and easily accessible facilities for women and men in the place of work and the labour Camps. (e.g., toilets should be located in separate areas, well-lit)display signs that the project site is an area where SEA/SH is prohibited.	Implementation by Contractor / GBV Focal Point at SPMU & overall supervision by Engineer in Charge	GRM and ICC committee has been formed as per Annexures 4 &5.
4	Ensure Codes of Conduct are clearly understood and signed by those with a physical presence at the project site; Train project staff on the behavior obligations under the CoCs and Disseminate CoCs (including visual illustrations) and discuss with employees and local communities.	Engineer in Charge Contractor	
5	Undertake regular M&E of progress on SEA/SH prevention and response activities, including reassessment of risks as appropriate.	GBV Focal point at SPMU/ IA	

limplementations costs would include: preparation of sign boards, posters, conducting of awareness trainings by Implementing Agency and also by Contractor.

2.2.1 LABOR MANAGEMENT PROCEDURE (ESS2)

2.2.2 Overview of labour use in the project

Number of Project Workers: Approximately 50 workers at different points of time (Direct workers, Contracted workers and Community workers) shall be engaged for the rehabilitation works

Characteristics of Project Workers: As per the proposed execution strategies for all Low to Moderate risk sub-projects, the following categories of project workers are identified:

i) Direct workers – all the existing dam site officials including those sent on deputation from other departments involved in the project activities;
ii) Contracted workers - all IAs would engage Contractors to undertake rehabilitation works; agencies/firms to support core service functions such as SCADA systems, etc. These contractors shall bring skilled Migrant workers for some of more specialized tasks; and
iii) Community workers (or volunteers particularly for EAP).

Timing of Labor requirements: See Table below:

S.No.	Type	Numbers	Locations	Duration	Skills required
1	Direct Workers (Project officials)	5-7	Dam site	Throughout	Executive and Supervisory
2	Contracted Workers	30-50	Dam site	18 months	Varied (skilled, semi skilled)
3	Community Workers	10-15	Villages/areas in the vicinity of the dam	Only during EAP implementation	Community facilitation skills

Note: Contractor shall have the following: (a) Labour license, (b) Insurance for all workers (c) Employee State Insurance (d) Migrant labour registration if labour outsourced from other state. (e) Compliance with provision as stipulated in the BOCW rules. Contractors shall allocate sufficient resources for environmental and social safeguard requirements.

2.2.3 Assessment of Key Potential Risks

Labour related risks would include:

- Safety issues given in the following table:

Sl.No	Risks	Mitigation measures
1.	Exposure to dust and noise	Use of Dust Mask, Ear muffs
2.	Inadequate accommodation/sanitation facilities	Adequate no.of shelter, toilet facilities should be arranged by Contractor.
3.	Sexual Harassment	GRM & ICC committee are formed to address SEAH/SEA.
4.	Inadequate emergency response system	Emergency alarm has to be placed at site.
5.	HIV/AIDS and other sexually transmitted diseases	Medical health checkup for HIV/AIDS to be implemented at site.
6.	Non-payment of wages	GRM & ICC committee are formed to address issues related to wages.

7.	Discrimination in promotions/ incentives/ training opportunities	Monthly calendar has prepared for training related to COC.
8.	Labour grievances/issues	GRM & ICC committee are formed to address issues related to all labour issues.
9	Working at heights using lifts, etc;	Contractor has to provide PPEs such as Helmets, Gumboots, safety belt, safety harness, etc;

Conditions:

- while at work like injuries/accidents/ fatalities Occupational health and safety risks due to exposure of workers to unsafe conditions while working at heights, working using lifts, handling of equipment and machinery, exposure to air and noise pollution etc. will be addressed through OHS guidelines.
- Short terms effects due to exposure to dust and noise levels, while at work
- Inadequate accommodation facilities for labour, including inadequate sanitation and health facilities
- Discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.)
- Sexual harassment at work
- Absence or inadequate or inaccessible emergency response system for rescue of labour/workforce in situations of natural calamities.
- Health risks of labour relating to HIV/AIDS and other sexually transmitted diseases
- Non-payment of wages
- Unclear terms and conditions of employment
- Discrimination and denial of equal opportunity in hiring and promotions/incentives/training opportunities
- Denial for workers' rights to form worker's organizations, etc.
- Absence of a grievance mechanism for labour to seek redressal of their grievances/issues

Brief overview of labor legislation: Occupational health and safety:

Refer to Annexure.5

2.2.4 Responsible staff

See Table below for list of key activities with responsibilities:

S.No.	Activity	Responsibility
1	Engagement and management of Contractors	SPMU of IA (TNGECL)
2	Engagement and management of Sub-Contractors	Contractor
3	Occupational Health and Safety (OHS)	Engineer-In-Charge and contractor's safety personnel.
4	Training of Workers	Engineer-In-Charge
5	Addressing worker grievances	Contractor (with oversight by IA)

2.2.5 Policies and procedures

These are listed below under the following sub-headings: i) Incidents and Accident Notification; ii) GBV/SEAH related iii) Occupational Health and Safety; and iv) COVID considerations.

2.2.4.1 **Incidents and Accident Notifications:** The contractor will promptly notify to the IA/SPMU within 24 hours any major incident or accident having significant impact on the environment, tangible cultural heritage, communities, the public or workers. They will provide sufficient detail regarding the incident or accident, indicating immediate measures taken to address it, and including information provided by any contractor and supervising entity. Further the SPMU will appraise this to CPMU and WB.

2.2.4.2 **GBV/SEAH related:** More than 95% of the contract labour is expected to be men, and women's participation as contract labour or community labour is going to be very low. Contractors will need to maintain harmonious relations with local communities by ensuring laborers/workers adhere to Code of conduct (CoC). The CoC commits all persons engaged by the contractor, including sub-contractors and suppliers, to acceptable standards of behavior. The CoC will include sanctions for non-compliance, including non-compliance with specific policies related to gender-based violence, sexual exploitation and sexual harassment (e.g., termination). The CoC will be written in plain language and signed by each worker to indicate that they have:

2.2.4.2.1.1 received a copy of the CoC as part of their contract;
2.2.4.2.1.1.1 been explained the CoC to them as part of induction process;
2.2.4.2.1.1.2 acknowledged that adherence to this CoC is a mandatory condition of employment;
2.2.4.2.1.1.3 understood that violations of the CoC can result in serious consequences, up to and including dismissal, or referral to legal authorities.

To mitigate potential risks related to on-site safety and GBV, the Contractor/ sub-contractor/ SPMU will undertake actions as given in Table below:

Action	Timelines	Responsibility
Separate, safe and easily accessible facilities for women and men in the place of work and the labour camps. (e.g. toilets should be located in separate areas, well-lit)	Throughout construction Period SPMU E&S Expert will monitor on monthly basis	Contractor, E&S Expert of SPMU.

Display signs that the project site is an area where SEA/SH is prohibited.	Throughout construction period SPMU E&S Expert will monitor on monthly basis	Contractor, E&S Expert of SPMU
Ensure Codes of Conduct are clearly understood and signed by those with a physical presence at the project site;	Upon joining Training will be conducted periodically and Training report will be shared in QPR.	Contractor, E&S Expert of SPMU
Train project staff on the behavior obligations under the CoCs and Disseminate CoCs (including visualillustrations) and discuss with employees and local communities.	Training will be conducted periodically and tool box discussion on daily basis.	Contractor, E&S Expert of SPMU

Note: Findings shall be reported in NPR/PPR by the Contractor /SPMU.

3 Occupational Health and Safety

IA is committed to:

2.2.4.2.5 Complying with BOCW Rules and other applicable requirements which relate to the occupational health and safety hazards.

2.2.4.2.6 Enabling active participation in OHS risks elimination through promotion of appropriate skills, knowledge and attitudes towards hazards.

2.2.4.2.7 Continually improving the OHS management system and performance.

2.2.4.2.8 Communicating this policy statement to all persons working under the control of IA with emphasis on individual OHS responsibilities.

2.2.4.2.9 Availing this policy statement to all interested parties.

2.2.4.2.10 To avoid work related accidents and injuries, the contractor shall ensure following Do's and Don'ts at site will:

2.2.4.2.11 **Pre-employment Health Check-up**: Ensure that health of each worker is checked and health record is maintained before deputing them to work.

2.2.4.2.12 **Deployment of EHS officer**: Designate a person responsible for OHS who is fully acquainted with handling of OHS issues

2.2.4.2.13 Induction training: Ensure that every worker is given OHS orientation training which will include use of PPE, first aid, use of fire extinguishers, action to be taken in case of accidents, caution to be exercised during working at height or confined areas, respecting system and procedures evolved at site for safe working. Training shall create enough awareness amongst workers so that they take reasonable care to avoid acts or omissions that are likely to result in injury to self, or the other workers/and other people. Training will be conducted intermittently, and training reports will be shared in QPR.

In case of inclusion or updating in COC dos and don'ts, training and signatures will be required again.

2.2.4.2.14 **First Aid**: Ensure that first aid box is provided at each work place its easily identifiable location. Few workers shall be trained as first aider including in CPR techniques. Also, the number of training sessions to be conducted yearly on fire mock drill/ first aid/ CPR and that the contractor shall allocate resources.

2.2.4.2.15 **PPE**: Ensure availability of PPE. Helmet, boot, earplug (for noisy areas), mask for dusty areas, gloves, safety belt and safety jacket. The contractor shall maintain a separate safety room at site for PPE inventory. Also, the contractor should maintain minimum 10% extra PPEs, that to provide for visitors, maintain the PPE invoice and PPE distribution register at site.

2.2.4.2.16 **SOPs**: Define SOPs (standard operating procedures) for Working at height or confined areas which will include minimum two persons working, one at work and another standby as rescuer. Sample SOPs are enclosed in Annexure.5.

2.2.4.2.17 **Ventilation**: Maintain adequate ventilation at confined areas and at workplace.

2.2.4.2.18 **Illumination**: Maintain adequate illumination at all work places, i.e. 10 to 30 LUX per 1 Sqm as per IEEE norms.

2.2.4.2.19 **Electric Hazards**: Prevent exposure to electrical hazards.

2.2.4.2.20 **Fire Protection**: Ensure adequate fire extinguisher (as per type of fire hazard viz. A, B, C) are placed at work place. (Eg: Community Kitchen in Labour Camp, Fuel storage area at work site, etc., atleast one in each area). Refer Annexure.13 for more details.

2.2.4.2.21 **Dust Control**: Ensure that workers are not exposed to high dust and noise level which can affect their health. Use dust suppressing system like water sprinkling and muffler or acoustic enclosures for noise generating system. Refer Annexure.1 for more details.

2.2.4.2.22 **Gas Cylinder handling:** Acetylene and oxygen/gas cylinders shall be handled using trolley where these cylinders are securely separated with each other for its safe use.

2.2.4.2.23 **Drinking Water and Sanitation**: Ensure that safe drinking water is available at each work site. Toilets fitted with sewage treatment system are to be provided at each worksite. Water supply and sanitary arrangements are available at the residential quarters area and project site which will be extended to the labourers and the key personnel.

2.2.4.2.24 ***Barricading and securing the work areas***: Each hazardous work area, if any, have safety barricading depending on nature of hazard

viz. trip, fall danger, restricted entry area, electrical hazard.

2.2.4.2.25 **Safety Signage**: Place adequate safety caution and signage in local languages for awareness to workers. Refer Annexure.7 for more details.

2.2.4.2.26 **Mock Drill**: Also conduct periodic mock drill to disseminate the safety procedures.

2.2.4.2.27 **Back-up Medical facility**: identify and tie up with equipped hospital(s) capable of providing ambulance and medical facilities or handling major injuries.

2.2.4.2.28 **Accident Reporting Analysis and Prevention**: Identify the reportable accidents2, analyse the cause of each reportable accident, maintain the record with analysis and take corrective action based on cause analysis for prevention of such accidents in future. Refer Annexure.8 for more details.

2.2.4.2.29 **Caution from Covid-19 scenario**: Refer Annexure.9 or more details,

2.2.4.2.30 **Compliance to law**: Ensure those legal requirements are followed like restriction on use of Child labour etc. Refer Cl. 2.2.5.

2.2.4.2.31 Contractor shall maintain wage registers.

DON'T

2.2.4.2.32 Do anything which may leads to risk to established health, safety and well-being rules or relevant health, safety and well-being regulatory requirements.

2.2.4.2.33 Jeopardize mental and physical well-being or that of people you work with by, for example, imposing unreasonable deadlines or regularly demanding longer working hours. As the working hours is restricted from 8 AM to 6 PM in protected areas, overtime work will not be applicable to this project.

Further to enforce the compliance of environmental management, contractors will be responsible and liable for safety of site equipment, labours and daily workers attending to the construction site and safety of citizens for each work site, as mandatory measures.

Occupational Health and Safety Monitoring

OHS compliance monitoring will be carried out by designated E&S Expert every month. Contractor will provide compliance in initial report to Engineer in charge and thereafter submit a compliance report every 3 months. 33. As per ESMF requirements, the contractor must submit a monthly E&S inspection report to SPMU. Additionally, the SPMU prepares a quarterly progress report and shares it with CPMU on a quarterly basis. Following shall be covered as part of OHS monitoring:

2.2.4.2.34 Health check-up records of workers, as applicable.

2.2.4.2.35 Accident hot spots on transport route, if any

2.2.4.2.36 Training and awareness of labour – OHS, Emergency Management, Use of PPEs
2.2.4.2.37 Identification of hazardous working locations and marking
2.2.4.2.38 Emergency response procedure
2.2.4.2.39 Availability of PPEs – types, numbers
2.2.4.2.40 Accident reporting

Communication and Consultation (Workers)

Workers consultation will be regular features. However this aspect shall be as per consultation process defined under other plans and ESS4.

Training and Records

Contractor will provide training to all workers before start of work and thereafter every three months. He will maintain training records and share the details with E&S experts of the dam as part of his quarterly progress report. The training should cover the following:

2.2.4.2.42 General awareness about the site, type of works to be carried out and risks involved
2.2.4.2.43 Use of appropriate PPEs for different types of works including dust masks and ear muffs
2.2.4.2.44 Following work instructions for hazardous/risky operations as marked onsite
2.2.4.2.45 How to act during emergency including basic rescue operations and accident reporting
2.2.4.2.46 Location of first aid boxes and fire extinguishers and how to use them
2.2.4.2.47 Handling of gas cylinders
2.2.4.2.48 Mock drill on Fire, First Aid, and CPR through external agency.
2.2.4.2.49 Emergency Preparedness and Management
2.2.4.2.50 Emergency Preparedness and Management Plan shall be followed as given under ESS 4

Reference to World Bank Group – (WBG) Environmental Health and Safety (EHS) and Other Guidelines

The WBG Guidelines of Environmental Health and Safety (WBGEHS) provide detailed guidance note on health and safety requirement and good practices. The WBGEHS guidelines are intended to be used in conjunction with Indian legislation on OHS at construction sites and shall be referred by contractor and IAs while finalizing site specific contractor's EHS management plan

An accident which causes death or which causes any bodily injury by reason of which the person injured is prevented from working for a period of forty-eight hours or more immediately following the accident (as per Building and Other Construction Workers Act, 1996.

2.2.5 AGE OF EMPLOYMENT

The minimum age of employment for this project shall be 18 years and to ensure compliance, all employees will be required to produce Aadhaar card or any other valid proof of age. If any contractor employs a person under the age of 18 years, that contractor will not only be terminated by IA but also be reported to the authorities. The nodal officer must ensure that worker identification, such as Aadhar card or voter ID, is returned to the worker and not kept with the worker.

2.2.6 TERMS ANDCONDITIONS

Terms and conditions for three types of workers are presented below:

i. The Direct Workers (Dam officials, government officials) are governed by their employment agreements with the Water Resources Department.

ii. Contractors will also be required to comply with the most current Regulation of Wages for the Building and Construction Industry which is issued by the Government and reviewed on a regular basis. The Minimum Wage Act specifies the minimum wages, hours of work, overtime pay, leave entitlements, travelling and Subsistence Allowances and the issue of protective clothing and reported in MPR in the form of a table. Before a contract is awarded, contractor is required to certify in writing that the wages, hour and conditions of work or persons to be employed by him on the contract are not less favorable than those contained in the most current wages regulation issued by the Labour Commissioner. Where a contractor fails to comply with this requirement, the contract with the contractor may be withdrawn as an approved contractor upon recommendations of the Labour Commissioner.

In ensuring full compliance with the law in this regard, contractors will be required to furnish with copies of the labour license and/ or copies of contract of all its workforce. As a monitoring mechanism, a contractor shall not be entitled to any payment unless he has confirmed that all employment conditions of the contract are being complied with. The IA would intervene if the contractor defaults in the payment of wages due to any of its employees.

'Community Workers' is further detailed in following sections.

2.2.7 GRIEVANCE MECHANISM

The Grievance Mechanism for Workers will be organized as follows:

i) **Direct Workers (Project Officials):** The Executive Engineer, Dam Authority, will be responsible for providing guidance and advice on all worker related grievances and their redressal, in line with the state and national legislation and the LMP.

ii) **Contract Workers**: While the Contractor will have his own GRM, the IA (Water Resources Department will have oversight) and the overall responsibility for ensuring the establishment and implementing the GRM for project workers. In this regard, the Executive Engineer will be responsible to ensure that the Contractor has established and operationalized the contract workers grievance redress mechanism. In this, Contractor will be supported by Environment and Social nodal officers by IA designated for the purpose. S/he will also be responsible for tracking and resolving workers grievances. S/he shall maintain records where grievances and complaints, including minutes of discussions, recommendations and resolutions made, will be recorded.

iII) **Community Workers:** The Executive Engineer, Dam Authority, will be responsible for providing guidance and advice on all community worker related grievances with this LMP.

2.2.8 CONTRACTOR MANAGEMENT

IA will ensure that contractor monitor, keep records and report on terms and conditions related to labour management. The contractor must maintain records with evidence of all payments made, including social security benefits, pension contributions or other entitlements, as applicable based on workers engagement i.e.-fixed term contract, full-time, part-time or temporary. The application of this requirement will be proportionate to the activities and to the size of the contract, in a manner acceptable to CPMU and the World Bank:

Labour conditions: records of workers engaged under the Project, including contracts, registry of induction of workers including CoC, hours worked, remuneration and deductions (including overtime), collective bargaining agreements;

Safety: reportable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).

Workers: number of workers, indication of origin (local and migrant), gender, age with evidence that no child labour is involved, and skill level (unskilled, skilled, supervisory, professional, management).
Training/induction: dates, number of trainees, and topics.

Details of any security risks: details of risks the contractor may be exposed to while performing its work; the threats may come from third parties external to the project. Worker grievances: details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken; grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.

RESOURCE EFFICIENCY AND POLLUTION PREVENTION (ESS3)

2.3.1 Pollution Prevention and Environment Quality Management Plan (PPEQMP)

Dam rehabilitation work in general can be categorised as civil work including paint work and hydro-mechanical work. requiring labour involvement for works, use of resources such as raw material, water and power during construction, pollution generation from storage and handling of material, generation of waste, use of paints and other chemicals for construction activities and generation of hazardous waste, transportation of raw material, etc. As all the proposed structural interventions are within the dams' premises, no adverse impacts are envisaged on communities including on the disadvantaged or vulnerable people.

Resource Efficiency, Pollution Prevention and Management plan is prepared to address potential risks identified with respect to resource use and pollution generation from civil, hydro-mechanical and painting work and also from labour camps and colonies.

2.3.2 Overview of PPEQMP

a) ***Water Management***

The proposed intervention activities are not expected to impact water resources as the proposed interventions are either crossing, altering or disturbing drainages nor impacting ground water resource in any form. Use of resources such as water and power will be optimized before start of work.

Construction related impacts and risks for water quality include:

- Accidental release of fuel or chemicals and contamination from poor waste management practices can affect surface and groundwater; although quantum of waste is expected to be small.
- Fuel/oil leakage from construction machinery working near water bodies
- Construction work along river bank
- Generation of sanitary wastes from labour colony and construction sites finding way to water bodies

Pollution prevention and control measures to avoid surface water pollution shall include:

- Labor camp will have adequate sanitation arrangement in terms of mobile/fixed toilet with arrangement of sewage collection and disposal. No wastewater from the camp/work force site shall be discharged directly without any treatment in to any surface water channels or drain, which eventually joins surface water bodies.
- The oil/lube storage shall be under roofed areas with impermeable cement concrete surfaces and provided with separate drainage system with oil separators. No discharge from oil/lube storage areas shall be directly discharged in to any open surface water channel/ streams.
- No construction debris and/or spills of construction materials are dumped on to stream waterway.
- Construction work along river bank shall be done in lean season when surface water level has receded and clear construction area is available.
- Activities like Rip-rap replacement and work on upstream side of dam (reservoir side) will be taken up only when the water level is low and clear work area is available. Adequate protection needs to be provided to avoid spillage of chemicals/construction material in reservoir.

b) ***Air Quality Management***

Construction activities can give rise to dust emissions if not effectively managed and have the potential to affect receptors near to the main construction sites due to dust generated from demolition, excavation, operation of construction equipment and

machinery, increased movement of vehicles, on to the local road network. Earth works will result in exposed areas of soil which will potentially generate dust when the weather is windy. The level and distribution of dust emissions varies according to the duration and location of activity, weather conditions, and the effectiveness of suppression measures.

Gaseous emission during construction will be from machinery, equipment and vehicles used for material transportation. The operation of vehicles and equipment will result in emissions of carbon monoxide, sulphur dioxide, and oxides of nitrogen. In particular, all commercial vehicles driven with diesel fuel is often used in India. Impact is expected to be localised. Keeping in view the quantum of work and requirement of raw material, only marginal increases in number of vehicles is expected and therefore emission on village road due to vehicular movement will not be significant, however, OHS norms and do's and don'ts will be adhered to for vehicular movement.

As the project is presently operational and the interventions are not going to alter the project operation in any manner, no operational phase impacts are envisaged on ambient air quality.

Pollution prevention and control measures to avoid air pollution shall include:

Among the air pollutants, dust levels in term of $PM_{2.5}$ and PM_{10}, is the most significant. In order to prevent and control the dust levels, the following measures are to be strictly adhered to:

- The contractor/transporter shall carry valid PUC (Pollution Under Control) certificate and only compliant vehicles shall be deployed during construction.
- The vehicles and equipment used during construction should be well maintained, to ensure minimum emissions. Engineer in Charge will carry out physical inspection to ensure compliance.
- The contractor shall provide wind barrier, if required, depending on most prevailing wind direction and presence of sensitive receptors at downwind side, at perimeter of construction site to arrest or blowing of suspended particle.
- Regular sprinkling of the water will be done on construction sites for dust suppression if there is potential of dust emission from storage of handling of lose material.
- If power connection is not available, Mobile DG sets may be used for lighting only during construction phase and they should meet emission and noise standards as per guidelines/standards issued by CPCB.
- All the construction workers and other staff, who get directly exposed to dust, should necessarily be provided with dust masks.

c) ***Noise and Vibration Control***

Sources of noise will be the vehicles and equipment for construction at the project sites. Due to construction activity in the area, noise levels will increase during the period of construction, however, they will remain limited to the work area mainly where construction activity will progress.

Impact of noise generation due to operation of construction machines and equipment is the exposure of workers operating these machines and other who are working in the surrounding. Such impacts can become significant if they are exposed to high noise for long hours continuously.

Pollution prevention and control measures to avoid Noise pollution shall include:

- DG sets, if required, will have a valid Type Approval Certificate and Conformity of Production certificate as per CPCB guidelines.
- All the construction equipment will be required to use available noise suppression devices and properly maintained mufflers.
- Workers in high noise area, will be provided with ear muffs. Workers exposure (time duration) to high noise will also be controlled.
- Minimize the use of noise producing equipment during night hours to avoid the disturbance to locals and wild animals of surrounding area.
- Vehicles to be equipped with mufflers recommended by the vehicle manufacturer.
- Movement of vehicles on village roads especially heavy vehicles for transportation of construction material, equipment, etc. shall be done during day time only.

d) **Waste Management from Hydro-mechanical works**

Project interventions (Refer Annexure.2) include hydro-mechanical work such as repair/replacement of hoists and ropes, repair and general maintenance and up-keeping of gates, etc. These activities will generate waste in terms of replaced parts, packaging material, empty containers, use and disposal of oil & grease, iron scrap, etc. There will be a mix of hazardous and non-hazardous wastes. It is important to have a plan ready for disposal of such wastes before start of the activity.

The site is expected to generate the following wastes:

(a) Hazardous waste - if applicable, specify quantity, storage and disposal and report in monthly report (generation and disposal) including the agency with whom the waste has been disposed.
(b) Municipal waste generated from labour camp - specify quantity, segregation, and disposal and report in monthly report (generation and disposal)
(c) paint drum - if applicable, specify quantity, storage and disposal and report in monthly report (generation and disposal).
(d) other wastes (i.e. scrap), specify quantity, storage and disposal and report in monthly report (generation and disposal).

Pollution prevention and control measures with respect to waste management: Project engineer needs to identify all the waste generated from hydro-mechanical work including replaced parts with estimated quantities and categorization as hazardous and non- hazardous waste. Storage and disposal of removed parts need to be planned by Executive Engineer; separately for hazardous waste which will be given to authorized vendors only.

e) ***Debris Management***

Rehabilitation work will generate and construction debris due to repair and demolition works such as repairs to masonry portion of dam: u/s face treatment, dam pier chipping and other repair works etc., operation of construction equipment and machinery and waste generation thereof, etc.

For debris - if applicable, quantity, storage and disposal shall be specified in the monthly report (generation and disposal).

Pollution prevention and control measures in respect of Debris management shall include:

- Debris disposal site shall be identified by contractor and concerned Executive Engineer together and necessarily avoid natural watercourses.
- While identifying such locations, endeavor would be to find low lying areas nearby so as to avoid effort of transporting debris.
- Area on the course of natural drainage should be avoided.
- The construction debris from all operational areas shall be regularly scavenged and disposed of at identified disposal sites only.
- No dump site shall be located in forest area.
- No dump site shall be located on agricultural area.
- The Contractor shall educate his workforce on issues related to disposal of waste.
- The debris disposal sites have to be suitably rehabilitated by leveling and restoring to original conditions and slopes stabilized.
- If required, grass and local shrubs should be planted to rehabilitate the site.

2.3.3 How water and other resource use will be planned

Resource planning will be done by contractor in consultation with engineer in charge. After award, the contractor will make an estimate of the raw material requirement, sources for procurement and transportation route. Contractor will discuss the plan with Engineer in Charge at site and get approval.

Material to be procured from quarry/borrow area, shall be identified by contractor along with source. Approval status will be submitted to engineer in charge for consent.

Requirement of water and power at various locations for construction work and labour camp shall be established by contractor and discussed with Engineer in charge. Locations, where DG power is to be used, shall be identified along with location of DG set and its noise and emission impacts on labour and community. Mitigation measures such as ear muffs for labour and sound barrier for community, if required shall be established.

2.3.4 Environmental Quality Monitoring Plan and protocols

This being rehabilitation work limited to dam area only with localised impacts which can be managed by implementing standard ESMP, environment quality monitoring is not required. However, keeping in view that some of the dams are located in proximity to protected areas, environmental quality monitoring will be carried out at such dams only.

Environment Quality monitoring requirements for dam located in proximity to protected areas is tabulated below:

Activity	Parameters	Locations	Frequency	Responsibility
Ambient Air Quality	$PM_{2.5}$, PM_{10} and SO_2 for 24 hours	At two major location of rehabilitation works to be identified by E&S Expert	Once before start of construction, once during the construction period and one at end of rehabilitation work	Contractor through NABL accredited Lab

Sound Levels	dB(A) levels – day and night equivalents – hourly reading during day and night time for 24 hrs	At two major location of rehabilitation works to be identified by E&S Expert	Once before start of construction, once during the construction period and one at end of rehabilitation	Contractor through NABL accredited Lab
Waste water discharge	Physical inspection to ensure waste water from rehabilitation work is not being disposed off in river	All rehabilitation worksites using water	Once every month	Engineer in charge through E&S Expert
Muck and debris handling and disposal	Physical inspection to ensure muck/debris from rehabilitation work is being securely disposed off at identified and approved location	All rehabilitation worksites generating muck/debris	Once every month	Engineer in charge through E&S Expert
Storage and disposal of hazardous waste	Physical inspection to ensure hazardous waste is being segregated and securely disposed off to authorised vendors	All rehabilitation worksites generating hazardous wastes	Once every month	Engineer in charge through E&S Expert

2.3.5 Reporting

Contractor will prepare a Quarterly Progress report (QPR) and submit to Engineer in Charge. The report will cover the compliance status of the Project with the ESMP in their scope and shall include Muck/Debris Management, Resource Conservation and Pollution Prevention Plan implementation. The Engineer in Charge through E&S expert at SPMU will include its own monthly inspection report and submit the report to SPMU/IA every quarter.

2.4 COMMUNITY HEALTH AND SAFETY (ESS4)

2.4.1 Overview

Dam rehabilitation work, although limited to dam complex, can increase community exposure to risk and impacts. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of SPMU/IA to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. Occupational health and safety (OHS) requirements for project workers are set out in ESS2, and measures to avoid or minimize impacts on human health and the environment due to existing or potential pollution are set out in ESS3. ESDD has identified that there will not be any direct risks and impacts on communities due to proposed rehabilitation work including

those who are vulnerable. Following sections propose mitigation measures in accordance with mitigation hierarchy to mitigate any indirect impact on communities.

2.4.2 Hazard Identification

Implementations of sub-project activities do not pose any community health and safety risks as the proposed rehabilitation work will be limited to dam area only. However, transportation of material; setting up of labour camp; influx of workers, though small in number and generally skilled workers only; pollution generation from rehabilitation work; may have indirect impact on community as identified in the ESDD report. The risks are summarized below:

Traffic and Road Safety – Sub-project activities are largely structural interventions categorised as civil works and hydro-mechanical works. This would require transportation of construction material, equipment and machinery, instrumentation, parts and accessories to the dam. In addition, there will be movement of workers (direct and contract workers) to and from site. Transportation of man and material will increase traffic on the village roads during the period of construction leading to increased risk of accidents, spillages, and noise and air emissions on generally deserted village roads. Keeping in view the nature of proposed rehabilitation work, few vehicles will be added per day, therefore this activity do not pose any risk to community. Traffic Management Plan is enclosed in Annexure.10.

Community Exposure to Health Issues – The sub-project activities will require contract workers – skilled and unskilled. It is expected that unskilled workers will be available locally; however, a small number of skilled workforce will come from outside the area and expected to stay at site. Influx of workers and setting up of temporary labour camp interfacing with community may increase the health risk of community. Migrant workers can be potential carriers of new infectious diseases not known in the area and impact the community health. Labour camp in vicinity of community may pose risk of unplanned waste and waste water discharge.

Management and Safety of Hazardous Material – Sub-project civil and hydro-mechanical interventions may require use of hazardous material in limited quantities such as fuels, flammable gases such as acetylene and LPG, etc, Transportation storage and handling of these hazardous materials requiring careful handling and disposal to minimise risk of public exposure or polluting community land and water resource.

2.4.3 Hazard Risk Management

Following measures are proposed to minimise the community health and safety risks due to sub-project activities:

Traffic and Road Safety

- Transportation of loose construction material will be through covered vehicles only
- PUC for all transport vehicles will made compulsory
- No large scale movement of vehicles at night time
- Drivers will be issued instructions to follow signage and safety norms

Community Exposure to Health Issues

- Health and hygiene requirement of the labour camp will be maintained though out the project cycle – potable water, power, community/individual kitchen, waste management
- Separate toilets for male and female workers staying in labour camp connected to septic tanks/adequate waste collection and disposal arrangement

- Waste management system will be implemented in labour camp by providing adequate number of bins and collection system to avoid littering of waste
- Labour will be sensitized to follow good health and hygiene practices for their as well community's health.
- SOP for preventive measures to be taken in labour camp is given in Annexure.11.

Incident Management, OHS monitoring, training:

Labour interaction with communities, Incident prevention and management, OHS monitoring, Health and Hygiene, training are discussed as part of labour management Plan ESS2.

2.4.4 Communication and Consultation (Workers & community)

Stakeholder consultation was carried out involving direct workers and community in the month of August 2021, during ESDD preparation. Direct workers are well aware of rehabilitation work and confirmed these activities remain limited to dam complex only. Community participants welcomed the proposed interventions relating to dam safety and confirmed that there are no pending issues regarding dam construction related resettlement. The participants welcomed the dam strengthening works. Participants have expressed that they do not have any grievances and as such no grievances were ever reported from their communities/neighbourhoods. Consultations will be continued during various phases of the project by IA.

2.4.5 Emergency Management Plan

Emergency Management Plan should be displayed prominently at work site in local language for ease of understanding of workers and staff. It should contain following information:

1. Name, Designation & Contact Numbers of the site supervisor and alternate to be informed in case of any emergency;
2. Contact details of nearby hospitals, fire department and police department
3. Location of fire extinguishers, first aid boxes, emergency alarm and assembly points
4. Potential Emergencies Situations such as fire, fall, electric shock, etc. & response measures such as use of fire extinguishers, rescue procedures, switching off main power (can be made pictorially)

Responsibility of site supervisor (or his alternate in case he is not present) will be clearly defined including:

1. Assess the level of emergency
2. Providing first aid/organize rescue, as per the emergency situation
3. Assess the need for hospitalization and call ambulance
4. Evacuate the area/limit entry after assessing type of emergency
5. Assess emergency situation and its potential of expanding and inform IA and first responders, as required (fire, police and medical)
6. Prepare accident report – root cause, corrective action and preventive action.

Note: Emergency preparedness Plan is enclosed in Annexure.12.

2.4.6 Emergency control Centre

Control room at dam serves as Emergency Control Centre, which has basic communication facilities. The same will be upgraded to serve as emergency control centre with following facilities:

- Display of the name of site emergency controller and all relevant phone numbers – project personnel, police, fire, medical, district administration
- Phone connection – landline/mobile (2 numbers)
- Site layout diagram with entry and exit routes / Assembly points

- Two numbers of first-aid boxes with prescribed first-aid medicines
- Two numbers of blankets
- Drinking water
- Two numbers of rescue ropes
- Two numbers of high beam torches
- Fire extinguisher of DCP and CO_2 type.

2.4.7 Reference to IFC Environmental Health and Safety Guidelines

The IFC guidelines of environmental health and safety provide detailed guidance note on health and safety requirement and good practices. This manual shall guide contractor and IAs while finalizing site specific contractor's EHS management plan.

2.5. BIODIVERSITY CONSERVATION MANAGEMENT PLAN (ESS6)

2.5.1 Applicability of Bio conservation and Management Plan (BCMP) to a sub-project

"Protected Area" means a National Park, a sanctuary, a conservation reserve or a community reserve notified under Wildlife Protection Act. Any new or expansion project within or in proximity to protected area, will have to undergo wildlife Clearance, however, rehabilitation work at existing dams in proximity to protected area do not require any clearance/compliances.

WB ESS6, "Biodiversity Conservation and sustainable Management of Living Natural Resources" requires assessing its applicability to a sub-project during ESDD, keeping in view the potential impact on biodiversity or habitat either positively or negatively, directly or indirectly.

Keeping the above in view, Biodiversity Conservation and Management Plan will be prepared for only those sub-projects which are in close proximity to any of the protected areas, to mitigate potential indirect impacts. The requirement is established during ESDD.

2.5.2 Sub Project Description

This section will briefly describe the sub-project including activities/interventions proposed in proximity to protected area, if any.

2.5.3 Inventory of Terrestrial and Aquatic Flora Fauna

This section will describe the protected area and its importance with respect to terrestrial and aquatic flora and fauna species being protected.

2.5.4 Likely Impact of Project Activities on Biodiversity areas.

A brief from the ESDD report about likely indirect impacts of sub-project rehabilitation work on protected area.

2.5.5. Conservation and Management Plan

Following measures are proposed for conservation of biodiversity:

- Labour will be sensitized to ensure that they do not indulge in tree cutting or hunting.
- Any access/short cut, linking work sites and labour camp through PA will be blocked/fenced

- Project authorities/contractor will be bound by rules and regulation of Wildlife (Protection) Act, 1972 of India and any other rule and guidelines, stipulated by the state Government.
- No dumping site will be identified in the protected area (this is not permitted by law) and no waste dumping (even temporary) will be permitted in that area.
- The project staff and workforce will be appropriately made aware about the importance of biodiversity and shall be advised not to indulge in any illegal activity
- In case of any violation, strict action and penalties would be levied in accordance with the law by appropriate authority.

2.5.6 Monitoring, Compliance reporting and Budget

Physical inspection by Engineer in Charge, before start of work and thereafter every month to check:

- Location of labour camp/colony w.r.t to conservation area and expected locations of breach.
- Route of labour movement from camp/Colony to work site and back and any possible interference with the protected area (block any short cuts/access).
- Review of complaints received, if any, reporting labour movement in the protected area and take corrective action.
- Review of labour training content and record to ensure labour is sensitized to the need of biodiversity conservation.
- Preparing quarterly compliance report.

2.6 TRIBAL DEVELOPMENT PLAN (ESS7)

2.6.1 Applicability of Tribal Development Plan (TDP) to a sub-project

There is no tribal people living downstream of the dam, Tribal Development Plan (TDP) is not applicable.

2.6.2 Previous Consultations

Stakeholder consultation was conducted on 12.08.2021 amidst COVID-19 pandemic lockdown and rainfall during the South West monsoon, after providing mask to all the participants. It was attended by permanent staff of the borrower (TNGECL) working at dam, public of nearby village.

Following is the summary of the outcome of stakeholder consultation:

1. All the participants welcomed the proposed interventions relating to dam safety and ensured that our DRIP work will not affect the villages during execution.
2. The participants explicitly mentioned that the dam is their lifeline and strengthening works will help their long term livelihood and therefore welcomed such information.
3. Participants have expressed that they do not have any grievances and as such no grievances were ever reported from their communities/ neighbor hoods.
4. There are no pending issues regarding dam construction related resettlement.
5. Sometimes people temporarily work in TNGECL and most of the time work at plains.
6. They are willing to work as daily wages labourers during execution of the DRIP works.

Communities welcomed such interactions and indicated that they would prefer Dam authorities conduct such face-to-face meeting, at a convenient location to inform of developments/interventions relevant to them. They welcomed other means of information

such as advertisements in the local papers, local media, etc, but preferred to have face to face interactions.

2.6.3 Social impacts, if any

This section will describe potential positive and negative impacts – direct or indirect, if any of the rehabilitation works on tribal population such as:

Positive Impacts: The tribal households will be indirectly and positively benefited by the dam safety interventions proposed for each sub-project Dam as these will help improve the overall safety of the dams.

Potential adverse impacts:. None

These activities in no way cause restriction on access to land or use of resources by local communities and there is no economic displacement envisaged due to the sub-project. Only non-structural interventions such as preparation and implementation of EAP and early flood warning systems will involve engaging with variety of stakeholders including tribal groups, living in the vicinity of the dam and would need to be consulted and informed in culturally appropriate approach – language, techniques that are familiar to them.

2.6.4 Measures to avoid, minimize impacts, if any

As the structural interventions will not lead to any adverse impacts, no specific mitigation measures are required. However, in context of non-structural measures, implementation of EAP and early flood warning system will be shared in meetings and informed in language/techniques which are conversant to them.

2.6.5 FPIC

ESS7 sets out the requirement of obtaining Free, Prior, and Informed Consent (FPIC) of affected Indigenous People/ Sub-Saharan African Historically Underserved Traditional Local Communities in the three circumstances viz.

(a) Have adverse impacts on land and natural resources subject to traditional ownership or under customary use or occupation;
(b) cause relocation of Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities from land and natural resources subject to traditional ownership or under customary use or occupation; or
(c) have significant impacts on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities' cultural heritage that is material to the identity and/or cultural, ceremonial, or spiritual aspects of the affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities' lives.

If any of the above three circumstance will become applicable, project risk category will change from Low to Moderate from Substantial to High. As such none of the three circumstances are found applicable and therefore, for Low to Moderate Risk project, even if it is located in Schedule V or VI areas, FPIC will not be required.

2.6.6 Action Plan to be implemented with EAP.

.No.	Activities	Q1	Q2	Q3	Q4	Q5

1	Initial kick off meeting with communities including tribal communities on: i. project interventions including likely disruptions if any to water supply ii. Preparation of EAP including likely timelines for mapping exercises of emergency resources (e.g. boats, community volunteers, etc.) iii. Inform them of the project level GRM;					
2	For EAP preparation, ● hold consultation with general communities involving Sarpanch and community members ● Hold separate meetings with females, disadvantaged and vulnerable groups					
3	Develop culturally appropriate IEC materials (for STs) for dissemination					
4	Disclose draft EAP at Disclosure event with participation from local villages including headmen/Sarpanch					
5	Disseminate key details (or Executive Summary) of EAP by pasting details in local villages					

SINCE IT IS NOT APPLICABLE, TRIBAL DEVELOPMENT PLAN HAS NOT BEEN PREPARED FOR KADAMPARAI DAM.

2.7 CULTURAL HERITAGE PROTECTION PLAN (ESS8)

Cultural Heritage Protection Plan will be applicable to those sub-projects, where cultural heritage of significance is identified within the project area and proposed interventions may have interface with cultural heritage of the area requiring plan for heritage protection during project implementation.

ESS8 recognises that cultural heritage provides continuity in tangible and intangible forms between the past, present, and future and the CHPP is prepared for those sub projects which are likely to have risks or impacts on cultural heritage.

2.7.1 Scope of Cultural Heritage Protection Plan (CHPP):

CHPP shall meet the following aspects:

1. Identify the presence of Archaeological protected monuments, present in dam or close vicinity of the dam
2. Identify applicable legislative restriction and comply with them.
3. Identify physical, cultural or any religious heritage of importance to communities in the area close to or in the vicinity of dam and is/ are likely to have impact
4. Define procedure for minimising the impact if any on cultural heritage of the areas.
5. To define procedure for dealing with chance find

2.7.2 CHPP Preparation and Approval

CHPP shall be prepared prior to start of construction, by Contractor in consultation with Engineer-In-Charge in accordance with ESMF provisions.

2.7.3 Contents of Site Specific CHPP

i. **Identification of cultural resources and likely impact from the project**
All archaeologically protected monuments and physical cultural resources of the community shall be identified. Risk and impact of the interventions on these resources shall be determined. Prior legislative permits, if applicable, shall be obtained.

ii. **Undertake community consultation and other stakeholders consultation** so that Community consultation and evolve sustainable protection measures.

iii. **Identification and Protection of Chance Find:**
Any chance find of historical or archaeological importance shall be informed to authority concerned and it shall be preserved under secure conditions.

iv. **Reporting**
Contractor shall share the CHPP monitoring reports with Engineer-In-Charge on regular basis.

v. **Responsibility**
Prime responsibility of developing and implementation of CHPP shall be of the contractor. However, IA will ensure its preparation and implementation in consultation with the Contractor. The IA shall also ensure deployment of experienced Cultural Heritage expert, if required.

SINCE IT IS NOT APPLICABLE, CULTURAL PLAN HERITAGE PROTECTION PLAN HAS NOT BEEN PREPARED FOR KADAMPARAI DAM.

2.8 STAKEHOLDER ENGAGEMENT PLAN (ESS10)

2.8.1 Identification of Stakeholders

Based on the current set of proposed interventions, the following potential stakeholders were identified and categorized as Affected Stakeholders, Other Interested Stakeholders, and Disadvantaged & Vulnerable Stakeholder.

i. **Affected Persons:** There are no affected persons who shall be directly or indirectly adversely affected by the proposed interventions. It is important to also identify affected persons if gets affected from any impacts related to construction on cultural and religious heritage perspective.

ii. **Other Interested persons**: In relation to structural interventions, these would be contractors, project management consultants, regulatory bodies/institutional stakeholders such as revenue, Pollution control board, forest and wildlife department or other environmental authorities, etc. In relation to non-structural interventions, these would be communities living downstream including farmers, village heads (Sarpanchs), community leaders, district administration, police, state disaster management authority, revenue department, electronic and print media, etc. These communities would be key stakeholders requiring to be involved in the implementation of EAP.

iii. **Disadvantaged and Vulnerable Stakeholders**: Illiterate persons, physically challenged, women and elderly would be key stakeholders – requiring special focus and outreach to ensure that they are well informed about the provisions of the EAP.

Few people are living at Navamalaipathi village near Navamalai Power house which is located 20KM downstream of sub-project area (Kadamparai dam). The people living in this area are made aware about safety precautions. Also, TNGECL proposed

to provide siren in the village about informing the water discharge through spillway. Mostly the dam water is used for generation which is not flowing through this village.

2.8.2 Stakeholder Engagement and Project cycle

Table 1 lists the different types of information, relevant target audience depending on the nature of information, modes and frequency of engagement with these stakeholders.

Table 1 – Stakeholder Engagement by Activities				
Information to be disclosed	**Target stakeholders**	**Tools of engagement & mode of disclosure**	**Frequency**	**Responsibility**
Provisions related to a. Dam Safety b. Biodiversity around the dam and clearance if any required c. Cultural, religious or monumental heritage around dam , if exist	✔ Contractor ✔ SPMU staff ✔ Forest Department ✔ Pollution control Board ✔ Department of culture, if required ✔ Farmers, Communities (affected/ other interested) in the dam vicinity	✔ Consultation meetings related ESDDs and ESMP ✔ Web disclosure of related ESDDs and ESMP	✔ Multiple ✔ Must before work starts ✔ During implementation	SPMU
Work opportunities for ✔ Structural works ✔	✔ Contractors ✔ Consultants	✔ Website notifications ✔ Tender advertisements in newspaper	✔ Multiple ✔ Continuous	SPMU
Work opportunities for ✔ Petty contracts ✔ Labor	✔ Communities (including disadvantaged persons) ✔ Petty contractor	✔ Meetings to inform Village heads or community representatives ✔ Special meetings for informing tribals (Gram Sabha)	✔ Multiple ✔ Continuous	SPMU and Contractor
GBV related provisions	✔ IA officials ✔ Contractor personnel ✔ Consultant personnel	✔ Office circular and training events ✔ Website notifications ✔ Bid documents and Contract provisions	✔ Multiple ✔ Continuous	SPMU
Labour management procedure	✔ IA officials ✔ Contractor personnel ✔ Consultant personnel	✔ Website notifications ✔ Bid documents and Contract provisions	✔ Multiple ✔ Continuous	SPMU

Grievance mechanisms	✔ Communities (affected/ other interested) ✔ Contractors (for procurement related)	✔ Phone number or Toll free Helpline ✔ Display boards at site with GRM information ✔ Consultative meetings ✔ Website notifications ✔ Meetings to inform Village heads or community representatives	✔ Continuous ✔ Multiple	SPMU

2.8.3 Timelines for Information disclosure and Feedback

Information to be disclosed with timelines for providing feedback, responding to newspaper advertisements is presented below:

Table 2: Disclosure, feedback and timelines

Disclosure of information/documents	Mode of providing feedback	Timeline for feedback	Conveying of responses by SPMU	
			No. of days	Mode
ESMF, SEF	Email id/website	-NA-		
Draft ESDDs/ESIAs; draft ESMPs	Email id/website	30 days	Within 7 days of end of feedback period	Website notification
Executive Summaries in local languages of ESMP	Email id/website	30 days	Within 7 days of end of feedback period	Website notification

2.8.4 Monitoring and reporting

Quarterly progress reports of IA to include the following parameters

S. No.	Parameters	Status (Nos./description)
1	Number of public hearings, consultation meetings and other public discussions/forums conducted within a reporting period (e.g. monthly, quarterly, or annually);	
2	Number and types of IEC materials used	
3	Number of project events published/broadcasted in the local, regional media	
4	Type and frequency of public engagement activities;	
5	Number and type of grievances received within a reporting period (e.g. monthly, quarterly, or annually) and number of those resolved within the prescribed timeline	

CHAPTER 3: ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN

3.1 PURPOSE OF ES MITIGATION MANAGEMENT AND MONITORING

For the relevant environmental and social risks identified during the ESDD process of the Project, Management Plans are furnished in Chapter 2. This Chapter provides E&S risk/impacts mitigation and management plan, along with monitoring requirement, responsible entity for implementation of mitigation plan as well as monitoring. The mitigation measures are presented ESS wise at Table 3.1.

Table 3.1 Environment and Social Mitigation and Management Plan

Activity and environmental aspects	Environmental and Social Risks/Impacts	Mitigation Measures	Stage of Action	Monitoring Requirements and Frequency	Responsibility of Implementation of Mitigation Measures	Monitoring Responsibility
Labour Camp (ESS 2)	Labour health, Hygiene, Drinking Water availability and Sanitary waste generation	Provide clean, hygienic and safe camp facilities for workers with provision of safe drinking water, separate canteen facility, first aid, periodic health check-up and waste management.. Make Provision for adequate number of toilets separately one for male and one for female, with arrangement of septic tank and soak pit for bathing.	Before Construction	Physical Inspection by IA before construction and thereafter every 3 months or if any complaint is received whichever is earlier. Review of complaints should be done every month by IA.	Contractor	IA

	Water and Power requirement impacting other competitive users	Source of water and power for labour camp as per advisory from IA	Before Constructio n			
	Tree cutting by labour for cooking and space heating	Provision of community kitchen/kitchen fuel (LPG) for labour. Restriction of cutting any tree	Before Constructio n			
	Outside labour, may be bringing in new and infectious diseases not known to area	Pre deployment health check -up of labour	Before Constructio n	Review of records of health check-up before start of construction	Contracto r	IA
	SEAH/GBV risk within as well as outside the camp	Training and awareness of workers, identification of GBV hotspots and monitoring, establishing GRM mechanism	Entire duration of project	●Review of training records and identified GBV hotspots and monitoring arrangement at start and every 3 months ●Monthly Review of complaints received under GRM	Contracto r; IA to establish GRM; GBV support	IA and SPMU for GRM
Labour employment and working conditions (ESS 2)	1. Non-payment of wages and overtime 2. Non-compliance to working hours, number of working days per week, rest day and rest time 3. Inadequate facilities at site - drinking water, toilets, food 4. Not providing temporary accommodation for labour	Ensure compliance to BOCW and other applicable legal instruments; latest state government notification issued by Labour Department for minimum wages, working hours, child labour age should be complied with.	Before construction - Contractors Labour License, Insurance, ESI and PF registration	Document review such as licenses, record register and muster roll; Physical inspection of working condition at site and labour camp; every 3	Contracto r	IA

	free of charge with separate toilet, bathing and lavatory facilities at least one for male and one for female workers. 5. Not providing kitchen and creche, if applicable 6. Employment of child labour	Establish ICC & GRM to address the complaints from local community, labour etc. Provide drop box at project site to receive complaints. Display the GRM in a board at project site.	Regular review during construction	months or if any complaint is received whichever is earlier; Review of complaints received under GRM every month		
Occupational Health and Safety during works (ESS 2)	1. Unsafe working conditions – poor marking, instructions, 2. Not enough PPEs for all workers; PPEs not appropriate for all types of risks at site or Poor quality PPEs 3. Inadequate training and awareness of workers in use of PPEs and/or in emergency response,	1. Contractor/Supervisor will inspect the work sites and mark them as high, moderate and low risk areas and ensure workers follow instruction to work in these areas 2. Adequate number of good quality appropriate PPEs to be provided by contractor – helmets, gum boots, safety belts, safety harness, gloves, overalls, ear plugs, face masks, etc. 3. All workers should be provided with training on use of appropriate PPEs and how to respond during emergency 4. Adequate EHS instructions shall be displayed at site 5. Provision of First aid with availability of trained first aiders shall be ensured 6. SOP shall be developed as per best practices and	Before construction – training and availability of PPEs During construction – marking of areas as per risks, rehearsing emergency response and identify training needs	Review of training records, review of availability of PPEs, Review of accident records and corrective preventive action reports – before start of construction thereafter every 3 months	Contractor	IA

		IFC EHS guidelines for unsafe conditions like working on height, working in confined areas, electrical safety, fall prevention, handling of hazardous material like welding gases 7. Adequate provision of life jacket if working on reservoir side 8. Procedure of incident prevention, investigation and corrective preventive action				
Use of resources – water, power and raw material for dam rehabilitation work (ESS 3)	Resource wastage, impact on land environment while procuring material from quarry/borrow areas	Resource planning will be done by contractor in consultation with engineer in charge (Estimate of material requirement from quarry/borrow area, identification of nearest locations with approval status . Ensure that material is sourced from quarries or borrow areas which has valid environmental clearance.	Before start of construction work	Review of resource planning ensuring efficiency Review of quarry and borrow material requirement with approval status, validity and environment clearance – once before start of construction	Contractor with IA	IA and SPMU
Pollution generation from rehabilitation work sites and labour camp	1. Air and noise emissions from storage and handling of raw material and during execution of civil and hydro-mechanical work	1. Ensuring covered storage of lose material/sprinkling of water to minimize fugitive emissions 2. Maintaining construction equipment and ensuring DG set used for power	During entire project duration	Ambient Air Quality Monitoring only for projects which are in close proximity to	Contractor through NABL accredited Lab;	IA

(ESS 3)	2. Water pollution from construction activities and from labour camp 3. Muck generation from excavation work, if any, and debris generation from repair work 4. Hazardous waste generation from civil construction work such as painting and hydro-mechanical work, replacement of parts, etc.	have valid certificate of Type Approval and also valid certificates of Conformity of Production as per conformance labelling. DG stack height shall be as per the Consent to be obtained from State Pollution Control Board before start of work. 3. Ensuring use of dust masks, if workers are exposed to dust emissions and ear muffs for exposure to high noise for long durations 4. Provision of mobile toilets at work site 5. Wastewater from construction sites not to be discharged untreated (compliance with general discharge standards) 6. Muck and construction debris to be disposed off at pre-identified and approved site 7. Hazardous waste (Empty barrels/containers/liners contaminated with hazardous chemicals /wastes; Contaminated cotton rags or other cleaning materials) to be separately stored and disposed off to authorized vendors only.		protected areas ($PM_{2.5}$, PM_{10} and SO_2 for 24 hours) at 2 major construction sites, before start of construction (as identified by Engineer in charge) once during construction and once at the end of rehabilitation work Sound Level monitoring (dB(A) levels) only for projects which are in close proximity to protected areas at 2 major construction sites (as identified by engineer in charge), once before start of construction once during construction and	Contractor	

		Refer Annexure.1.		once at the end of rehabilitation work Monthly physical inspection to ensure wastewater from rehabilitation work is not being disposed off in river; muck/debris is being disposed off at identified locations. soil level : near construction camp site or active work site area where probability of waste discharge exists Physical inspection of use of PPEs, review of DG specification, wastewater discharge, muck and debris handling and disposal – every month		

				Physical inspection of segregation, storage and disposal of hazardous waste to authorised vendor – every month		
Transportation of material to project site through village roads. (ESS 4)	Increase in the traffic on village roads leading to air and noise emissions as well as risk of accidents.	1. All vehicles used by contractors for transportation of persons and material should have valid PUC 2. Lose material should only be transported in covered vehicles	During entire duration of project	Physical inspection and review of documents before construction and thereafter every 3 months or if any complaint is received whichever is earlier	Contractor	IA
Biodiversity Conservation for sub-projects in close proximity are as as per ESMP (ESS 6)	Indirect impacts due to rehabilitation work in proximity to protected areas involving limited outside labour	1. Sensitizing labour on importance of conservation area and dos and donts	Before start of construction	Physical inspection of location of labour camp wrt PA before start of construction	Contractor and IA	SPMU
Tribal Development for sub-projects in Schedule V or VI areas preparing EAP	Non-structural interventions such as preparation and implementation of EAP and early flood warning systems	During EAP Implementation: 1. Identification of scheduled areas and tribal clusters to prioritise targeting of	During implementation of EAP	Review of Plan of engagement of tribal population	IA	SPMU

(ESS 7)	will involve consultation with variety of stakeholders including tribal groups, living in the vicinity of the dam and would need to be consulted and informed in culturally appropriate approach – language, techniques that are familiar to them.	dispersed indigenous communities in the non-tribal areas as well as for clear targeting of tribal in the schedule V and VI areas 2. Development of culturally appropriate Information Education and Communication (IEC) materials for dissemination in the project areas to avoid panic/rumours and providing correct and accurate information in a manner understood to locals 3. Deployment of local (tribal) Community Facilitators to support awareness generation and mobilization in tribal areas.		for EAP implementation Review of complaints received before start of construction		
Cultural Heritage for sub projects impacting any protected monuments as identified in ESDD (ESS 8)	Damage to monument/site of cultural heritage	1. Before start of construction, joint inspection by contractor and IA, of cultural heritage site will be undertaken 2. Work plan will be prepared to ensure no direct/indirect impact from work. 3. Labour interference or labour access to the site will be prohibited	Before start of construction	Review of work plan vis-à-vis protection requirement to cultural heritage Review of training records	Contractor and IA	SPMU

		4. ASI rules for visit to site or any other regulation will be strictly adhered to 5. Training and awareness of labour to cover protection of site				
Stakeholder Engagement (ESS 10)	stakeholder participation, implementing the grievance mechanism, ensuring continuous information transfer through open communication	Establish grievance mechanism and implement	Before construction	Review of complaints received, if any, corrective preventive action and redressal	IA	SPMU

3.2 ES MITIGATION AND MONITORING PLAN – ACTION RESPONSIBILITY MATRIX

Various preparatory action and plans are to be prepared before start of construction work by contractor and Implementing Agency (Reference Chapter 2 and section 3.1) Table below lists actions to be taken by contractor and IA.

By Contractor		
Specific Action/ Preparation requirements	**Reference Document / format**	**Stage of Action / Frequency**
Preparation of Labour Camp Plan(if labour camp are proposed)	Number of workers, number of units required, duration of stay; facilities proposed to be provided – toilets, kitchen drinking water, waste management	Once - Before start of work
Health check-up of workers (if workers are planned to stay at site for more than six months)	Health check records	Once - Before start of work
Training and awareness of labour – GBV/ SEA, Code of Conduct, OHS requirements	Topics covered, date of training and attendance	First before start of work, thereafter after every 3 months
Compliance to labour laws	Copy of Labour license, ESI, PF	First before start of work, thereafter as per expiry/ renewal
Identification of hazardous working locations and marking and emergency response plan	List of risky activities	Before start of work
Availability of PPEs	List of PPEs – number of each type	Before start of work
Training of workers on use of PPEs and Emergency Response	Training records	First before start of work, thereafter after every 3 months
Ambient air quality and sound level monitoring for projects in close proximity to protected areas	As per the report of NABL accredited lab	Before start of work, during construction and at the end of rehabilitation work
Identification of authorised vendor of hazardous waste	Name of the vendor, status of authorisation and copy of authorisation	Before start of work
Identification of approved quarry/borrow area	Name of the supplier, copy of approval	Before start of work
Submission of Quarterly Progress Report		Within 2 weeks of end of every 3 months period from start date

By Implementing Agency supported by EMC	
Specific Action/Preparation requirements	**Timeline/ Frequency**
Identification of suitable location of labour camp, if applicable	Before start of work
Identification of source of water and power for labour camp, if applicable	Before start of work
Identification of GBV hotspots	Before start of work
Approval of quarry/borrow area	Within one week of submission of details by contractor
Identification of ambient air quality and sound level monitoring locations for projects in close proximity to protected areas	Before start of work
Identification of muck/debris disposal location	Before start of work
Establishing GRM and its awareness - poster/signage with contact details	Before start of work
Ensuring effectiveness of GRM and review of complaints received	Every month during the entire duration of project implementation
Inspection of labour camp ensuring adequate facility	First on set up, thereafter every 3 months
Reviewing contractors documents and ensuring compliance to labour laws	First on setup, thereafter every 3 months
Ascertaining adequacy of good quality PPEs	Once before start of work, thereafter every 3 months
Physical inspection at work site - air emissions, noisy operations, use of PPEs	Every month during the entire duration of work
Submission of Quarterly Progress Report	Within one month, from end of every 3 months period from start date

CHAPTER 4. IMPLEMENTATION ARRANGEMENTS AND ESMP BUDGET

The ESMP implementation is mainly the responsibility of Contractor engaged for the Works. Implementing Agency is responsible for Sub Project level activities not directly addressed by Contractor such as GBV referral mechanism, Stakeholder engagement etc. The EMC engaged by Implementing Agency will support the IA in implementation monitoring of ESMP.

In compliance with ESMF, the framework provisions of ESMP, which shall be implemented by Contractor, will be included as part of Bids and the Contractor upon on boarding shall submit C-ESMP with updated inputs on management plans. The ESMP will be updated, should additional information/ impacts are determined during the project.

4.1 IMPLEMENTATION AND SUPERVISION ARRANGEMENTS

Table below outlines the management measures and implementation and supervision arrangements for the various activities at different stages of the project.

S. No	Project Stage/Activity	Management Measures	Responsibility	
			Planning and Execution	**Supervision/ Monitoring**
1	Establishing Labour Camp before start of construction, if required	Provision of separate toilets for male and female, sanitation and waste collection & disposal facilities, provision of kitchen fuel/community kitchen	Contractor	Engineer in Charge
2	Health check of labour before induction(in case outside labor are proposed to employ and stay for more than six months)	Health from an authorised government hospital/dispensary and submission of record	Contractor	Engineer in Charge
3	Compliance to labour laws - before start of construction	Ensure compliance to BOCW and other applicable legal instruments including; latest state government notification issued by Labour Department for minimum wages, working hours, child labour age.	Contractor	Engineer in Charge
4	Identification of GBV hotspots and accident hotspots on transport route	Physical survey and hotspot dentification	E&S Expert at Dam	Engineer in Charge

S. No	Project Stage/Activity	Management Measures	Responsibility	
			Planning and Execution	**Supervision/ Monitoring**
	before start of construction			
5	Workers training	Workers training covering SEA/SEAH and GBV risks and consequences, OHS training and emergency actions, Code of Conduct – awareness and acceptance; biodiversity conservation	Contractor	E&S
6	Occupational Health and Safety of workers during entire duration of project	1. Contractor/Supervisor will inspect the work sites and identify the high risk areas, if any; ensures workers follow instruction to work in these areas 2. Adequate number of good quality appropriate PPEs to be provided by contractor – helmets, gum boots, safety belts, safety harness, gloves, overalls, ear plugs, face masks, etc. 3. All workers should be provided with training on use of appropriate PPEs and how to respond during emergency	Contractor	E&S
7	Resource planning before start of construction	1 Resource planning will be done by contractor in consultation with engineer in charge (requirement of water and power at various location for construction work and labour camp) 2 Estimate of material requirement from quarry/borrow area, identification of nearest locations with approval status	Contractor	Engineer in Charge
8	Pollution prevention during entire project duration	1. Ensuring covered storage of lose material/sprinkling of water to minimise fugitive emissions 2. Maintaining construction equipment and ensuring DG set used for power have valid certificate of Type Approval and also valid certificates of Conformity of Production as per conformance labelling 3. Ensuring use of dust masks, if workers are exposed to dust emissions and ear muffs for exposure to high noise for long durations 4. Provision of mobile toilets at work site	Contractor	E&S

S. No	Project Stage/Activity	Management Measures	Responsibility	
			Planning and Execution	**Supervision/ Monitoring**
		5. Wastewater from construction sites not to be discharged untreated (compliance with general discharge standards) 6. Muck and construction debris to be disposed off at pre-identified and approved site 7. Hazardous waste (Empty barrels/containers/liners contaminated with hazardous chemicals /wastes; Contaminated cotton rags or other cleaning materials) to be separately stored and disposed off to authorised vendors only		
9	Safe transportation of man and material during entire duration of project	1. All vehicles used by contractors for transportation of persons and material should have valid PUC 2. Lose material should only be transported in covered vehicles	Contractor	Engineer in Charge
10	Inspection of Labour Camp wrt to Conservation Reserve	1. Physical inspection ensuring no easy access to conservation reserve from work site/labour camp and shortcuts 2. Blocking of access/shortcuts	E&S Experts	Engineer in Charge
12	EHS monitoring	To be undertaken throughout the project implementation period with inspection by E& S staff of contractor monthly and report submission	E&S experts of contractor	IA

Reporting by contractor and monitoring by SPMU

Contractor will prepare a Quarterly Progress report (QPR) and submit to E&S Experts/SPMU giving the compliance of ESMP. Details will include status on:

1. Progress on ESMP implementation work plan
2. Status of Compliance with E&S statutory requirements such as labour licenses, insurance, etc.
3. ESHS incidents & supervision
4. Usage (no. required, distributed and used) of Personal Protective Equipment (PPE) such as hard hats, safety shoes and safety vests by workers
5. Training conducted, and worker's participation (submit reports with statistics of training and worker's participation)
6. Functioning of GRM relating to labour aspects, including summary details of Workers grievances, if any
7. Community grievances, if any

8. Corrective Actions and planned E&S activities for next quarter

SPMU will prepare its quarterly monitoring report and submit the same along with contractors report to CPMU.

ANNEXURE 1:

OUTLINE OF CONTRACTOR'S ESMP

(Will cover all on site issues and responsibility with management; include chance find procedure if applicable)

1. **Sub-project activities description under Contractor's Scope**

2. **Licensing Requirement**
   - 2.1 Labour License
   - 2.2 Insurance
   - 2.3 Use of approved quarry/borrow areas, if such material is required
   - 2.4 Any other

3. **Workforce management under COVID 19 considerations, if applicable**
   - 3.1. Profile of work force – work activities, schedule, contract duration, workforce rotation plan, workers place of stay, workers with underlying health issues
   - 3.2. Measures to mitigate risks on account of COVID 19
   - 3.3. Contingency plan covering – prehealth checkup, access restrictions, hygiene, waste management, accommodation arrangements, PPE provision and usage
   - 3.4. Reporting and handling of Instances of COVID 19 cases, training and communication with workers, training and SOPs on communicating and contact with community

4. **Labour Camp (if outside labour is accommodated in a labour camp)**
   - 4.1. Location of Labour Camp
   - 4.2. Number of labour to be housed and duration
   - 4.3. Break-up of labour workforce – male, female, children
   - 4.4. Number of Units in Labour Camp
   - 4.5. Source and Provision of Water and Power Connection including Drinking Water
   - 4.6. Cooking Arrangement – Individual Kitchen/community Kitchen
   - 4.7. Source, Type and Provision of Kitchen Fuel
   - 4.8. Toilet facilities – individual/community; fixed/mobile and sewage disposal arrangement
   - 4.9. Waste collection and disposal arrangement
   - 4.10. Identify Risk of Community Interface – any fencing/separation requirement
   - 4.11. Security and general lighting arrangement

5. **Resource Planning**
   - 5.1. Water and power requirement for works and locations
   - 5.2. Need for water line or electrical wiring
   - 5.3. Raw material requirement and source(s)
   - 5.4. Temporary storage(s) at site and location(s) – cover/uncovered
   - 5.5. Transportation route from source to storage

6. **Pollution Prevention**

6.1. Potential of dust emission from openly stored raw material and mitigation arrangement – covering, sprinkling, etc.
6.2. Potential of water pollution from spillage and leakage from raw material storage and preventive measures
6.3. Potential of air emissions from works including toxic emissions from paints and chemicals, emissions from DG sets and other construction equipment – locations where potential is high, possibility of community impact, impact on workers, preventive measures such as dust masks for workers, etc.
6.4. Potential of noise generation from works (use of equipment and machinery, demolition work) including from any activity planned at nigh time – locations where potential is high, possibility of community impact, impact on workers, preventive measures such as ear muffs, etc.
6.5. Potential of water pollution from works – possibility of leakage to surface water or accumulation in low lying areas; preventive measures/treatment requirement
6.6. Estimate of excavated earth/construction debris requiring disposal – quantum, sources(s) of generation, identified dumping sites, transportation mode and route, period of dumping and restoration plan

7. **Occupational Health & Safety and Emergency Management**
7.1. PPE requirement and numbers
7.2. Lists of tasks and work zone critical for hazard prevention, if any
7.3. Location of warning signage for hazard prevention
7.4. Requirement of first aid boxes and portable fire extinguishers
7.5. Key person(s) to be contacted during emergency
7.6. Protocol for deciding the level of emergency – need for hospitalization, information to authorities, etc.
7.7. Process of accident analysis, corrective and preventive measures and need for reporting

8. **Addressing GBV Risks**
8.1 Preventive measures – provision of lighting, separate toilet areas for men and women, increased vigil and security arrangement for community sensitive GBV hotspots, if identified by dam authorities.
8.2 Sensitizing and awareness of labour on GBV issues including penalties and legal action against offenders
8.3 Awareness about GRM

9. **Code of Conduct**
9.1 Preparation of Code of conduct
9.2 Making labour aware of conduct with all the provisions, do's and don'ts, penalties
for non-compliances, etc.
9.3 Displaying CoC at prominent locations
9.4 Signing of CoC by workers

10. **Awareness and Training**
10.1 Plan for training and awareness covering Pollution Prevention, OHS, Use of PPEs, Accident reporting and emergency management, CoC, GBV, GRM, etc.
10.2 Training schedule
10.3 Training records

ANNEXURE 2:

SUB-PROJECT SPECIFIC E&S SENSITIVE INFORMATION

Kadamparai Dam is located in Coimbatore district of Tamil Nadu. There is no significant settlement in the proximity areas of the project. There are no Schedule V1 areas in Tamil Nadu. The Coimbatore district has its headquarters in Coimbatore and it is divided into three revenue divisions and eleven Taluk (tehsil). There are 295 revenue villages. The district has 38 Community Development Blocks consists of 295 Village Panchayat.

The economy of the district is basically dependent on non-agricultural activities & resources. The brief demographic characteristic of the district is given in the table below:

No. of Households	9,58,035	**Household Size**	**04**
Total Population	**34,58,075**	**Population (0-6 age)**	**1,82,350**
Male	17,29,297	Boys (0-6 age)	52,275
Female	17,28,748	Girls (0-6 age)	49,794
Sex Ratio	997	Sex Ratio (0-6)	953
Population (SC)	**535911 (15.49%)**	**Population (ST)**	**28342 (0.82%)**
Male	266960	Male	14245
Female	268951	Female	14097
Literates	**33,07,644**	**Literacy Rate (in %)**	**91.30**

Schedule tribe population in the district is very limited and are scattered. There are no Scheduled Tribe households in the downstream areas. No physical interventions planned in the downstream areas.

ANNEXURE 3:

SAMPLE CODE OF CONDUCT (COC) (Translate to local language also)

Code of Conduct

1. I will comply with applicable national and company laws, policies, rules, and regulations (including policy on sexual harassment).
2. I will Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the employer's personnel, and the contractor's personnel (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment).
3. I Will not use illegal substances.
4. I Will not discriminate in dealing with the local community and all co-workers. I will Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinions, national, ethnic or social origin, property , disability, birth or other status.
5. I Will not indulge in sexual harassment (for example prohibition of the use of language or behaviour particularly towards women and/or children, that is inappropriate, abusive, sexually provocative, demeaning or culturally inappropriate)
6. I will not involve violence, including sexual and/or gender-based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberties).
7. I Will not mix/interact with children (anyone under the age of 18), and ensure their safety in the project areas.
8. I will adhere to Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer).
9. I will Avoid conflict of interest(such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family or personal connection).
10. I will Respect reasonable work instructions (including environmental and social norms).
11. I will adhere to Protection and proper use of property (for example, to prohibit theft, carelessness or waste).
12. I Will attend training for the duration of the contract for understanding this code of conduct.
13. I Will report violations of this code. All staff must report suspected or actual violations by a fellow worker, whether in the same contracting firm or not. Reports must be made through the GRM setup for this purpose.
14. I know that Sanctions may be applied if an employee is confirmed to be a gender-based violence perpetrator. (The sanctions will be proportional to the transgression and in accordance with applicable laws and policies).
15. I know that Non-retaliation against workers who report violations of the code, if that report is made in good faith.

I have read and was explained all the contents given above, and I understand the requirement. I shall strictly adhere to this code of conduct in all the areas of work. I understand the insistence on compliance with these norms which are mandatory for me.

Name: Signature

நடத்தைவிதி (Code of Conduct)

1. பொருந்தக்கூடியதேசியமற்றும்நிறுவனசட்டங்கள், கொள்கைகள், விதிகள்மற்றும்ஒழுங்குமுறைகள் (பாலியல்துன்புறுத்தல்தொடர்பானகொள்கைஉட்பட) ஆகியவற்றுடன்இணங்குதல்.
   Compliance with applicable national and company laws, policies, rules, and regulations (including policy on sexual harassment).
2. உள்ளூர்சமூகம் (பாதிக்கப்படக்கூடியமற்றும்பின்தங்கியகுழுக்கள்உட்பட), முதலாளியின்பணியாளர்கள்மற்றும்ஒப்பந்ததாரரின்பணியாளர்கள் (பரிந்துரைக்கப்பட்டதனிப்பட்டபாதுகாப்புஉபகரணங்களைஅணிவது, தவிர்க்கக்கூடியவிபத்துகளைத்தடுப்பதுமற்றும்நிலைமைகள்அல்லது நடைமுறைகளைப்புகாரளிப்பதுஉட்பட) பொருந்தக்கூடியசுகாதாரமற்றும்பாதுகாப்புத்தேவைகளுக்குஇணங்குதல். பாதுகாப்புஆபத்துஅல்லதுசுற்றுச்சூழலுக்குஅச்சுறுத்தல்).
   Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the employer's personnel, and the contractor's personnel (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment).
3. சட்டவிரோதபொருட்களைபயன்படுத்தமாட்டோம்.
   Will not use illegal substances.
4. உள்ளூர்சமூகத்துடனும்அனைத்துசகஊழியர்களுடனும்கையாள்வதில் பாரபட்சம்காட்டமாட்டார்கள். இனம், நிறம், மொழி, மதம், அரசியல்அல்லதுபிறகருத்துக்கள், தேசிய, இனஅல்லதுசமூகதோற்றம், சொத்து, ஊனம், பிறப்புஅல்லதுபிறஅந்தஸ்துஆகியவற்றைப்பொருட்படுத்தாமல்பெண்கள், குழந்தைகள் (18 வயதுக்குட்பட்டவர்கள்) மற்றும்ஆண்களைமரியாதையுடன்நடத்துங்கள்.
   Will not discriminate in dealing with the local community and all co-workers. Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinions, national, ethnic or social origin, property , disability, birth or other status.
5. பாலியல்துன்புறுத்தலில்ஈடுபடமாட்டோம் (உதாரணமாக, மொழிஅல்லதுநடத்தையைப்பயன்படுத்துவதைத்தடைசெய்தல், குறிப்பாகபெண்கள்மற்றும்/அல்லதுகுழந்தைகளிடம், இதுபொருத்தமற்ற, தவறான, பாலியல்தூண்டுதல், இழிவுபடுத்தும்அல்லதுகலாச்சாரரீதியாகபொருத்தமற்றது).
   Will not indulge in sexual harassment (for example prohibition of the use of language or behaviour particularly towards women and/or children, that is inappropriate, abusive, sexually provocative, demeaning or culturally inappropriate).
6. பாலியல்மற்றும்/அல்லதுபாலினஅடிப்படையிலானவன்முறைஉட்படஎ ந்தவன்முறையும்இல்லை (உதாரணமாக, உடல், மனஅல்லதுபாலியல்பாதிப்புஅல்லதுதுன்பத்தைஏற்படுத்தும்செயல்க

மனஅல்லதுபாலியல்பாதிப்புஅல்லதுதுன்பத்தைஏற்படுத்தும்செயல்கள், அத்தகையசெயல்களின்அச்சுறுத்தல்கள், வற்புறுத்தல்மற்றும்சுதந்திரத்தைபறித்தல்).
No violence, including sexual and/or gender-based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberties).

7. பாலியல்சுரண்டல்மற்றும்துஷ்பிரயோகம்உட்படஎந்தசுரண்டலும்இல்லை (உதாரணமாகபாலினத்திற்காகபணம், வேலை, பொருட்கள்அல்லதுசேவைகளைபரிமாற்றம்செய்வதைதடைசெய்தல், பாலியல்சலுகைகள்அல்லதுபிறஅவமானங்கள், இழிவானநடத்தை, சுரண்டல்நடத்தைமற்றும்அதிகாரதுஷ்பிரயோகம்உட்பட).
No exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods or services for sex, including sexual favours or other forms of humiliation, degrading behaviour, exploitative behaviour, and abuse of power).
8. 18 வயதிற்குட்பட்டஎவருடனும்உடலுறவில்ஈடுபடுவதைத்தவிர்க்கவும், மேலும்இந்தகுறியீட்டைமீறினால்வேலைவாய்ப்பைப்பாதிக்கக்கூடியதடைகள்விதிக்கப்படும்.
Refrain from sex with anyone under the age of 18 and that the breach of this code will incur sanctions that could impact employment.
9. குழந்தைகளுடன் (18 வயதுக்குட்பட்டஎவரும்) கலக்கவோ/ஊடாடவோகூடாது, மேலும்திட்டப்பகுதிகளில்அவர்களின்பாதுகாப்பைஉறுதிசெய்யும்.
Will not mix/interact with children (anyone under the age of 18), and ensure their safety in the project areas.
10. சுகாதாரத்தேவைகள் (உதாரணமாக, தொழிலாளர்கள்தங்கள்முதலாளிவழங்கியகுறிப்பிட்டசுகாதாரவசதிகளைப்பயன்படுத்துவதைஉறுதிசெய்ய).
Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer).
11. வட்டிமுரண்பாட்டைத்தவிர்க்கவும் (நிதி, குடும்பம்அல்லதுதனிப்பட்டதொடர்புஉள்ளஎந்தவொருநபருக்கும்நன்மைகள், ஒப்பந்தங்கள்அல்லதுவேலைவாய்ப்பு, அல்லதுஎந்தவகையானமுன்னுரிமைசிகிச்சைஅல்லதுசலுகைகள்வழங்கப்படாது).
Avoid conflict of interest(such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family or personal connection).
12. நியாயமானபணிவழிமுறைகளை (சுற்றுச்சூழல்மற்றும்சமூகவிதிமுறைகள்உட்பட) மதிக்கவும்.
Respect reasonable work instructions (including environmental and social norms).
13. சொத்துபாதுகாப்புமற்றும்முறையானபயன்பாடு (உதாரணமாக, திருட்டு, கவனக்குறைவுஅல்லதுகழிவுகளைதடைசெய்ய).
Protection and proper use of property (for example, to prohibit theft, carelessness or waste).
14. இந்தநடத்தைநெறிமுறைகளைப்புரிந்துகொள்வதற்கானஒப்பந்தத்தின்காலத்திற்கானபயிற்சியில்கலந்துகொள்வார்.
Will attend training for the duration of the contract for understanding this code of conduct.

விட்டாலும்,
சகதொழிலாளியின்சந்தேகத்திற்குரியஅல்லதுஉண்மையானமீறல்க ளைப்புகாரளிக்கவேண்டும். இந்தநோக்கத்திற்காக GRM அமைப்புமூலம்அறிக்கைகள்செய்யப்படவேண்டும்.
Will report violations of this code. All staff must report suspected or actual violations by a fellow worker, whether in the same contracting firm or not. Reports must be made through the GRM setup for this purpose.

16. ஒருபணியாளர்பாலினஅடிப்படையிலானவன்முறைகுற்றவாளிஎனஉ றுதிசெய்யப்பட்டால், தடைகள்விதிக்கப்படலாம். தடைகள்மீறலுக்குவிகிதாசாரமாகவும்பொருந்தக்கூடியசட்டங்கள்மற் றும்கொள்கைகளின்படியும்இருக்கும்.
Sanctions may be applied if an employee is confirmed to be a gender-based violence perpetrator. The sanctions will be proportional to the transgression and in accordance with applicable laws and policies.

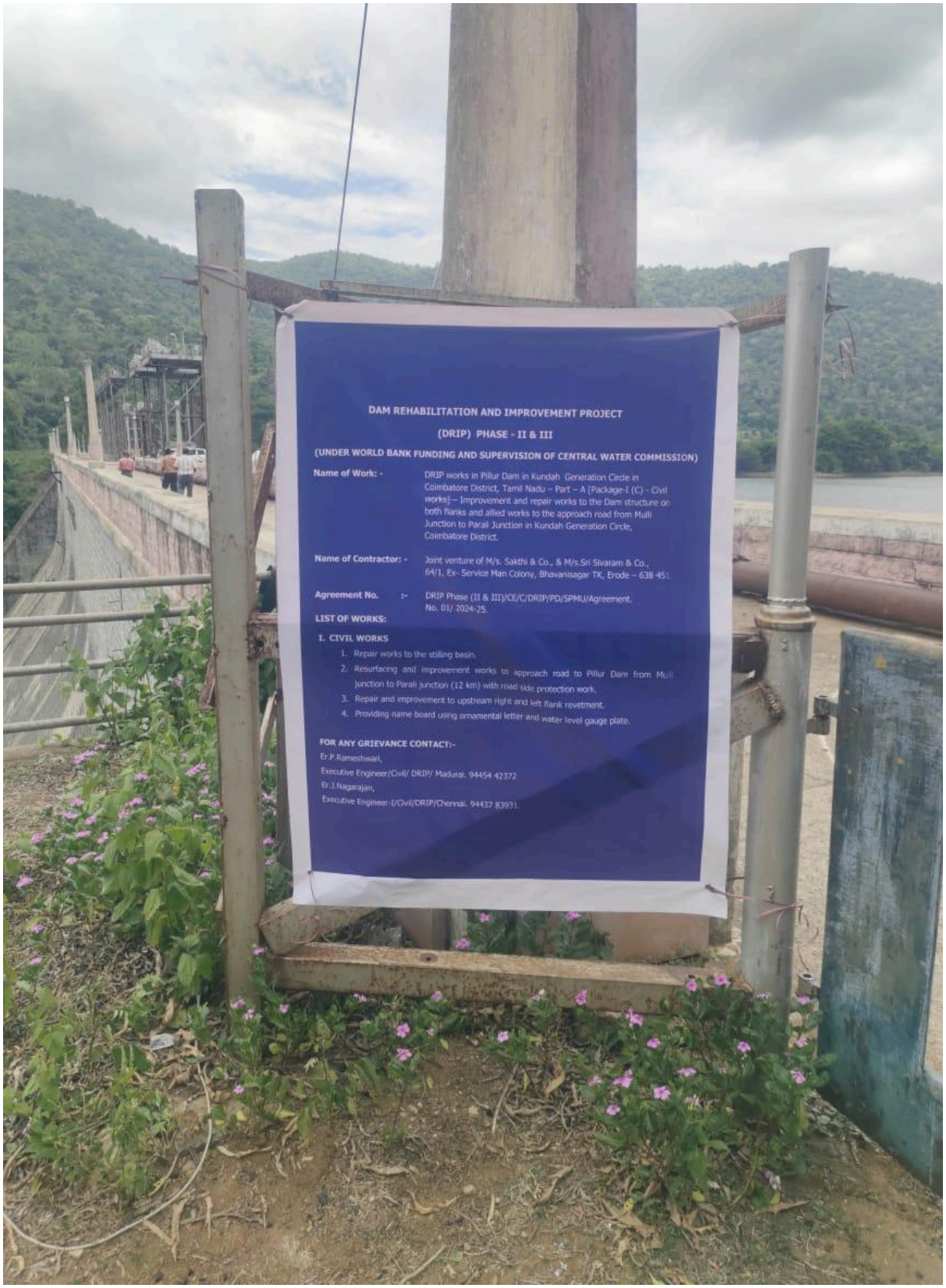
17. அந்தஅறிக்கைநல்லெண்ணத்துடன்செய்யப்பட்டால், குறியீடுமீறல்களைப்புகாரளிக்கும்தொழிலாளர்களுக்குஎதிராகப்பழி வாங்கப்படாது.
Non-retaliation against workers who report violations of the code, if that report is made in good faith.

மேலேகொடுக்கப்பட்டுள்ளஅனைத்துஉள்ளடக்கங்களையும்நான்படித் துவிளக்கியுள்ளேன்,
மேலும்தேவையைப்புரிந்துகொண்டேன்.பணியின்அனைத்துபகுதிகளி லும்இந்தநடத்தைநெறிமுறைகளைநான்கண்டிப்பாகக்கடைபிடிப்பேன். எனக்குகட்டாயமாகஇருக்கும்இந்தவிதிமுறைகளுக்குஇணங்கவேண்டு ம்என்றவலியுறுத்தலைநான்புரிந்துகொள்கிறேன்.

I have read and was explained all the contents given above, and I understand the requirement. I shall strictly adhere to this code of conduct in all the areas of work. Iunderstand the insistence on compliance with these norms which are mandatory for me.

பணியாளர்களின்பெயர்: ஒப்பந்ததாரரின்பெயர்:

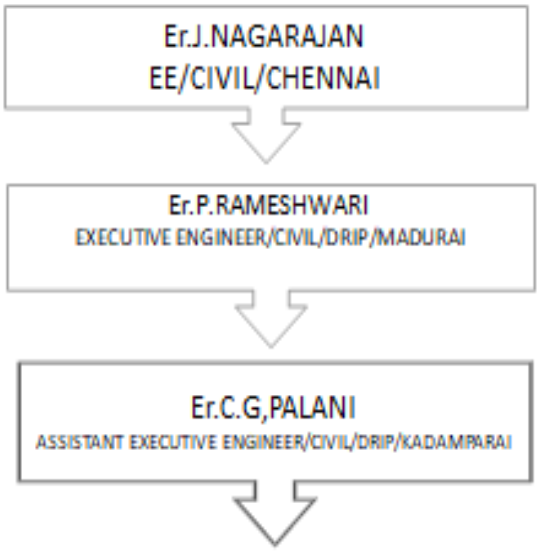
ANNEXURE 4:
Grievance Redressal Mechanism (SAMPLE)


DAM REHABILITATION AND IMPROVEMENT PROJECT
(DRIP) PHASE - II & III
(UNDER WORLD BANK FUNDING AND SUPERVISION OF CENTRAL WATER COMMISSION)
Name of Work: -
DRIP works in Pillur Dam in Kundah Generation Circle in Coimbatore District, Tamil Nadu – Part – A [Package-I (C) - Civil works] – Improvement and repair works to the Dam structure on both flanks and allied works to the approach road from Mulli Junction to Parali Junction in Kundah Generation Circle, Coimbatore District.
Name of Contractor: -
Joint venture of M/s. Sakthi & Co., & M/s.Sri Sivaram & Co., 64/1, Ex- Service Man Colony, Bhavanisagar TK, Erode – 638 451.
Agreement No. :-
DRIP Phase (II & III)/CE/C/DRIP/PD/SPMU/Agreement. No. 01/ 2024-25.
LIST OF WORKS:
I. CIVIL WORKS
1. Repair works to the stilling basin.
2. Resurfacing and improvement works to approach road to Pillur Dam from Mulli junction to Parali junction (12 km) with road side protection work.
3. Repair and improvement to upstream right and left flank revetment.
4. Providing name board using ornamental letter and water level gauge plate.
FOR ANY GRIEVANCE CONTACT:-
Er.P.Rameshwari,
Executive Engineer/Civil/ DRIP/ Madurai. 94454 42372
Er.I.Nagarajan,
Executive Engineer-I/Civil/DRIP/Chennai. 94437 83931.

ANNEXURE 5:

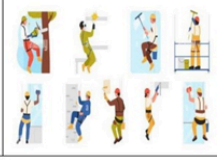
INTERNAL COMPLAINT'S COMMITTEE (SAMPLE)

GREIVENCE REDRESSAL MECHANISM (GRM)/INTERNAL COMPLIANCE COMMITTEE (ICC)

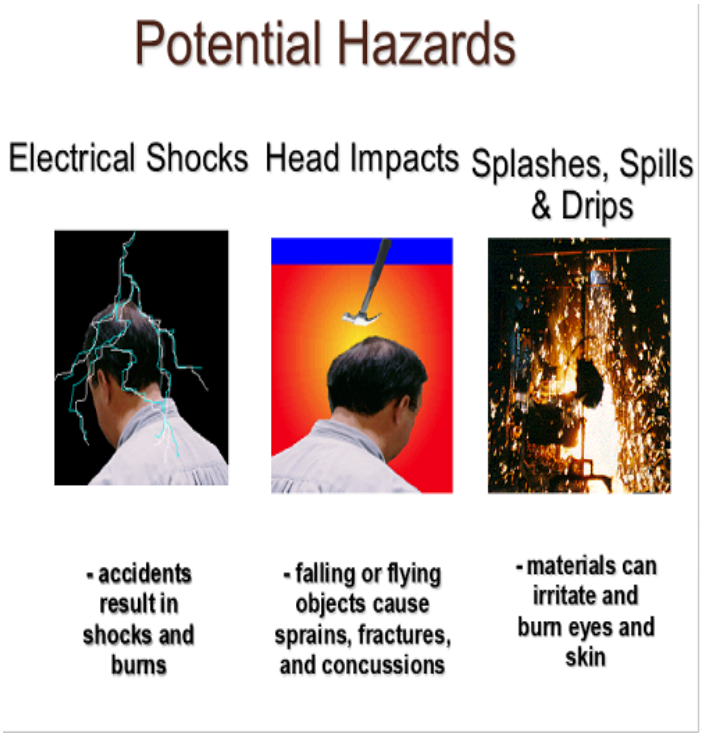


ANNEXURE 6:
STANDARD OPERATING PROCEDURE (SOP)

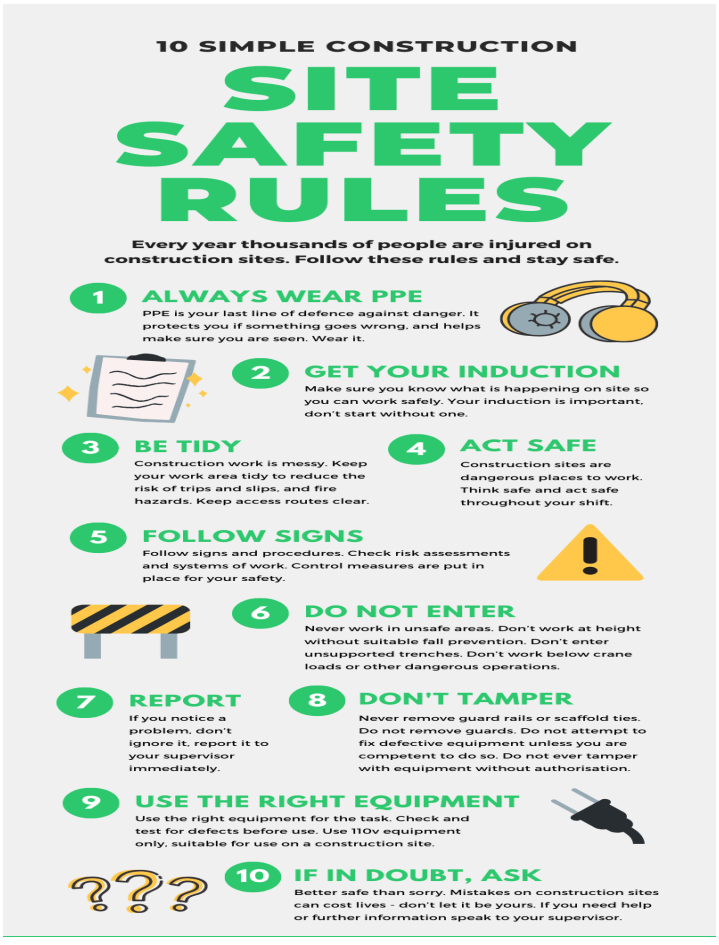
Standard operating Procedure (SOP) - PILLUR DAM

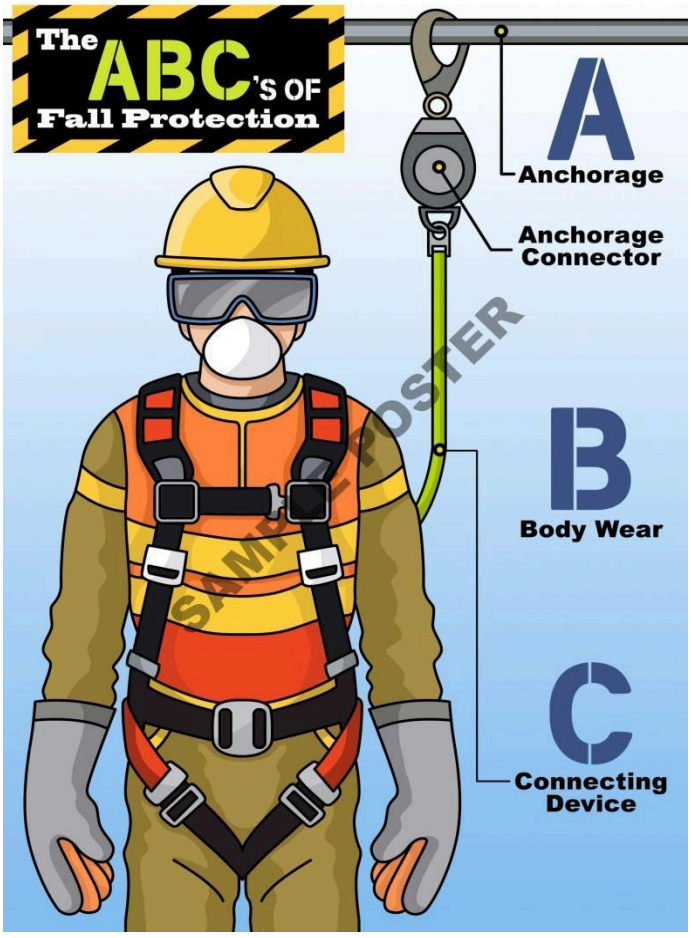
	WORK AT HEIGHTS உயரத்தில் வேலை		WELDING AND CUTTING OPERATION வெல்டிங் மற்றும் கட்டிங் ஆபரேஷன்		ELECTRICAL SAFETY மின் பாதுகாப்பு		EXCAVATION WORK குழி வேலை		HANDLING OF HAZARDOUS CHEMICALS அபாயகரமான இரசாயனங்களை கையாளுதல்
1	Be trained to work at heights	1	Hoses shall be in good condition.	1	Work shall be done by qualified, experienced electrical technicians.	1	Proper inspection shall be done to identify underground utility services existing near or inside the excavation areas.	1	Hazardous chemicals shall be stocked safety at the site.
	உயரத்தில் வேலை செய்ய பயிற்சி பெறுங்கள்		குழல்கள் நல்ல நிலையில் இருக்க வேண்டும்		தகுதி வாய்ந்த, அனுபவம் வாய்ந்த மின் தொழில்நுட்ப வல்லுநர்களால் வேலை செய்யப்பட வேண்டும்.		குழி வேலை பகுதிகளுக்கு அருகில் அல்லது உள்ளே இருக்கும் நிலத்தடி பயன்பாட்டு சேவைகளை அடையாளம் காண முறையான ஆய்வு செய்யப்பட வேண்டும்.		அபாயகரமான இரசாயனங்கள் தளத்தில் பாதுகாப்பாக சேமிக்கப்பட வேண்டும்.
2	Install full edge protection	2	Hoses shall not be wrapped around cylinders	2	All electrical installations shall be checked periodically, shall be free from short circuit, loose contacts, insulation failure etc.	2	All excavated areas shall be cordoned off with barriers of minimum height 2.5 m and tape, to prevent public access.	2	Material safety data sheet (MSDS) shall be readily available at the project site.
	முழு விளிம்பு பாதுகாப்பை நிறுவவும்		சிலிண்டர்களைச் சுற்றி குழல்களை மூடக்கூடாது		அனைத்து மின் நிறுவல்களும் அவ்வப்போது சரிபார்க்கப்பட வேண்டும், குறுகிய சுற்று, தளர்வான தொடர்புகள், காப்பு செயலிழப்பு போன்றவற்றிலிருந்து விடுபட வேண்டும்.		குழி வேலை செய்யப்பட்ட அனைத்து பகுதிகளும் பொது அணுகலைத் தடுக்க, குறைந்தபட்ச உயரம் 2.5 மீ மற்றும் டேப் கொண்ட தடைகள் மூலம் சுற்றி வளைக்கப்பட வேண்டும்.		பொருள் பாதுகாப்பு தரவு தாள் (MSDS) திட்ட தளத்தில் உடனடியாகக் கிடைக்கும்.
3	Barricade danger area	3	Regulators shall be checked for leaks.	3	Work on live lines must be avoided.	3	Excavated material shall be deposited clear of the trench to avoid the fall of debris.	3	Safety signs, symbols, and cautionary instructions shall be displayed.
	பேரிகேட் ஆபத்து பகுதி		ஒழுங்குபடுத்துபவர்கள் கசிவுகள் உள்ளதா என சோதிக்கப்பட வேண்டும்.		நேரடி வரிகளில் வேலை தவிர்க்கப்பட வேண்டும்		3. குப்பைகள் விழுவதைத் தவிர்ப்பதற்காக அகழ்வாராய்ச்சி செய்யப்பட்ட பொருட்களை அகழியில் இருந்து தெளிவாக வைக்க வேண்டும்.		எச்சரிக்கை வழிமுறைகள் காட்டப்படும்.
4	Don't use unsafe platforms	4	Arrestor must be fitted in supply line from the cylinder/generator to the burner.	4	Use PPE such as rubber hand gloves, rubber shoes, etc.	4	Excavators shall be operated by licensed drivers only.	4	Provide PPE such as gloves, googles etc.
	பாதுகாப்பற்ற தளங்களைப் பயன்படுத்த வேண்டாம்		சிலிண்டர் / ஜெனரேட்டரிலிருந்து பர்னருக்கு சப்ளை லைனில் அர்ரெஸ்டர் பொருத்தப்பட்டிருக்க வேண்டும்		4. ரப்பர் கையுறைகள், ரப்பர் காலணிகள் போன்ற பிபிஇகளைப் பயன்படுத்தவும்.		குழி வேலை இயந்திரங்கள் உரிமம் பெற்ற ஓட்டுநர்களால் மட்டுமே இயக்கப்படும்.		கையுறைகள், கூகுள்கள் போன்ற PPE ஐ வழங்கவும்
5	Harness work tools	5	Ensure adequate ventilation while doing welding & cutting operations in confined areas.	5	Danger notice and other safety instructions & signs should be displayed near electrical installations.	5	Relevant PPE such as hard hats, safety boots, goggles, ear protectors and glove shall be used.		
	ஹார்னெஸ் வேலை கருவிகள்		வெல்டிங் செய்யும் போது போதுமான காற்றோட்டத்தை உறுதி செய்யவும்		ஆபத்து அறிவிப்பு மற்றும் பிற பாதுகாப்பு வழிமுறைகள்		கடினமான தொப்பிகள், பாதுகாப்பு பூட்ஸ், கண்ணாடிகள், காது பாதுகாப்பாளர்கள் மற்றும் கையுறை போன்ற தொடர்புடைய PPE பயன்படுத்தப்பட வேண்டும்.		
		6	Personal protective Equipment (PPE) shall be used			6	Warning signs shall be provided around the cordoned area.		
			தனிப்பட்ட பாதுகாப்பு உபகரணங்கள் (PPE) பயன்படுத்தப்பட வேண்டும்				சுற்றி வளைக்கப்பட்ட பகுதியைச் சுற்றி எச்சரிக்கைப் பலகைகள் வைக்கப்பட வேண்டும்.		
									

ANNEXURE 7:
SAFETY SIGNS


Potential Hazards
Electrical Shocks
Head Impacts
Splashes, Spills & Drips
- accidents result in shocks and burns
- falling or flying objects cause sprains, fractures, and concussions
- materials can irritate and burn eyes and skin


DO NOT ENTER
UNLESS YOU ARE DRESSED IN THE PROPER GEAR
Hard Hat
Safety Goggles
Shirt With Sleeves
Safety Vest
Long Pants
Work Boots


10 SIMPLE CONSTRUCTION
SITE SAFETY RULES
Every year thousands of people are injured on construction sites. Follow these rules and stay safe.
1 ALWAYS WEAR PPE
PPE is your last line of defence against danger. It protects you if something goes wrong, and helps make sure you are seen. Wear it.
2 GET YOUR INDUCTION
Make sure you know what is happening on site so you can work safely. Your induction is important, don't start without one.
3 BE TIDY
Construction work is messy. Keep your work area tidy to reduce the risk of trips and slips, and fire hazards. Keep access routes clear.
4 ACT SAFE
Construction sites are dangerous places to work. Think safe and act safe throughout your shift.
5 FOLLOW SIGNS
Follow signs and procedures. Check risk assessments and systems of work. Control measures are put in place for your safety.
6 DO NOT ENTER
Never work in unsafe areas. Don't work at height without suitable fall prevention. Don't enter unsupported trenches. Don't work below crane loads or other dangerous operations.
7 REPORT
If you notice a problem, don't ignore it, report it to your supervisor immediately.
8 DON'T TAMPER
Never remove guard rails or scaffold ties. Do not remove guards. Do not attempt to fix defective equipment unless you are competent to do so. Do not ever tamper with equipment without authorisation.
9 USE THE RIGHT EQUIPMENT
Use the right equipment for the task. Check and test for defects before use. Use 110v equipment only, suitable for use on a construction site.
10 IF IN DOUBT, ASK
Better safe than sorry. Mistakes on construction sites can cost lives - don't let it be yours. If you need help or further information speak to your supervisor.


The ABC's OF Fall Protection
A
Anchorage
Anchorage Connector
B
Body Wear
C
Connecting Device
SAMPLE POSTER

ANNEXURE 8:
ACCIDENT REPORTING

CONSTRUCTION INCIDENT REPORT FORM

Use this form to report accidents, injuries, medical situations, criminal activities, traffic incidents, or student behavior incidents. If possible, a report should be completed with 24 hours of the event.

Date of Report: _____, 20____

PERSON INVOLVED

Full Name: _____ Address: _____

Identification: ☐ Driver's License No. _____ ☐ Passport No. _____
☐ Other: _____

Phone: (____) ____-_____ E-Mail: _____

THE INCIDENT

Date of Incident: _____, 20____ Time: ____:_____ ☐ AM ☐ PM

Location: _____

Describe the Incident: _____
_____
_____

INJURIES

Was anyone injured? ☐ Yes ☐ No

If yes, describe the injuries: _____
_____
_____

WITNESSES

Were there witnesses to the incident? ☐ Yes ☐ No

If yes, enter the witnesses' names and contact info: _____
_____
_____

ANNEXURE 9:
COVID PROTOCOL

COVID is no longer considered a threat, but in the event of an increase in Covid cases or any directives or orders issued by the local or national government related to COVID, the COVID protocol will be activated.

COVID considerations: Influx of Migrant Labour is likely as there will be a need to perform high skilled jobs which may not be available locally or even within the state. These are likely to come from other states or adjoining states or districts. Possibly 10- 15 persons are required for highly skilled jobs. The remaining – semi-skilled and unskilled labor will be sourced from within the district.

At the time of labour engagement and start of work or anytime during the execution of work, any directives issued by government with respect to labour, movement, labour stay at site, social distancing or any other restriction put in place to contain the spread of infectious disease such as Covid 19.

IA will monitor and ensure that contractor will follow any restriction on movement or advice on distancing as issued by government due to Covid 19 or any other infectious disease during the period of construction. IA will request the details from the Contractor about the measures being taken to address the risks. This may include the following aspects as relevant

a. Conducting pre-employment health checks
b. controlling entry and exit from site/workplace
c. General hygiene
d. Cleaning and waste disposal
e. Adjusting work practices
f. reviewing accommodation arrangements, to see if they are adequate and designed to reduce contact with the community
g. reviewing contract durations, to reduce the frequency of workers entering/exiting the site
h. rearranging work tasks or reducing numbers on the worksite to allow social/physical distancing, or rotating workers through a 24-hour schedule
i. providing appropriate forms of personal protective equipment
j. Instances of spread of virus
k. Training and communication with workers
    - Communication and contact with community
    - **IAs shall rRequest the Contractor to convene regular meetings** with the project health and safety specialists and medical staff (and where appropriate the local health authorities), and to take their advice in designing and implementing the agreed measures.
    - **A** senior **person** should be identified as a focal point to deal with COVID-19 issues e.g. work supervisor or a health and safety specialist
    - **IAs shall request** for **coordination arrangements,** particularly at site where there are a number of contractors and therefore (in effect) different work forces *(PIU could request the main contractor to put in place a protocol for regular meetings of the different contractors)*
    - **IAs shall check with Contractors** on whether the workers are informed/ encouraged to use the existing project grievance mechanism to report concerns relating to COVID-19.

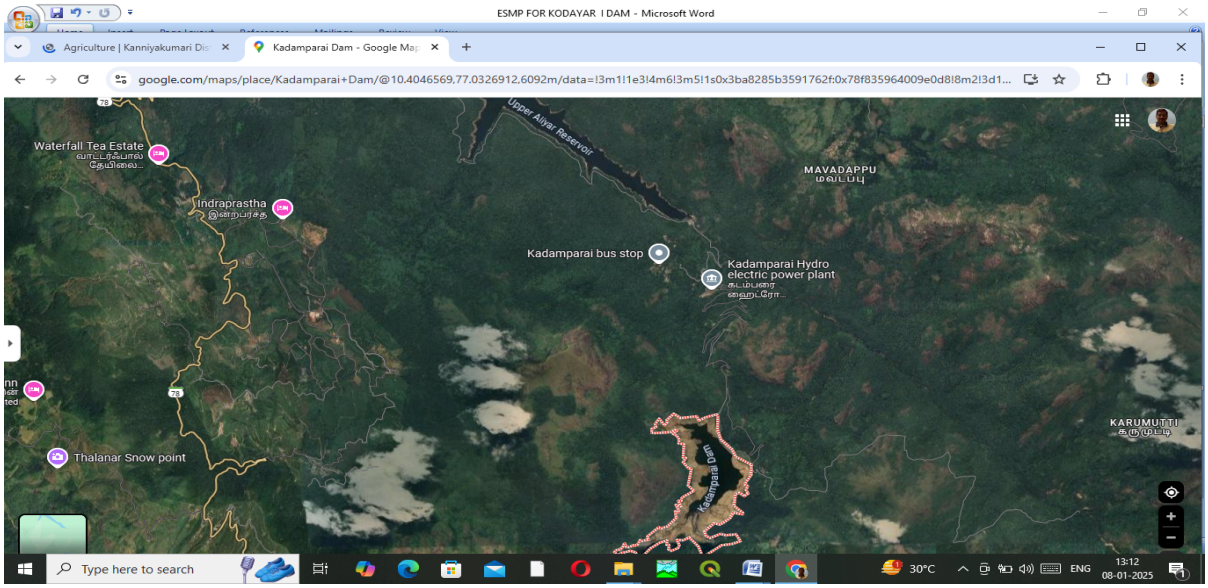
ANNEXURE 10:
TRAFFIC MANAGEMENT PLAN (SAMPLE)

- Kadamparai Dam is located 57 km from Pollachi Town in Coimbatore district.
- Transportation of materials is intended to be done with minimum disturbance to people residing along the route.
- Materials are to be transported through tippers/truck/mini truck with a truck load (maximum of 25 MT Gross Weight, 16 m^3 each) which make minimum of 25 trips a day altogether.
- The road passes through Lower Aliyar, Attakatti villages and Upper Aliyar Staff Quarters, Kadamparai Power House and this has to been taken into consideration while transporting the material.
- Since the materials enter into the Forest area at Lower Aliyar, it is suggested that transportation of material to be done between **08:00 AM to 06.00 PM.**
- The movement of trucks are restricted during night time.

Hourly traffic operations between 8.00 AM to 6.00 PM

- Max. two forward and two return operation for 1 tipper.
- Intermediate halting point to avoid crossing of convoys.
- Average speed – 25 Km/ hour

Issues	Solutions
Damages to road	Damages will be rectified after completion of work.
Material spilling/ leaking/ pollution	• Maintaining sufficient freeboard • No spill/leaking type load bodies • Covering of material to avoid spillage
Operating hours inside RF	08.00 AM to 06.00 PM



Annexure 11

SOP for Labour Camp

- Environment and social risk of labour camp and disposal of debris has been identified as moderate.
- Further to enforce the compliance of environmental management, the contractors shall be responsible and liable for safety of labours and daily workers attending to the construction site as mandatory measures.
- The sub-project activities will require contract workers – skilled and unskilled. The unskilled workers are available locally; however, a small number of skilled work-force may come from outside the area and expected to stay at site. Influx of workers and setting up of temporary labour camp interfacing with community may increase the health risk of community.
- Migrant workers can be potential carriers of new infectious diseases not known in the area and impact the community health.
- Labour camp in vicinity of community may pose risk of unplanned waste and waste water discharge.
- Labour shall be sensitized to follow good health and hygiene practices for their as well community's health.
- Health and hygiene requirement of the labour camp shall be maintained though out the project cycle.
- Arrangements for potable water, power, community/ individual kitchen, waste management shall be done properly.
- Contractor shall ensure that safe drinking water is available for each work men. Water supply and sanitary arrangements shall be available at the labour camp.
- Separate toilets shall be made available for male and female workers staying in labour camp connected to septic tanks/ adequate waste collection and disposal arrangement. Separate, safe and easily accessible facilities for women and men in the labour Camps. (e.g., toilets should be located in separate areas, well-lit) SEA/SH is prohibited.
- Labour camp will have adequate sanitation arrangement in terms of toilet with arrangement of sewage collection and disposal. No wastewater from the camp shall be discharged directly without any treatment in to any surface water channels or drain, which eventually joins surface water bodies.
- Waste management system shall be implemented in labour camp by providing adequate number of bins and collection system to avoid littering of wastes.

- Generated sanitary wastes from labour colony shall be disposed off properly.
- Inadequate accommodation facilities for labour, including inadequate sanitation and health facilities shall be viewed by Project Authorities and the Contractor shall be instructed to take immediate corrective actions.
- Waste generated from labour camp shall be collected after segregation, and disposed and reported in monthly report specify the quantity of wastes.
- Requirement of water and power at labour camp shall be established by contractor and discussed with Engineer in charge.
- Any access/ short cut, linking work sites and labour camp through Project Authorities shall be blocked/ fenced.
- At the time of labour engagement and start of work or anytime during the execution of work, any directives issued by government with respect to labour, movement, labour stay at site, social distancing or any other restriction shall be put in place to contain the spread of infectious disease.

ANNEXURE12:
Emergency Preparedness plan (EPP)

EMERGENCY PREPAREDNESS PLAN (EPP) அவசர தயார்நிலை திட்டம் - PILLUR DAM (Dredging Work)

Medical Emergency மருத்துவ அவசரம் **Call medical emergency phone number:** **மருத்துவ அவசர தொலைபேசி எண்ணை அழைக்கவும்:**	**Fire Emergency - தீ அவசரநிலை** **When fire is discovered:** **தீ கண்டுபிடிக்கப்படும் போது:**	**CHEMICAL SPILL- இரசாயன கசிவு:** **When a Chemical Spill has occurred:** **இரசாயன கசிவு ஏற்படும் போது:**	**WEATHER AND NATURAL DISASTERS - வானிலை மற்றும் இயற்கை பேரழிவுகள்** **Earthquake:** **நிலநடுக்கம்:**	**Flood:** **வெள்ளம்:**
Hospital No: 0422 2300600	Activate the nearest fire alarm	Immediately notify the designated official and Emergency Coordinator.	Stay calm and await instructions from the Emergency Coordinator or the designated official.	Be ready to evacuate as directed by the Emergency Coordinator and/or the designated official.
மருத்துவமனை எண்: 0422 2300600	அருகில் உள்ள தீ எச்சரிக்கையை இயக்கவும்	நியமிக்கப்பட்ட அதிகாரி மற்றும் அவசரநிலை ஒருங்கிணைப்பாளருக்கு உடனடியாகத் தெரிவிக்கவும்.	அமைதியாக இருங்கள் மற்றும் அவசரநிலை ஒருங்கிணைப்பாளர் அல்லது நியமிக்கப்பட்ட அதிகாரியின் அறிவுறுத்தல்களுக்காக காத்திருக்கவும்.	அவசரநிலை ஒருங்கிணைப்பாளர்/ மற்றும்/அல்லது நியமிக்கப்பட்ட அதிகாரியின் வழிகாட்டுதலின்படி வெளியேற தயாராக இருங்கள்.
Ambulance No: 108	Notify the local Fire Department by calling No.	Contain the spill with available equipment (e.g., pads, booms, absorbent powder, etc.).	Keep away from overhead fixtures, windows, filing cabinets, and electrical power.	Follow the recommended primary or secondary evacuation routes. If outdoors:
ஆம்புலன்ஸ் எண்: 108	எண்ணை அழைப்பதன் மூலம் உள்ளூர் தீயணைப்புத் துறைக்குத் தெரிவிக்கவும்.	கிடைக்கக்கூடிய உபகரணங்களுடன் கசிவைக் கட்டுப்படுத்தவும் (எ.கா., பட்டைகள், பூம்கள், உறிஞ்சக்கூடிய தூள் போன்றவை).	மேல்நிலை சாதனங்கள், ஜன்னல்கள், கப்பலிங் கேபினட்கள் மற்றும் மின்சார சக்தி ஆகியவற்றிலிருந்து விலகி இருங்கள்.	பரிந்துரைக்கப்பட்ட முதன்மை அல்லது இரண்டாம் நிலை வெளியேற்ற வழிகளைப் பின்பற்றவும். வெளியில் இருந்தால்:
Fire Department No: 0422 23300211	If the fire alarm is not available, notify the site personnel about the fire	Secure the area and alert other site personnel.	Assist people with disabilities in finding a safe place.	Climb to high ground and stay there.
தீயணைப்பு துறை எண்:0422 23300211	தீயணைப்பு அலாரம் கிடைக்கவில்லை என்றால், தீ பற்றி தள பணியாளர்களுக்கு தெரிவிக்கவும்	பகுதியைப் பாதுகாத்து மற்ற தள பணியாளர்களை எச்சரிக்கவும்.	மாற்றுத்திறனாளிகளுக்கு பாதுகாப்பான இடத்தைக் கண்டுபிடிப்பதில் உதவுங்கள்.	உயரமான நிலத்தில் ஏறி அங்கேயே இருங்கள்.
Provide First Aid Kit at site.	The fire extinguisher is in working condition and personnel are trained to use it.	Do not attempt to clean the spill unless trained to do so.	Evacuate as instructed by the Emergency Coordinator or the designated official.	Avoid walking or driving through flood water.
தளத்தில் முதலுதவி பெட்டியை வழங்கவும்.	தீயை அணைக்கும் கருவி செயல்படும் நிலையில் உள்ளது மற்றும் பணியாளர்களுக்கு அதைப் பயன்படுத்த பயிற்சி அளிக்கப்பட்டுள்ளது.	கசிவைச் சுத்தம் செய்யப் பயிற்சி பெறாதவரை சுத்தம் செய்ய முயற்சிக்காதீர்கள்.	அவசரநிலை ஒருங்கிணைப்பாளர் அல்லது நியமிக்கப்பட்ட அதிகாரியின் அறிவுறுத்தலின்படி வெளியேறவும்.	வெள்ள நீரில் நடப்பதையோ வாகனம் ஓட்டுவதையோ தவிர்க்கவும்.
First Aid assistance:	Leave the site using the designated escape routes.	Attend to injured personnel and call the medical emergency No:		If car stalls, abandon it immediately and climb to a higher ground.
முதலுதவி உதவி	நியமிக்கப்பட்ட தப்பிக்கும் வழிகளைப் பயன்படுத்தி தளத்தை விட்டு வெளியேறவும்.	காயமடைந்த நபர்களைப் பார்த்து மருத்துவ அவசர எண்ணை அழைக்கவும்:		கார் நிறுத்தப்பட்டால், உடனடியாக அதைக் கைவிட்டு உயரமான இடத்தில் ஏறவும்.
Stop the bleeding with firm pressure on the wounds (note: avoid contact with blood or other bodily fluids).	Escaping the area is possible by backing up to the nearest exit.	Call the Fire Department to perform a large chemical (e.g., mercury) spill clean-up.		
காயங்கள் மீது உறுதியான அழுத்தத்துடன் இரத்தப்போக்கை நிறுத்தவும் (குறிப்பு: இரத்தம் அல்லது பிற உடல் திரவங்களுடன் தொடர்பைத் தவிர்க்கவும்)	அருகில் உள்ள வெளியேறும் இடத்திற்கு காப்புப் பிரதி எடுப்பதன் மூலம் அங்கு பகுதியிலிருந்து தப்பிப்பது சாத்தியமாகும்.	ஒரு பெரிய இரசாயனம் (எ.கா. பாதரசம்) கசிவைச் சுத்தம் செய்ய தீயணைப்புத் துறையை அழைக்கவும்.		
Clear the air passages in case of choking.		Deal with the spill in accordance with the instructions described in the MSDS. Small spills must be handled in a safe manner, while wearing the proper PPE.		
மூச்சுத் திணறல் ஏற்பட்டால் காற்றுப் பாதைகளை அழிக்கவும்.		MSDS இல் விவரிக்கப்பட்டுள்ள வழிமுறைகளின்படி கசிவைச் சமாளிக்கவும். சரியான PPE அணிந்திருக்கும் போது சிறிய கசிவுகளை பாதுகாப்பான முறையில் கையாள வேண்டும்.		
When personnel exposed to hazardous materials, consult the Material Safety Data Sheet (MSDS). பணியாளர்கள் அபாயகரமான பொருட்களுக்கு வெளிப்படும் போது, பொருள் பாதுகாப்பு தரவுத் தாளை (MSDS) அணுகவும்				

ANNEXURE13:

Fire Fighting Appliances Types of Extinguishers suited for the three classes of fire is as follows:

Type of extinguishers	Class A	Class B	Class C
Carbon-di-oxide	Suitable for small surface fire only.	Suitable. Does not leave residue or affect equipment or food or food stuff.	Suitable, non-conductor and does not damage equipment.
Dry Chemical	Suitable for small surface fire only	Suitable, Chemical releases smothering gas and fog and shields operator from heat.	Suitable, Chemical is a non-conductor fog or dry chemical shields operator from heat.
Foam	Suitable, has both smothering and wetting action	Suitable, smothering blanket does not dissipate, floats on top of spilled liquid.	Unsuitable, foam being a conductor should not be used on live equipment.
Water	Suitable, Water saturates material and prevents re-kindling	Unsuitable, water will spread and not put it out.	Unsuitable, water being conductor should not be used on live electrical equipment.
Vaporizing liquid	Suitable for small surface fire only	Suitable, releases heavy smothering gas on fire.	Suitable, non-conductor and will not damage equipment.

Fire and Fire Protection:

Insulation Class	Types of Fire	CO_2	Dry Chemical	Foam	Water
Class A	Paper, Wood, cloth excelsior, Rubbish etc., where quenching fires and cooling affects only of water is required	Small surface fire only.	Small Surfaces fire only.	Yes. Foam has both smoothening and wetting action and excellent.	Yes. Water separate the materials prevent radicals.

Class B	Burning liquids (Gasoline, oils, Paints, Coating fats etc.,) Where smoothening action is required.	Yes. CO_2 leaves no residue does not affect equipment.	Yes. Chemical releases smoothening gas or fires log or dry chemicals shields operator from heat.	Yes. Smoothening blanket does not dissipate floats on top of spilled.	No. water will spread, not put it out.
Class C	Fire in live Electrical equipment (Motor, switches appliances etc.,) where a non-conducting extinguisher agent is required.	Yes. CO_2 is a non-conductor leaves no residue, will not damage equipment	Yes. Chemical Is a non-conductor fog or dry chemical shields operator from heat.	No. foam is a conductor and should not be used on line electrical equipment.	No. Water is a conductor should not be used on line electrical equipment.