

NAM NGIEP 1
POWER COMPANY

Environmental and Social Monitoring and Management Plan for the Entire Construction Works (ESMMP-CP)

Volume II: Procedures

Revision 1, March 2014



NAM NGIEP 1 POWER COMPANY LIMITED

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Monitoring and Management Plan
for the Entire Construction Works
(ESMMP-CP)**

Volume II: Procedures

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Prepared by ERM-Siam Co., Ltd.

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For and on behalf of
ERM-Siam Co., Ltd.

Approved by: Cristina Pellegrino

Signed: _____



Position: Partner

Date: 26 March 2014

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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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ACRONYMS

ADB	Asian Development Bank
BAT	Best Available Techniques
CA	Concession Agreement
DCCs	The District Coordination Committees
EDL	Electric de Laos
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EL. m	Elevation meter
EM	Environmental Manager
EMO	Environmental Management Office
EMP	Environmental Management Plan
EMU	Environmental Monitoring Unit
EO	Environmental Officers
ESD	Environmental and Social Division
ESM	Environmental and Social Manager
ESO	Environmental and Social Officer
E&S	Environmental and Safety
ESMMP-CP	Environmental and Social Monitoring and Management Plan for the Entire Construction Works
ESMMP	Environmental and Social Monitoring and Management Plan
GOL	Government of Lao
GRC	Grievance Redress Committee
GWh	Gigawatt Hour
IAP	Independent Advisory Panel
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
JSC	Joint Steering Committee
ISO	International Organization for Standardization
JBIC	Japan Bank for International Cooperation (JBIC)
km	Kilometers
kV	Kilovolts
LR	Lower Reservoir
LWU	Lao Women Union
m	Meters
m ³	Cubic meter per second
mill.m ³	Million cubic meters
MoH	Ministry of Health
MONRE	Ministry of Natural Resources and Environment
MW	Megawatts
NC	Non-Compliance
NCR	Non-Compliance Report
NGOs	Non-Governmental Organizations
NNP1	Nam Ngiep 1 Project
NNP1PC	Nam Ngiep 1 Power Company Limited

ACRONYMS

NTPFs	Non-Timber Forest Products
PAPs	Project Affected Persons
PMO	Prime Minister's Office
PPE	Personal Protective Equipment
PRLRC	Provincial Resettlement Management and Living Condition Restoration Committee
REDP	Resettlement and Ethic Development Plan
RMU	Resettlement Management Unit
SIA	Social Impact Assessment
SMO	Social Management Office
SP	Sub-plan
SSESMMP-CP	Site Specific Environmental and Social Management and Plan for Construction-Phase
UR	Upper Reservoir
UXO	Unexploded Ordinance
VDCCs	The Village Development Coordination Committees

This section defines procedures of NNP1PC to measure, monitor and evaluate environmental performance, including corrective and preventative action procedure. Within the context of this ESMMP-CP, tasks distribution concerning implementation and operation in the construction phase is presented as follows:

- Competence, training and awareness;
- Communication and reporting;
- Documentation, document control and record;
- Operational control; and
- Emergency preparedness and response.

9.1 **COMPETENCE, TRAINING AND AWARENESS**

The Construction Contractor will ensure that its employees and workers are adequately implementing the ESMMP-CP, as well as environmental and social legal requirements and obligations. All employees and workers will particularly receive induction presentation on environmental awareness. This will be conducted in appropriate language.

Three levels of action to be implemented include:

- Environmental awareness program;
- General health awareness program; and
- Specific environmental training program.

9.1.1 ***Environmental Awareness Program***

The environmental awareness program aims to provide constructions workers with in-depth understanding of the ESMMP-CP and outline legal obligations relevant to construction activities. All employees and workers will receive the following training:

- An induction presentation, as well as periodic refresh training on environment awareness, to be conducted in the language relevant to them;
- The workshops for organization involving all new recruits and presenting their obligations regarding basic environmental and social protection measures include:
 - General measures to follow throughout the construction period, such as prohibitions on hunting and poaching of wildlife, purchasing wildlife meat, fishing, gathering and harvesting medicinal or valued plants and trees, and possessing firearms, snares, traps and other hunting equipment;

- Housecleaning and waste management in worker camps, in construction sites, along roads and nearby villages;
 - Pollution control during construction activities;
 - Ban of all kinds of drug for all employees;
 - Attending to works while under the influence of alcohol;
 - Measures for preserving health and the dissemination of vectors and transmissible diseases, including basics on hygiene; and
 - Disciplinary consequences for violation of the measures presented as part of the Environmental Awareness Program. The consequences will be important to add accountability to the ESMMP-CP.
- Preparation and distribution of supporting paper documents to each and all participants, summarizing key issues in awareness workshop proper language and fully illustrated; and
 - Preparation of posters based on the paper document also in proper language to be posted wherever justified and practical e.g. camps entrance, buildings, canteen, etc.

At the end of each session, the Construction Contractor is responsible for filling a training attendance record with the date, name of trainer, name of the attendees and their signatures.

9.1.2 *General Health Awareness Program*

The general health awareness program will focus particularly on basic hygiene practices, vector and transmissible diseases control, AIDS/STD control, prevention drugs and alcohol use.

AIDS and STD control

NNP1PC and Construction Contractors are aware of risk of development of AIDS and STD among the workforce, as most of the workers will live far from family for a significant period. In order to reduce the risk of transmission, a specific awareness program will be implemented during the Project construction period. The program will address all employees and workers, with special attention to those who are exposed to higher risks as truck drivers.

The program will include;

- Information or group training for all workers on AIDS and STD transmission and protection measures;
- Readily available supply of prophylactics in the medical centers; and
- Use of information such as leaflets and posters to be posted in worker camps and in medical facilities buildings.

Prevention of Malaria disease

This program should be presented to employees in risk area prone to Malaria during the construction period in order to raise their awareness around the causes of the disease and prevention.

The program will include;

- Information or group training on prevention of Malaria disease for the employees and workers.
- Post the poster of information about cause of disease, prevention and treatment at the worker camps and administration buildings

Prevention of drugs and alcohol use

This program aims to promote the health of all workers and to reduce accidents in daily activities during construction phase. The purpose of this program is to;

- Educate the danger of drugs and alcohol usage; and
- Provide guidance to avoid or treat drug related diseases.

The program will include;

- Information or group training for all workers on the prevention drugs and alcohol use program;
- Post the poster of information about danger of drugs and alcohol usage at the workers camps; and
- Campaign to prohibit smoking and drinking at worker camp on special days e.g. Buddha day, Non-smoking day.

9.1.3

Specific Environmental Training Program

For supervisors and foremen, as well as workers who could be affected by environmentally critical activities, additional specific environmental trainings will be organized in the fields and the involved workers should attend. The specific environmental training programs should consist of, but not limited to the as following;

- Safety and First Aid training
- Fire prevention training
- Hazardous materials management training (including particularly explosives, fuel and oil&chemical spillage response)
- Emergency preparedness and response

Training activities will be organized as workshops, focusing on the presentation, content and application of specific procedures included as components of the ESMMP-CP. Training action will be supported by posting

posters depicting various steps of the procedures (explosive management, refueling, spill response etc.) in appropriate areas.

All details regarding training and awareness programs are presented in SP 05: Training and Awareness.

At site level, workers will also require training regarding environmental sensitivity of the site and on the mitigation measures described in the related SSES MMP.

9.2 COMMUNICATION AND REPORTING

Communication of this Project is categorized into two levels by referencing to the organizational structure as 1) Internal Communication, and 2) External Communication.

9.2.1 Internal Communication

Internal communication is defined as a communication between NNP1PC ESD and Construction Contractor ESD, and communication inside NNP1PC ESD and Construction Contractor ESD itself with regards to environmental and social issues. The communication might include but not limit to

- Routine daily, weekly, and monthly communication and monitoring/inspection;
- Follow up Non-compliance Report (NCR) and corrective action;
- Formal monthly reporting and meeting to report progress and implementation, as well as follow-up non-compliance issues;
- Urgent communication when needed to address issues of immediate threat to the environment; and
- Conduct quarterly internal audits against the ESMMP-CP.

Internal communication guidelines is shown in *Table 9.1* and *Table 9.2*.

Table 9.1 Internal Monitoring/Inspection, Meeting and Auditing Guideline

No.	List	Participant	
		NNP1PC	Contractor
Monitoring/Inspection, Meeting, and Audit			
1.	Daily monitoring/inspection		x
2.	Weekly monitoring/inspection		x
3.	Monthly monitoring/inspection Monthly meeting	x	x
4.	Follow up NCR and corrective action	x	x
5.	Quarterly Internal audit	x	x
6.	Ad-hoc meeting (per case)	x	x

Table 9.2 Internal Reporting Guideline

No.	List	Originator	Receiver
Reporting			
1.	Weekly/monthly inspection report	Sub-contractor	Contractor
		Contractor	NNP1PC
2.	NCR and corrective action	Contractor	Sub-Contractor
		NNP1PC	Contractor
3.	Environmental incident/accident report (per case)	Contractor	NNP1PC
4.	Monthly environmental and social report	Contractor	NNP1PC
5.	Annual Environmental and social report	Contractor	NNP1PC
6.	Quarterly audit report	NNP1PC	Contractor

Apart from regular self-monitoring/inspection (daily and/or weekly) by Construction Contractor, a regular monthly meeting and monitoring/inspections are set up with participants from NNP1PC and Construction Contractor. The participants will join the meetings on particular topics they are responsible to present. Meeting agenda will be prepared before the meeting and inspection. It is responsibility of both NNP1PC and Construction Contractor itself to issue Non-Compliance Report once non-comformities with ESMMP-CP has been found during inspection.

The detail of the Non-Compliance Process is described in the next section. Construction Contractor shall submit a regular inspection report including non-compliance report, and incident/accident report (per case) to NNP1PC for review and approval. All reports will be consolidated as Construction Contractor’s environmental and social performance report and finally submitted to the NNP1PC on a monthly basis with the agreed format. The NNP1PC will consequently combine environmental and social monthly report of all Construction Contractors and submit to MONRE.

Communications will also include routine daily and weekly communication to address particular issue or problem, or to exchange information by telephone, fax, Email, or formal letter. It also includes urgent communications when needed (e.g. non-compliance, emergency response and incidents) to address issues that present an immediate threat to the environment and social.

It shall be noted that should the construction activities which undertake by both the main Contractor and its Sub Contractors are not complied with the environmental obligations requirement and corrective actions are not addressed within the specified time period, NNP1PC has the right to suspend the Contractor and Sub Contractor construction activities and the penalty shall be notified as stated in the Contract document between NNP1PC and the Contractor.

9.2.2

External Communication

External communication is defined as a communication between the Project (NNP1PC and Construction Contractor) and third parties such as GOL, local communities on environmental and social issues. External communication may includes but not limit to:

- Routine communication and joint monitoring/inspection i.e. on a monthly basis;
- Formal monthly reporting and meeting to report progress and implementation, as well as follow-up non-compliance issues;
- Urgent communication when needed to address issues of immediate threat to the environment;
- Public Disclosure (see detail in *Section 5*);
- External audit; and
- Grievance redress mechanism.

External communication guidelines is shown in *Table 9.3* and *Table 9.4*.

Table 9.3 *External Monitoring/Inspection, Meeting and Audit Guideline*

No.	List	Participant		
		GOL/ ADB	NNP1PC	Contractor
Monitoring/Inspection, Meeting, and Audit				
1.	Monthly monitoring/inspection	x	x	x
2.	Monthly meeting	x	x	
3.	Ad-hoc meeting (per case)	x	x	
4.	Quarterly external audit	x	x	x

Table 9.4 *External Reporting Guideline*

No.	List	Originator	Reviwer/ Approver
Reporting			
1.	Monthly environmental and social report	NNP1PC	GOL
2.	Annual environmental and social report	NNP1PC	GOL

A regular joint monitoring/ inspections are set up with participants from GOL, NNP1PC and Construction Contractor to observe Project implementation against ESMMP-CP, and follow up critical NCR/corrective action has been found during internal inspection. The detail of the Non-Compliance Process is described in the next chapter.

Likewise, communications will also include routine daily and weekly communication to address particular issue or problem, or to exchange information by telephone, fax, Email, or formal letter. It also includes urgent communications when needed (e.g. non-compliance, emergency response and incidents) to address issues that present an immediate threat to the environment and social.

In addition, external communication includes communication established for practical reasons between the Construction Contractor and local authorities for site specific issues to be discussed. Any communication of this type will immediately be reported to the NNP1PC with date, name of persons concerned and subject of discussion. Any external communication (via meeting, letter, site visit, etc.) shall be recorded by Construction Contractor and reported in the monthly report.

Where, in the opinion of MONRE found that the Project (NNP1PC, Contractor including Sub contractors) is non-compliance with the environment obligations, MONRE has the right to promptly inform the Project. Both of recommended and warning may inform by MONRE via MONRE website and/or require NNP1PC to post in NNP1PC's website into strictly implement it obligations.

When the construction activities of the Project are not complied with the environmental obligations requirement and corrective actions are over due the specified time period. MONRE has the right to take appropriate enforcement actions related the regulation and applicable law. Third party should be employed to correct the non-compliance by the MONRE's right at the Project's sole expense.

9.2.3 *Reporting*

Reports from external communication as specified above will be submitted to MONRE under the conditions as shown in CA Annex C including;

1) Monthly Report

During the period commencing from the first day of the month immediately following the construction works thought and including the end of concession period, the NNP1PC shall prepare and submit to MONRE (both hard copy and digital version) monthly reports (in a unified format to be approved in advance by MONRE) covering the following items, and certified as true, complete and correct by the NNP1PC Managing Director:

- Progress made to date on implementation of the measures assessed against the approved measures and monitoring programs;
- Difficulties encountered in implementing the measures and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;
- Number of type of non-compliance with the measures and proposed corrective actions and timelines for completion of those actions;
- Relevant information from reports received by NNP1PC from construction contractors, sub-contractors(if any), and NNP1PC itself;

- Accidents or incidents relating to the environmental, social, and welfare of stakeholders; and
- Monitoring data of environmental parameters and conditions as committed in the EIA, ESMMP-CP, and SSESMP.

It shall be noted that the monthly environmental and social performance report shall be prepared by NNP1PC with the cutoff date on the 25th of each month and the monthly report shall be submitted to the MONRE on the 30th of each month.

The incident and accident that occur in the Project areas shall be investigated to identify the route causes and incident/accident report shall be included in the environmental and social monthly report submitted to MONRE.

2) Annual Report

The NNP1PC shall prepare and submit the annual report to MONRE no later than sixty (60) days following the end of each calendar year (both hard copy and digital version), covering the following items:

- A summary of items covered by the monthly reports required above;
- Gantt diagram showing the activities (construction works, environmental measures, monitoring) carried out during the period against what was planned for that period;
- Progress of planned outputs and performance objectives;
- Description and analysis of water quality (surface water, wastewater discharges from camp and construction sites, worker's drinking water and/or village and households water supply);
- Description and analysis of wildlife and fishery monitoring data;
- Description and analysis of hazardous substances waste data;
- Description and analysis of environmental incidents and accident data;
- Significant problems encountered and corrective actions taken;
- Identification of any deviation from ESMMP-CP, and EMP; and
- Result and status of implementation of biodiversity offset activities.

3) Audit Report

External audit report is described in *Section 10.5*.

9.2.4 *Communication Language*

The formal communication language is Lao and English. This will be applied to all written communication. However, specific language i.e. Japanese may be used for communications involving construction works.

The Grievance Redress Committee (GRC) is established by PRLCR to address any complaints and grievances pertaining to land acquisition, compensation and resettlement that are brought forward by to entitle the PAPs the right to make a claim if not adequately mitigated from environment impacts, compensated, and received entitlements.

The GRM procedures will be managed by a hierarchy of grievance redress committees, comprising the members outlined in *Table 9.5*.

Table 9.5 *Grievance Redress Committee Members*

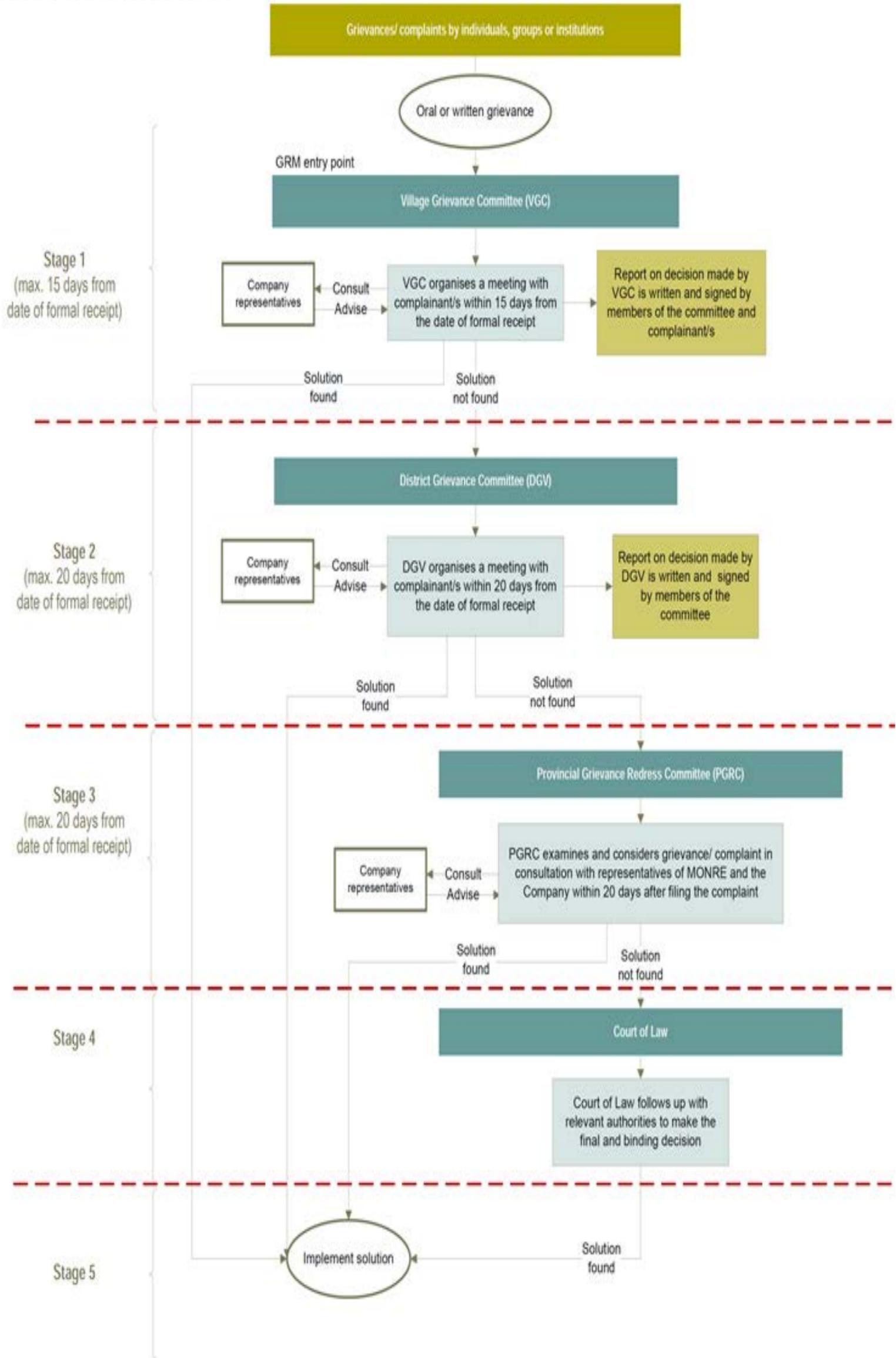
Committee	Committee Members
Village Grievance Committee	<ul style="list-style-type: none"> • The village head (chairperson); • Representatives of local village authorities; • Village elders; and • Representatives from community organizations, including the Lao Women’s Union.
District Grievance Committees	<ul style="list-style-type: none"> • Representative of the District Authority (chairperson); • Local village leader(s)/ head(s); • Representatives from the PAPs, other than village leader(s)/head(s); • Local village elders and/or other local community organizations, including the Lao Women’s Union; • Representatives from local not-for-profit organizations; and • Representatives from the Project team.
Provincial Grievance Redress Committee	<ul style="list-style-type: none"> • Representative of the provincial authority. This individual will become the chairperson; • Representatives from the provincial or district authority’ • Representatives from the PAP (eg. a representative from a village directly affected by the Project); • Representatives from community organizations, including the Lao Women’s Union; • Representatives from a local not-for-profit organization; and • Representatives from the Project team.

The Project will place a formal request to GOL for the PRLRC in each Province to establish the Provincial and District Grievance Committees. The District Grievance Committees will be given the authority to establish Village Grievance Committee in those villages affected within the District.

The schematic of the grievance procedure is shown in *Figure 9.1* and the grievance form and recordkeeping are shown in *Appendix 6*.

Figure 9.1 The Schematic of Grievance Procedure of the NNPI Project

**Nam Ngiep 1 Hydropower Project
Grievance Redress Mechanism (GRM)**



Stages and timeframes associated with the GRM procedures are as follows:

- Stage 1: PAPs will register grievances on any aspect of compensation, relocation or unaddressed losses with the Village Grievance Committee. The Village Grievance Committee will organize a meeting within 15 days from the date of formal receipt of the grievance with the complainants to resolve the issue using its traditional methods of conciliation and negotiation; the meeting will be held in a public place and will be open to other PAPs and villagers to ensure transparency. The report on the decision of the Village Grievance Committee must be in writing and must be signed by all members of the committee. If any members of the committee dissent from the opinion of the majority, those members can note their dissent as part of the report of the decision. The aggrieved party and the Project representatives should also sign and indicate their agreement or disagreement with the decision.
- Stage 2: If either the PAP or the Company is not satisfied with the decision of the Village Grievance Committee, or if the Project does not abide with the decision of the Village Grievance Committee, an appeal can be made directly by the Project or by the PAP, or by the Village Grievance Committee on behalf of the PAP. Other persons or organizations, such as local NGOs, mass organizations like Lao Women's Union, or other representatives of the PAP, can ensure that the appeals are forwarded to the District Grievance Committee. The District Grievance Committee will keep a public log of all claims and grievances it receives, including a summary of the decisions made, and must also make public all reports on the decisions made by the committee. The meeting of the District Grievance Committee will be held in a public place, no more than 20 days from the date of formal receipt of the grievance. Representatives from the Company must be available to provide any necessary information to the committee on entitlements, compensation rates, mitigation measures, and any other relevant information concerning the grievance. The report on the decision of the District Grievance Committee must be in written and must be signed by the members of the committee.
- Stage 3: If the PAP is still not satisfied with the decision of the District Grievance Committee or if the Project does not abide by the decision of the District Grievance Committee, an appeal can be made to the Provincial Grievance Redress Committee. The Provincial Grievance Redress Committee will examine and consider the complaint or grievance in consultation with representatives of MONRE and the Company within 20 days after filing the complaint.
- Stage 4: If the PAP is still not satisfied with the decision of the Provincial Grievance Redress Committee, or in the absence of any response within the stipulated time, the grievance can be submitted to the Court of Law by the PAPs or a representative of a non-profit

organizations or the Village Grievance Committee on behalf of the PAPs or at the request of the Project. The Court of Law will follow up with the relevant authorities to make the final and binding decision.

- Stage 5: In case that the Project is found responsible for negligence, the Project will cover in full all administrative and legal fees incurred by the PAPs in the GRM process at the district, provincial and MONRE levels and in the Court of Law. Complaints and grievances concerning impacts during construction will be considered up to and for no more than one year after the official date of completion of construction.

9.3 DOCUMENTATION

Document control system is the most important element that shall be corrected, completed, up-to-date, and readily available where and when required. The NNP1PC will set up the process to document with traceability. The NNP1PC will use a computer database to store, track and allow analysis of this information. All documents regarding environmental and social management of NNP1 construction activities and derived from the procedures described in this ESMMP-CP will be listed, created, and stored in appropriate files and registered. The list of document to be filed includes (but not limited to);

- Owner's EMP, ESMMP-CP, SSESMMMP, and Contractor's EMP (including addendum and revised version);
- Technical studies, maps, drawing, photos, etc. relating to construction activities and impacts;
- Law, regulation, and standard;
- All documentation of communication and correspondent;
- Monthly, and annual reports including minutes of meeting;
- Routine inspection reports;
- Non-Compliance reports and audit reports;
- All document relevant to training materials;
- Incident and accident report; and
- Grievance records.

Some of the above document forms are presented in *Appendix 6*.

9.4 CONTROL OF DOCUMENTS

The NNP1PC ESD is responsible for the establishment of ESMMP-CP documentation and revision of existing documentation, and for the maintenance of ESMMP-CP documents.

An Environmental Document Control Register will be established and maintained by ESD with the following key tasks:

- Document title and registration number;
- Version number;

- Date of issue;
- Date of review; and
- Location of Hard Copy (if justified)

The ESMMP-CP and its addendum will be revised accordingly. The reviewed date will be recorded on the document cover.

When documents are reviewed and revised, any changes will be tracked electronically to enable readers to understand the changes.

A hard copy and electronic file of all supporting documents shall be placed in the Obsolete Environmental Documents File and listed on the Obsolete Environmental Documents Register.

Information to be entered into the Obsolete Environmental and Social Documents Register is:

- Obsolete Environment Documents File Number
- Document Title and Registration Number
- Issuance Date
- Withdrawal Date

Distribution of any documentation by electronic file will be done only using Adobe PDF encrypted standard in order to avoid uncontrolled changes in the document.

Both on-site and off-site backup files shall be kept for all documents.

It is also the responsibility of Construction Contractors to set up the documentation system and controls to be standardized. All documents, maps, drawing, procedures, etc, in relation to environmental and social aspects of the construction of this Project as required in contractual obligations shall be created and filed in the site office and related sites, and can be utilized any time as needed.

9.5

OPERATIONAL CONTROL

The construction activities potentially implicated with each of the identified significant environmental and social impacts are controlled through mitigation measures. Technical principles and procedures for application of mitigation measures are described in relevant Sub-Plans, and site specific implementations in relation to each site activities will be described in SSESMMPs and Site Specific Plans.

The overview and details of environmental and social mitigation measures and monitoring to be implemented are described in *Table 6.1* to *Table 6.4*.

Prior to establishing the environmental and social mitigation measures, rules, regulation and BAT describing the guidelines and good practices associated with significant environmental aspects have been established and communicated so that Project personnel understand their responsibilities,

actual or potential environmental and social impacts and legal and other obligations associated with their tasks to ensure good management and adverse environmental and social impacts are efficiently minimized.

The environmental and social mitigation measures will be reviewed every two years for their applicability and effectiveness, and following activities changes to construction activities where new or revised mitigation measures may be required. The ESD of NNP1PC and Construction Contractor will be responsible to identify those mitigation measures which show difficult implementation or limited results and propose appropriate improvements or changes that will be submitted for approval by the GOL authorities.

9.6 *EMERGENCY PREPAREDNESS AND RESPONSE*

Emergency situations and incidents shall be managed in accordance with the guideline for Emergency Response Procedure as presented in *Appendix 7*. This describes the potential safety, health and environmental emergency situations and incidents that might occur during the construction period. Procedures have been developed to identify, manage and coordinate potential emergency incidents and responses.

For each potential emergency or incident the appropriate response plan includes measures regarding:

- Response organization, roles and responsibility;
- Response equipment and products;
- Communication; and
- Reporting procedure

The NNP1PC and Construction Contractor shall also periodically test such procedures or organize emergency drills where practicable.

In addition, Construction Contractor is responsible for developing and implementing the emergency response procedure and related mitigation measures associated with emergency responses such as explosion, oil and toxic spillage, as well as hazardous material handling. Any accident and incident will be reported using the Incident & Accident Report as shown in *Appendix 7*.

Periodic emergency and incident response procedures are also described in the 2 Sub-plans; Sub Plan 06: Hazardous Material Management, and Sub Plan 17: Emergency Preparedness. Thematic Plan entitled Emergency Management and Planning are also available.

10.1 MONITORING AND INSPECTION

Monitoring and inspection is an integral part of the environmental management system as it establishes how the Project performs against environmental commitment. Schedules and procedures for monitoring and inspection should be developed at the outset in order to:

- Identify any negative impacts from construction activities
- Assess the effectiveness of control measures
- Demonstrate compliance with regulatory conditions
- Identify if further controls/corrective action is required

Monitoring and inspection programs will be implemented for the duration of the construction phase of the Project. The program include:

- Routine monitoring and inspection conducted by the Environmental Officer; and
- Compilation of monitoring and inspection report with non-compliance.

Monitoring and inspection to be implemented are described in *Table 6.4*, *Table 6.5*, and relevant SSESMMMPs.

Under those monitoring and inspection programs, each compliance report consisting of all description of compliances and their levels, photographic documentation and/or checklists, will be available and provided by Construction Contractors to NNP1PC with a readily accessible record of construction progress, photographic documentation, and documentation of compliance with the Project environmental requirements.

The documents above shall be included in the environmental and social monthly report submitted to MONRE for acknowledgement.

Schedule of regular inspection, monitoring and reporting will be specified in the Contractor's EMP and/or SSESMMMP to ensure that the established standards of environmental controls are maintained. Schedules, checklists, inspection and reports should be undertaken and kept at each site office and should be updated and used in the day to day operation of the site.

Monitoring and inspection during the construction period can be categorized into the following level:

- At Construction Contractor level, monitoring and inspection to ensure on a day to day basis that mitigation measures are fully implemented along with construction activities, and that results observed comply with the contractual obligations;

- At NNP1PC level, routine monitoring and inspections to ensure that results provided by the Construction Contractor are corrected, to provide the necessary environmental coordination and interface with the Contractors, and to provide a comprehensive picture of the current environmental situation and efforts at site level.
- At GOL level (MONRE), monitoring and inspection to ensure the construction activities complied with the environmental requirement on a quarterly basis and review the monthly environmental and social report provided by NNP1PC.

10.1.1 *Monitoring and Inspection by Construction Contractor*

For Construction Contractor, internal organization requires the Inspector team with environmental skills or trained personnel. Each Inspector will conduct routine inspection of sites and activities in their area of responsibility to evaluate compliance with commitments defined in the ESMMP-CP, Contractor's EMP, and SSESMMMP.

Results of field observations, either documenting compliance or non-compliance with environmental requirements will be reported on standard forms. The use of these standard forms will help to ensure that compliance-related observations are recorded in a consistent manner and in a standard format. The information can be entered into the database that will be used to track the status of and allow analysis of non-compliance situations.

Monitoring activities complying with the applicable standards/guidelines will primarily concern i.e. water quality, air quality, noise and vibration. For ambient air, noise and water quality, sampling and analysis shall be carried out relying on certified equipment and/or laboratory.

10.1.2 *Monitoring and Inspection by NNP1PC*

The field staff or NNP1PC ESD will visit and inspect each of the construction sites on a monthly basis. Information collected during each visit is reported on a standard form, which provides a checklist of issues to control, depending on the degree of compliance or non-compliance observed. The field staff of NNP1PC ESD may join inspection with Construction Contractor and relevant agencies e.g. GOL, and as agreed in order to observe and follow up any event or significant issues that have been reported. Visits to a site will be increased if the site presents a higher environmental risk potential.

Likewise, monitoring activities complying with the applicable standards/guidelines will be conducted. Ambient air, noise and water quality, sampling and analysis shall be carried out relying on certified equipment and/or laboratory.

10.1.3 *Monitoring and Inspection by MONRE*

The MONRE should be invited by the NNP1PC ESD to attend the inspection and monitoring of construction activities at least quarterly and apart of this inspection and monitoring, the report documents of inspection and monitoring result report shall be submitted to MONRE for review and approval in accordance with the environmental obligations and applicable standards.

Where, MONRE found that the Project's construction activities by NNP1PC and its Contractor and Sub contractors are non-compliance with the environment obligations, MONRE has the right to promptly inform the Project. Both of recommended and warning may inform by MONRE via MONRE website and/or require NNP1PC to post in NNP1PC's website into strictly implement it obligations.

When the construction activities of the Project are not complied with the environmental obligations requirement and corrective actions are over due the specified time period. MONRE has the right to take appropriate enforcement actions related the regulation and applicable law. Third party should be employed to correct the non-compliance by the MONRE's right at the Project's sole expense.

10.2 *EVALUATION OF COMPLIANCE*

If criteria within the ESMMP-CP are not fulfilled and appropriate and corrective action is not taken, an evaluation of compliance can be raised by the representative of NNP1PC ESD, as well GOL authorities. Examples of circumstances where this may arise include:

- Receipt of a complaint regarding pollution or other environmental impacts caused by the Project;
- Departure from approved or agreed procedures; and
- Non-conformance identified as a consequence of any self-assessment, or environmental monitoring and inspection.

10.3 *NON-COMPLIANCE, CORRECTIVE ACTION AND PREVENTION ACTION*

10.3.1 *Non-compliance and Corrective Action*

Non-compliance is a tool addressing by field staff whenever failure to fulfil environmental-related objective and target have been found. Correction of non-compliance also will be identified for solution and preventing the recurrence of the problem.

Corrective action may include changes to work instructions (frequency of testing, test method etc.), further staff training, etc. Non compliance should be reviewed by, at least, the EMO Manager and form part of construction meeting agendas.

Non-compliance/corrective action report will be issued to the Construction Contractor by NNP1PC. It is the responsibility of the Construction Contractor to immediately initiate corrective actions and, once completed, provide details of the actions undertaken on the non-compliance/corrective action report and return it signed to NNP1PC within an agreed timeframe.

10.3.2 *Non-compliance procedure*

Non-compliance will be separated into three levels on the basis of importance, and communications requirements for the inspection will be commensurate with the severity of the non-compliance situation. The three levels of non-compliance situations are:

Non-Compliance Level 1

The level 1 is a non-compliance situation that is not consistent with requirements, but not believed to represent an immediate or severe threat to human and environment. Repeated Level 1 concerns may become Level 2 concerns if left unattended and overdue.

Corrective action also may be suggested by coordination and discussion with the Contractor's site construction supervisor to be implemented no later than expected due date.

Non Compliance Level 2

The level 2 is a non-compliance situation that has potential significance and requires expeditious corrective action and site-specific attention, as well as raising of non-compliance level 1 that is unattended and overdue. Repeated Level 2 concerns may become Level 3 concerns if left unattended and overdue.

Non-compliance level 1 and 2 is to be issued NNP1PC EO, and verified and approved by EMO Manager with suggested corrective action to be implemented no later than expected due date. Special follow-up of corrective measures is required.

Non Compliance Level 3

The level 3 is a critical non-compliance situation, including observed significant damage on the environment or a reasonable expectation of very severe impending damage, as well as raising of non-compliance level 2 that is unattended and overdue.

Non-compliance level 3 is to be reported to the NNP1PC Managing Level (i.e. ESD Deputy Managing Director), and then Managing Director for approval. When non-compliance level 3 is identified and Construction Contractor is acknowledged, implementation as per suggested corrective action shall be carried out as expeditious as practical for closure within the due date. In case of overdue, the financial penalty may be applied to Construction Contractor in accordance with contractual obligations and/or agreements between NNP1PC and Construction Contractor.

MONRE has the right to employ third party to correct the remained non-compliance that left unattended over the agreed due date in which NNP1PC shall be responsible for the cost occurred to rectify such non-compliance cases. MONRE has the right to disclose warning in the MONRE's website and also enforce to post such case on NNP1PC's website.

The following Table illustrates some examples of non-compliance expected to be observed during the construction period and Non-Compliance Report Form is presented in *Appendix 6*.

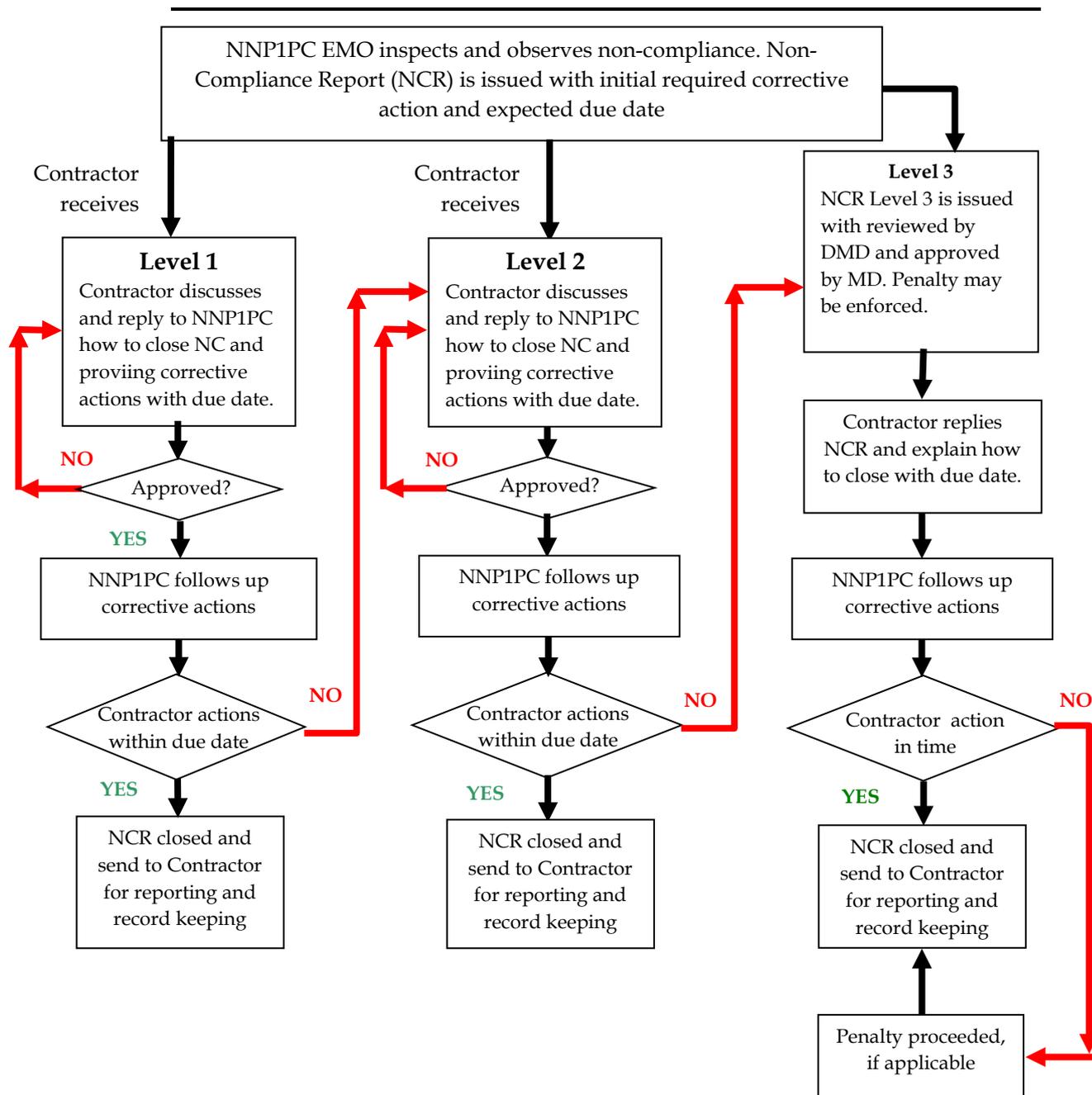
Table 10.1 *Examples of Non-Compliance Level Identification*

Non-Compliance Level	Examples of Non-Compliance
LEVEL 1	<ul style="list-style-type: none"> • General cleanliness of sites not satisfactory • Inappropriate storage of non-hazardous waste • Inappropriate management of traffic volume and safety • Inappropriate management of waste and wastewater management that may cause impacts to natural water resources • Inappropriate storage of Hazardous Materials (oil, fuel), but without immediate danger for the environment • No training courses, emergency drills in appropriate time frame • Inappropriate management/cleaning of sedimentation pond or storm water drainage network • Lack of road signs or any required sign boards such as hazardous material storage area, explosive magazine, etc. • Lack of road watering in inhabited areas • Dust and emitted air generated from inappropriate operations/machines • Excessive speed or noise detected in sensitive areas • Inappropriate maintenance of vehicles/engines that possibly cause oil leakage on the ground • Minor leakages from fuel tanks • Any non-implementation following proposed mitigation measures without immediate danger or damage to human and environment

Non-Compliance Level	Examples of Non-Compliance
LEVEL 2	<ul style="list-style-type: none"> • Any Level 1 NC left uncorrected after due date • Inappropriate storage of Hazardous Materials (oil, fuel), with potential threat for the environment or public health • Inappropriate storage or handling of hazardous materials • Accidental spill of petroleum products less than 100 l volume, with no serious threat for the environment • Significant leakages from fuel tanks or from garages areas • Inappropriate soil management and spoil dumping beyond specific areas • Inappropriate erosion control measures • Inappropriate restoration or rehabilitation of areas after construction activities completion (borrow areas, temporary camps, stockyards, etc) • Lack of environmental quality monitoring (air, water, noise) in regular time frame • Hunting, cooking, fishing, collecting of fauna and flora by employee personally is observed • Any non-implementation following proposed mitigation measures that may cause danger or damage to human and environment if no resolution in a timely manner
LEVEL 3	<ul style="list-style-type: none"> • Any Level 2 NC left uncorrected after due date • Any accidental spill over 100 l, of petroleum products or any other liquid product registered as Hazardous Material • Accidental spill less than 100 l but in a sensitive area (within 30 m of a water body) • Deliberate discharge of used oil or other hazardous waste in river stream • Concrete waste (liquid) discharged directly to natural water bodies • Trapping or killing of protected or endangered animal species during clearing activities or by Construction Contractor's employee personally • Damaging or destroying of archaeological and cultural heritages during clearing activities • Dangerous behaviour on public roads (excessive speed, dangerous load, alcohol) that cause extreme damage to property and life • Effluent (not compliance to applicable standard) discharged directly to natural water bodies • Test results of environmental quality monitoring (potable water, drinking water, effluent from camps, ambient air and noise) are not compliance to applicable standard, without appropriate corrective actions • Caused serious danger to human and environment

The procedure for Non-Compliance and Corrective Action is described in Figure 10.1.

Figure 10.1 Summary of Non-Compliance Report Procedure



10.4

INTERNAL AUDIT

Regular audits shall be carried out internally by auditors who can be the NNP1PC's qualified staffs with experience in the following:

- Expertise in environmental science and technology;
- Expertise in the technical and environmental aspects of construction phase of the project;
- Expertise in environmental law and regulation;
- Expertise in environmental management systems; and
- Expertise in auditing process.

The auditor will initiate scheduled audits of the construction activities of the entire construction sites and Construction Contractor's organization against the requirement established in the Contract Documents and in this ESMMP-CP.

Internal Audit will be carried out on a quarterly basis. Non-conformances or observations identified during audits will be subject to the provisions of corrective action and will be implemented for closure.

10.5

EXTERNAL AUDIT

GOL's representative i.e. Independent Monitoring Agency (IMA) will regularly audit the NNP1PC management system and effectiveness of mitigation measures implemented during construction to ensure compliance with the contractual obligations. It is responsibility of NNP1PC to provide available documentation, information and data requested by the Independent Monitoring Agency.

The Independent Monitoring Agency's audit report will be submitted to the NNP1PC for implementation and action. Non-conformances or observations identified during audit will be subject to the provisions of corrective action.

The ESMMP-CP will be updated, revised and reviewed internally on a regular basis however, the ESMMP-CP will be submitted to MONRE every two years as required by CA Annex C, to ensure particularly that the ESMMP-CP continuing suitability, adequacy and effectiveness regarding the project construction progress, and the Construction Contractor commitment to continual improvement. The Management Review shall be conducted by ESD Management Team.

The example of components to be reviewed is listed below:

- Current objectives, targets, and management plans as detailed in the ESMMP-CP,
- Reports of internal and external audit,
- Non-compliances of Construction Contractors and status of corrective actions,
- Status of performance regarding objectives and targets
- Improvement proposals or suggestions, and
- Update effectiveness of mitigation measures.

The Management Review Meeting will be conducted to identify opportunities for improvement in the components as listed above. It also is necessary to identify the performance and essential resources for implementing and achieving such performance.

As a result, expected outputs of the management review will be, but not be limited to:

- Management review minutes;
- Revision of policy, objectives, targets and plans where improvements are deemed necessary;
- Identification of requirements for improvement of management system, planning and implementation;
- Definition of planning for following years;
- Suggestions and proposed actions, if any;
- A revised ESMMP-CP for next 2 years; and
- Revised budget for environmental and social implementation every 2 years.

Once the first revision of the ESMMP-CP for Entire Construction Works is approved by MONRE, NNP1PC shall translate this document into Laos and shall post the Laos version on NNP1PC's website.

The ESMMP-CP in Laos version shall also be distributed to the relevant stakeholders i.e. Environmental Government Authorities in Provincial and District levels, head of affected villages in the construction areas.

This ESMMP-CP for the entire construction works is designed in accordance with Company's Integrated Environmental and Social Obligations stated in Concession Agreement - Annex C and also is designed to comply with ISO 14001. Cross reference of sections in this ESMMP-CP and requirements to ISO 14001 can be demonstrated below.

Table 12.1 Cross reference of the ESMMP to ISO 14001:2004 Requirements

ISO 14001 Clause		Sections in the ESMMP-CP			
4.1	General	1	General		
		12	Cross reference of ISO 14001:2004 requirements and sections in the ESMMP-CP		
		13	Cross reference to standards		
4.2	Environmental Policy	2	Environmental Policy		
4.3	Planning				
4.3.1	Environmental aspects	5	Authorities and other stakeholders related to environmental aspect		
		6.1	Overview of adverse impacts of the entire construction works		
		8	Thematic plans and programs		
		10.1	Monitoring and inspection		
		3	Legal and other requirements		
4.3.2	Legal and other requirements	3	Legal and other requirements		
4.3.3	Objectives and targets	6	Overview of measures and monitoring		
4.4	Implementation and Operation	4	Organization structure, roles and responsibilities		
		4.1	Organization		
		4.4.1	Resources, roles, responsibility and authority		
		4.4.2	Competency, training and awareness		
		4.4.3	Communication		
		4.4.4	Documentation		
		4.4.5	Control of documents		
		4.4.6	Operation control		
		4.4.7	Emergency planning and response		
		4.5	Checking	10	Checking
		4.5.1	Monitoring and measurement	6.2	Overview of environmental monitoring
				7	Site specific plans and programs
				10.1	Monitoring and inspection
		4.5.2	Evaluation of compliance	10.2	Evaluation of compliance
		4.5.3	Nonconformity, corrective action and preventive action	9	Implementation and operation
10.3	Non-compliance, corrective action and prevention action				
4.5.4	Control of records	10.4	Internal audit		
4.5.5	Internal Audit	10.5	External audit		
4.6	Management Review	11	Management review		
4.6.1	Review of EMS Section	11	Management review		
4.6.2	Continual improvement	11	Management review		

Apart from compliance to ISO14001:2004 requirements, the development of this ESMMP-CP respects other international standards and environmental regulations such as applicable Lao Laws, GOL Guidelines, Asian Development Bank Standards, IFC Performance Standards, IFC Environmental and Safety Guidelines, IFC Industry-specific guidelines. Full disclosure of relevant requirements is presented in *Section 3* of this ESMMP-CP.

Furthermore, NNP1PC ensures that every project related activities and its impacts are analyzed with careful considerations specified by the requirements and managed accordingly where applicable. All 18 Sub-Plans are developed to direct the implementations in compliance with all related regulations.

Cross reference of 18 Sub-Plans of ESMMP-CP complied with IFC Performance Standards and ADB safeguard Policy Statement can be demonstrated below.

Table 13.1 *Cross Reference of 18 Sub-Plans of ESMMP-CP Complied with International Criteria*

Sub-Plans of ESMMP-CP	IFC Performance Standards	ADB Safeguard Policy Statement
SP01: Erosion and Sediment Control	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP02: Water Availability and Pollution Control	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP03: Emission and Dust Control	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP04: Noise and Vibration	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP05: Waste Management	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP06: Hazardous Material Management	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP07: Vegetation Clearing	Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management	Safeguard Requirements 1: Environment
SP08: Landscaping and Re-vegetation	Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management	Safeguard Requirements 1: Environment

Sub-Plans of ESMMP-CP	IFC Performance Standards	ADB Safeguard Policy Statement
SP09: Biodiversity Management	Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management	Safeguard Requirements 1: Environment
SP10: Spoil Disposal	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP11: Quarry and Construction Layout	Performance Standard 3: Pollution Prevention and Abatement	Safeguard Requirements 1: Environment
SP12: Unexploded Ordnance (UXO) Survey and Disposal	Performance Standard 4: Community Health, Safety and Security	Safeguard Requirements 1: Environment
SP13: Construction of Work Camps	Performance Standard 2: Labor and Working Conditions	Safeguard Requirements 1: Environment
SP14: Traffic and Access	Performance Standard 2: Labor and Working Conditions	Safeguard Requirements 1: Environment
SP15: Training and Awareness	Performance Standard 2: Labor and Working Conditions	Safeguard Requirements 1: Environment
SP16: Project Personnel Health Program	Performance Standard 4: Community Health, Safety and Security	Safeguard Requirements 1: Environment Safeguard Requirements 2: Involuntary Resettlement; and Safeguard Requirements 3: Indigenous Peoples
SP17: Emergency Preparedness	Performance Standard 4: Community Health, Safety and Security	Safeguard Requirements 1: Environment
SP18: Cultural Resources	Performance Standard 8: Cultural Heritage	Safeguard Requirements 1: Environment Safeguard Requirements 2: Involuntary Resettlement; and Safeguard Requirements 3: Indigenous Peoples

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ERM's Bangkok Office

179 Bangkok City Tower
24th Floor, South Sathom Road
Tungmahamek, Sathorn
Bangkok 10120, Thailand
Tel: +66 2 679 5200
Fax: +66 2 679 5209

www.erm.com