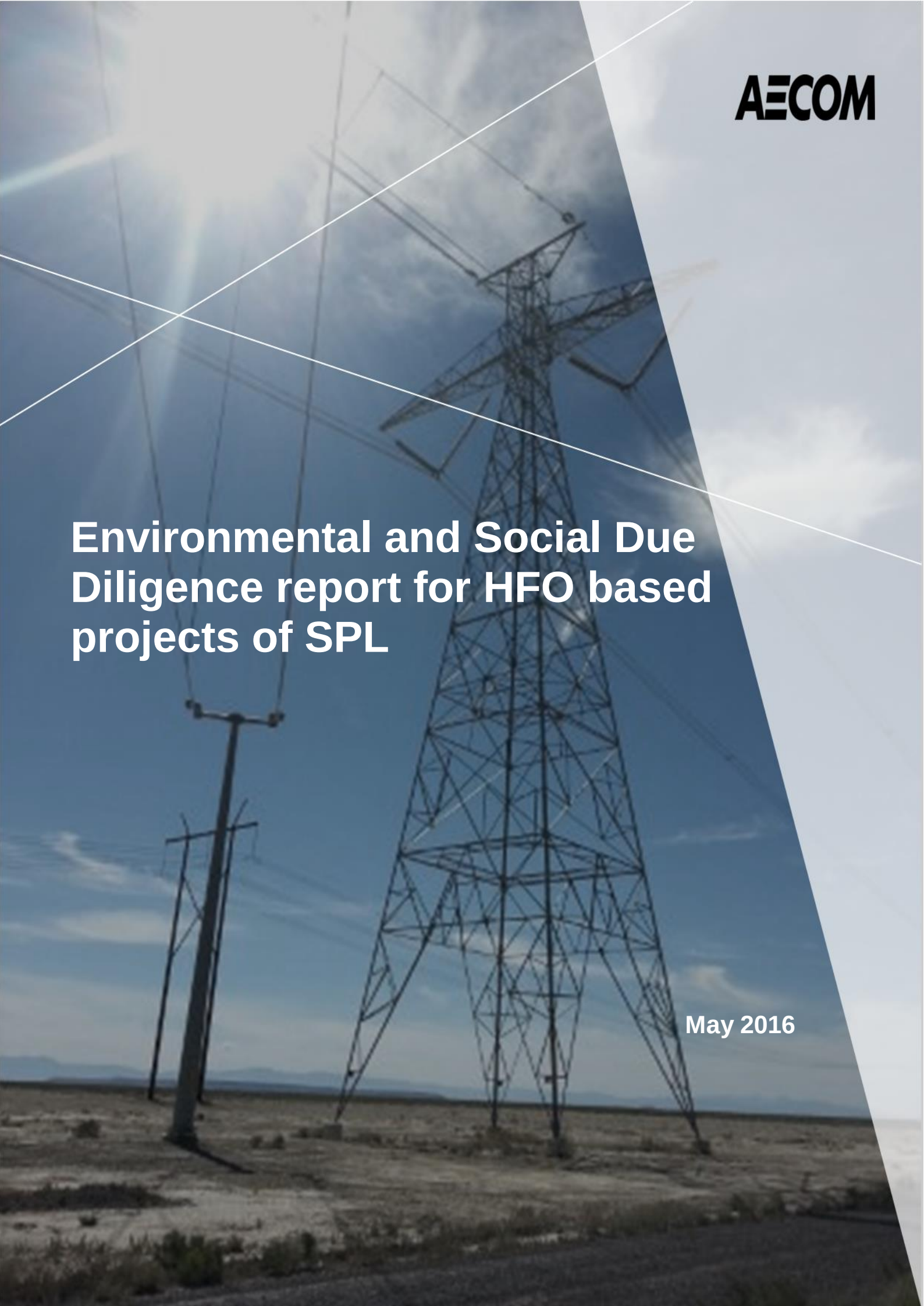


Environmental and Social Due Diligence report for HFO based projects of SPL

May 2016

Environment and Social Due-Diligence Report

Prepared for

Summit Corporation Limited

Prepared by

AECOM India Pvt. Ltd.

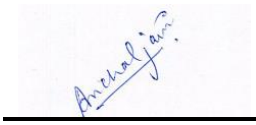
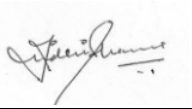
May 2016

AECOM AGILITY
CLIENTS
EMPLOYEES
EXCELLENCE
INNOVATION
INTEGRITY
PROFITABLE GROWTH
SAFETY

Quality Information

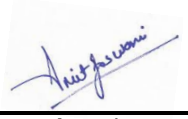
Site Visit, Review and Report Preparation

The site visit and report preparation were undertaken by the following AECOM professionals from AECOM's, Gurgaon office, Haryana, India

102 MW SNPL Unit-II Modonganj, Narayanganj Report	 **Deena Baruah,** Consultant II	 **Anchal Jain,** Consultant II
55 MW SNPL Unit-II Modonganj, Narayanganj Report	 **Nishant Kumar,** Environmental Consultant	 **Nidhi Sharma,** Associate
110 MW, Barisal Report	 **Ajay Pillai,** Associate Diroctor	 **Reela Mishra,** Senior Environmental Consultant

Quality Control Review

A Quality Control Review of this report was conducted by following professionals, in AECOM's Gurgaon Office, Haryana, India office

 **Amit Goswami,** Project Environmental Consultant	 **Dr. Somnath Mukherjee,** Executive Director, Environment, India

Revision History

Revision	Revision Date	Details	Authorized Name/Position	Authorized Signature
Revision No. 1	**27 May 2016**		**Ajay Pillai** Project Director	

1.0 Introduction

Summit Group of Companies is one of the leading private sector conglomerates of Bangladesh comprising a chain of business units including power, shipping and communications. Summit Group is one of the pioneers in power generation in Bangladesh with eleven power plants in operation. Summit Corporation Limited (hereinafter referred to as 'SCL/ Summit'), formerly known as Summit Industrial and Mercantile Corporation (Pvt.) Ltd., was established in 1985, as a holding company sponsoring its subsidiary companies to own, build and operate infrastructure projects in power sector.

SCL has eight subsidiary companies that are part of the Summit Group. Apart from these, SCL also holds stakes in Summit Power Limited. (hereinafter referred as 'SPL'), an independent entity with other shareholders. SCL currently produces around 1,260 MW of power, which is around 13% of total capacity of Bangladesh. The total net worth of SCL, including all its subsidiaries, is USD 600 million as on FY-15.

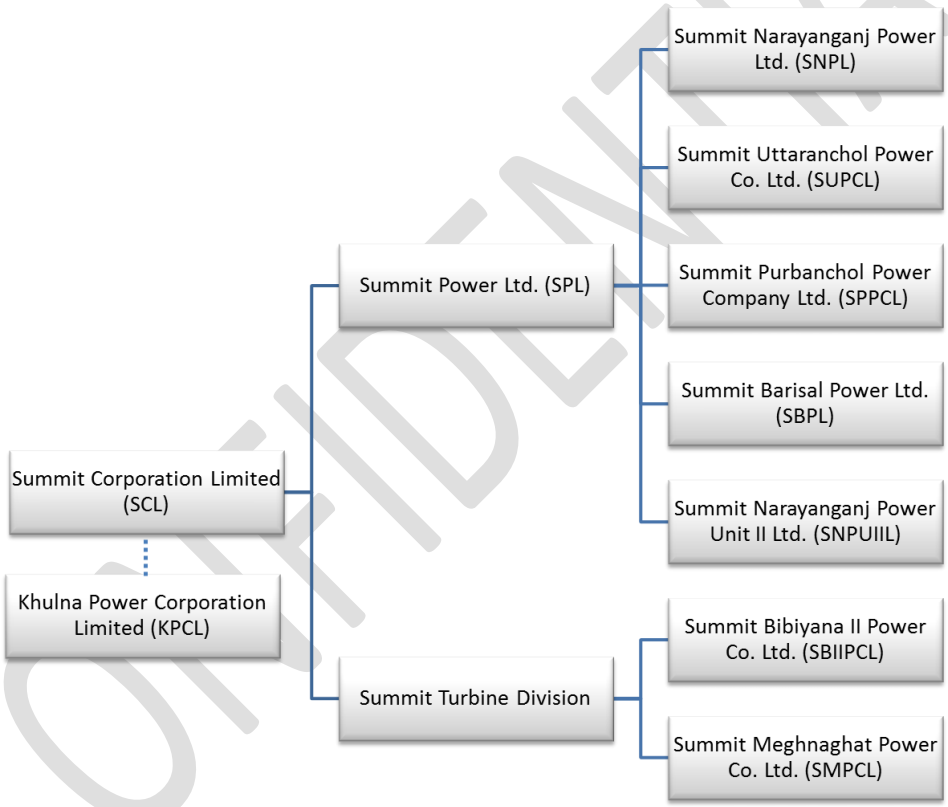


Figure 1.0-1 – SCL and Subsidary Companies

SCL operates both gas engine based and Heavy Fuel Oil (HFO) based power plants through its subsidiary Turbine division and Summit Power Limited. The gas engine based power plants are developed and operated by Summit Power Limited ('SPL'). SCL has a Turbine Division for development and operation of units using turbines for generating electricity. The Turbine Division currently comprises two subsidiary companies, SMPCL and SBIIPCL. The subsidiaries formed under the Turbine Division follow the policies and procedures of the holding company, SCL.

SPL which is a subsidiary of SCL is a holding company and comprises of five subsidiary companies including: (i) Summit Narayanganj Power Ltd. (SNPL), (ii) Summit Purbanchal Power Company Ltd. (SPPCL), (iii) Summit Uttaranchal Power Company Ltd. (SUPCL), (iv) Summit Narayanganj Power Unit II Ltd. (SNPUIIL); and (v) Summit

Barisal Power Ltd. (SBPL). SPL also holds 17.64% of the ownership of Khulna Power Company Limited (KPCL) which has three HFO based power plants: (i) 110 MW (operational since 1998) at Goalpara, Khulna (ii) 115 MW (operational since 2011) at Goalpara, Khulna and (iii) 40 MW (operational since 2011) at Noapara, Jessore.

SPL owns and operates nine (09) power plants at different locations across Bangladesh with a total capacity of 372 MW and One under construction 110 MW Plant at Barisal (SBPL). SPL's plants have been established and manufactured by companies including Wartsila – Finland, Caterpillar - USA, and GE Jenbacher, Austria. The list of operational units under SPL has been presented in **Table 2-1**.

Table 1-1: List of Operational Projects under SPL

SNo	Project Company	Location	Capacity	Fuel
1	Summit Power Ltd.	Ashulia, Savar	44.75 MW	Gas
2	Summit Power Ltd.	Madhabdi, Narsingdi	35 MW	Gas
3	Summit Power Ltd.	Chandina, Comilla	25 MW	Gas
4	Summit Uttaranchol Power Co. Ltd.	Ullapara, Sirajgonj	11 MW	Gas
5	Summit Uttaranchol Power Co. Ltd.	Maona, Gazipur	33 MW	Gas
6	Summit Purbanchol Power Co. Ltd.	Jangalia, Comilla	33 MW	Gas
7	Summit Purbanchol Power Co. Ltd.	Rupganj, Narayanganj	33 MW	Gas
8	Summit Narayanganj Power Ltd. SNPL (Unit –I)	Madanganj, Narayanganj	102 MW	HFO
9	Summit Narayanganj Power Unit II Ltd.	Narayanganj	55 MW	HFO
	Total		**372 MW**	

1.1 Purpose

SCL intends to hold 20% of the country's generation capacity. As power generation is a capital-intensive sector, SCL has planned to go international market for expanding its equity base. As part of this endeavour, SCL has signed an Appraisal letter with the International Finance Corporation (hereinafter referred to as 'IFC') for investment in the company to be made by latter and its co-investors, subject to satisfactory outcome of a due diligence process.

As per the requirements of IFC, due diligence on Environmental & Social aspects of the Company is required before making any decision on investment/financing in any company. SCL and IFC have therefore engaged AECOM India Private Limited (hereinafter referred to as 'AECOM') to review and assess the environmental, H&S and social performance of Holding company (SCL), subsidiaries, operating assets, assets under construction, and proposed assets under SCL against the following reference framework:

- Bangladesh Environmental, Health, Safety and Social regulations related to all aspects that are covered in the IFC Performance Standards, 2012;
- IFC Performance Standards 1 through 8 dated January 2012;
- The World Bank General Environmental, Health and Safety ("EHS") Guidelines, dated 2007;
- World Bank Sector EHS Guidelines for Thermal Power Plants dated 2008;
- Power Sector EHS Guidelines for Electric Power Transmission and Distribution dated 2007 (except Section 3.2 and 3.3);

As part of the due-diligence exercise, AECOM has conducted site visits to operational, and under construction projects, and conducted desk based assessment for proposed projects and some of the operational site. This report presents details of observations made as part of Environmental and Social Due Diligence (ESDD) of HFO based Power Plants.

The present assessment has been undertaken as per the predefined scope of work (under **Section 1.2** of this report) and methodology (under **Section 1.3**) in the AECOM proposal for the assessment dated 06th February, 2016. The observations made by AECOM professionals during the assessment are detailed under **Section 3.0** of each report along with recommendations to mitigate or minimize the Environment and Social (E&S) risk or impact(s), if any.

1.2 Scope of Work

The scope of work for the E&S DD of operational assets includes the following tasks:

- Identification and description of the main environmental and social risks and impacts;
- Assess the compliance of the Company's environment, health, safety and social management systems (ESMS) with the provisions of applicable standards presented in **Section 1.1**;
- Assessment of the compliance status of the Project against EHS&S regulatory requirements and requirements of Applicable Standards and identify any non-compliances;
- Characterization of the environmental setting, current surrounding land use, historical land use (on & off-site) of the Project and related issues concerning the environmental context of the Project, which may be of relevance to operation related risks and impacts;
- Evaluation of current and past operational activities and related practices at the Project in order to establish known or potential sources of soil, groundwater and/or surface water impact;
- Review of the management systems, mechanisms, policies and procedures in place for the management of environmental and social issues at both holding company and individual operations, including organization, objectives, targets, training, performance monitoring and auditing, and staffing, budgeting, and management review including covering matters related to use and management of contractors;
- Identification from media and other relevant sources if there are any concerns regarding potential environmental and social issues in relation to the Investment or the Sponsor, including outstanding litigation, notices or orders from courts or regulators, negative Non-Governmental Organization and/or affected community attention, that may lead to reputational risk;
- Interview of key stakeholders including affected communities to assess risk, issues, concerns and opportunities (for SBPL) and Telephonic discussion with the site management for desk based assessment;
- Assessment of the capacity and resources of the Investment to implement the Environmental and Social Management System and the Action Plan;

1.3 Methodology

The approach and methodology broadly applied for the execution of the assessment has been detailed below:

- A list of information required for the project was shared with the company after the kick-off meeting;

- AECOM reviewed the existing Environmental and Social Management System (ESMS) of the project in order to assess its adequacy and effectiveness of implementation, and identify gaps with the reference framework;
- Project specific environment and social risks and impacts were evaluated as per the reference framework, such as:
    - Resource consumption (energy and water), emissions and discharges;
    - Waste management;
    - Increased traffic;
    - Impacts on nearby communities;
    - Labour working conditions;
    - Occupational health and safety;
    - Community health, safety and security; and others.
- Review of the adequacy and status of implementation of management and monitoring plans for the project operations, developed as part of the project's ESIA including the effectiveness of existing monitoring system in place, was undertaken;
- Review of other relevant environmental and social risks and impacts or issues that may emerge out of review of public information and/or stakeholder consultations was also undertaken;
- Verification of compliance with various commitments of the project as part of ESIA and clearances obtained from relevant agencies was undertaken; and
- Based on review and verifications, the present report has been prepared which comprises of observations on compliance to and gaps with respect to the reference framework, as detailed under **Section 3.0** of each specific report; and
- Recommendations of additional actions to close the gaps detailing actions to be implemented, budgets/estimated costs and timeframes for completion of such actions/measures for all reports have been consolidated and provided under **Section 4.0** of each site specific report.

Specifically for SBPL, the methodology for undertaking the due diligence of the project has adhered to the following line of action:

- A two member team comprising of Environment, Health Safety and Social experts from AECOM undertook reconnaissance site visit of the facility on 18th March 2016 and the following activities were carried out:
- Direct observation of the entire project area, with a focus on the sensitive environmental, health/ safety and social features and receptors;
- Consultation with the project developers, EPC contractor/ subcontractor and labour to understand the project details, how the project proponents are meeting the statutory requirements (permits, licenses etc.), and the challenges they have been facing in terms of environmental, health & safety and social issues if any;
- Discussions with the communities (affected families) has been undertaken to assess overall perceptions and opinions about the project and to identify any potential issues of conflicts;
- Furthermore, the observations made in the report are subjected to material threshold in relation to expenditures required to meet compliance with the Applicable Standards. This material threshold is a monetary value and relates to costs considered necessary to address findings identified during the assessment. Expenditures greater than the material threshold have been considered

to have the potential to impact either the value or the operability of the assets. In the context of this due diligence, the threshold has been defined as an Environmental or Social (including safety, security and community) issue that:

- Would require more than USD 250,000 to rectify;
- May result in significant business interruption/criminal proceedings or a major environmental incident;
- Has resulted in community or NGO protest (as identified through an internet search); and/or
- Could result in a risk of multiple serious injuries or fatalities.

1.4 Limitations and Data Gaps

This report presents the observations made by AECOM professionals based on the scope of work and agreed approach and methodology with Summit and lenders. The present report has been developed to identify the potential EHS and social issues and conditions associated with the activities of the project for which the assessment has been carried out. During the course of this assessment, AECOM has attempted to independently assess the potential presence of EHS and social issues or conditions within the limits of the established scope of work as described in the contract between IFC, Summit and AECOM.

As with any assessment exercise, there is a certain degree of dependence upon verbal information provided by the point of contact for assessment, limited number of documents available for review and information available in the public domain, which is not readily verifiable. CAP developed for the facility constitutes a summary of the recommended actions, whereas a full description is presented in the body of this report on the nature of the findings, distinguishing between:

- Those aspects that could not be verified based on the available information; and
- Those areas in which a non-compliance with IFC Performance International Standards or Bangladesh National Regulations was observed.

This report has been prepared by AECOM for the benefit of its client, Summit and IFC. AECOM's client may release the information to third parties, who may use and rely upon the information at their discretion. However, any use of or reliance upon the information by any party shall be solely at the risk of such party and without legal recourse against AECOM, its parent, its subsidiaries and affiliates; or their respective employees, officers, or directors; regardless of whether the action in which recovery of damages is sought is based upon contract, tort (including the sole, concurrent, or other negligence and strict liability of AECOM), statute, or otherwise. This information shall not be used or relied upon by a party that does not agree to be bound by the above statement.

The EHSS Due Diligence of the HFO based Power Plants is largely based on the documents made available, and discussions with stake holder and observations from site walk through undertaken by AECOM professionals during the site visit. Wherever documentation, policies and procedures for evaluation were not available for review, it has been highlighted in the report at relevant sections. In addition, wherever AECOM has not been able to make a judgment or assess any process, it has been highlighted as an information gap and a way forward has been suggested.

1.5 Layout of the Report

This report includes the following sections under each site specific reports:

- ***Section 2***: provides a description of each HFO Power plant, its operation and procedures and a review of compliance status to the reference frame work;

- ***Section 3***: reviews the status of compliance of the each facility with respect to the IFC Performance Standards and applicable reference framework. A consolidated table at the end of Section 3 on summary of findings is also provided for each report; and

- ***Section 4:*** provides a consolidated Corrective Action Plan (CAP) based on the gaps for all facilities along with timeline for completion.

Site specific reports have been presented in the following sequence:

1. SNPL Unit- I Modonganj, Narayanganj (Operational)
2. SNPL Unit- II Modonganj, Narayanganj (Operational)
3. 110 MW Power Plant, Barisal (Under Construction)

Desk-based EHSS Due Diligence Report as per IFC Sustainability Framework 2012

102 MW HFO-based Power Plant

Modonganj, Narayanganj, Bangladesh

May, 2016

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Abbreviations

BPC	Bangladesh Petroleum Corporation
BPDB	Bangladesh Power Development Board
CAP	Corrective Action Plan
DoE	Department of Environment
E&S	Environmental and Social
EC	Environment Clearance
ECR	Environment Conservation Rules
EHS	Environmental, Health and Safety
EIA	Environment Impact Assessment
EMP	Environmental management Programs
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social due Diligence
ESMS	Environment and Social Management System
ETP	Effluent Treatment Plant
FTP	Fuel Treatment Plant
GHG	Greenhouse Gas
GRM	Grievance Redressal Mechanism
HFO	Heavy Fuel Oil
HIRA	Hazard Identification Risk Assessments
HR	Human Resource
ICP	Informed Consultation and Participation
IFC	International Finance Corporation
IMS	Integrated Management System
IPP	Independent Power Producer
MD	Management Director
MR	Management Representative
MSDS	Material Safety data Sheets
OHS	Occupational Health and Safety
PPA	Power Purchase Agreement
RO	Reverse Osmosis
SM	System Manual
SNPL	Summit Narayanganj Power Limited
SOP	Standard Operating Procedures
SOSCL	Summit Oil & Shipping Co. Ltd.
SPL	Summit Power Limited
SPM	Suspended Particulate Matter

Executive Summary

Summit Group sponsored Summit Power Limited (herein after referred as 'SPL'), is the first Independent Power Producer (IPP) in Bangladesh in private sector providing power to national grid. SPL was incorporated in Bangladesh on March 30, 1997 as a Private Limited Company. On June 7, 2004, the Company was converted to Public Limited Company under the Companies Act 1994. In 2011, SPL commissioned the 102 MW capacity power plant at M.N Goshal Road, Madanganj, Narayanganj under Summit Narayanganj Power Limited (herein after referred as SNPL), where SNPL has 55% ownership. The company was incorporated under the Companies Act, 1994, as a Private Limited Company on May 4, 2010. The Project/SNPL was the result of the Government of Bangladesh (GOB)'s ongoing effort to ease the reeling power crisis of Bangladesh. The project started commercial operations from 1st April 2011. The facility currently operates on Heavy Fuel Oil (HFO), which would is being supplied by Summit Shipping & Company Limited through dedicated pipelines. Site Management has apprised that SOSCL reservoir tanks are first transported to jetty, than from there fuel is transferred to the dedicated storage tanks located at facility through 345m long pipelines.

Summit Corporation Limited (hereinafter referred to as 'Summit') and International Finance Cooperation (hereinafter referred to as 'IFC' or 'lenders') engaged AECOM India Private Limited (hereinafter referred to as 'AECOM') as the Independent Environmental and Social Consultant to undertake an environment and social risk screening through desk based evaluation of a 102 MW operating Thermal Power Asset based on Heavy Fuel Oil (HFO) (hereinafter referred as 'Project/ Facility/ Site') as per IFC Sustainability Framework, 2012. The desktop based due diligence has been undertaken against the requirements of the following reference framework:

- Bangladesh Environmental, Health, Safety and Social regulations related to all aspects that are covered in the IFC Performance Standards, 2012;
- IFC Performance Standards 1 to 8 dated Jan 2012;
- The IFC General Environmental, Health and Safety ("EHS") Guidelines, dated 2007;
- The IFC Sector EHS Guidelines for Thermal Power Plants dated 2008;
- Power Sector EHS Guidelines for Electric Power Transmission and Distribution dated 2007 (except Section 3.2 and 3.3)

The operational facility has obtained all requisite environmental permits from the Department of Environment; Bangladesh for operation of the plant except for the explosive license which was noted to have expired on 31st December, 2014. .Any application submitted to relevant authorities for obtaining explosive license was not available for review during the assessment and hence the status of license being expired can be concluded as high severity issue. The plant is required to submit environmental monitoring report to Department of Environment on quarterly basis. SNPL has established an Integrated Management System (IMS) incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 and has formed a System IMS Manual (also called as System Manual) document dated 1st February, 2012.

The facility is financed by Deutsche Investitions- und Entwicklungsgesellschaft (herein after referred as 'DEG') and The Netherlands Development Finance Company ((herein after referred as 'FMO') as part of which an Environment and Social Action Plan (ESAP) dated 3rd August, 2012 was developed for the facility. ESAP provides a description of actions to be completed by SNPL, along with deliverables, status of the action and action completion date (if completed). It covers addressal of project specific issues like noise, waste management, waste water treatment,

community engagement and communication program, environment and social monitoring program, construction of jetty, organization structure, fuel storage, occupational health and safety plan. DEG has issued a completion certificate to SNPL dated August, 2014 pertaining to completion of Environment and Social Action (ESAP) and increase of stack height from 36m to 56m.

Since, the project falls under Red Category of Environment Conservation Rules, 1997 and has received Environment Clearance in year of 2011 from the Department of Bangladesh; it is evident that the facility has conducted Environment and Social Impact Assessment Study (ESIA) before the commencement of the project. However, the ESIA was not available for AECOM's review. Site Management has informed that ESIA report for Unit-1 is not available in soft version. Hence, ESIA report prepared for Unit-II (55MW HFO based Thermal power plant) of SNPL was utilized for assessment of prevailing baseline conditions.

102 MW Operational HFO thermal power plant is Categorized as ***Category B*** project as per IFC Sustainability Framework, 2012. The Project is expected to have limited adverse social and/or environmental impacts that can be readily addressed through mitigation measures. Following Rationale can be attributed for its categorization:

- Identified potential environmental and social risks and impacts are site-specific and either readily managed through design or addressed through mitigation measures like construction of noise barriers to negate the effect of increased noise on immediate community, increase of stack height based on air dispersion modelling;
- Most of the infrastructure needed for the operation of the project is already in place;
- Treated Waste Water from ETP is being utilized for gardening purposes and there is no direct discharge of treated or un-treated waste water in Shitkalya River ecosystem;
- The past land use of the operational facility was a rice processing unit and there was no rehabilitation issues associated with the site. The land procurement was based on willing- buyer and willing-seller concept;
- SNPL has a Grievance mechanism in place for local community and is addressing their concerns and issues through regular meetings;
- A series of mitigation measures related to environment and social aspects have already been implemented by the project after completion of ESAP developed for DEG funding and a completion certificated has issued for the same dated August, 2014.

AECOM reviewed relevant project documents to understand the project and its current operations and undertook regulatory review to understand the applicable, local and national legislation and regulatory frameworks and legal compliance. Additionally AECOM verified the extent of aspects of the project to check their accordance with the reference framework and also reviewed the adequacy of the organization capacity and management structures. Finally a Corrective action plan (CAP) was developed to address any gaps or issues that need to be managed through the life of the project and after the review process, a 'Material Threshold' in relation to expenditures required to meet compliance with the Applicable Standards is be applied .

Key observations and findings (PS wise) as part of the Environmental and Social Due Diligence conducted at SNPL Power Plant are presented below:

PS-1: Assessment and Management of Social & Environmental Risks and Impacts

SNPL has established an Integrated Management System (IMS) incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 and has formed an Integrated Management System Manual at the facility level. A series of procedures on EHS aspects have been formulated and maintained by the SNPL as a part of IMS Manual.

SNPL has undertaken cumulative air dispersion modelling for Unit-I and adjacent Cement plant. However, no cumulative impact assessment on ground level concentrations has been undertaken considering both Unit I and II and existing cement plant. Overall compliance with PS1 is adequate, however, there is no overarching social policy developed as a part of IMS Manual.

PS-2: Labour and Working Conditions

SNPL has established a procedure on Human Resource Development which is applicable to its full time employees. However, there is no mention of supply chain and migrant workers. Terms of employment include wages and benefits, wage deductions, hours of work, breaks, rest days, overtime arrangements, and overtime compensation, medical insurance, pension, and leave for illness, vacation, maternity, or holiday have been specified in procedure for Human Resource Development.

Overall compliance with PS 2 is adequate, however, following non-compliances against IFC PS 2 have been observed during the assessment process:

- HR Policy: The HR policy statement is applicable to both direct employees and contracted workers but there is no mention of supply chain workers or migrant workers;
- HR Procedure: The HR procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015); The HR Procedure is not consistent in terms of sick and annual leaves as required with Bangladesh Labour Act, 2006;Certain elements are not included in IMS Manual such as prohibition of forced and bonded labour, assessment of age of worker employed, formation of workers organization etc., working conditions for migrant workers, avoidance of sexual harassment;
- Contract document: The contract documents between SNPL and contactor does not contain provisions pertaining to disbursement of wages to the workers, payment for overtime, entitlement of leaves , the written terms of employment to the workers, provision of identity cards etc.
- Retrenchment: The SP-HRM document contains a process for retrenchment of employees; however it does not include alternatives to be adopted to avoid any kind of retrenchment for contracted and indirect workers.
- Occupational Health and Safety: Various checklists are prepared by SNPL pertaining to job risk assessment, workplace inspection, accident and incident report, work permit system, medical history checklist for employees, hot work permit, lock out and Tag out; but certain checklists such as PPE Assessment, Occupational Noise Measurement Records, OHS risks associated with HFO handling and in jetty area are not developed;
- Occupational Health and Safety: Monitoring of occupational health of employees in terms of exposure to high temperatures and EMF not documented;

- Training Evaluation: Specific training needs for workers required pertaining to OHS have been identified; however training evaluation was not carried out to check the effectiveness of the training imparted.

PS-3: Resource Efficiency and Pollution Prevention:

SNPL has established procedures to maintain control of Significant Environmental Aspects, ensure regulatory compliance, meet the company's environmental objectives, and conform to the Environmental Care Policy. SNPL has successfully designed an environmental and social monitoring program which includes emissions, Ambient Air Quality (AAQ), fuel content, wastewater, waste management, oil soils, ground contamination, CO2 emission register as part of ESAP developed for DEG, 2012.

Overall compliance with PS 3 is adequate, however, following non-compliances against IFC PS 3 have been observed during the assessment process:

- There are no reports available on quantification of GHG emissions or on voluntary disclosure done by SNPL;
- Establishment of environment monitoring programs for air quality management, noise management, effluent management, and stack emissions management and ensure compliance EC condition pertaining to submission of quarterly monitoring reports to Department of Environment (DoE), Bangladesh.
- SNPL utilizes underground water and river water to fulfil its requirements, but details such as individual water consumption quantity from the deep well and river water or if there is any stress on the aquifer due to the water withdrawal activities conducted by the plant are not available;
- There were no records on ground water extraction;
- Implementation of noise abatement measures could not be assessed as there no latest monitoring reports provided for review.
- The noise levels measured at control rooms falls in range of 71-72 dB (A) which exceeds the limit of 60 dBA;
- Absence of environment monitoring programs for air quality management, noise management, effluent management, and stack emissions management with their sampling frequency, monitoring methods, and analysis.
- SNPL has not documented any details on electronic, plastic waste management

In context to project operations, the project proponent is required to undertake the study on ground water availability (ground water modelling) in the present area to assess the stress on the aquifer due to water withdrawal for plant operations. The study establishes the presence of ground water to ensure availability for longer period of time and its dependency on local community present in the area.

Potential usage of river water in case of stress on ground water availability will require augmenting the existing capacities of current water treatment plant at operational facility, which in total may involve financial support exceeding USD 250,000.

PS-4: Community Health Safety and Security:

As per the IMS Manual, SNPL identifies potential hazards as facility and job risk assessment from a number of internal and external sources. As per review of Job Risk Assessment Form dated 1st June, 2012, it was noted that the details pertaining to hazards from handling of oily rags, maintenance of switch yard and hot works with applicable controls has been documented. The risk assessment exercise does identify risks/impacts from oil leaks from pipelines which may pose hazard to the community. SNPL has also documented requirement of noise surveys during community meeting held under External Communication and Record.

SNPL has an established procedure for emergency preparedness and response in which they have taken into account the needs of relevant interested parties such as the emergency services and neighbours. The procedure for emergency preparedness and response (SP-EMR-1) includes the community evacuation procedure in case of an emergency such as a gas release, fire, or an explosion. Non compliances observed with respect to requirements of PS-4 are:

- SNPL identifies potential hazards as facility and job risk assessment from a number of internal and external sources, but there no reports available on Hazard and Operability (HAZOP) or Pre-startup Safety Review (PSSR) studies considering the to determine potential impacts on community health and safety because of the power plant activities. It is important to establish he risk associated with HFO storage and installed pipelines for transportation of HFO;
- SNPL's Emergency Preparedness and Response plan has a procedure for community evacuation, which however does not include mock drill requirements for the community people;
- As per the SP-EMR-1 procedure, SNPL conducts annual meeting with local people and with representatives from Fire and Police department, however Minutes of meetings for such meetings were not available for review;
- There was no formal mechanism to update community about emergency preparedness plan and security arrangements for the site.

In context of the project's existing risk assessment studies pertaining to storage areas of Heavy Fuel Oil (HFO) and pipelines, Hazard analysis is required to be undertaken in conjunction with Hazard Identification (HAZID)/Hazard and Operability (HAZOP) studies, and quantitative risk assessments (QRAs) to assess the potential to release toxic, hazardous, flammable material and identify impact zones.

Potential hazard analysis and risk assessment of the storage areas of fuel, pipelines installed would entail the implementation of mitigation measures to address the identified risks in impact process which could lead to contamination or physical injury. This execution of mitigation measures at site level may involve financial support exceeding USD 250,000.

PS-5: Land Acquisition and Involuntary Resettlement:

The 102 MW HFO based Power plant is established on 21,853 sqm of land at Narayanganj. Land for the plant has been procured in year of 2011 on willing buyer and willing seller basis. Site Management has informed that the past land use of the site is rice processing facility. Additionally, there is no settlement in this designated area for the operational facility. Therefore, no population has been displaced and no resettlement was required for the

construction of the operational facility. Site Management has also reported that the compensation given was calculated at the market value.

- With respect to observations noted during the document review, the project is compliant with PS-5 and no issues pertaining to land have been identified.

PS-6: Biodiversity Conservation and Sustainable Management of Living Natural Resources:

With respect to interaction with site management, the project is compliant with PS-6 and no issues pertaining to Biodiversity Conservation and Sustainable Management of Living Natural Resources have been identified. It was informed that waste water from plant operation is treated in an ETP and it is utilized for gardening purposes after its treatment. All the parameters of treated waste water in within the limits of standards prescribed in ECR, 1997. Also, there is no discharge of treated waste water in the River, as reported by the management.

PS-7: Indigenous People:

The population of indigenous communities in Narayanganj district is limited. Owing to the small scale of plant operations, no direct social risks to the community at large, including the indigenous community if any, were identified. PS 7 does not get triggered.

PS-8: Cultural Heritage:

Apparently, Madanganj is located in west of the project site. 'Mahamud Nagor Eidgha' (a religious place) was observed to be located in north of the site at a distance of 800m in Mahmud Nagar. The place is outside the facility boundary and will not have any impact due to plant operations. As per the review of secondary information pertaining to operational facility, the project does not fall under purview of Performance Standard 8.

2.0 Project Description

2.1 Background

Summit Group sponsored Summit Power Limited (herein after referred as 'SPL'), is the first Independent Power Producer (IPP) in Bangladesh in private sector providing power to national grid. SPL was incorporated in Bangladesh on March 30, 1997 as a Private Limited Company. On June 7, 2004, the Company was converted to Public Limited Company under the Companies Act 1994. In 2011, SPL commissioned the 102 MW capacity power plant at M.N Goshal Road, Madanganj, Narayanganj District under Summit Narayanganj Power Limited (herein after referred as SNPL), where SNPL has 55% ownership. The company was incorporated under the Companies Act, 1994, as a Private Limited Company on May 4, 2010. The Project/SNPL was the result of the Government of Bangladesh (GOB)'s ongoing effort to ease the reeling power crisis of Bangladesh. The project started commercial operations from 1st April 2011. The facility operates on Heavy Fuel Oil (HFO), which is being supplied by Summit Shipping & Company Limited (herein after referred as 'SOSCL') through dedicated pipelines and jetty. Site Management has apprised that fuel tanks of SOSCL are unloaded on floating jetty present at facility, from where fuel is transported to the dedicated HFO tanks via pipelines of 345m in length.

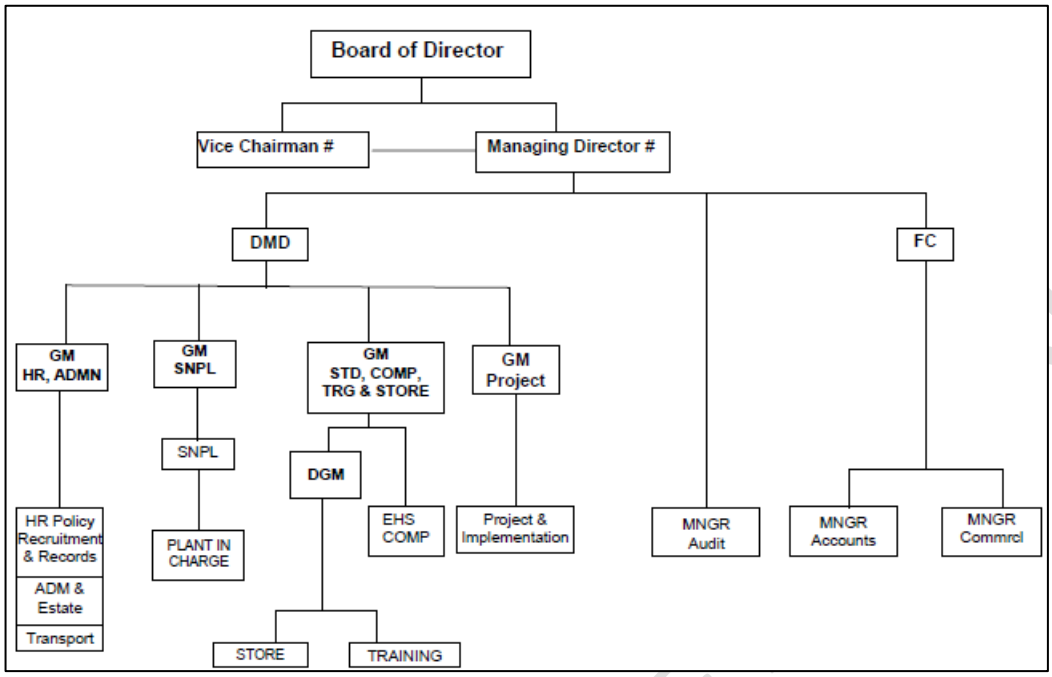
The Power Purchase Agreement PPA was signed on June 23, 2010, between SNPL and Bangladesh Power Development Board (BPDB) for installation of 102 MW Power Plant, its operation and Maintenance and Supply of electricity for 5 years at Madanganj, Narayanganj. The plant is designed for 30 years of life. Three feeders of rating 132 KV, 40/50 MVA originate from 132 KV switchyard of the Power Plant ending in Madanganj 132/33 KV Grid Sub-Station of Dhaka Power Distribution Company Limited. Feeders are equipped with outdoor SG6 Breakers and protection relays. From Plant Sub-Station to Grid Sub-Station underground cables are connected sub-station to evacuate power.

Currently, Operation and day-to-day maintenance is undertaken by SNPL directly. For scheduled preventive/breakdown maintenance, long term agreement has been signed with Wartsila Bangladesh Limited ((plant generator supplier).

2.2 Organisation Structure

As per review of the Corporate Level organogram, the Board of Directors administers the Vice Chairman and the Management Director (MD). The MD directly supervises the DMD (Deputy Managing Director), FC (Finance Controller) and the Manager (Audit). DMD supervises the four General Managers viz. General Manager Human Resources (HR) & Admin, General Manager SNPL (Plant In-charge), General Manager Stores and General Manager Projects who are responsible for HR and admin related works, Plant In Charge, stores & training and project implementation, respectively. The Deputy General Manager (DGM) stores & Training and the EHS (Environment, Health and Safety) & Compliance personnel directly reports to the General Manager (GM) stores. The managers from Accounts and Commercial divisions report to Finance Controller. All management related activities for the plant are planned at corporate level. Evidently, General Manager-Admin (corporate level) manages HR Policy and recruitment records for the SNPL plant. The detailed organization structure is depicted in **Figure 2-1** below:

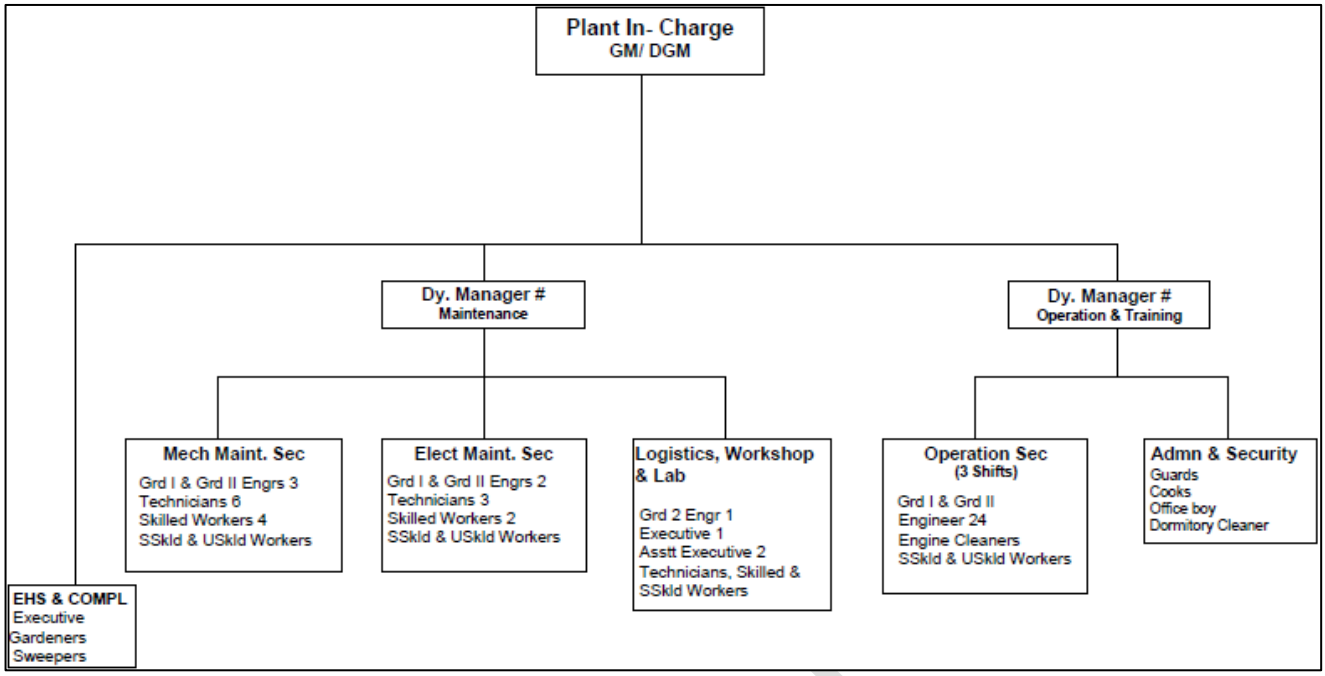
Figure 2-1: Organisation Structure



Source: SM-08 of System Manual dated 1st February, 2012

The organogram, as depicted in the **Figure 2-2** below, is the operational plant/facility level structure, as per the SNPL's IMS Manual (SM-08). As per review of the organogram, the Plant In-charge (usually a GM or a DGM in designation) supervises the Deputy Managers from Maintenance responsible for the mechanical maintenance, electrical maintenance, logistics, workshop & lab and from Operations & Training division responsible for Operations, to the GM Stores. Site Management has informed that EHS issues controlled by Management Representative from Head Office & at plant level EHS Officer and joint EHS Committee look after all the issues pertaining to Environment, Health, Safety and Social aspects. Joint EHS Committee comprises of Project Manager, Deputy Project Manager, Four (4) Assistant Manager-Tech, EHS- Officer and Chemist. It was also observed that EHS Officer has successfully completed the Environment Management Course (based on ISO 14001:2004 Standard). Completion certificate dated 17th January, 2013 issued IRCA by was reviewed in this regard.

Figure 2-2: Organogram of Operational Plant



2.3 Facility Details

The SNPL power plant is approximately 30 km Southeast of Dhaka city, Bangladesh and spread over an area of 21,853 sqm of land. The site is accessible by Dhaka-Chittagong road via diversion at Madanganj, Narayanganj. The site is located amidst other industries and residential properties and is on eastern bank of Shitalakshya River. The site settings of operational facility in all four directions are detailed below:

North Side: To the north east of the facility, a paved road leads to a 6 m wide internal road from which the facility is accessed. There are settlements located in north direction. Madanganj Ghat Bus Stop is located at a distance of 500m in of the site.

East Side: Madanganj is located in east of the facility. Adjacent to the site, a paved road connecting Mahmud Nagar to Madanganj is located.

South Side: A Cement Grinding Mill owned by Bashundhara Industrial Complex Limited (BICL) is located in south of the operational facility

West Side: Shitalakshya river is situated in west of the site. Across the river, Gognagar and Char Syedpur are located in west of the operational facility. A second of 55 MW Capacity based on HFO owned by Summit NarayanPower Unit II Ltd is located to adjacent to 102MW Operational facility in west direction.

The internal road connects to the facility's main lounge area which has an office room, kitchen, dining room, a prayer room and toilets. The engines and the associated stacks are located at the central portion of the facility. The tank farm is located at the western corner of the site. Other utilities such as the Effluent Treatment Plant (ETP),

transformer unit, fire pump house, Fuel Treatment Plant (FTP) and lube oil storage are located along the south-eastern boundary of the site. **Figure 2-3** shows the site location of the operational facility.

Figure 2-3: Location of 102 MW HFO based Thermal Power Plant owned by SNPL

1. Indicative Project location in Bangladesh

2. Project location in Madanganj, Bangladesh

3. Project location and surrounding landuse

Not to Scale	**INDICATIVE PROJECT LOCATION MAP IN MADANGANJ, BANGLADESH** Prepared by: Anchal Jain Approved by:	**Description**: 1. *1. Indicative Project location in Bangladesh; 2. Project location in Madanganj, Bangladesh; 3. Project location and surrounding landuse* **Source:** Google Maps and Googel Earth, DigitalGlobe Image, dated 01st March, 2016

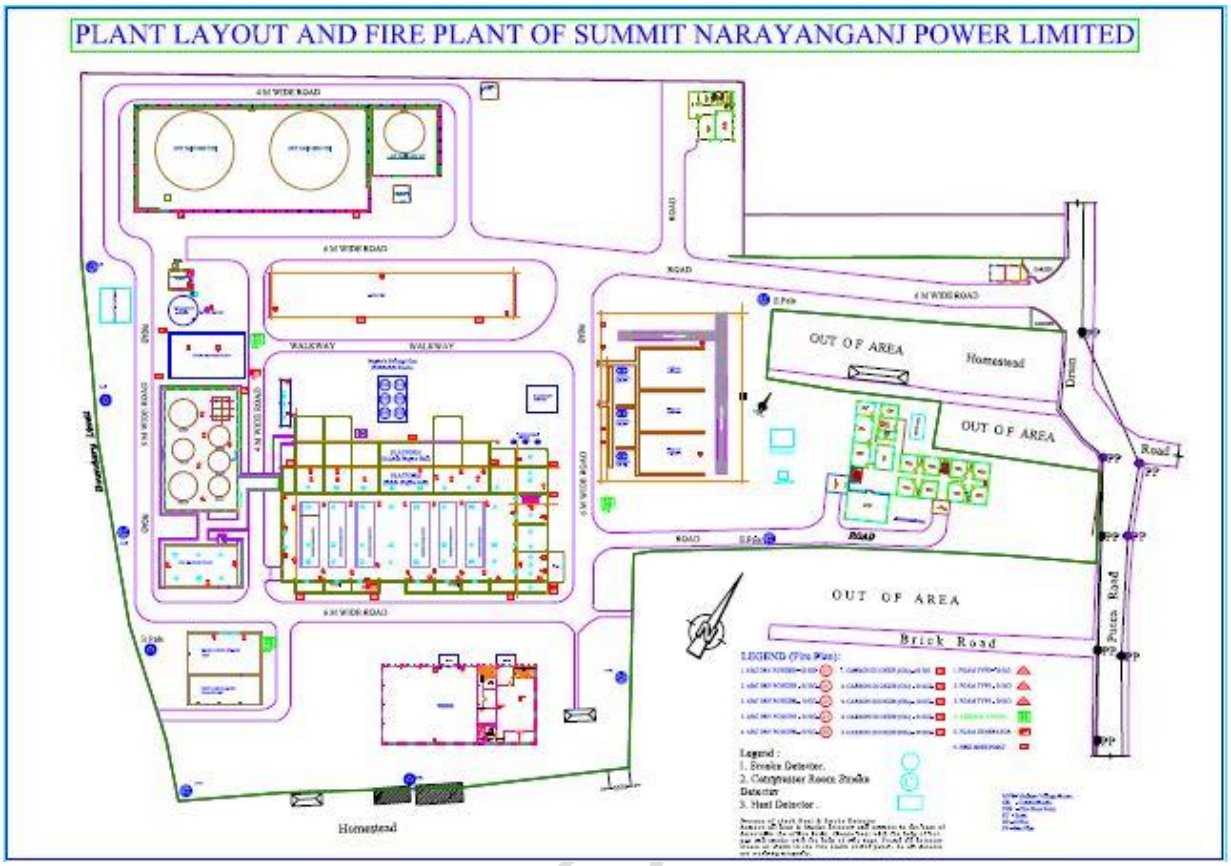
1
2 3

2.3.1 Process Description

The operational facility has six (6) Wartsila 18V446GD four stroke engines, direct injected with trunk piston, turbocharged and with intercooled design. Engines are gas HFO engine, which utilizes HFO combustion cycle in both gas and liquid fuel operations giving the characteristics of engine with uncompromised output and derating. The engines are designed for continuous operation on light fuel at any load between 10-100%. The engine can run on both HFO and diesel, however, based on review of documentation, it was evident that the facility fuel is HFO.

The HFO feeder unit feeds the HFO from the fuel tanks to the fuel circulation system. The feed pumps are electrically driven screw pumps equipped with suction strainers and built-in safety valves. The HFO and oxygen is injected into the combustion chamber generating smoke, which in turn runs the alternator.

Figure 2-4: Plant Layout of 102 MW Operational Facility



Source: SNPL

2.3.2 Details of Engine and Specifications

The main generating units of the plant consists of six (6) Wartsila make 18V46GD Reciprocating type Dual Fuel Engines, which are coupled with ABB Alternators of rated voltage 11000V. Each of the engines produces 17.067MW. The optimized dual fuel injection system contributes to complete combustion of all fuels over the entire load stage. Fuel Oil Operation is based on the use of normal fuel oil injection pumps and can run on Crude oil, Light Fuel Oil (LFO) or HFO. Fuel Sharing is available between 35% and 87.5% of rated load.

Engine

The engine is designed for continuous operation of heavy fuel at any load between 25-100% and can be started and stopped on heavy/crude oil if the fuel is heated to operating temperatures. It comprises of fuel oil system, lubricating oil system, starting air system, cooling water system, combustion air system and exhaust gas system. The engines function on maximum fuel viscosity at 50^{O}C. Specifications of Engine are given below:

Table 2-1: Engine Specifications

Parameters	Specification
Engine type	W18V46
Number of cylinders	18
Cylinder bore	460 mm
Speed -	500 rpm

Rated output -	17550 kWm
Main voltage	415 V
Secondary voltage	110 VDC
Rotation direction	Clockwise

Source: Technical Specification provided by SNPL

Table 2-2: Generator Specifications

Parameters	Specification
Generator type	AMG 1600SS1DSE
Output	21345 kVA
Power factor	0.80
Voltage	11 000 V
Current	1120 A
Frequency	50 Hz
Ant condensation heated power	2.4 Kw

Source: Technical Specification provided by SNPL

Engine Colling Water

Corrosion inhibiting additives are used in the engine cooling water. The specifications for engine cooling water for turbine washing and separator operating water are given below:

Table 2-3: Limits for Engine Cooling Water

Type of Water	Limits
pH at 25^{o}C	>6.5
Conductivity	<100 mS/m
Total Hardness Ca2+	<10 odH
Silica	<50 mg/l
Chlorides	<80 mg/l
Sulphates	<150 mg/l

Source: Contract between SNPL and Wartsila

The specifications of pre-heating unit are provided below:

Preheating unit

- Pump capacity - 15 m3/h
- Motor power, pump - 1.1 kW
- Expansion vessel Volume - 1200 litres

Radiators

- Number of radiators per engine - 4

- Number of cooling fans per radiators – 06
- Motor power - 7.5 kW

Charge Air

The numbers of bag filters proposed are 18 with filter power of 0.18 kW. The attenuation of charge silencer of 35 dB(A). The highest allowed concentration of impurities at charge air inlet is given below:

Table 2-4: Concentration of impurities in Charge air

Type of Water	Limits
Chlorides	1.16 mass-ppm
Hydrogen Sulphides	0.25 Vol-ppm
Sulphur Dioxide	0.43 Vol-ppm
Ammonia	0.125 Vol-ppm
Minimum filtration class	EN 779:2002

Source: Contract between SNPL and Wartsila

Fuel Oil system

All the high-pressure fuel injection system is located in a closed compartment with a removable cover providing maximum reliability and safety for preheated fuel. The fuel system will comprise of the following:

- Low pressure pipes made of steel;
- High pressure pipes double wall with common leak alarm;
- Injection pumps, individual for each cylinder;
- Pneumatic stop cylinder at each injection pump;
- Fuel and injector gas in each cylinder;
- Fuel Limiter to limit smoke at start up;
- Solenoid valve for fuel limiter at start up

Heavy Fuel Oil Feeder Unit

- LFO Pump capacity - 29.9 m3/h
- Motor power, feed pump - 7.5 kW
- HFO Pump capacity - 26.4 m3/h
- Motor power, feed pump - 11 kW

Booster unit

- Booster pump capacity - 14 m3/h
- Motor power, booster pump - 7.5 kW
- Clean leak pump capacity - 1.66 m3/h
- Motor power, clean leak pump - 1.1 kW
- Dirty leak pump capacity - 1.5 m3/h
- Mixing and deaeration tank volume - 60 litres
- Clean leak tank volume - 150 litres
- Dirty leak tank volume - 50 litres

- Fuel filter, mesh size - 37 µm

2.3.3 Utilities

Electricity

Power withdrawal from the plant is undertaken as per provision of the PPA, which was executed on 23rd June, 2010. The Plant is connected with the nearby 132kV Substation of Power Grid Company of Bangladesh (PGCB). The electricity is produced at 11KV, which is evacuated to 132KV national grid through three 11/132KV Step-up Power Transformers.

Water and waste water

The water requirement for cooling water and domestic purpose is met by using underground water through deep tube well (submersible pump) and during monsoon season, the plant draws water from the River Shitalakshya which is located towards the west at an approximate distance of 500m from the site. Ion Exchange (India) limited was contracted by SNPL for construction and installation of Water Treatment Plant including Clarifier, with an inflow rate of 15m^3/ hr and Reverse Osmosis Plant with capacity of 4m^3/ hr within the site premises.

The water requirements for the different processes is presented in the table below:

Table 2-5: Water Usage and its Requirement

Type of Water	**Requirement** (based on 2015 data)
Engine cooling water	792 m^3/year
Potable water	720 m^3/year
Dormitory water	5,400 m^3/year
DM Water	7,188 m^3/year
Raw water (Fire tank)	52,980 m^3/year

Total water requirement for the year 2015 was 53040 m^3

Daily water requirements as provided by Site Management are detailed below:

Process and sanitary water excluding boilers

8 l/MWh x 100 MW = 800 l/h

Boiler water consumption (including blow down cooling water):

3% x 100 MW x 1500 x 0,1 = 450 l/h

Totally 1250 l/h

The total water requirement for operational facility is 1250 litres/ hour. Site Management has also informed that permission for ground water abstraction is under process from Government of Bangladesh. However, no application was provided for review. Water is treated by water treatment plant by using different types of clarifier, filters such as Reverse Osmosis (RO) membrane, mixed bed, lamella etc. Additionally various types of chemicals such as lime, alum etc. are also used to clarify the water. The total water quality parameters is monitored and measured by Authorized chemist of the plant laboratory. As per work order executed between SNPL and Ion Exchange (India) Ltd dated august, 2010, A Water Treatment Plant (WTP) has been installed which comprises of following components:

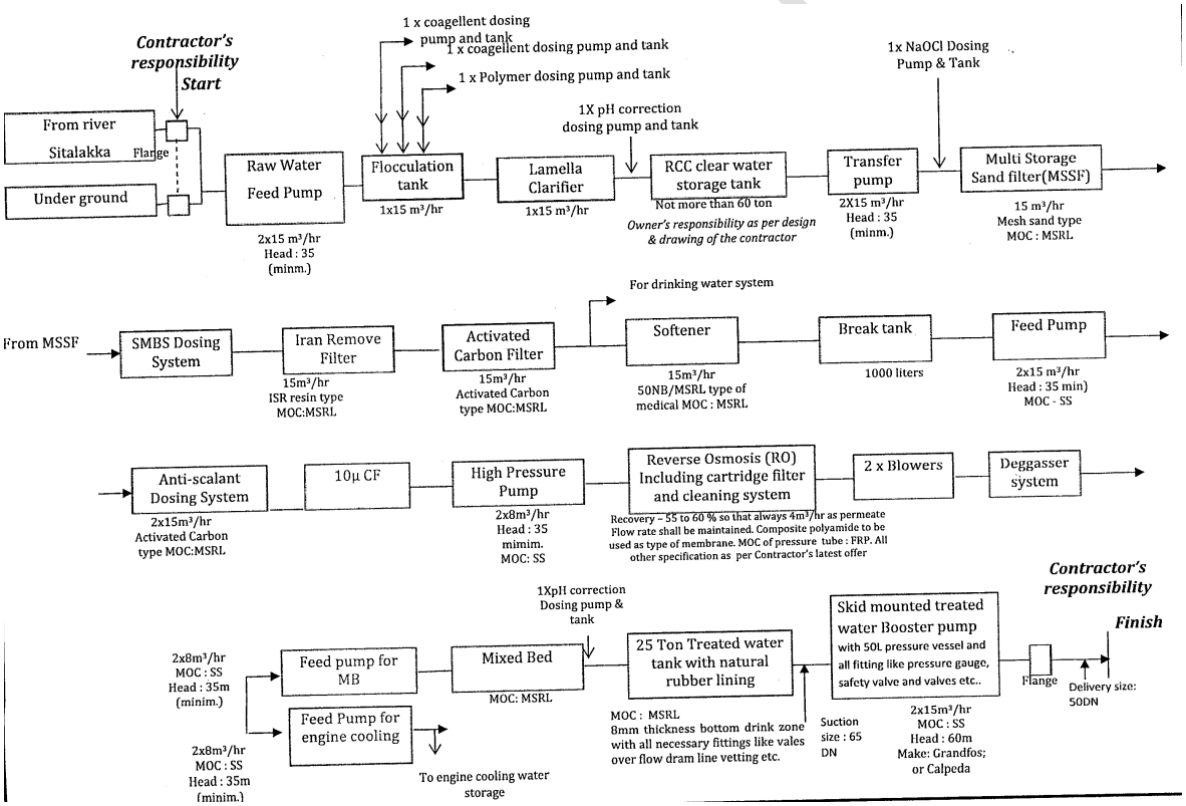
Table 2-6: Capacities of Different Types of Tanks installed in WTP Unit

Component	Capacity
Treated Water Tank	25 Tone
6 bar Skid Mounted treated Water Booster Pumps	2x15m^3/hr
Clarifier	15m^3/hr
Reverse Osmosis Plant	4m^3/hr
Demineralized Water Tank	25 Tone

Source: Contract between SNPL and ION Exchange Limited

The WTP installed inside the facility is operational on Multi Storage Sand Filter and activated carbon filter with chemical dosing of Sodium Hypochlorite (NaOCL). The functioning of WTP has been explained in Figure below.

Figure 2-5: Flow Diagram of Water treatment Plant for 102 MW Operational Facility



Approximately 6 ton of waste water treated by Effluent Treatment Plant, 1.5 ton of oily water is treated and approximately 4 ton of sludge is produced which is sold to DoE approved vendors on daily basis.

Fuel

SNPL plant operates on Heavy Fuel Oil (HFO) and requires about 116,070 m^3 of HFO per year to run the 102 MW plant. SNPL has signed a long-term contract with Summit Oil & Shipping Company Limited. (SOSCL) for HFO supply and SOSCL has been a reliable supplier of HFO with 100% assurance. HFO is transported from reservoir tank of SOSCL to the power plant through pipeline of length 345m. Site Management has apprised that SOSCL reservoir tanks are first transported to jetty, than from there fuel is transferred to the dedicated storage tanks located at facility through pipelines. The location of reservoir was not available to assess the length of pipeline dedicated for transportation of HFO. As per review of Fuel supply Agreement executed between SNPL and SOSCL dated 19th May, 2013, the annual fuel requirement for the facility was estimated to be 1, 50,000 MT. SNPL is required to provide a yearly, half yearly and three months estimates of fuel requirement. It is the responsibility of supplier to procure and maintain all the fuel permits consents and licenses required for transportation of fuel.

The quality analysis for the HFO samples are conducted by Veritas Petroleum Services (ASIA) Pte Ltd. and is tested for its density, viscosity, water content, micro carbon residue, sulphur, total sediment potential, ash, vanadium, sodium, aluminium, silicon, iron, nickel, calcium, magnesium, phosphorous, potassium, pour point, flash point, aluminium + silicon and net specific energy. As per report 'analysis of fuel oil sample from vessel Summit Narayanganj Power Limited' issued by Veritas Petroleum Services dated 28th April, 2016, sulphur content is noted to be 2.76% m/m.

Storage Tanks

There are two (2) Heavy Fuel Oil (HFO) Reservoir tanks each having capacity of 3500 tons and a Diesel Oil Reservoir tank of capacity 600 tons located at the western corner of the site. The day tank area contains a HFO day tank, HFO buffer tank, LFO day tank, oily water buffer tank, sludge tank and used lubricating oil tank. The capacities of tanks dedicated for storage of Heavy Fuel Oil (HFO), oily water, sludge tanks were not available.

Fuel Treatment Plant (FTP)

Before the heavy fuel oil enters the day tank, it is treated in a separator unit, where impurities and water are removed. The separator unit includes three separators, each of which is equipped with a feed pump and a heater. The electrically driven feed pump operates at constant flow. Together with an automatically operated three-way valve, the heater ensures that the oil entering the separator is at the correct temperature. The impurities removed from the oil are collected in a sludge tank in the separator unit and the water is chemically treated in compliance with regulatory requirements and drained out. The Water Treatment Plant installed inside the facility is operational on Multi Storage Sand Filter and activated carbon filter with chemical dosing of Sodium Hypochlorite (NaOCL). Capacities of Different tanks have been provided in Table 2 :1. The sludge tank is emptied by an air-driven pump. The separator unit has connections for compressed air and operating water. A control unit monitors and controls the operation of the separation system.

2.3.4 Associated Facilities

Construction of Jetty: The facility operates on Heavy Fuel Oil (HFO), which hs being supplied by SOSCL through dedicated pipelines and jetty. Site Management has apprised that fuel tanks of SOSCL are unloaded on floating jetty present at facility, from where fuel is transported to the dedicated HFO tanks via 345m long pipelines.

Pipelines: A dedicated pipeline are already constructed from intake point of fuel storage up to SNPL's storage facility including fuel measuring system, internal fuel supply system, and fuel heating/purification system.

11 kV Switch Yard Area: A freestanding floor mounting vermin proof 11kV 3 phase Switchgears Rated Voltage is already constructed for evacuation of power. It comprises of following:

- 1xCircuit breaker with spring return to neutral position;
- 1x mechanical emergency tripping button with cover fitted in the switch gear front door;
- 1xmechnical closing push button;
- 1xcircuit breaker local/ remote selector switch;
- 3xMCB for A.C. and 6xMCB for control D.C. Supply;

2.3.5 Status of Permits

Table 2-7: Status of Permits

Sl. No.	Type of Permits	Issue Date	Validity	Issuing Authority	Capacity	Current Status
01	Environment License	31st December 2015	12th July 2016	Department of Environment, Bangladesh	102 MW	Valid
02	Fire License	16th July, 2015	30th June, 2016	Bangladesh Fire Service and Civil Defense Authority		Valid
03	Factory License	13th March, 2011	31st December, 2017	Dy. Chief Inspector of Factories		Valid
04	Explosive License	29th January, 2014	31st December, 2014	Department of Explosives, Bangladesh	Diesel: 200,000 L Furnace Oil: 4,00,000 L	Expired
05	Trade License Renewal	01st July 2015	13th September 2016	Narayanganj City Corporation	-	Valid
06	Power Purchase Agreement	23rd June, 2010	24th June 2015	Between SNPL and Bangladesh Power Development Board	-	Expired

2.4 Environment Health, Safety and Social Scenario

2.4.1 Environment

The operational facility has obtained all requisite environmental permits from the Department of Environment, Bangladesh for operation of the plant except for the explosive license, which was noted to have expired on 31st December 2014. Any application submitted to relevant authorities for obtaining explosive license was not available for review during the assessment and hence the status of licence being expired can be concluded as high severity issue, The plant is required to submit environmental monitoring report to Department of Environment on quarterly basis. SPL has established an Integrated Management System incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 at the corporate level. Based on the corporate IMS Procedure, SNPL has also developed its IMS policy and procedure at the operational facility in line with requirements of IMS developed at corporate level.

SNPL has established an Integrated Management System (IMS) incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 and has formed a IMS Manual (also called as System Manual) document dated 1st February, 2012 at facility level, in line with requirements of IMS developed at Corporate level.. An IMS policy has also been established, which defines the quality, environmental and occupational health protection and safety objectives and goals. An EHS Compliance Personnel has been identified in the organogram of SNPL, who is responsible for management of environment, health & safety issues at the operational Facility. Six (6) stacks of 56m height has been provisioned for dispersion of air pollutant from operational plant. SNPL do undertake monitoring of environment parameters like ambient air quality, waste water quality (inlet and outlet of ETP), noise quality and stack emissions, the details of which is provided in subsequent section of the report.

2.4.2 Health and Safety

SNPL has developed procedures for hazard identification and risk assessment that comprises of Job Risk Analysis (JRA), safety Health and inspection, consultations and OHS Performance management. As part of the ISO and OHSAS certified management system, SNPL imparts training to employees and contract workers; monitors EHS performance of the plant and reports performance internally ,monitors, investigates accidents/EHS/ safety incidents and implements corrective action; internal and external audits, and management review. EHS Compliance Personnel is responsible for overall plant's environment and compliance related matters as well as employee's health and safety issues. Procedure for emergency preparedness and response, which includes response for in case of hazardous material spill, plant black out etc. has also been developed as part of IMS Manual.

2.4.3 Social and Stakeholder

IMS Manual has developed a procedure on Human Resource Development which details a HR policy applicable to both direct and contracted workers. The policy has captured the elements of nondiscrimination, avoidance of child labour, entitlement of wages, several allowances, retrenchment, training requirements and grievance redressal mechanism. IMS Manual dated year 2012 has also established supply and contract management which details supplier management, approval, verification of purchased product. Several procedures have been developed which are aligned with aspects of purchasing process and procuring contractor services. General Manager (GM) Human Resources (HR) and Admin department as identified in the Organogram has the responsibility to maintain HR policy and recruitment records.

The site management has not formally identified stakeholders and developed a Stakeholder Engagement Plan and also has not initiated 'Information disclosure ' to the community on potential risks associated with the project.

SNPL has developed a procedure SP-ENV-06 for Environmental communications to local community, as part of the procedure, provision of grievance addressal has been given for local communities by placing a grievance box and recording down the communications received in an external communication register. As per review of document, all complain will be resolved in the community engagement meeting. Both community representative and SNPL representative will take decision about resolving the problem.

As per Doc No SF-ENV-08 'External Communication Record' provided for review, local people site management has recorded issues communicated by locals and community till date and action taken to close It. the issues comprises of provision of medical facilities for locals, noise surveys undertaken to repair of houses, health awareness program, development of 185m road for community welfare. As per review of Document 'External Complaint Log', no complaints were observed to be recorded by the site management.

2.5 Project Documents Reviewed

The facility is the operation phase since year 2011. To facilitate the desk-based review of operating asset, following documents were made available by Summit or SNPL for review:

- Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011;
- Contract btw SNPL and AEG Engineering Ltd dated 17th June, 2010 for Design, Erection, procurement, supply, manufacture and commissioning of 11kV switch gear panels and equipment.
- Contract between SNPL and Adroit Environment Consultant Ltd for preparation of IEE and EIA report dated 22nd June, 2010;
- Contract between SNPL and Barakat Business Company for handling and transportation of alternators from Chittagong port to project site dated 1st December, 2010;
- Contract between SNPL and Energy Pac Engineering Ltd for Design, Erection, procurement, supply, manufacture and commissioning of three nos. of 40/50 MVA, 11/132 kV power transformers, and three nos of 1500 kVA , 11/0.415 kV station transformers dated 15th June, 2010;
- Contract between SNPL and Ion Exchange Ltd for design, supply, construction & Installation and commissioning of Clarifier, RO and Water Treatment Plant on turnkey basis dated 23rd August, 2010;
- Contract with Shamolina Ltd for handling and transportation of auxiliary good from Chittangong port via road motorway dated 15th December, 2010;
- Contract with Siemens for design, fabrication, installation, testing and commissioning of low voltage switch board and Motor Control Centre dated 14th October, 2010;
- Contract between SNPL and Energy Pac Engineering Ltd for Design, Erection, procurement, supply, manufacture and commissioning of 11/132 kV Electrical Substation dated 15th June, 2010;
- Article no 26 on' Delivery and Supply of Liquid Fuel'.
- Contract between SNPL and Wartsila Finland OY for supply, delivery, supervision and erection of power plant dated 14th May, 2010;
- Maintenance Agreement with Wartsila Bangladesh Ltd for 102MW power plant dated 17th July, 2011;
- A copy of Accident and incident report from SNPL dated 1st February, 2012;
- Environment and Social Action Plan developed for DEG bank dated 3rd August, 2012;
- Environment monitoring conducted dated 2014 (air water soil, stack emissions) undertaken by Department of Environment, dated 15th April, 2014;
- Hazardous waste records and list of vendors for disposal of hazardous waste dated 1st February, 2012;

- Noise survey report undertaken by ND Technology(Sea) PTE Ltd, dated 9th April, 2015;
- Integrated Management System Manual for SNPL dated 12th February, 2012
- Details of power plant
- Information sought by IFC (details of plant, performance etc.);
- Fire License via No AD/ Dhaka/18570/10 by Fire Service and Civil Defense Department valid till 30th Jun, 2016;
- Trade License from Narayanganj City Corporation vide no 7626 dated 5th June, 2013;
- License to import Class I Petroleum from Chief Inspector Explosives, Bangladesh dated 29th January, 2014;
- Factory License from Chief Inspector factories, Bangladesh under Bangladesh Labour Law, 2006;
- Final Master Layout with smoke and heat Detector;
- Work Permit dated 01st March, 2013 for engine hall, and alternator near cooling fans;
- Document No- SF-MNG-02 dated 1st February, 2012 for Deployment of Objectives for Quality;
- Document No- SF-MNG-04 dated 1st February, 2012 for IMS Objective Achievement Status;
- Training Calendar, 2016;
- Technical Specification of the Major Equipment;
- Document No- SF-OHS-02 dated 1st June, 2012 for Job Risk Assessment;
- Assessment of working conditions dated 1st February, 2012 detailing temperature, noise level at various plant areas;
- Document No- SF-OHS-01 dated 1st June, 2012 for Facility Risk Assessment;
- Document No- SF-ENV-02 dated 15th March, 2012 for Significance Of Environmental Aspect;
- Document No- SF-MNG-03 dated 1st February, 2012 for Report On Achievements Of Objectives OHS;
- A sample medical test undertaken for qualitative hearing dated 01st July, 2015;
- Fuel Supply Agreement between SNPL and Summit Oil Shipping Company Limited dated 19th May, 2013;
- Minutes of Meeting for Joint Environment, Health and Safety Subcommittee dated 13th January, 2012;
- Emergency Preparedness and Response Plan Drill Plan for 2016;
- Tie up of Hospitals with SNPL;
- Health and safety training attendance (HRM-07_SNPL) dated 1st February, 2012;
- Details of CSR activities of Summit Group;
- Construction Health and Safety Management Plan;
- Chemicals list of SNPL;
- Boiler Registration;
- Certificate from Bangladesh Energy Regulatory Commission Dhaka, Bangladesh;
- Plant Operation Report;
- Sludge Handling System;
- Air Dispersion Model Results dated 28th July, 2011;
- DEG Completion Certificate Date 14th August, 2014;
- Attendance of Joint EHS Sub Committee Meeting held on 22nd October, 2015;
- MOM of EHS Meeting held on 22nd September, 2015;
- Completion Certificate of EMS Training of EHS Officer dated 20th March, 2013;
- A report on non-conformance, corrective and preventive action taken 1st January, 2015;
- External Complaint Log;
- Training record on oil spillage and overflow dated 15th august, 2015;
- MOM of meeting held with Community people dated 12th Jul, 2015;
- Details on intake point;
- SNPL Land deed;
- Specifications of heavy fuel oil;
- Details of water Requirements;
- Environment and Social Impact Assessment Report for Unit-II of SNPL;

- External Communication Record; and
- Ground Water Test Report.

2.6 Project Categorization

102 MW Operational HFO thermal power plant is Categorized as ***Category B*** project as per IFC Sustainability Framework, 2012. The Project is expected to have limited adverse social and/or environmental impacts that can be readily addressed through mitigation measures. Following Rationale can be attributed for its categorization:

- Identified potential environmental and social risks and impacts are site-specific and either readily managed through design or addressed through mitigation measures like construction of noise barriers to negate the effect of increased noise on immediate community, increase of stack height based on air dispersion modelling;
- Most of the infrastructure needed for the operation of the project is already in place;
- Treated Waste Water from ETP is being utilized for gardening purposes and there is no direct discharge of treated or un-treated waste water in Shitkalya River ecosystem, hence no impact is envisaged due to waste water discharge;
- The past land use of the operational facility was a rice processing unit and there was no rehabilitation issues associated with the site. The land procurement was based on willing- buyer and willing-seller concept;
- A series of mitigation measures related to environment and social aspects have already been implemented by the project after completion of ESAP developed for DEG funding and a completion certificated has issued for the same dated August, 2014.
- The operational facility is based on dual fuel which will be natural gas/ High Speed Diesel, with very limited emissions as compared to coal based power Plant. However, due to uncertainty on availability of Natural Gas, the plant is primarily HFO based and hence will have CO2, Sox, NOx emissions which are not significant;
- The facility has established cumulative impact on ambient air due to its own operations and that of the nearby cement manufacturing facility. As a result, stack height has been increased to 56m to meet the WHO Ambient Air Quality Standard for NO2 (µg/m3) and the WHO Interim Target for SO2 (50 µg/m3);

3.0 Document Review and Assessment of Compliance

This section details the compliance of the project with respect to requirements under IFC Sustainability Framework and applicable national and local regulations. The observations made during the due diligence and gaps identified are discussed herewith.

3.1 Performance Standard (PS) 1: Assessment and Management of Social & Environmental Risks and Impacts

3.1.1 Environment and Social Management System

Requirement 1: The client, in coordination with other responsible government agencies and third parties as appropriate, will conduct a process of environmental and social assessment, and establish and maintain an ESMS appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements:

i. policy;
ii. identification of risks and impacts;
iii. management programs;
iv. Organizational capacity and competency;
v. emergency preparedness and response;
vi. Stakeholder engagement (Stakeholder engagement is an ongoing process that may involve, in varying degrees, the following elements: stakeholder analysis and planning, disclosure and dissemination of information, consultation and participation, grievance mechanism, and ongoing reporting to Affected Communities.); and
vii. Monitoring and review.

Observation 1 as per IFC PS

SPL has established an Integrated Management System incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 at the corporate level. Based on the corporate IMS Procedure, SNPL has also developed its IMS policy and procedure at the operational facility in line with requirements of IMS developed at corporate level

Hence, SNPL has established an Integrated Management System (IMS) incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 and has formed an Integrated Management System Manual at the facility level. The IMS manual is an overview of the IMS presenting the details of the systems and commitments, which SNPL has been pursuing. SNPL has defined procedures for the various activities related to their production and management. The IMS manual contains the following elements:

- Quality Policy, Environmental Policy and Occupational Health Protection & Safety (OHS) Policy;
- Procedure for identification of environmental aspects and its significant impacts;
- Procedure for hazard identification, risk assessment;
- Organogram;
- Emergency Preparedness and Response Plan;

- Procedure for human resource development which includes disciplinary measures/grievance procedure; and
- Procedure for monitoring and measurement environmental and Occupational Health & Safety performances.

The IMS manual developed at facility level is not endorsed by the senior management team of SNPL.

Requirement 2 as per IFC PS: Policy: The client will establish an overarching policy defining the environmental and social objectives and principles that guide the project to achieve sound environmental and social performance.

Observation 2: Policies for Environment Management and Occupational Health and Safety have been outlined under EMS and OHSMS to exhibit SPL's commitment at corporate level towards effective management of environment, and health and safety aspects. It include commitments to comply with legislation, applicable standards, and other requirements, minimize significant environmental and health & safety impacts associated with plant operations, provide adequate facilities as may be applicable for effective environment and H&S management, encourage the adoption of EMS and OHSMS principles by suppliers / partners / service providers, and meet training requirements for diligent implementation of procedural requirements of EMS and OHSMS.

On same lines, the IMS manual of SNPL commits to the Quality, Environmental and the OHS policies at facility level. The different policies formulated at facility level by SNPL are detailed below:

Quality Policy: As per the quality policy, SNPL has established a Quality Management System (QMS) as per ISO 9001:2008 and maintains it while committing to continual improvement. The policy states that the company, its suppliers and business partners commit to the highest quality standards of services provided to the customer, while complying with the legal requirements. Ensuring education and training programs for employees, suppliers and business partners on issues related to quality. Evaluating and recognising the quality of work performed by employees, suppliers and business partners.

Environmental Policy: As per the policy, SNPL commits to practice environmental management system (ISO 14001:2004) as a dynamic process. The company will seek full compliance with legislation, applicable standards (including IFC standards), and other requirements from agreements signed by the organization. SNPL commits to minimize any significant environmental impacts of new developments using integrated environmental management procedures and planning. The company will provide the sites with adequate facilities, aiming at the environmental protection, associated with adequate employee-workplace environment integration. The company will implement generation techniques and use resources that will minimise hazardous waste generation. Policy dissemination will be done by educating and training the employees and encourage them to conduct their activities in an environmentally responsible manner.

OHS Policy: As per the policy, SNPL commits to ensure a health and safe work environment to employees and provide resources for awareness, preliminary risk evaluation, training and monitoring of health and accident risks. SNPL will ensure consistency of their health and safety procedures with the relevant legislative requirements and IFC standards. The company commits to incorporate occupational health and safety considerations in the planning stage of product and process design. SNPL will continually strive to eliminate any foreseeable hazards, which may result in property damage, accidents, or personal injury /illness. SNPL also commits to continually improve the OHS management and performance and to be prepared for emergencies and act promptly to eliminate their resulting incidents/accidents. A report (SF-MNG-03) on achievements of OHS objectives from a period of 1st Jan, 2015 to 31st Dec, 2015 was shared with AECOM which includes various target achievements such as zero (0) occurrences of

accidents, lost time due to accidents, ill health and lost time due to ill health during the year. However the document was not endorsed by the management.

SNPL has not developed an overarching social policy statement, which demonstrates the commitment of senior management of Summit for management of social risks and impacts in a responsible manner. However, for effective management of labour and human resources aspects, Summit has developed and implemented Human Resource Policy dated 01 January 2013. The human resource policy statement declares management commitment for ensuring employment of workers, irrespective of any form of discrimination. The policy statement also refrains from employing any child labour (under the age of 18 years) and dual employment. Based on review, it was noted that the policy statement does not restricts forced labour and does not extend to indirect workforce.

HR related should covered under PS 2 HR Policy Statement: SNPL has established an Integrated Management System Manual (IMS), wherein a procedure on Human Resource Development has been developed dated 1st January 2013 at facility level. SNPL has developed similar policies based as already formulated at corporate level by SPL As per review of policy, it was noted that the policy statement is applied to both direct employees and contracted workers However, there is no mention of supply chain workers. The various elements specified in policy are:

- Non-discrimination based on religion, sex race, national origin or any other factor that does not pertain to the individual's ability to do the job;
- Avoidance of child labour: No one who is below 18 years of age can be hired as an employee for on regular, contract or temporary status.
- Recruitment is undertaken based on competency and Job Description (JD) that is finalized for the position by Head of the Department and a copy of it is sent to HR. In case if there is any change in the duties and responsibilities of the position, then job description must be revised.
- Salary to all the employees to be paid monthly with the house rent, conveyance and medical allowances.
- House Rent, Conveyance, and Medical Allowance are an important part of employee's total gross salary. It is paid and calculated on monthly basis with the Basic salary.
- Employees are entitled for conveyance allowance, medical allowance, leave encashment etc;
- Work Schedule has also been specified with normal working hours and working in shifts;
- Entitlement of holidays has also been provided;
- Grievance mechanism for employees has also been detailed;
- A notice period of 90 days is required for resignation in writing;

The Management Representative (MR) deals with the organizational issues to ensure the implementation of the actions related to meet the IMS requirements. A respective Deputy Management Representative (DMR) of Quality management, Environmental and OHS management supports the MR. Periodic reviews of the policies are conducted to ensure the suitability of the policies, relevancy and appropriateness to the SNPL objectives, as well as to their activities and services.

SNPL has formulated the following procedures for ensuring effective communication among the employees:

- Procedure for Environmental Communications (Procedure SP-ENV-6),
- Procedure for OHS Consultation and Communications (SP-OHS-4)

3.1.2 Identification of Risks and Impacts

Requirement 3: Identification of Risks and Impacts: The client will establish and maintain a process for identifying the environmental and social risks and impacts of the project.

As per the Rule 7 (Procedure for issuing Environmental Clearance Certificate) of The Environment Conservation Rules, 1997, for Red category project, a Location Clearance Certificate shall be issued prior to the Environmental Clearance Certificate. Provided that the Director General may, without issuing a Location Clearance Certificate at the first instance, directly issue Environmental Clearance Certificate if he, on the application of an industrial unit or project, considers it appropriate to issue such certificate to the industrial unit or project. For applying Environmental Clearance certificate for Red Category projects, following documents shall be attached with an application:

- report on the feasibility of the industrial unit or project;
- report on the Initial Environmental Examination (IEE) relating to the industrial unit or project, and also the terms of reference for the Environmental E.C.R. '97 185 Impact Assessment of the unit or the project and its Process Flow Diagram; or Environmental Impact Assessment report prepared on the basis of terms of reference previously approved by the Department of Environment, along with the Layout Plan (showing location of Effluent Treatment Plant), Process Flow Diagram, design and time schedule of the Effluent Treatment Plant of the unit or project, (these are applicable only for a proposed industrial unit or project);
- report on the Environmental Management Plan (EMP) for the industrial unit or project, and also the Process Flow Diagram, Layout Plan (showing location of Effluent Treatment Plant), design and information about the effectiveness of the Effluent Treatment Plan of the unit or project (these are applicable only for an existing industrial unit or project);
- no objection certificate of the local authority:
- emergency plan relating adverse environmental impact and plan for mitigation of the effect of pollution;
- outline of relocation, rehabilitation plan (where applicable);
- other necessary information (where applicable);

Observation 3: *Identification of environmental impacts:* SNPL was granted with Environmental Clearance Renewal on 30th December 2015 for 102 MW plant which is valid till the 12th July, 2016. However, Environment and Social Impact Assessment Report (ESIA) for the operational facility (was not available for review. ESIA report for SNPL Unit-II, which is located adjacent to Unit-1 in west direction, was available for review and baseline conditions were assessed to evaluate the environmental monitoring carried out for SNPL-I.. As per the IMS Manual, SNPL identifies the environmental aspects that are in their control and those that they can influence having significant impacts on the environment. Issues such as applicable legal requirements and other requirements to which the organization subscribes and the views of interested parties are also taken into account. The significance of each aspect is determined according to procedure SP-ENV-1, Identification of Environmental Aspects and its Significant Impacts. The procedure talks about the following environmental procedures:

- procedure for identification of environmental aspects and its significant impacts;
- procedure for identification and disposal of controlled wastes;
- procedure for identification and disposal of special wastes;
- procedure for waste handling and segregation;
- procedure for environmental legal and other requirements;
- procedure for environmental communications;
- procedure for monitoring and measurement; and
- procedure for evaluation of compliance (audits).

SPL has established procedures to identify Environmental Risks associated with the plants operation as part of its IMS under “Procedure for Identification of Environmental Aspects and Its Significant Impacts – Doc no: SP-ENV-1”.

Aligned with similar guidelines, SNPL documents the identified environmental aspect & impact in their prescribed form-SF-ENV-01 at facility level. As per the reviewed form, SNPL has identified environmental aspect and impact associated with different plant equipment and activities such as the HFO transfer unit, water treatment plant, fire tank, auxiliary boiler, fuel treatment plant, fuel day tank area, engine hall, hot work activity etc. SNPL also calculates the significance of the identified environmental impacts.

The significance of Environmental aspect is documented as per the form-SF-ENV-02. A completed SF-ENV-02 form was shared with AECOM, which contains environmental impacts from various tasks undertaken inside the plant. However, the filled up forms did not have details of the preparer, date of preparation and also are not endorsed by the Management Representative,

Since, the project is a Red Category project and has received EC from the DoE; it is evident that the facility has conducted Environment and Social Impact Assessment Study (ESIA) before the commencement of the project. However, the ESIA was not available for AECOM’s review.

Risk/Hazard Assessments: As per IMS, SNPL also identifies potential hazards as facility and job risk assessment from a number of internal and external sources. Hazards are initially assessed in a defined format as per IMS and accordingly appropriate actions are taken. This process is followed as per SP-OHS-1 Procedure for Hazard Identification, Risk Assessment, which has been established and maintained for OHS Hazard and Risk Management at SNPL. The procedure involves identification, classification, assessment, establishment of operational controls, definition and follow-up of the objectives and goals for OHS (Occupational Safety and Health) Hazards and Risk, resulting from the activities which SNPL has influence.

The overview of the hazard identification and risk assessment process includes developing a methodology to identify the hazards associated with various activities to assess risks and determine their respective controls, implement them and then monitor and review the assessments at regular intervals.. SNPL uses a Facility Risk Assessment Form (SF-OHS-01) to conduct risk assessment of various physical activities inside the facility. Further, a Risk Control Action Form (SF-OHS-03) is available which is used to capture the completion of the action reported in the Risk Assessment process.

Completed Facility Risk Assessments form (SF-OHS-01) from powerhouse combined with six engine & auxiliary system and Job Risk Assessments form (SF-OHS-02) from mechanical maintenance were shared with AECOM for review. The risk assessment forms contains hazards associated with physical items/activity or job step/task and their severity levels before and after controls. However, the filled up forms did not have details of the preparer, date of preparation and also are not endorsed by the Management Representative.

Environmental audits and social audits: As per SNPL’s Procedure for Evaluation of Compliance (Document No. SP-ENV-8), periodical evaluation of facility compliance with the legal requirements that are applicable to its environmental aspects, as part of its commitment to compliance. A variety of methods are used to assess compliance, including processes such as

- audits;
- document and/or records review;

- facility inspections;
- interviews;
- project or work reviews;
- routine sample analysis or test results, and/or verification sampling/testing, and
- facility tour and/or direct observation.

As per one of condition stipulated in Environment Clearance granted to the operational facility in year of 2011, SNPL maintains a quarterly frequency for evaluating the compliances and methodology for evaluation of compliance that suits its size, type and complexity. However, documents related to the periodical environmental audits were unavailable for review and therefore adherence to the procedure by SNPL could not be confirmed.

PS1 requires the project to identify social risks and impacts associated with plant operations. SPL, as part of its IMS, has not developed any procedures to identify potential social risks at corporate level.

Similarly, SNPL has not developed any procedures to identify any social risks and impacts associated with the project. SNPL has not maintained any legal register with a list of national and local legislations relevant to SNPL's activities with its compliance at facility/ site level.

Cumulative Impacts: As per review of google earth location of the facility site dated 1st March, 2016, the site is accessible by country boats from Madanganj Ferry Ghat which is located across Sitalakhya River, in west of the facility. In immediate north of the site, scattered agricultural fields are observed. A Cement Grinding Mill owned by Bashundhara Industrial Complex Limited (BICL) is located in south of the operational facility, which could result in cumulative impacts on ambient conditions. Detailed assessment of Air Dispersion modelling was undertaken by Poyry Environment GambH considering emissions from 102 MW operational facility and adjacent cement plant. A technical proposal for undertaking Air Dispersion Modelling was submitted to SNPL dated July 2011. A copy of proposal was provided for review. Results of Air Dispersion Model were also shared with AECOM. As per the evaluation of the results, it was observed that emission concentration of PM exceeds IFC limit of 50mg/Nm^3 at an installed stack height of 36m. The IFC Standards for both NO_x and SO_2 are met. Ambient air quality at stack height of 36m in terms of PM 10 does not exceed the WHO standards. However, ambient conditions of NO2 and SO2 exceed the prescribed limits of WHO. Hence, it is recommended to increase the stack high to 56 m to meet the WHO Ambient Air Quality Standard for NO2 (µg/m^3) and the WHO Interim Target for SO2 (50 µg/m^3). The ambient air quality results calculated at a stack height of 56m indicates the concentrations of PM 10 and NO2 to be 4 µg/m^3 and 36 µg/m^3 respectively. The calculated concentration of SO2 is 46 µg/m^3, which does not exceed the interim target of 50 µg/m^3 . However, it is to be noted that the assessment was carried out in absence of proposed Unit-11 of 55MW capacity, which is located adjacent to operational facility.

Figure 3-1:SNPL Facility and cement plant in vicinity

Documentation of Risks and Impacts Identification Process: As per SNPLS's procedure for document control (document no. SP-DCL-1), the environmental documents, internal system audit documents, occupation health and safety documents etc. are maintained to control the documents and data at facility level. However, documentation to demonstrate compliance with the procedures on environmental or health and safety impact studies or audits were not available for review.

3.1.3 Management Program

Requirement 4: Consistent with the client's policy and the objectives and principles described therein, the client will establish management programs that, in sum, will describe mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the project.

There are no legal requirements covering this aspect.

Observation 4: As per the IMS Manual, SNPL has adopted the ISO 14001:2004 (Environmental Management System-EMS) standard as the foundation of their "Environmental Care System". The plan for developing and maintaining EMS by SNPL is includes:

- identifying the legal and other requirements followed by identifying and evaluating environmental aspects, related operations and activities;
- Defining views of interested parties
- Preparing environmental policy;
- Defining key roles and responsibilities of associated personnel;
- Establishing objectives and targets;
- Environmental management Programs (EMPs);
- Identifying operational controls;
- Identifying monitoring and measurement needs and when required implement the needs in the EMPs;
- Establishing procedures for corrective/preventive action, document control & records management;
- Establishing operational controls & monitoring processes;

- Defining job-specific roles and responsibilities;
- Conducting initial employee awareness;
- Establishing other-system level procedures;
- Preparing Environment Management System (EMS) documentation (manual)
- Conducting specific employee training;
- Conducting internal EMS audits; and
- Conducting management reviews.

OHSAS 18801: As per the IMS Manual document, SNPL has established, implemented and maintains the occupational safety and health management system according to OHSAS 18001which is regularly audited and certification is issued by Bureau Veritas.

The occupational safety and health management system followed by SNPL includes defining objectives and system descriptions, hazard identification, risk analysis (analysing hazards and identifying risks), risk assessments (consolidating and prioritizing risks), decision making (developing an action plan), validation of control (evaluating results for further actions) and modifying system/processes accordingly. However, no documentary evidence was available for review which could validate the adherence to the occupational safety and health management system. In the decision making process, options are considered for implementing the hierarchy of controls i.e. elimination, substitution, engineering controls, administrative controls and personal protective equipment (PPE).

The management program of SNPL does not include any social management programs like stakeholder engagement process, which describe the mitigation and performance improvement measures and actions that address the social risks. As per lender's Environmental and Social Action Plan (ESAP), 2012, SNPL was suggested to develop management programs for the maintenance and operation of jetty and pipelines and community engagement program. However, no documental evidence for such management programs was available for review.

The ESAP, 2012 prepared by the lender dated 3rd August 2013 contains various issues and their respective deliverables, responsible staff member and statuses of the issues identified as on 3rd August 2012. It was noted that all issues were completed as per the Action Plan.

As per one of the action detailed in ESAP, SNPL is required to design environmental and social monitoring program incl. emissions, AAQ, fuel content, wastewater, waste management, oil spills, ground contamination, CO_2 emission register (based on used fuel). The annual monitoring reports should include the developments of switching from HFO to natural gas if the availability of natural gas allows that switch. However, no monitoring program was provided for review. In addition, no study on availability of natural gas was available for its evaluation from switching to Natural Gas. Site Management has reported that currently there is no usage of Natural Gas for operation of plant, only HFO is being utilized for the operations.

3.1.4 Organisation Capacity and Competency

Requirement 5 as per IFC PS:

Performance Standards Requirements: Organizational Capacity and Competency: The client, in collaboration with appropriate and relevant third parties, will establish, maintain, and strengthen as necessary an organizational structure that defines roles, responsibilities, and authority to implement the ESMS.

Legal Requirement: Environment Clearance (EC) granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 13: A trained Environment, Health and Safety (EHS) personnel should be recruited to handle the environmental aspects in SNPL.

Observation 5: SPL's IMS, 'System Manual' (doc. No. SM-08) identifies management responsibilities and showcases its effectiveness by outlining management commitment to adopt and effectively implement the IMS at Corporate level.

As per the IMS manual, SNPL has established and maintained an organizational structure that defines roles, responsibilities and authority to implement the EMS and occupational safety and health management system at facility level.

EMS and OH&S system: The Management Representative (MR) as defined in ISO 9001, ISO 14001 and OSHAS 18001, for the IMS, is employed in SNPL who is further assisted by a Deputy Management Representative (who is EHS Officer at facility level) to carry out the responsibilities effectively.

The personnel roles and responsible for implementing and maintaining the environmental and occupational safety and health management system are well established. MD of the plant is primarily responsible for establishing the environmental and occupational health & safety objectives (OHS) and targets. The General Manager, HR takes care of the employee trainings, integrating environmental and OHS elements into recruiting and performance appraisal processes. The main responsibilities of the Management Representative (MR) include communicating the importance of the environmental and OHS management among all employees, tracking and analysing new requirements, ensuring conformance with SNPL's EMS and OHS requirements. The MR's responsibility also include identifying environmental aspects and OHS hazards of products and activities, establishing environmental and OHS objectives and targets, maintaining the EMS records and OHS (training etc.), coordinating EMS and OHS documents control efforts and coordinate auditing efforts. The responsibilities of the Plant Manager, maintenance & finance team and that of the employees are also well established. However, the responsibility matrix does not include the roles and responsibilities of the EHS personnel in terms of implementing the EMS and occupational safety and health management system.

Site Management has informed that EHS issues controlled by Management Representative from Head Office & at plant level EHS Officer and joint EHS Committee look after all the issues pertaining to Environment, Health, Safety and Social aspects. Joint EHS Committee comprises of Project Manager, Deputy Project Manager, Four (4) Assistant Manager-Tech, EHS- Officer and Chemist. It was also observed that EHS Officer has successfully completed the Environment Management Course (based on ISO 14001:2004 Standard). Completion certificate dated 17th January, 2013 issued by IRCA was reviewed in this regard. However, allocation of social related job responsibilities to EHS Officer at facility level was not available for review.

Training: As per the Procedure for Human Source Development (SP-HRM-1), line managers primarily conduct training need assessment; however, the needs are also determined from employee's personal experience of failure in performing any sort of job-related activity and observation of performance. Other sources of assessing need are employee survey, interview during performance evaluation, job analysis etc. The GM HR prepares an Annual Training Plan after the need assessment and plans all the training courses to be conducted in that particular year. At the end of each training program, evaluation is done by filling up the training evaluation form (SF-HRM-08). Records of qualification and competence (education, experience and training) are maintained.

The Annual training plan of SPL was shared with AECOM which contains plant wise training calendar for the year 2016. As per the training plan, SNPL will have the following trainings in the year 2016:

- Casual Staff Training 2-1st & 2nd June
- Basic Mechanical Training (HFO plant)-17th July to 24th July
- Training on Safety and Environment- 21 August & 22nd August
- Training on Total Quality Management- 4th September & 5th September
- Casual Staff Training 2-27th October
- Training on Social Responsibility & Compliances-13th November,
- Basic Electrical Training (HFO plant)—4th December- 8th December

Sample training records (SF-HRM-07) were shared for the year 2015 for trainings on environmental awareness, waste management & disposal, oil spillage; health and safety awareness (Emergency Response Plan & PPE); Aspect, Impact and HIRA. The documents include training topic, date, time duration and facilitator, details and signature of the participants. However, training evaluation forms were not available for AECOM's review to check the effectiveness of the trainings imparted.

3.1.5 Emergency Preparedness and Response

Requirement 6 S: Emergency Preparedness and Response: Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment.

Legal Requirement: Section 62 of Chapter VI (Safety) of Bangladesh Labor Act, 2006: Adequate means of escape should be provided in the facility as per the Section 62. In factories wherein fifty or more workers and employees are employed shall arrange at least once in a year a mock fire-fighting and the employer shall maintain a book records in this regard.

Observation 6: SNPL has established a procedure SP-EMR-1 for Emergency Preparedness and Response to mitigate the hazards of emergencies that may arise due to project related activities. The procedure SP-EMR-1 also includes the community evacuation procedure in case of an emergency such as a gas release, fire, or an explosion. This procedure is designed to ensure the identification of the potential for emergency situations, response to such emergency situations and prevent or mitigate associated adverse Environmental and OH&S consequences. To ensure safe, suitable work place by implementing emergency preparedness for different types of emergency situation.

SNPL has designed the procedure to ensure the identification of the potential for emergency situations, response to such emergency situations and prevent or mitigate associated adverse environmental and OH&S consequences. In planning its emergency response SNPL takes account of the needs of relevant interested parties, e.g. emergency services and neighbors. The procedure includes community evacuation process in emergency situations when residents and neighbors in the vicinity of the plant might be required to evacuate their homes. As per SNPL, personnel shall be trained in how to initiate the emergency response and evacuation procedures (continuous process) and also periodic testing of emergency procedures shall be performed (where possible) to ensure that SNPL and external emergency services can appropriately respond to emergency situations As per the procedure, drill for spill control and fire alertness to be conducted every 45 days SNPL has different checklist to inspect fire

control equipment (SF-OHS-8) and work place conditions (SF-OHS-7). However, no reports on emergency response plan, training or mock drills of employees and community people were available for review. An Emergency preparedness and response plan has been shared for review which specifies schedule of fire drill and Gas leak Drill in year of 2016. However, the procedure for undertaking drills has not detailed.

- Emergency Preparedness response procedure does not detail fire fighters and first aiders for the operational facility;
- The procedures lack details pertaining to evacuation routes, emergency numbers and mock drills.
- Reports on emergency response training or emergency drill records could not be reviewed due to unavailability;
- SNPL has not outlined procedures for information disclosure and training requirements for community with respect to emergencies and risks identified as part of the Emergency Preparedness and Response Plan.

3.1.6 Monitoring and Review

Requirement 7 as per IFC PS: Monitoring and Review: The client will establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements.

Submission of Environment Monitoring reports as per one of Conditions of Environment Clearance granted to the Plant dated 2011.

Observation: SPL's Senior Management periodically reviews the suitability and effectiveness of the IMS through the Management Review Committee (MRC) and makes recommendations for improvement where appropriate. The frequency and conduct of these reviews have been established under Procedures for Management Review. SPL mandates that a nine member site level Joint Environment and Health & Safety Committee is to be constituted which shall meet on a monthly basis to assess plant level Environment and H&S issues. The internal audits are to be conducted on a quarterly basis wherein Plant in charge or Deputy Plant in charge from other SPL sites, shall initiate site visits to conduct compliance check for implementation of IMS. SPL at the corporate level has established "procedures for internal system audit". The site maintains findings and records of quarterly audit reports.

As per the Procedure for Management Review (Document no: SP-MNG-1), the Management Review committee conducts management review of the organization for reviewing the suitability, adequacy and effectiveness of the IMS at regular interval (quarterly) at facility level. The Management Review Committee Members consist of the following: MD, DMD, FC, GM (SNPL), GM (HR), GM (STD, COMP, TRG & STORE), Plant Manager (PM), Manager (CO), MR. MR will act as member secretary of the committee. With various other issues, the environmental and the OH&S performances are also discussed in the review meetings. Management Review Meeting is scheduled to be held at least once in every three months. However no documentary evidence was provided to establish the implementation.

A procedure on control of non-conformity has also been developed which talks about issuance of non-conformity and that is required to be raised during Management review meetings which is scheduled to be held on monthly basis. Also, as per procedure no SP ISA-1 at facility level, Internal System Audit is checked and reviewed to ascertain conformity to the requirement of ISO-14001, ISO-14001, OHSAS 18001 Standards and its effectiveness at least 2 times in a year. However no documentary evidences were present to establish the occurrence of internal audit for operational facility. With no Social Management System in place, SNPL has not developed any methods to monitor social issues or concerns.

3.1.7 Performance Measurement and Monitoring

Observation 7: Performance measurement and monitoring

Environment: As per the IMS Manual, SNPL has established procedures to maintain control of Significant Environmental Aspects, ensure regulatory compliance, meet the company's environmental objectives, and conform to the Environmental Care Policy. Controls apply to those performing work on behalf of the company as well where necessary. As per review of DEG Environmental and Social Action Plan (ESAP), 2012, SNPL has successfully designed an environmental and social monitoring program which includes emissions, Ambient Air Quality (AAQ), fuel content, wastewater, waste management, oil soils, ground contamination, CO^2 emission register. However, no such annual monitoring programs or schedules were available for review.

As per one of the conditions stipulated in Environment Clearance granted to the plant dated 2011, environment monitoring reports are required to be submitted to Department of Environment (DoE) on quarterly basis. Only one such monitoring report dated 15th April, 2014 was provided for review. It was noted that Department of Environment, (DoE) has undertaken the monitoring for air quality and inlet and outlet of ETP. As per assessment of the monitoring results documented in the report, the monitoring was undertaken at about 15 m North from the power plant to assess the ambient air pollutant concentrations of SPM, SO2 and NOx as per the ECR 1997 (amendment 2005). The limits as per the ECR 1997 for SPM, SO2 and NOx are 200, 80, 100 microgram/$m^{3,}$ respectively were within the desired limit. However, only one report has been shared for review, and hence the frequency of the monitoring exercise cannot be determined. The information has been only for stack height. Also the total numbers of stacks and respective stack heights are unavailable for the review. There is no information on Air Pollution Control Devices (APCDs) installed in Stack, technology provisioned for ETP, to support the monitoring undertaken by DoE in April, 2014. The compliance with EC condition of submission of quarterly monitoring reports was also not established due to non-availability of subsequent monitoring reports to report dated 15th April, 2014.

Detailed assessment of Air Dispersion modelling was undertaken by Poyry Environment GambH considering emissions from 102 MW operational facility and adjacent cement plant. A technical proposal for undertaking Air Dispersion Modelling was submitted to SNPL dated July 2011. A copy of proposal was provided for review. Results of Air Dispersion Model were also shared with AECOM. As per the evaluation of the results, it was observed that emission concentration of PM exceeds IFC limit of 50mg/Nm^3 at an installed stack height of 36m. The IFC Standards for both NOx and SO 2 are met. Ambient air quality at stack height of 36m in terms of PM 10 does not exceed the WHO standards. However, ambient conditions of NO2 and SO2 exceed the prescribed limits of WHO. Hence, it is recommended to increase the stack high to 56 m to meet the WHO Ambient Air Quality Standard for NO2 (ug/m^3) and the WHO Interim Target for SO2 (50ug/m^3). The ambient air quality results calculated at a stack height of 56m indicates the concentrations of PM 10 and NO2 to be 4 ug/m^3 and 36 ug/m^3 respectively. The calculated concentration of SO2 is 46ug/m3, which does not exceed the interim target of 50 ug/m^3. The However, it is to be noted that the assessment was carried out in absence of proposed Unit-11 of 55MW capacity, which is located adjacent to operational facility.

Noise Emissions: Noise emission is recorded at the control room, at the engine hall, and within 2 meters outside the boundary at each side once every week. As per the assessment of the records, it was observed that noise levels captured in all four directions are well within the DoE standards of 75/70 dB (A) day/night. However, the noise levels measured at control rooms falls in range of 71-72 dB (A) which exceeds the limit of 60 dBA as Good International

Industry Practice (GIIP), with an understanding that up to 65 dBA can be accepted for reciprocating engine power plants if 60 dBA is economically difficult to achieve.[1]

A separate noise survey was conducted for operational facility by ND Technology (SEA) PTE Ltd dated April, 2015. As per review of report, Noise levels were measured along the new North boundary, adjacent to the village houses. The major sources identified are the radiators and now the exhaust stacks, especially towards the North-East Boundary, near the Mosque. The measured noise levels were in the range of 63-72 dB (A). To negate the effect of increased noise level three noise control measures were suggested which are:

- Install a noise barrier wall at the North and North-East boundary to reduce noise from the current and new radiators;
- Improve the sound insulation of the power house by full height brick wall on 3 walls, sound absorption on the upper walls, double skin roof, use of acoustic doors, acoustic legging to pipelines;
- Internal conditions of exhaust silencers need to be repaired from time to time.

As per the assessment of the report, it was observed that Noise levels at the North East boundary exceed the boundary noise limit and are higher than measured in 2011. SNPL has constructed a noise barrier at the north boundary which is adjacent to houses of local community. However, implementation of acoustic related measures within the plant premises was not verified due to lack of site visit.

SNPL has an Effluent Treatment Plant, from which water samples are collected at the inlet and at the outlet and are tested from pH, DO, BOD, COD and TDS as per the Bangladesh Standard for Waste Water from Industrial units, discharge to inland surface water-ECR 1997, for which the limits are 6.0-9.0, 4.5-8.0 mg/L, ≤50 mg/L, ≤200.0 mg/L and ≤2100 mg/L respectively. Based on review of the reports for the month of June 2014, it was observed that all the parameters were within the desired limits. Since, only one report was shared for review by SNPCL, the performance of the treatment system, any past non-compliances and the frequency of the monitoring exercise cannot be commented.

Test reports for oily water samples were shared for testing pH, conductivity and oil & grease as per the DoE-Bangladesh and World Bank/IFC Standard and were found to be within desired limits.

OH&S: As per the IMS Manual, SNPL has developed a procedure for Performance Measurement and Monitoring (SP-OHS-5) which is a systematic approach for measuring and monitoring its OH&S performance on a regular basis, as an integral part of its overall management system. The performance measures are grouped according to the following categories:

- Effectiveness: A process maintaining the OHSAS system;
- Efficiency: A process characteristic indicating the degree to which the set criteria/targets are met;
- Quality: The degree to which the objectives meet requirements and expectations;
- Timeliness: Measures whether the objectives or targets was met correctly and on time. Criteria must be established to define what constitutes timeliness for a given unit of work; and
- Safe Work Environment: Measures the overall safe working environment for its Employees.

Following methods are employed by SNPL to measure the OHS performances with the help of different checklists:

[1] IFC guidelines on Thermal Power Plants, 2008

- results of hazard identification, risk assessment and risk control process (SF-OHS-1);
- systematic workplace inspection using checklists (SF-OHS-7);
- inspections of specific machinery to check that safety related parts are fitted and in good conditions (SF-OHS-8);
- behavior sampling: assessing workers' behavior to identify unsafe work practices that might require correction;
- analysis of documentation and records; and
- Survey among employees attitudes on the OHS system and practice and employee consultation processes.

As per the procedure, records of inspections, surveys and Internal System Audit are sampled to identify the causes of nonconformity and repetitive hazards. However, the reports pertaining to OH&S monitoring were not available for review.

3.1.8 Stakeholder Planning and Engagement Planning

Requirement 8: Stakeholder Analysis and Engagement Planning: Clients should identify the range of stakeholders that may be interested in their actions and consider how external communications might facilitate a dialog with all stakeholders. Where projects involve specifically identified physical elements, aspects and/or facilities that are likely to generate adverse environmental and social impacts to Affected Communities, the client will develop and implement a Stakeholder Engagement Plan that is scaled to the project risks, impacts, and development stage, and be tailored to the characteristics and interests of the Affected Communities.

Environment Clearance (EC) granted by Department of Environment, Bangladesh dated 18th February 2011, condition no. 3: If the factory is creating any sort of pollution, and in any instance if complaints are received from the stakeholders, the factory might be asked to stop their operations.

Observation 8: SPL has developed and implemented systems to facilitate effective customer communications in regards to product information, inquiries, contracts, complaint handling, and customer feedback (customers being Bangladesh Power Development Board, and Rural Electrification Board).

Based on review of a Document - SF-ENV-08 'External Communication Record' and environment monitoring records, SNPL will have certain impacts on the local community like increased noise and exposure to dust. As per the Environmental and Social Action Plan (ESAP) 2012, a Community Engagement Program in accordance with IFC PS 1 was developed including a grievance mechanism and a community emergency consultation plan. Site management has informed that meetings with nearby community are held regularly in the project area where the all the locals are invited to discuss their views and concerns, and were recorded in a Document - SF-ENV-08 'External Communication Record' which was provided for review. It was observed site management has recorded issues communicated by locals and community till date and action taken to close it. The issues comprises of provision of medical facilities for locals, noise surveys undertaken to repair of houses, health awareness program, development of 185m road for community welfare. SNPL has not formally identified the stakeholders other than community[2].

[2] Other stakeholders are those not directly affected by the project but that have an interest in it. These could include national and local authorities, neighboring projects, and/or nongovernmental organizations.

3.1.9 External Communications and Grievance Mechanisms

Requirement 13 : Clients will implement and maintain a procedure for external communications that includes methods to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability.

Where there are Affected Communities, the client will establish a grievance mechanism to receive and facilitate resolution of Affected Communities' concerns and grievances about the client's environmental and social performance.

Environment Condition as per Environment Clearance granted to the operational facility: If factory is creating pollution, and complaints are received by stakeholder pertaining to this, the facility will be asked to stop the operations.

Observation 13: As part of IMS procedures on Environmental Communications, for external parties including residential areas in the vicinity of the plant and community at large residing near the plant, SPL, at the corporate level, has established procedures for grievance addressal under "Procedures for Environmental Communications" (doc no. SP-ENV-6) to ensure external communications relating to the environmental performance of the organization are received and adequately handled at the site level. Accordingly, the site management maintains an External communication record and external complaint log in SF-ENV-08 and SF-ENV-09 at the plant level.

Apparently, SNPL does have system in place receive external communications and requests for information regarding environmental and social performance of operational facility, which is aligned with corporate level. The external communications requirement has been developed partially based on the communications element of ISO 14000, which requires procedures for receiving, documenting and responding to relevant information and requests from external interested parties.

SNPL has developed a procedure SP-ENV-06 for Environmental communications to local community, as part of the procedure, provision of grievance addressal has been given for local communities by placing a grievance box and recording down the communications received in an external communication register. As per review of document, all complain will be resolved in the community engagement meeting. Both community representative and SNPL representative will take decision about resolving the problem. As per the procedure, DMR (Env) or Admin Officer has responsibility of receiving the complaints, investigating them and giving response accordingly. However, the grievance mechanism comprises of addressal at one-tier which is not time bound.

As per Doc No SF-ENV-08 'External Communication Record' provided for review, local people site management has recorded issues communicated by locals and community till date and action taken to close It. the issues comprises of provision of medical facilities for locals, noise surveys undertaken to repair of houses, health awareness program, development of 185m road for community welfare. As per review of Document 'External Complaint Log', no complaints were observed to be recorded by the site management.

SNPL has also formulated a committee comprising various leaders of various profession and social workers as follows:

GM SNPL, DPM SNPL, Asst Exe(EHS), SNPL, Md. Mizanur Rahman (Asst. Exe), SNPL), Md. Mohsin Khondokar (Asst Executive, SNPL), Abdul Hoq Matobbor (Social Worker), Hazi Amzad Hossain (Businessmen/president Nurnobi Mosque), Alamgir Hossain (Social Worker /General Sectrey), Hazi Piar Ali Matobbor (Social Worker/Businessmen), Mokhlesur Rahman (Teacher, Madrassa), Foysal Ahmed Sagor (Counsilor (Madonganj))

3.1.10 Ongoing Reporting to Affected Communities

Requirement 14 as per IFC PS: The client will provide periodic reports to the Affected Communities that describe progress with implementation of the project Action Plans on issues that involve ongoing risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities.

Observation 14: Local communities reside in north and east direction of the operational facility. Site management has informed that meetings with nearby community are held regularly in the project area wherein all the locals are invited to discuss their views and concerns regarding the environmental performance of the operational facility. Procedure SP-ENV-06- Environment Communication outlines the grievance procedure for affected communities.

As per Doc No SF-ENV-08 'External Communication Record' provided for review, site management has recorded issues communicated by locals and community till date and action taken to close it. The issues comprises of provision of medical facilities for locals, noise surveys undertaken to repair of houses, health awareness program, development of 185m road for community welfare. According to the procedure, meeting will be held each quarter of the year with community representatives which will be headed by General Manager of SNPL and DPM will act as secretary. As per review of Document 'External Complaint Log', no complaints were observed to be recorded by the site management.

A Minutes of Meetings dated 12th July 2015 pertaining to meeting held with community was shared for review. Implementation of welfare program, outcomes of previous meetings and general issues were discussed in the meeting.

3.1.11 Status of Compliance of PS-1

The project proponent is largely in compliance with PS1 requirements. However, strengthening of management systems is required to ensure that all risks and impacts commensurate to the operations of the facility are adequately managed. The non-compliances observed are:

- **ESMS and Policy**: There are no social elements like Stakeholder engagement (other than community) in IMS Manual and overarching social policy to describe social related impacts. The IMS Manual is not endorsed by the senior management team of SNPL;
- **Legal Register**: SNPL has not identified the legal risks which can cause financial or reputational loss to the company neither has maintained a legal register with compliance to Bangladesh national EHS requirements;
- **Identification of Risks and Impacts**: Cumulative Impact Assessment with respect with to air emissions considering Unit-I and Unit-II of SNPL and Cement Plant has not been conducted by SNPL ;
- **Management Program**: Lack of management procedures on handling of HFO at jetty area, Assessment of PPEs and Occupational Noise;
- **Emergency Preparedness and Response**: Updation of Emergency Preparedness Plan for operational Facility is required;

- **Organization Capacity**: Additional Roles and Responsibilities allocated to EHS Officer for person handling social issues at site was not available for review;
- **Grievance Redressal Mechanism**: Grievance Redressal Mechanism is required to be strengthened in term of time bound addressal of complaints/ issues received from community at a two –tier level system.

3.1.12 Recommendations

- SNPL is required to establish a social policy which will be an overarching declaration for addressal of social impacts and risks associated with the plant operations and procedures like stakeholder engagement;
- SNPL should ensure that all the procedures documented as a part of IMS Manual are endorsed by their senior management team.
- SNPL should maintain job description of EHS Officer for managing social aspects at facility level and should ensure that appropriate training is provided pertaining to social aspects through adequate provision of training. Documentation of training records should be maintained.
- SNPL should maintain a legal register at site level to ensure compliance with all applicable rules and regulations;
- Management programs for maintenance and operations of jetty , assessment of PPEs and Occupational Noise should be formulated and required to be included in information disclosure;
- SNPL is required to conduct a Cumulative Air Impact Assessment as part of the risks and impacts identification process to establish the Ground Level Concentrations (GLC) in the project area (considering Unit-I, Unit-II and adjacent cement plant) ;
- The emergency response plan should be updated for the operation facility and include the following things:
  - ✓ Emergency contacts and communication systems/protocols (including communication with Affected Communities when necessary)
  - ✓ Procedures for interaction with government authorities (emergency, health, environmental authorities)
  - ✓ Permanently stationed emergency equipment and facilities (e.g., first aid stations, firefighting equipment, spill response equipment, personal protection equipment for the emergency response teams);
  - ✓ Identified First Aiders and Fire Fighters;
  - ✓ Protocols for the use of the emergency equipment and facilities
  - ✓ Clear identification of evacuation routes and muster points
- SNPL is recommended to develop an environment monitoring program comprising the parameters to be measured, sampling and analytical methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and the definition of thresholds. Monitoring results should be documented, and the necessary corrective and preventive actions identified and implemented.
- Two-Tier Grievance Redress Mechanism is to be developed with time bound addressal of concerns for community.

3.1.13 Material Liability

In context of project operations, the project proponent is required to establish a robust grievance mechanism to address the issues raised by local community members regarding project's environment and social performance. This is mandatory regulatory requirement as per Environment Clearance permit condition wherein, the authority can order closure of facility in case of any grievances or community issue.

3.2 Performance Standard (PS) 2: Labour and Working Conditions

3.2.1 Human Resource Management Policies and Procedures

Requirement 15: IFC Performance Standard requirement: Performance Standard 2 asserts that the client will adopt and implement Human Resource Policies and Procedures appropriate to the nature of the workers and the business activities in which client is involved. The policy and procedures covers aspect like non-discrimination and equal opportunity on the grounds of personal characteristics, retrenchment, working relationships, child labour, forced labour and retrenchment.

Observation 15: SNPL has established an Integrated Management System Manual (IMS), wherein a procedure on Human Resource Development has been developed dated 1st January 2013. As per review of policy, it was noted that the policy statement is applicable to both direct employees and contracted workers. HR procedures established also include employee training requirements, performance evaluation, leave entitlements; grievance management and different allowances (as explained in PS1). However, there is no mention of supply chain workers. In addition, the procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015)

Apparently, no scope of work has been framed in the above said policy statement pertaining to aspects like prohibition of forced and bonded labour, formation of workers organization etc.

The following gaps were noted based on the observations made against the established requirements, as detailed above:

- The HR policy statement does not mention about supply chain workers
- The HR procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015)
- The HR policy does not contain scope of work pertaining to aspects like prohibition of forced and bonded labour, formation of workers organization etc.

3.2.2 Working Conditions and Terms of Employment

Requirement 16 as per IFC PS: Performance Standard 2 (Labour and Working Condition): The client is required to provide reasonable working conditions and terms of employment to the workers and where possible be a party to the collective bargaining agreement with the worker's organization. The provisions extend to migrant workers who carry out similar work at par with the non-migrant workers. In instances where accommodation services are provided to the workers, the client will be responsible to adopt and implement policies on the quality and management of the accommodation and provision of basic services. Principles of non-discrimination and equal opportunity will be adhered to while providing the accommodation services. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association.

Observation 16: Terms of employment include wages and benefits, wage deductions, hours of work, breaks, rest days, overtime arrangements, and overtime compensation, medical insurance, pension, and leave for illness, vacation, maternity, or holiday have been specified in procedure for Human Resource Development.
There is a salary structure for all permanent staff members, comprising of basic pay, allowances etc. Grades and corresponding designation/positions are indicated below and every staff member shall be included in one of these pay grades on the weightage of the job at the time of appointment. GM HR negotiates the salary of the individual on

appointment in consultation with the respective GM as appropriate. SNPL has entitled all its employees with House rent allowance, conveyance allowances, medical allowances and medical bonus. All the employees are also eligible for performance bonus on yearly basis. Annual Leave can be accumulated by an employee if he does not avail the leave. In any particular year maximum 20 days leave can be encased at 1.5 times of basic salary only if the management due to exigency of company's business does not accept the leave application provided that the employee has at least 30 days accumulated annual leave left to his account even after the encashment. However, the management can waive this requirement of left over annual leave in very special circumstances.

Requirements pertaining to training, wages, prohibition of child labour, working hours are same as for staff of SNPL. However, the procedure does not mention about the applicability of working conditions for migrant workers who can be hired for operations of the facility.

Ae per review of Contract document executed between SNPL and Wartsila, for maintenance services of the equipment, there no provisions for disbursement of wages to the workers, payment for overtime, entitlement of leaves in the contract document. There is no mention of provisions in the documents pertaining to the written terms of employment to the workers, provision of identity cards etc.

3.2.3 Worker's Organization

Requirement 17 as per IFC PS: The client will encourage workers from electing worker representatives, forming or joining workers' organizations of their choosing and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining. The client will engage with such workers' representatives and workers' organizations, and provide them with information needed for meaningful negotiation in a timely manner. The workers' organizations are expected to fairly represent the workers in the workforce.

Observation 17: Procedure for Human Resource Development does not cover any clause or statement pertaining to formation of worker's organizations or union at the operational facility. Workers' organizations should be representative of the work force and act pursuant to the principles of fair representation of workers and should form part of Human Development Procedure.

3.2.4 Non-Discrimination and Equal Opportunity

Requirement 18 as per IFC PS: The client will not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The client will base the employment relationship on the principle of equal opportunity and fair treatment, and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment,

Legal Requirement: Any discriminatory behavior based on sex, color and creed is totally prohibited in any law in Bangladesh. Article 27 and 28 has provided a guideline to the legislator to make the discrimination free environment at every walks of national life. Section 345 of the new labor law is however noteworthy in this connection.

Observation 18: Procedure on Human Resource Development has captured the elements of non-discrimination based on religion, sex race, national origin or any other factor that does not pertain to the individual's ability to do the job for employees and contractors. However, migrant workers are not identified in the document.

3.2.5 Retrenchment

Requirement 19 as per IFC PS: The client will carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers.

Legal Requirement: Section 20 of Bangladesh Labor Act 2006: A worker employed in an establishment may be retrenched from service on the ground of redundancy. No worker who has been in continuous service for not less than one year under an employer shall be retrenched by the employer unless the worker has given one month's notice in writing, indicating the reasons for retrenchment, or the worker has been paid in lieu of such notice, wages for the period of notice.

Observation 19: As per review of Document no SP-HRM-1 developed for Human Resource Development, a staff member or a contracted worker may be retrenched within 60 days' notice or payment in lieu thereof if the post against which the hiring was made is abolished. Also, services of any Management Staff may be terminated without assigning any reason by giving a one month notice in writing or on payment of one (1) month gross salary in lieu thereof. Requirements for exit interview, notice period and final settlement of accounts of respective employee has been detailed in the above said document developed by SNPL. The procedure does not talk about any alternatives to be adopted to avoid any kind of retrenchment for its employees and contracted workers.

Temporary/Contractual appointments shall terminate automatically on the completion of the agreed period of service in the absence of any offer and acceptance of extension.

3.2.6 Grievance Mechanism

Requirement: A grievance mechanism is required for its workers to raise workplace concerns. It is necessary to brought matters to management's attention and addresses it expeditiously. Grievance mechanisms may be designed to direct complaints through an appropriate process in order to protect the confidentiality of the worker, and should ensure that workers can raise concerns other than to immediate supervisors.

Section 33 of Bangladesh Labor Act 2006: Workers who has been removed from employment and has grievance and intends to seek redress shall submit his grievance to his employer within thirty days of being informed of the cause of such grievance. Thereafter employer enquires the matter within fifteen days and gives opportunity to the worker of being heard and communicates his decision in writing to him. If the worker is dissatisfied with the decision, he can approach the Labour court thereafter.

Observation 20: As per review of Human Resource Development Procedure (SP-HRM-1), a grievance mechanism has been formulated for employees of SNPL to raise any work place concern. Any individual employee, who has a grievance in respect of anything connected with his employment in the Company, shall observe the followings for right of his grievance.

- Aggrieved employees shall first address in writing, complaints to their immediate supervisor.

- If the Staff member is not satisfied with the response from their supervisor then the aggrieved employees should write to the next level supervisor.

If the employee is not satisfied, he should write directly to GM HR giving copy to the departmental Head. The concerned employee must bring his grievance to the employer's notice within 30 days of the occurrence of the cause of such grievance. All complaints have to be in writing, signed and dated by the concerned employee(s) if they are to receive consideration. However, there is no procedure detailed for documentation of grievance received, analysis of grievance, and formation and renewal of Grievance Redressal Committee. Also there is no provision of anonymous communication of grievance. There is no mechanism developed for addressing grievances from the community.

As per review of Document, employee can lodge a complaint pertaining to job posting, denial of personal request, promotions, compensation, increments, level or working conditions etc. However, there were no records wherein grievances received from staff or workers are documented were available for review.

3.2.7 Protecting the Work Force

Requirement 21 The client will not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. The client will identify the presence of all persons under the age of 18.

Section 34 of Chapter III of Bangladesh Labor Act 2006: No child (below 14 years of age) shall be employed or permitted to work in any occupation or establishment. No adolescent (above 14 years of age but below 18 years of age) shall be employed of permitted to work in any occupation or establishment unless a certificate of fitness is granted to him by a medical practitioner.

Observation 21: As per System Manual, no one who is below 18 years of age can be hired as an employee for on regular, contract or temporary status. SNPL has established Appointment Procedures that outlines screening process for permanent, temporary, contractual and apprenticeship staff. All permanent staff and casual staff engaged onsite at the plant are required to go through formal recruitment procedures before being engaged for work.

3.2.8 Occupational Health and Safety

Requirement 22 as per IFC PS: The client will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The client will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice, as reflected in various internationally recognized sources including the world bank Group environmental, Health and Safety Guidelines, the client will address areas that include the (i) identification of potential hazards to workers, particularly those that may be life-threatening; (ii) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) training of workers; (iv) documentation and reporting of occupational accidents, diseases, and incidents; and (v) emergency prevention, preparedness, and response arrangements. For additional information related to emergency preparedness and response refer to Performance Standard 1.

Section 2.0 on Occupational Health and Safety of World Bank's General EHS Guidelines, 2007: these guidelines provide the protective and preventive measures for managing principal risks to occupational health and safety which

comprises of general facility design and operation, communication and training, monitoring of accidents and diseases.

- **Observation 22:** SPL has recognized risks associated with Occupational Health and Safety aspects at corporate level through Procedure for Hazard Identification, Risk Assessment" (doc no: SP-OHS-1)..
- Based on guidelines set out at corporate level, SNPL has formulated "Facility Risk Assessments Form" (doc no: SF-OHS-01) and "Job Risk Assessments Form" (doc no: SF-OHS-02) at site/facility level.
- SNPL has developed procedure for Hazard Identification and Risk Assessment (HIRA) applicable to operation phase of the plant and requires the identification process to cover non-routine as well as routine activities at site level. It includes abnormal, unusual, and non-routine operations such as major repair events, weekend operations, night shifts, contractor activities, and operations conducted at remote locations, maintenance operations that are carried out infrequently but may have a high risk, and situations that involve response to emergencies. HIRA Procedure also details topics such as review of facility hazards and risks, review of job hazards and risks.

SNPL has established methods as to how contractor or suppliers might affect its ability to manage OHS hazards and risks, achieve objectives, and otherwise comply with applicable legal requirements and other requirements to which the organization subscribes at facility level. The hazards arising from the use of products or services supplied to the organization by them, the potential lack of familiarity with the workplace and existing controls of those not in the direct employment of the organization, e.g. visitors, contractor personnel are taken into consideration for controlling adverse consequences. SNPL has maintained procedures (SP-OHS-4) for communicating with contractors and other visitors to the workplace related to the OH&S risks faced by these parties and the consequences associated with nonconformity with OH&S requirements for operational facility. The procedure talks about Job risk Assessment, for workers working within the premises. Procedures have also been developed for safety and health inspection, compliances with the legal requirements on a regular basis, monitor and measure OH&S performance. Various checklist are also present pertaining to job risk assessment, workplace inspection, accident and incident report, work permit system, medical history checklist for employees, hot work permit, lock out and Tag out. Sample work permits for activities such as Diesel Generator (D.G) maintenance, lube oil leakage maintenance, working against abnormal sound of cooling fan and for injector pressure test were shared with AECOM. The permits are acknowledged by the maintenance department ensuring compliance with the safety procedure and on successful completion.

However, several Checklists were observed to be not developed as a part of Manual such as:

- PPE Assessment;
- Occupational Noise Measurement Records;
- OHS risks associated with HFO handling and in jetty area;

A qualitative test of hearing report was shared which was conducted for a 33 year old male employee working as an Assistant General Manager in Technical division. The report states that the person did not have any ear related issue. This suggests that medical tests are undertaken for workers working inside the facility to assess the occupation exposure to various hazards such as hearing loss. However, no other tests related to occupational hazards such as allergy to some kind of chemicals or suitability for work was not available for review. Occupational exposure to heat occurs during operation and maintenance of combustion units, pipes, and related hot equipment were not documented. Also potential exposure to EMF was not assessed.

SNPL has tie ups with hospitals all across Bangladesh where employees are entitled to claim insurance.

A procedure has also been developed for operation and control of Auxiliary systems which describes the working of all equipment like fuel treatment system, HFO feeder unit, Booster unit, mixing tank, compressed air system etc. workers are required to fill the checklists before operation of auxiliary units. It mandates recording of pressure and temperature at inlet and outlet for pre-heating unit and auxiliary unit. However, it does not talk about the usage of PPEs during operation of auxiliary units.

Incidents/Accidents Investigations: Document (SF-OHS-17) which is an investigation report on accident/ incident was provided for review. It details the description of accident occurred, actions to be taken for its closure, name of the person who has implemented the action, person who has verified the implementation.

3.2.9 Workers Engaged by Third Party

Requirement 23 as per IFC PS: Performance Standard (Labour and Working Condition): This element of PS 2 mandates client to make efforts in ascertaining that the third parties involved in engaging workers are reputable and follow an ESMS. The client will establish policies and procedures for managing and monitoring the performance of such third parties and will incorporate the same within the contractual agreements with them. The client will ensure that the workers engaged by the contractors have access to a grievance redressal mechanism either developed by the Contractor and if none available, follow the mechanism developed by them to serve the workers.

Observation 23: Supply and Contract Work Management has been detailed in SM document developed by SNPL. As per review of document, SNPL achieves this conformity of work performed by carefully managing the selection of new contractors, by ensuring that only approved contractors are engaged to perform the work or services.it has provisions for periodic reviews of contractors and approval process as described in SP-PUR-2. SNPL has established methods as to how contractor or suppliers might affect its ability to manage OHS hazards and risks, achieve objectives, and otherwise comply with applicable legal requirements and other requirements to which the organization subscribes.

Procedure for Procuring Contractor Services details the selection criteria for approval of contractors which is based on Past Performance, Environmental Risk Assessment and Occupational Health and Safety Assessment of the contractor engaged. SNPL is required to maintain records for contractor management:

- Rationale for the method of procurement (if not self-evident);
- Rationale of contract pricing arrangement (also if not self-evident);
- Reason for accepting or rejecting the bids or offers;
- Basis for the contract price (as prescribed in this policy);
- A copy of the contract documents awarded or issued and signed by the Contracting Officer;
- Basis for contract modifications; and
- Related contract administration actions.

Various checklists have been developed to assess the contractor capability to manage associated EHSS risks like environment risk assessment sheet, occupational health and safety assessment sheet which are required to be filled before engaging a contractor. However no document was available for review for the contractor hired. In addition,

there are no procedure for managing and tracking the performance of contractor on Environment and OHS parameters.

As per review of contract document executed between SNPL and Watersila, SNPL has not contractually bound the various contractors for compliance with applicable local and national rules and regulations pertaining to waste emissions, air and water quality etc. There is no provision grievance redressal mechanism developed by the contractor for the workers.

3.2.10 Supply Chain

Requirement 24 as per IFC PS: The client will identify risks associated with child labour and forced labour in the primary supply chain and take appropriate steps to remedy them. The client will monitor its primary supply chain on a regular basis and where significant risks is identified, the client will introduce procedures and mitigation measures to ensure that the primary suppliers are taking steps to prevent or correct the situation. Where finding a remedy is impossible, the client will eventually shift its suppliers to the ones that follow the protocols.

Supply Chain workers are employed by suppliers providing goods and materials to the company. There is no direct contractual or labor relationship between the client and the workers at supplier level, and suppliers pay costs and benefits.

Observation 24: The applicability of this element of PS 2 will be limited owing to the fuel that Heavy Fuel Oil (HFO) will be utilized for generation of power, which will be supplied to the site through pipelines of 345m length after transferring from jetty. Site Management has apprised that SOSCL reservoir tanks are first transported to jetty, than from there fuel is transferred to the dedicated storage tanks located at facility through 345m long pipelines. It was the responsibility of SNPL for construction of jetty for transportation of fuel from intake point to storage area. The risk related with supply chain can be associated with the supply of various kind of chemicals (acids, alkalis etc.) paints, thinners etc to the site during operation phase of the facility. Supply and Contract Work Management has been detailed out in System Manual developed for the facility. It talks about the approval of supplier before its selection, maintaining records of approved suppliers and verification of purchased products. An approved supplier list is required to be maintained for foreign materials and consumables to be used at site. Also, as per review of Procedure on purchasing processes (SP-PUR 1) dated 1st February, 2012, Suppliers' performance is recorded for all the supplies. Depending on this record, Suppliers are either dropped from the approved suppliers list or they are continued for the future. These suppliers-tracking formats are checked to update approved suppliers list for future. Various chemicals are utilized during the operation phase of the project he various chemicals utilized during the operation phase of the project are alum, electrolytic polymer, lime, sodium hypo chloride, SMBS (odium Meta Bisulfite), sodium chloride, anti-scalent, caustic soda, pH booster, Nalco (1800, 7208, 4221) and corrshield NT 4291. The list of vendors who supply hazardous chemicals for various purposes like anti-scaling of boilers, anti- corrosion was not available for review.

3.2.11 Status of Compliance of PS-2

The project proponent is required to implement the recommendations provided in the issues pertaining to ensure compliance with PS-2 requirements. Non-Compliances observed with respect to PS are:

- **HR Policy:** The HR policy statement is applicable to both direct employees and contracted workers but there is no mention of supply chain workers or migrant workers;
- HR Procedure: The HR procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015); The HR Procedure is not consistent in terms of sick and annual leaves as required with Bangladesh Labour Act, 2006;Certain elements are not included in IMS Manual such as prohibition of forced and bonded labour, assessment of age of worker employed, formation of workers organization etc., working conditions for migrant workers, avoidance of sexual harassment;
- **Contract document**: The contract documents between SNPL and contactor does not contain provisions pertaining to disbursement of wages to the workers, payment for overtime, entitlement of leaves , the written terms of employment to the workers, provision of identity cards etc.
- **Retrenchment:** The SP-HRM document contains a process for retrenchment of employees; however it does not include alternatives to be adopted to avoid any kind of retrenchment for contracted and indirect workers.
- **Occupational Health and Safety**: Various checklists are prepared by SNPL pertaining to job risk assessment, workplace inspection, accident and incident report, work permit system, medical history checklist for employees, hot work permit, lock out and Tag out; but certain checklists such as PPE Assessment, Occupational Noise Measurement Records, OHS risks associated with HFO handling and in jetty area are not developed;
- **Occupational Health and Safety**: Monitoring of occupational health of employees in terms of exposure to high temperatures and EMF not documented;
- **Training Evaluation:**Specific training needs for workers required pertaining to OHS have been identified; however training evaluation was not carried out to check the effectiveness of the training imparted.

3.2.12 Recommendations

- SNPL needs to incorporate compliance with local labour laws (Bangladesh Labour Act and Labour Rules, 2015) in procedure developed for Human Resource Management;
- The procedure should cover all type of workers, including direct workers, contracted workers and supply chain workers.
- In the procedure, elements of avoidance of sexual harassment and abuse should be included. This will act as a guideline for equal treatment of all employees in terms of recruitment, hiring, firing, working conditions, or terms of employment for the management. Elements of avoidance of forced and bonded labor should be incorporated in the procedure.
- SNPL should include a clause for prohibition of child and forced labour at work place in the contract document being executed with different contractors and subcontractors.
- SNPL is recommended to add a clause in the procedure to provide the same working conditions and terms of employment to the migrant workers as being provided to non-migrant workers performing the same kind of work.
- SNPL should add a clause in the contract document executed with contractor for compliance with Labour Act of Bangladesh, 2006 pertaining to terms of employment to contracted workers.
- SNPL should not discourage workers from forming or joining a workers' organization. Workers should be free to meet and discuss workplace issues on the premises during scheduled breaks, and before and after work.
- SNPL is recommended to develop a consultation plan to consult workers about the possibility of adopting a range of other measures, including reduction in hours; productivity improvements; temporary layoff; and salary reduction to avoid retrenchment. Such measures should be introduced after a period of consultation, and in full agreement of the workers affected.

- SNPL is recommended to develop checklists for assessment of PPE usage by workers, monitor of occupational noise, HFO handling, and working of pipelines and integrate them into existing IMS Manual.
- SNPL should conduct evaluation of the training imparted pertaining to OHS aspects by means of feedback forms from the workers;
- SNPL should conduct medical tests for workers working inside the facility to assess the occupational exposure to hazards other than the hearing test such as allergy to some kind of chemicals or suitability for work were not available for review;

3.2.13 Material Liability

No findings in this section qualify as material liability.

3.3 Performance Standard (PS) 3: Resource Efficiency and Pollution Prevention

3.3.1 Resource Efficiency

Requirement 25: The client will implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities.

Water Consumption: When the project is a potentially significant consumer of water, in addition to applying the resource efficiency requirements of this Performance Standard, the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others.

Environment Clearance (EC) granted by Department of Environment, Bangladesh dated 18th February 2011, condition no. 6 require that Cooling water reuse arrangements need to be operational correctly.

Observation 25: SNPL uses the optimized dual fuel injection system that contributes to complete combustion of all fuels over the entire load stage. Fuel Oil Operation is based on the use of normal fuel oil injection pumps and can run on Crude oil, LFO or HFO. Given Fuel Sharing is available between 35% and 87.5% of rated load. However, based on review of documents, it was noted that the plant operates on HFO and requires about 116,070 m^3 of HFO per year to run the 102 MW plant.

SNPL utilises underground water and river water to fulfil its water requirements and in the year 2015 following quantities of water were used per activity:

- Engine cooling water: 792 m^3/year
- Potable water: 720 m^3/year
- Dormitory water: 5400 m^3/year
- DM water: 7188 m^3/year
- Raw water for fire tank: 52980 m^3/year ,

The total water requirement for the year 2015 was reported to be 53040 m^3/ year. Site Management has reported that the water requirement is 1250 liters/hour for the operational facility. However, the quantity of water withdrawn from the deep well and from the river is not available separately. It is therefore difficult to define the usage in term of quantities from each source. There are currently no studies undertaken to understand the stress on the aquifer due to the water withdrawal activities conducted by the plant. Additionally, it was reported by the site management that

dependence on groundwater is more as compared to river water due to non-availability of river water in other seasons except monsoons and the quality of river water is not fit for usage. Given this, it can be assumed that the facility water dependency on groundwater is significant as compared to river water. The facility has not undertaken any assessment to evaluate sustainable supply and use of ground water.

Also, there are no details on any sort of water conservation methods followed by the plant such as cooling water reuse, Rain Water Harvesting etc. to recharge the ground water.

Requirement 26: **Greenhouse Gases:** In addition to the resource, efficiency measures described above, the client will consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project.

Observation 26: Heavy fuel oil being carbon-intensive fuel, releases sulphur dioxide and other pollutants into the atmosphere on combustion, contributes to greenhouse gas (GHG) emissions. Currently there are no details of calculation of GHGs in terms of CO_2 equivalent by SNPL. There are no reports available on quantification of GHG emissions or on voluntary disclosure done by SNPL.

3.3.2 Pollution Prevention

Requirement 28 The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts.

Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011, requires that the processes of the SNPL should not lead to pollution.

Observation 28: As per the IMS Manual, SNPL has established procedures to maintain control of Significant Environmental Aspects, ensure regulatory compliance, meet the company's environmental objectives, and conform to the Environmental Care Policy. Controls apply to those performing work on behalf of the company as well where necessary. As per review of DEG Environmental and Social Action Plan (ESAP), 2012, SNPL has successfully designed an environmental and social monitoring program which includes emissions, Ambient Air Quality (AAQ), fuel content, wastewater, waste management, oil soils, ground contamination, CO2 emission register. However, no such annual monitoring programs or schedules were available for review.

As per one of the conditions stipulated in Environment Clearance granted to the plant dated 2011, environment monitoring reports are required to be submitted to Department of Environment (DoE) on quarterly basis. Only one such monitoring report ***dated 15th April, 2014*** was provided for review. It was noted that Department of Environment, (DoE) has undertaken the monitoring for air quality and inlet and outlet of ETP. As per assessment of the monitoring results documented in the report, the monitoring was undertaken at about 15 m North from the power plant to assess the ambient air pollutant concentrations of SPM, SO2 and NOx as per the ECR 1997 (amendment 2005). The limits as per the ECR 1997 for SPM, SO2 and NOx are 200, 80, 100 microgram/$m^{3,}$ respectively were within the desired limit. The compliance with IFC-WB guidelines cannot be established due to absence of sampling frequency. However, only one report has been shared for review, and hence the frequency of the monitoring exercise cannot be determined. Also the total numbers of stacks and respective stack heights are unavailable for the review. There is no information on Air Pollution Control Devices (APCDs) installed in Stack, to support the monitoring undertaken by DoE

in April, 2014. The compliance with EC condition of submission of quarterly monitoring reports was also not established due to non-availability of subsequent monitoring reports to report dated 15th April, 2014. The monitoring has been undertaken after the increase of stack height from 36m to 56m, as a result concentration of Particular matter is within the limits as prescribed in ECR, 1997.

Noise Emissions: Noise emission is recorded at the control room, at the engine hall, and within 2 meters outside the boundary at each side once every week. As per the assessment of the records, it was observed that noise levels captured in all four directions are well within the DoE standards of 75/70 dB (A) day/night. However, the noise levels measured at control room falls in range of 71-72 dB (A) which exceeds the limit of 60 dBA as Good International Industry Practice (GIIP), with an understanding that up to 65 dBA can be accepted for reciprocating engine power plants if 60 dBA is economically difficult to achieve.[3]

A separate noise survey was conducted for operational facility by ND Technology (SEA) PTE Ltd dated April, 2015. As per review of report, Noise levels were measured along the new North boundary, adjacent to the village houses. The major sources identified are the radiators and now the exhaust stacks, especially towards the North-East Boundary, near the Mosque. The measured noise levels were in the range of 63-72 dB (A). To negate the effect of increased noise level three noise control measures were suggested which are:

- Erect a noise barrier wall at the North and North-East boundary to reduce noise from the current and new radiators;
- Improve the sound insulation of the power house by full height brick wall on 3 walls, sound absorption on the upper walls, double skin roof, use of acoustic doors, acoustic legging to pipelines;
- Internal conditions of exhaust silencers need to be repaired from time to time.

As per the assessment of the report, it was observed that Noise levels at the North East boundary exceed the boundary noise limit and are higher than measured in 2011. SNPL has constructed a noise barrier at the north boundary which is adjacent to houses of local community. However, implementation of acoustic related measures within the plant premises was not verified due to lack of site visit.

SNPL has an Effluent Treatment Plant, from which water samples are collected at the inlet and at the outlet and are tested from pH, DO, BOD, COD and TDS as per the Bangladesh Standard for Waste Water from Industrial units. However, it exceeds the limits prescribed of 30 mg/l in IFC EHS guidelines for BOD levels:

Table 3-1: Treated Waste Water from ETP

Date	pH	DO	BOD	COD	TDS
Inlet	6.75	0	250	729	2320
ETP Outlet	7.8	6	36	99	510
Industrial Wastewater Standard, ECR 1997	6.0-9.0	4.5-8.0	50.0	200.0	2100.0
IFC Standard Limit	6 to 9	-	30	125	-

Approximately 6 ton of waste water treated by Effluent Treatment Plant, 1.5 ton of oily water is treated and approximately 4 ton of sludge is produced which is sold to DoE approved vendors on daily basis. Site Management

[3] IFC guidelines on Thermal Power Plants, 2008

has also reported that treated water from ETP is being utilized for gardening purposes. A part of neutralized boiler water is discharged on vacant adjacent land.

As per review of Environment Management Plan (EMP) developed as a part of ESIA report of Unit-II, An Effluent Treatment Plant (ETP) has already constructed to treat the waste water:

Description of Unit process:

- Coagulation: Caustic Soda (NaOH) and Alum used as coagulating agent for removing Oily and sludgy of FTP & WTP back wash water.
- Flocculation: Electrolytic polymer forms flocculation of FTP and WTP back wash water which can easily separate the suspended particle form the solution.
- Neutralization: Caustic Soda (NaOH) and Alum also used as water neutralizing agent.

Description of Unit operation:

Sedimentation: It occurs after floc formation of oily and sludgy water by gravitational forces.

Filtration: After completing sedimentation process the water passed through different types of filters such as Lamella Clarifier, Multi stages filters and activated filters which have involved mechanical and electrical forces.

Description the different stages of SNPL's ETP:

- Buffer Tank-1 (100m3): Water enters into this tank from fuel purification process of power plant where as caustic, alum and polymer to be dosage into the tank input. Then mechanical air blowing into the tank for removing odor and suspended particle from sludgy water. After completing the total process the water transferred into the buffer tank 2.
- Buffer Tank-2 (100m3): Here water comes mainly from back wash and filtrations unit of WTP and some water added from buffer tank 1. If required the chemical dosing adjusted manually into this tank as per water quality parameters.
- Filter Unit: Water pumped into the lamella clarifier for sedimentation of sludgy particles. Then passes fresh water by over flown to the multi stages filters and then again pumped into the activated carbon filter. Finally we get treated water and reserved into the water monitor tank and reused for gardening of this final water.

Green Belt Development: SNPL is required to develop a Green Belt Development Plan ensuring 33% of the total site area is covered under green cover as per Compliance to one of the conditions stipulated in Environment Clearance granted by DOE dated 11th April, 2011, Bangladesh. However, documentation pertaining to compliance with the requirement was not available for review.

Gaps

The following gaps were noted based on the observations made against the established requirements, as detailed above:

- Adequate numbers of environmental monitoring reports were not available for review to establish the compliance with condition stipulated in Environment Clearance granted to the facility of submission of quarterly monitoring reports to DoE, Bangladesh;
- The compliance with IFC-WB guidelines cannot be established due to absence of sampling frequency.
- As pert the review report, the noise levels measured at control rooms falls in range of 71-72 dB (A) which exceeds the limit of 60 dBA;
- Details on green belt development were not available for review.

Requirement 29 as per IFC PS: Wastes: The client will avoid the generation of hazardous and non-hazardous waste materials. Where waste generation cannot be avoided, the client will reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment.

Legal Requirement: Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 2: Waste materials produced in the plant should be reused and should not create pollution.

Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 9: Spent lube oil, oil filters should be sold to authorized vendors.

Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 9: Spent oil/residual oil should not be disposed to water bodies.

Observation 29: SNPL produces waste oil and oily rags, which are termed as special waste while all other wastes are termed as controlled wastes. SNPL has developed procedures for disposal of controlled wastes (SP-ENV-2), special wastes (SP-ENV-3) and for waste handling and segregation (SP-ENV-4). The plant has a waste segregation process where different types of waste are stored in different coloured drums as presented below.

- Metal waste: Yellow drums
- Cardboard boxes: To be flattened and stacked oil pallets
- Waste oils: Red drums
- Oily rags: Red container
- Plastic waste: Green drums
- Reject produce: Cages
- General garbage: Black drums
- Rubbish: White drums

As per the procedures, SNPL maintains a waste disposal register where the entire waste disposal is recorded and is signed by the concern store staff responsible for handing over waste to a waste buyer/carrier. As per renewal of Environment Clearance granted to the Plant dated 30th July, 2015, all hazardous waste including wastage oil, diesel, Fuel oil are required to be sold to 'Mitali Traders' who is an authorized recycler under Department of Environment, Bangladesh. A copy of waste disposal register was provided for review, which contains records of sludge disposed of to the authorized recyclers including Mitali traders). The waste registry contains the mode of transport, quantities of waste disposed, name & address of the carrier, start & finishes time and is signed by the representatives of the organisation and of the waste carrier.

Apparently, the waste oil and oily rags are sealed and stored in a covered and bonded area. However, since there was no site visit conducted for this plant, details on asbestos usage, any polychlorinated biphenyls (PCBs) containing equipment or usage of Ozone Depleting Substances (ODS) inside the plant could not be verified. In addition, there are no documental evidences, which contain details on asbestos, PCBs and ODSs usage in the plant for review.

As per the procedure for waste handling and segregation, the plastic waste and Electronic waste (E-waste) is given to the local people free of cost. However, there were no details available on quantities of electronic wastes generated onsite.

Requirement 30 Hazardous Materials Management: Hazardous materials are sometimes used as raw material or produced as product by the project. The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials. In this context, the production, transportation, handling, storage, and use of hazardous materials for project activities should be assessed.

EC granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 9: Spent lube oil, oil filters should be sold to authorized vendors.

Observation 30: As per the IMS doc no. SP-EMR-1, the following materials are stored / used in significant quantities located at the plant facility:

- Engine lube oil SAE40;
- Hydrochloric acid;
- Caustic soda;
- Diesel fuel; and
- Cooling water treatment (Corroshield)

- The quantities of the above stated materials are not provided by SNPL for review. Material Safety Data Sheets (MSDS) for the above materials are stored in the Control Room for workers referral. However, the MSDSs of the chemicals are usually in English which may not be readable to the local workers (local language is Bengali). The storage of MSDS in the control room is not a correct practice since in case of a spillage or leakage; a worker has to first run to the control room first to check the method of spill response and then come back to the spill site to contain it. This will delay the procedure leading to further increase in the spillage/leakage.

The procedure for Emergency Preparedness and Response includes response procedures in case of a chemical, lube oil, gas or any hazardous material release through pipeline leakage or any other type of spills. As per the procedure, emergency response to hazardous material releases is limited to defensive containment. Defensive containment does not allow for close approach to stop a release where there is a potential for employee overexposure, either by inhalation or dermal contact. Material safety data sheet should be used to assess the probable danger of the material. Defensive containment procedures include evacuation and establishment of containment perimeters. Evacuation will be activated by the Control Room in response to the initial notification. Trained operations-level emergency responders will be dispatched to the affected area to investigate the situation, assist in evacuation procedures as needed, and establish defensive perimeters by restricting employee access to the affected area. If feasible and appropriate, responders will protect vulnerable pathways (drains, sumps, etc.) with spill containment equipment. The specifications and the details on the location of spill containment equipment and any testing records to check the adequacy of the equipment were not available for review.

For pipeline damages, the responsible emergency responders checks the entire line by walking along the line with a small 250 gram hammer to hear the sound, look for traces of leakage in the pipes, joints, inspect the supporting structures, etc. Inspection team should maintain radio contact with the control room at the terminal office. The pipeline check is conducted every 24 hours once in normal condition and twice during extreme hot weather.

In order to handle a minor spill caused by gasket leakage or any other leakage, response team is equipped with a spade and a hoe to contain the spill with sand within a limited area on ground. For any major spill beyond the control of the responder's team, Fire department has to be contacted and called for control.

Contaminated items such as sand and fabric are properly stored in steel drums and care is taken to avoid contamination of water from these stored items. In case of tank spillage due to failure of welding joints, immediate response team will shut all the outlets till the emergency is over and will attend to contain the spill. If required, dykes are reinforced by sand bags. In case, the leakage containment is out of control of the response team, outside help will be sought after informing the top management.

All incidents are recorded and are sent to head office. The incidents are reviewed to find the root cause and to avoid further recurrence. Hazardous spill response drills are conducted every six months. Incentives are provided for attending the drills and punitive measures are taken for those who miss the drill. However, no incidents reports, root cause analysis of those incidents or drill records were provided by SNPL for review.

Gaps

The following gaps were noted based on the observations made against the established requirements, as detailed above:

- MSDS were not pasted on each hazardous chemical tank/drum and were not translated in Bengali;
- Incidents reports, root cause analysis of those incidents or mock drill records were not available for review.

Requirement 31 as per IFC PS: Pesticide Use and Management: The client will, where appropriate, formulate and implement an integrated pest management (IPM) and/or integrated vector management (IVM) approach targeting economically significant pest infestations and disease vectors of public health significance.

Pesticide Ordinance, 1971 and Agricultural pesticides (Amendment) act, 1980

Observation 31: There are no details available regarding pesticide use and its management on site.

3.3.3 Status of Compliance of PS-3

The Project is largely compliant to IFC PS3 requirements except the following gaps:

- There are no reports available on quantification of GHG emissions or on voluntary disclosure done by SNPL;
- Establishment of environment monitoring programs for air quality management, noise management, effluent management, and stack emissions management and ensure compliance EC condition pertaining to submission of quarterly monitoring reports to Department of Environment (DoE), Bangladesh.
- The compliance with IFC-WB guidelines cannot be established due to absence of sampling frequency for ambient air quality monitoring;
- SNPL utilizes underground water and river water to fulfil its requirements, but details such as individual water consumption quantity from the deep well and river water or if there is any stress on the aquifer due to the water withdrawal activities conducted by the plant are not available;
- There were no records on ground water extraction;
- Implementation of noise abatement measures could not be assessed as there no latest monitoring reports provided for review.
- The noise levels measured at control rooms falls in range of 71-72 dB (A) which exceeds the limit of 60 dBA;
- There are no details on green belt development provided for review;

- Absence of environment monitoring programs for air quality management, noise management, effluent management, and stack emissions management with their sampling frequency, monitoring methods, and analysis.
- SNPL has not documented any details on electronic, plastic waste management

3.3.4 Recommendations

- SNPL should quantify the GHG emissions (direct emissions of GHGs from operational facility). Quantification will enable SNPL to participate in carbon finance programs and prepare them for possible future emissions trading regimes;
- SNPL is recommended to undertake a study on availability of ground water in order to analyze the effect of their water usage on the nearby communities and compare that to their baseline (if available) and take steps accordingly to mitigate any adverse effects. SNPL may look into options for additional resource efficiency measures within the site such as reverse osmosis-based water recovery, dry cooling, rain water harvesting, etc.
- SNPL shall ensure that environmental parameters (air quality, noise quality, water quality) monitoring program is in place which should include monitoring methods, monitoring locations, equipment, frequency, record, sampling analysis keeping and review procedure;
- Monitoring of ambient air quality should follow the monitoring periods as prescribed by Bangladesh norms or WB-IFC guidelines;
- SNPL is recommended to take noise monitoring on monthly basis and to ensure implementation of noise abatement measures within the site and its boundary;
- Provision of sound-insulated control rooms with noise levels below 60 dBA is recommended to negate the noise impact from control room;
- Provide evidence of compliance with the requirement of 33% green area as required in the environmental clearance condition. In case of non-compliance, SNPL to ensure that adequate green cover is provided to comply with the permit condition.
- The plant should obtain chain of custody documentation for all types of the waste disposed which will demonstrate that all the solid wastes sent from the plant were transported by licensed carrier to a licensed final disposal facility.

3.3.5 Materia Liability

In context to project operations, the project proponent is required to undertake the study on ground water availability (ground water modelling) in the present area to assess the stress on the aquifer due to water withdrawal for plant operations. The study establish the presence of ground water to ensure availability for longer period of time. and its dependency on local community present in the area.

Potential usage of river water in case of stress on ground water availability will require augmenting the existing capacities of current water treatment plant at operational facility, which in total may involve financial support exceeding USD 250,000.

3.4 Performance Standard (PS) 4: Community Health Safety and Security

3.4.1 Community Health and Safety

Requirement 32: The client will evaluate the risks and impacts to the health and safety of the Affected Communities during the project lifecycle and will establish preventive and control measures consistent with good international

industry practice (GIIP), such as in the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) or other internationally recognized sources.

Observations 32:

As per the IMS Manual, SNPL identifies potential hazards as facility and job risk assessment from a number of internal and external sources. As per review of Job Risk Assessment Form dated 1st June, 2012, it was noted that the details pertaining to hazards from handling of oily rags, maintenance of switch yard and hot works with applicable controls has been documented. The risk assessment exercise does identify risks/impacts from oil leaks from pipelines which may pose hazard to the community. Treated Wastewater is being utilized for gardening purposes and no wastewater is discharged to the river.

Noise and Vibration: Noise levels were measured to be in range of 63-72 dB (A) along the new North boundary, adjacent to the village houses which exceeds the limit as set out for mixed area in ECR, 1997 which is 60dB(A) for day time and 50 dB(A) for night time. As per review of Doc No SF-ENV-08 'External Communication Record' provided, local people site has communicated issues pertaining to noise during meetings held with community. Hence, to address this concern, various noise surveys has been undertaken to measure the noise, specifically in north of the operational facility. Communities are residing in north, north-east of the facility, at distance of 100m from the site. To negate the effect of increased noise level three noise control measures were suggested which are:

- Erect a noise barrier wall at the North and North-East boundary to reduce noise from the current and new radiators;
- Improve the sound insulation of the power house by full height brick wall on 3 walls, sound absorption on the upper walls, double skin roof, use of acoustic doors, acoustic legging to pipelines;
- Internal conditions of exhaust silencers need to be repaired from time to time.

Various noise abatement measures have been implemented like installation of noise barrier, construction of full height brick wall on three walls, acoustic doors at all entrances to the powerhouse or fit sound locks. Acoustic legging to the pipe and repairing of existing exhaust silencers.

As per report of noise survey conducted by Nd Technology (Sea) Pte Ltd, dated April 2015, Vibration levels were not measured during the survey, however there was no feelable vibration in the outlying buildings on the site. The engines are on high efficiency vibration isolators and supported on large concrete foundations.

Requirement 33: **Infrastructure and Equipment Design and Safety:** The client will design, construct, operate, and decommission the structural elements or components of the project in accordance with GIIP, taking into consideration safety risks to third parties or Affected Communities.

Observations 33: SNPL has obtained a Fire License from the Bangladesh Fire Service and Civil Defence, which is valid till the 30th June, 2016. However, certifications pertaining to structural stability of the civil structures by a competent authority were not available for review.

Requirement 34: Hazardous Materials Management and Safety: The client will avoid or minimize the potential for community exposure to hazardous materials and substances that may be released by the project. Where there is a potential for the public (including workers and their families) to be exposed to hazards, particularly those that may be life-threatening, the client will exercise special care to avoid or minimize their exposure by modifying, substituting, or eliminating the condition or material causing the potential hazards.

Environment Clearance granted by Department of Environment, Bangladesh dated 18th February, 2011, condition no. 9 states that the spent lube oil, oil filters should be sold to authorized vendors. Additionally, Condition no. 10 requires that the spent oil/residual oil should not be disposed to water bodies.

Observation 34: Various types of hazardous materials such as lube oil, hydrochloric acid, and caustic soda and Diesel fuel, is used in the facility. The quantities of the storage of these materials were not available for review. Additionally, the risk assessment procedure does not covers evaluation of the risks and impacts posed by the handling of hazardous materials and risks and impacts posed beyond SNPL's boundary and into areas inhabited or used by the community (at approximately 100 m north-west, northern and eastern part of the facility).

- There are no details on any Hazard and Operability (HAZOP) study of the project. Additionally, Pre-startup Safety Review (PSSR) before scheduled or breakdown maintenance considering the safety. SNPL has not conducted any Hazard and Operability (HAZOP) or Pre-startup Safety Review (PSSR) studies considering the health and safety of the community members.

Requirement 35: Ecosystem Services: The project's direct impacts on priority ecosystem services may result in adverse health and safety risks and impacts to Affected Communities. Where appropriate and feasible, the client will identify those risks and potential impacts on priority ecosystem services that may be exacerbated by climate change.

Observation 35: The project site and its surroundings do not fall under any national park, wild life sanctuary or any other eco-sensitive zone. The project lies in an urban setting and does not have direct impacts on priority ecosystem services.

Requirement 36: Community Exposure to Disease: The client will avoid or minimize the potential for community exposure to waterborne, water based, water-related, and vector borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups.

Observation 36: As per the Procedure for Human Resource Development (SP-HRM-1), SNPL appoints new candidates after being medically examined and found fit by the Medical Officer prior to joining. Subsequent retention in the service of the company will be subject to the employees maintaining themselves medically fit and so certified from time to time by the Company's Medical Officer. This practice helps in avoiding any inadvertent introduction of new or highly resistant diseases into host communities. However, no medical examination records were available for review.

There are no data available on community exposure to waterborne, water based, water-related, and vector borne diseases, and communicable diseases that could result from project activities..

Requirement 37: Emergency Preparedness and Response: In addition to the emergency preparedness and response requirements described in Performance Standard 1, the client will also assist and collaborate with the Affected Communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to respond to such emergency situations.

Observation 37: SNPL has an established procedure for emergency preparedness and response in which they have taken into account the needs of relevant interested parties such as the emergency services and neighbours. The procedure for emergency preparedness and response (SP-EMR-1) includes the community evacuation procedure in case of an emergency such as a gas release, fire, or an explosion. Evacuation will be carried out with the help of

local people, police department and fire department. The procedure however does not include mock drill requirements for the community people.

As per the procedure, the PIC and DMR (OHS) has to arrange an annual meeting with local people (representative committee of community people), Fire Department representative (if possible) and police department representative (if possible) to discuss issues related to community emergency response. The procedure also stated that the minutes of this meeting shall be recorded and maintained. However, minutes of such with stakeholders are not available for review.

Requirement 38: **Security Personnel:** When the client retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by its security arrangements to those within and outside the project site.

Observation 38: As per the procedure (SP-EMR-1), SNPL is manned continuously, 7 days a week, 24 hours a day. The plant is secured by wall boundary and deployed security personnel on site. However there has been no risk and impacts identification process which considers security risks associated with the entire range and all stages of their operational activities, including personnel, products, and materials being transported. No details on communication of SNPL's security arrangements to the stakeholders were available for review. There are no employment records available for review of the security personnel.

3.4.2 Status of Compliance of PS-4

The Project is compliant to most of the requirement of PS-4; however significant level of compliance can be achieved by implementation of the recommendations provided in this section. Some of the non-compliances observed are:

- SNPL identifies potential hazards as facility and job risk assessment from a number of internal and external sources, but there no reports available on Hazard and Operability (HAZOP) or Pre-startup Safety Review (PSSR) studies considering the to determine potential impacts on community health and safety because of the power plant activities. It is important to establish he risk associated with HFO storage and installed pipelines for transportation of HFO;
- SNPL's Emergency Preparedness and Response plan has a procedure for community evacuation, which however does not include mock drill requirements for the community people;
- As per the SP-EMR-1 procedure, SNPL conducts annual meeting with local people and with representatives from Fire and Police department, however Minutes of meetings for such meetings were not available for review;
- There was no formal mechanism to update community about emergency preparedness plan and security arrangements for the site.

3.4.3 Recommendations

- SNPL should conduct Hazard and Operability (HAZOP) study and develop procedure on Pre-startup Safety Review (PSSR) for the operational facility. Additionally, Quantitative Risk Assessment should be undertaken to evaluate the impact zone due to storage of fuel in the facility and pipelines. Adequate action plan to be developed for implementation of recommendations of such assessment.
- SNPL should ensure the implementation of noise abatement measures within the operational facility and its boundary and should monitor noise levels on monthly basis.
- SNPL should maintain the minutes of meetings for the quarterly meeting conducted with their stakeholders and should consider including the stakeholders in regular training exercises (e.g., simulations, drills, and

debriefs of exercises and actual events) to familiarize them with proper procedures in the event of an emergency; and

- SNPL should communicate their security arrangements to workers and stakeholders through the community engagement process;

3.4.4 Material Liability

In context of the project's existing risk assessment studies pertaining to storage areas of Heavy Fuel Oil (HFO) and pipelines, Hazard analysis is required to be undertaken in conjunction with Hazard Identification (HAZID)/Hazard and Operability (HAZOP) studies, and quantitative risk assessments (QRAs) to assess the potential to release toxic, hazardous, flammable material and identify impact zones.

Potential hazard analysis and risk assessment of the storage areas of fuel, pipelines installed would entail the implementation of mitigation measures to address the identified risks in impact process which could lead to contamination or physical injury. This execution of mitigation measures at site level may involve financial support exceeding USD 250,000.

3.5 Performance Standard (PS) 5: Land Acquisition and Involuntary Resettlement

Requirement 39: Performance Standard 5 recognizes the right of the people who are impacted from project related land acquisition and restricted on land use. Involuntary resettlement refers to both physical (relocation or loss of shelter) and economic displacement (loss of assets/ livelihood). It entails cases where there is occurrence of lawful expropriation/ temporary/ permanent restrictions on land use and negotiated settlements in which buyer can resort to expropriation or imposes legal restrictions on land use if negotiations with the seller fail.

The client is to ensure that alternate project designs would be considered to avoid or minimize physical and/or economic displacement. Where displacement cannot be avoided, the client will offer the displaced persons compensation for loss of assets at full replacement cost and other assistance to help them improve and restore their standard of living. Moreover, the client will also provide opportunities to displaced communities and persons to derive appropriate developmental benefits from the project.

In cases where involuntary resettlement is unavoidable, a census survey will be undertaken by the client to assess the socio economic baseline of the area so that identification of the displaced person can be ascertained in terms of compensation awards and assistance. In the absence of host government procedures, the client will establish a cut-off date for eligibility and information regarding the cut-off date will be documented and disseminated throughout the project area.

Observation 39: The 102 MW HFO based Power plant is established on 21,853 sqm of land at Narayanganj. Land for the plant has been procured in year of 2011 on willing buyer and willing seller basis. Site Management has informed that the past land use of the site is rice processing facility. Additionally, there is no settlement in this designated area for the operational facility. Therefore, no population has been displaced and no resettlement was required for the construction of the operational facility. Site Management has also reported that the compensation given was calculated at the market value.

3.5.1 Status of Compliance of PS-5

SNPL management has reported that the land for operational facility was procured in year of 2011 and there were no resettlement and rehabilitation issues associated with the land procured for the project. Hence, PS5 is not triggered for this project.

3.5.2 Recommendations

Since there are no gaps identified with respect to the requirements, hence no recommendations are provided in this section.

3.5.3 Material Liability

Nil findings of material liability have been identified (in PS 5's context) with respect to the following threshold limits for issues associated with Environmental / Social (including safety, security and community) aspects:

- Issues requiring more than USD 250,000 for rectification;
- Issues resulting in significant business interruption / criminal proceedings or a major environmental incident
- Issues resulting in community or NGO protest; and / or
- Issues resulting in a risk of multiple serious injuries or fatalities

3.6 Performance Standard (PS) 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

Requirement 40: Performance Standard 6 (PS6) recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The requirements set out in this Performance Standard have been guided by the Convention on Biological Diversity, which defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. The objective of PS 6 is

- To protect and conserve biodiversity.
- To maintain the benefits from ecosystem services.

To promote the sustainable management of living natural resources through the adoption of practices that integrates conservation.

As per Section 23 of Bangladesh Wildlife (Preservation) Order, 1973 (as amended up to 1974) the person shall not pollute water in any manner.

Observation 40:

The operational facility is located in east of Sitalakhya River which subsequently joins Meghna River. Site Management has informed that a jetty has constructed to facilitate transportation of HFO from SOSCL tanks to storage tanks located in inside the facility. A 345m long pipeline has also laid for carrying HFO from intake point of fuel to dedicated tanks from jetty.

Water Quality monitoring has been undertaken for upstream and downstream of Shitalakshya River as a part of ESIA of 55MW SNPL Plant-Unit-II, located adjacent to SNPL Unit-1. The analysis shows that Dissolved Oxygen (DO falls

within the range of 3.84-3.91 mg/l while Biological Oxygen Demand (BOD) exceeds the limit of 50 mg/l for both the samples. ETP outlet water quality analysis has also been provided as a part of baseline conditions. All the parameters evaluated like Dissolved Oxygen (DO), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Dissolved Solids are observed to be within limited prescribed by DOE, Bangladesh. Temperature was observed to be in range of 25.1-27.1^{o}C. Site Management has also reported that treated water from ETP is being utilized for gardening purposes. A part of neutralized boiler water is discharged on vacant adjacent land.

It was also reported by SNPL Management that no discharge of waste water is Shitalakshya River; hence no severe impact on aquatic fauna present in River is envisaged.

3.6.1 Status of Compliance of PS-6

Treated wastewater is being utilized for gardening purposes and there is no discharge in Shitalakshya River ecosystem. Hence, this PS is not applicable.

3.6.2 Recommendations

There are no recommendations against this aspect.

3.6.3 Material Liability

No findings of material liability have been identified (in PS 7's context) with respect to the following threshold limits for issues associated with Environmental / Social (including safety, security and community) aspects:

- Issues requiring more than USD 250,000 for rectification;
- Issues resulting in significant business interruption / criminal proceedings or a major environmental incident
- Issues resulting in community or NGO protest; and / or
- Issues resulting in a risk of multiple serious injuries or fatalities

3.7 Performance Standard (PS) -7: Indigenous People

Requirement 41 as per IFC PS: Performance Standard 7 recognizes that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalized and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development.

Observation 41: The facility is located within the proximity of Dhaka, in Narayanganj area of Bangladesh. As per secondary research, it is observed that there are no indigenous people associated with Narayanganj Area and there are no tribal people residing near the facility operations. Hence, this aspect will not be applicable to the project

3.7.1 Status of Compliance of PS-7

The operational facility is located in Narayanganj area of Dhaka, Bangladesh. The area does not have indigenous community. Hence, this PS is not applicable to the project site.

3.7.2 Recommendations

- There are no recommendations against this aspect.

3.7.3 Material Liability

No findings of material liability have been identified (in PS 7's context) with respect to the following threshold limits for issues associated with Environmental / Social (including safety, security and community) aspects:

- Issues requiring more than USD 250,000 for rectification;
- Issues resulting in significant business interruption / criminal proceedings or a major environmental incident
- Issues resulting in community or NGO protest; and / or
- Issues resulting in a risk of multiple serious injuries or fatalities

3.8 Performance Standard (PS) - 8: Cultural Heritage

3.8.1 Cultural Heritage

Requirement 42 as per IFC PS: Performance Standard 8 recognizes the importance of cultural heritage for current and future generations. Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage, this Performance Standard aims to ensure that clients protect cultural heritage in the course of their project activities.

Observation 42: As per review of google earth location of the facility site dated 1st March, 2016, the site is accessible by country boats from Madanganj Ferry Ghat which is located across Sitalakhya River, in west of the facility. In immediate north of the site, scattered agricultural fields are observed. A Cement Grinding Mill owned by Bashundhara Industrial Complex Limited (BICL) is located in south of the operational facility. Apparently, Madanganj is located in west of the project site. 'Mahamud Nagor Eidgha' (a religious place) was observed to be located in north of the site at a distance of 800m in Mahmud Nagar. The place is outside the facility boundary and will not have any impact due to plant operations.

3.8.2 Status of Compliance of PS-8

As per the review of secondary information pertaining to operational facility, the project does not fall under purview of Performance Standard 8.

3.8.3 Recommendations

None.

3.8.4 Material Liability

No findings of material liability have been identified (in PS 8's context) with respect to the following threshold limits for issues associated with Environmental / Social (including safety, security and community) aspects:

- Issues requiring more than USD 250,000 for rectification;
- Issues resulting in significant business interruption / criminal proceedings or a major environmental incident
- Issues resulting in community or NGO protest; and / or
- Issues resulting in a risk of multiple serious injuries or fatalities

This section delineates the list of actions required to be undertaken by the management to ensure closure of the gaps as identified in Section 3.0 of the report. The Corrective Action Plan is provided below with timelines, responsibilities and specific action items. The CAP for the same has been furnished below:

The gaps are categorised as red, orange and yellow flag issues based on the severity of impact on the EHS and Social aspect:

Flags		Remarks
	Red Flag Issues	These are observations which pose high impact on the environment, health, safety and social aspects and may have legal implications.
	Orange Flag Issues	These are observations which pose moderate impact on the environment, health, safety and social aspects.
	Yellow Flag Issues	These are observations which pose low or least impact on the environment, health, safety and social aspects.

Table 3-2: Corrective Action Plan for 102 MW HFO Based Thermal Power Plant

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
1.	PS-1	ESMS and Policy	• IMS does not focus on social aspect other than community; • IMS has not established an overarching social policy.		• Develop an overarching policy to cover social aspects; Develop dedicated procedures for social aspects; Ensure that all the procedures documented as a part of IMS Manual are endorsed by their senior management team.	A third party consultant shall be engaged to develop procedures ($3000)	General HR Manager Admin Officer	Three months
2.	PS-1	Legal Register	• There is no legal register maintained at facility with compliance to Bangladesh national EHS requirements		Develop a legal Register to establish compliance with Bangladesh legal requirements	• To be developed as a part of IMS Manual • Updation on six monthly basis.	EHS Officer	Two Months
3.	PS-1	Identification of Risk and Impacts	• Cumulative Impact Assessment with respect with to air emissions considering Unit-I and Unit-II of SNPL and Cement Plant has not been conducted		Conduct a Cumulative Impact Assessment based on air dispersion modelling to establish the Ground Level Concentrations (GLC) in the project area (considering Unit-I, Unit-II and adjacent cement plant).	A third party consultant shall be engaged to undertake air dispersion modelling (considering Unit, II and cement plant) ($8000)	Plant –In-charge EHS Officer	Two Months
4.	PS-1	Management Programs	• Lack of management procedures on handling of HFO at jetty area, Assessment of PPEs and Occupational Noise;		Develop procedures pertaining to handling of HFO at jetty area, Assessment of PPEs and occupational noise at different areas of plant.	A third party to be engaged for development of procedures and to be integrated with existing IMS Manual ($4000)	Plant –In-charge EHS Officer	Two Months

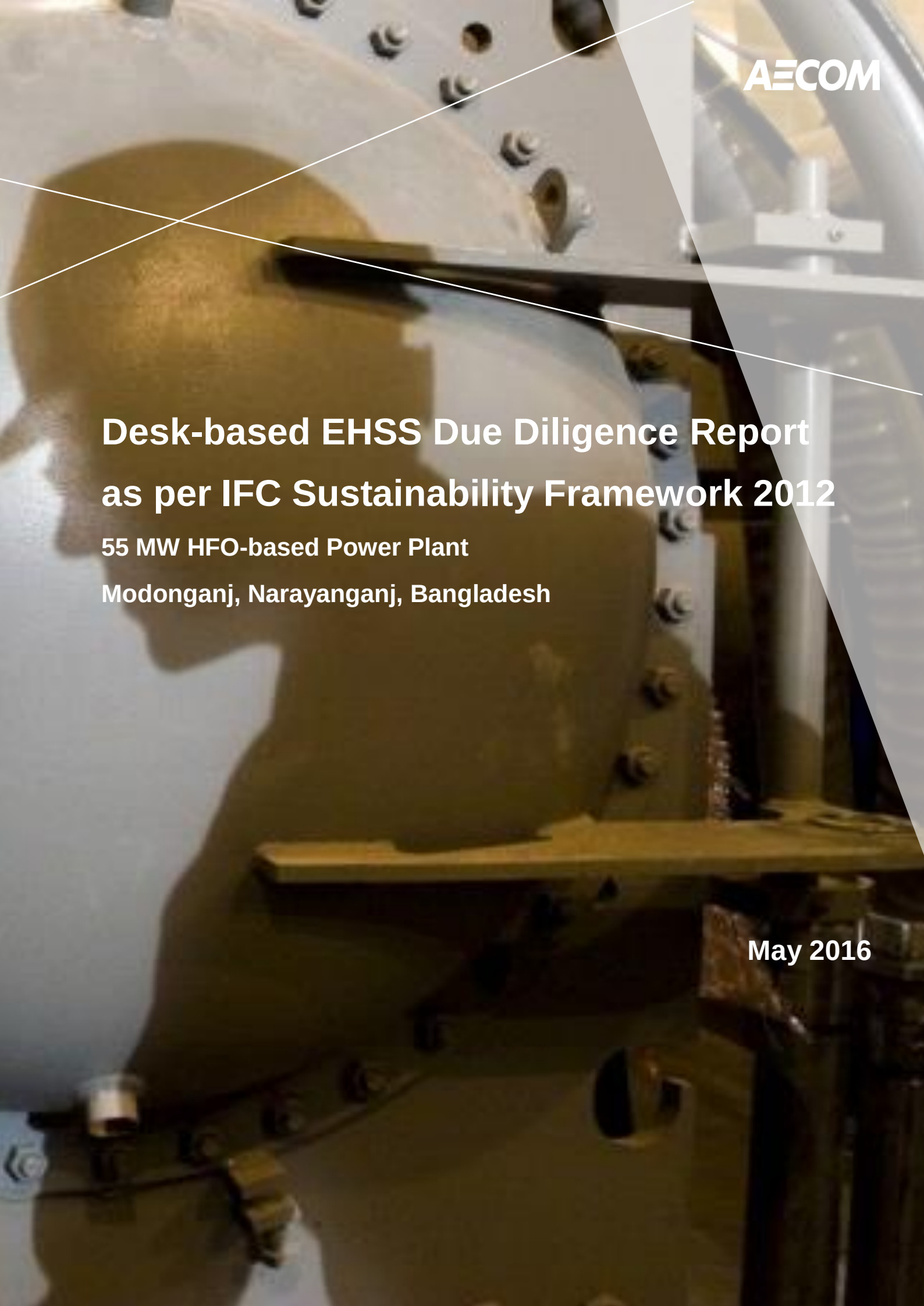
S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
5.	PS-1	Emergency Preparedness and Response	• Updation of Emergency Preparedness Plan for operational Facility is required		• The emergency response plan should be updated for the operation facility and include the following things: ✓ Emergency contacts and communication systems/protocols (including communication with Affected Communities when necessary) ✓ Procedures for interaction with government authorities (emergency, health, environmental authorities) ✓ Permanently stationed emergency equipment and facilities (e.g., first aid stations, firefighting equipment, spill response equipment, personal protection equipment for the emergency response teams); ✓ Identified First Aiders and Fire Fighters; ✓ Protocols for the use of the emergency equipment and facilities ✓ Clear identification of evacuation routes and muster points	Updation of Emergency Preparedness procedure and add site specific details on evacuation routes, emergency numbers etc.	EHS Officer	Two Month
6.	PS-1	Organisational Capacity and Competency	• Additional Roles and Responsibilities allocated to EHS Officer for person handling social issues at site		Maintain job description of EHS Officer for managing social aspects at facility level and should ensure that appropriate training is provided pertaining to social aspects through adequate provision of training. Documentation of training records should be maintained.	Enrolment of EHS Officer in trainings pertaining to social aspects. ($500)	General HR Manager	One Month
7.	PS-1	External Communication and Grievance Redressal	• Grievance Redressal Mechanism is required to be strengthened in term of time bound addressal of complaints/ issues received from community at a two –tier level system		Two-Tier Grievance Redress Mechanism is to be developed with time bound addressal of concerns for local community.	Updation of Grievance Mechanism system	EHS Officer Admin Officer	Two Months

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
8.	PS-2	Human Policies and Procedures	• There is no mention of supply chain workers or migrant workers in HR Policy; • The HR procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015); • The HR Procedure is not consistent in terms of sick and annual leaves as required with Bangladesh Labour Act, 2006; • Certain elements are not included in IMS Manual such as prohibition of forced and bonded labour, formation of workers organization etc., working conditions for migrant workers, avoidance of sexual harassment;		• HR Procedure requires to be updated in terms of : • Incorporation of compliance with local labour laws (Bangladesh Labour Act and Labour Rules, 2015); • Coverage of all type of workers, including direct workers, contracted workers and supply chain workers. • Elements of avoidance of sexual harassment and abuse, formation of worker's organization to be included. • Element of provision of same working conditions and terms of employment to the migrant workers as being provided to non-migrant workers performing the same kind of work to be added.	Updation of HR Procedure with inclusion of all the points	General HR Manager Admin Officer	Two Months
9.	PS-2	Contractor Management	• The contract document does not contain provisions pertaining to avoidance of child and forced labour at work place.		• SNPL should include a clause for prohibition of child and forced labour at work place in the contract document being executed with different contractors and subcontractors. • SNPL is recommended to add a clause in the procedure to provide the same working conditions and terms of employment to the migrant workers as being provided to non-migrant workers performing the same kind of work.	Updation of contract document	Admin Officer	Two Months
10.	PS-2	Retrenchment	• Retrenchment procedure does not include alternatives to be adopted to avoid any kind of retrenchment for contracted and indirect workers.		Develop a consultation plan to consult workers about the possibility of adopting a range of other measures, including reduction in hours; productivity improvements; temporary layoff; and salary reduction to avoid retrenchment. Such measures should be introduced after a period of consultation, and in full agreement of the workers affected.	Updation of HR Procedure with addition of clause on avoidance of retrenchment	General HR Manager Admin Officer	Two-Months
11.	PS-2	Occupational Health and Safety	• Various checklists for PPE Assessment, Occupational Noise Measurement		Develop checklists for assessment of PPE usage by workers, monitor of occupational	Updation of OHS Procedures	EHS Officer	Two Months

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
			Records, OHS risks associated with HFO handling in jetty area are not developed; • Monitoring of occupational health to assess the occupational exposure to high heat and EMP were not documented ; • Training evaluation was not carried out to check the effectiveness of the training imparted.		noise, HFO handling, and working of pipelines and integrate them into existing IMS Manual. • Duration of exposure and exposure levels of workers to heat and EMF should be identified. • Conduct evaluation of the training imparted pertaining to OHS aspects by means of feedback forms from the workers.	and Checklists Monitoring of exposure levels of high heat and EMF to workers working near combustion units, pipes, and related hot equipment by engaging Third Party ($15000) Updation of training procedure with inclusion of feedback forms.		
12.	PS-3	Resource efficiency	• Stress on aquifer due to ground water abstraction for facility has not been assessed; • There were no records on ground water extraction;		• Conduct study to evaluate the stress on existing groundwater resources of the area. The study should assess the existing levels of groundwater, evaluate the water consumption due to project and assess the impacts. • Maintain records of ground water extraction; • SNPL may look into options for additional resource efficiency measures within the site such as reverse osmosis-based water recovery, dry cooling, rain water harvesting, etc.	In context to project operations, the project proponent is required to undertake the study on ground water availability (ground water modelling) in the present area to assess the stress on the aquifer due to water withdrawal for plant operations. The study establishes the presence of ground water to ensure availability for longer period of time and its dependency on local community present in the area. Potential usage of river water in case of stress on ground water availability will require augmenting the existing capacities of current water treatment plant at operational facility, which in total may involve financial support exceeding USD 250,000.	EHS Officer	Two Months

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
						Ground Water Consumption records with readings of Bore well;		
13.	PS-3	Pollution Prevention	• Implementation of noise abatement measures could not be assessed as there no latest monitoring reports provided for review. • The compliance with IFC-WB guidelines cannot be established due to absence of sampling frequency for ambient air quality monitoring		• SNPL is recommended to take noise monitoring on monthly basis and to ensure implementation of noise abatement measures within the site and its boundary; • Provision of sound-insulated control rooms with noise levels below 60 dBA is recommended to negate the noise impact from control room. • Monitoring of ambient air quality should follow the monitoring periods as prescribed by Bangladesh norms or WB-IFC guidelines	Additional noise monitoring is required to be undertaken ($5000) Changes in Environment Monitoring Program Documentation of monitoring results	EHS Officer	Two Months
14.	PS-3	Green Belt Development	• Documentation pertaining to compliance with ensuring 33% of the total site area is covered under green cover was not available for review.		• Provide evidence of compliance with the requirement of 33% green area as required in the environmental clearance condition. In case of non-compliance, SNPL to ensure that adequate green cover is provided to comply with the permit condition.	Green Belt Development Plan	Plant-In Charge EHS Officer	Two Months
15.	PS-3	Waste Management	• SNPL has not documented any details on electronic, plastic waste management		The plant should obtain chain of custody documentation for all types of the waste disposed which will demonstrate that all the solid wastes sent from the plant were transported by licensed carrier to a licensed final disposal facility.	Documentation of different type of waste generated and its disposal mechanism	EHS Officer	Two Months
16.	PS-4	Community Health and Safety	• Risk associated with HFO storage and installed pipelines for transportation of HFO have not been established; • There was no formal mechanism to update community about emergency preparedness plan and security		• Conduct Hazard and Operability (HAZOP) study and develop procedure on Pre-startup Safety Review (PSSR) for the operational facility. Additionally, Quantitative Risk Assessment should be undertaken to evaluate the impact	Potential hazard analysis and risk assessment of the storage areas of fuel, pipelines installed would entail the implementation of mitigation measures to	EHS Officer	Two Months

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	Responsibility	Timeline (from date of finalization of this report)
			arrangements for the site.		zone due to storage of fuel in the facility and pipelines. • Adequate action plan to be developed for implementation of recommendations of such assessment. • Information pertaining to emergencies associated with the site, security arrangements is to be disseminated to community during quarterly meetings	address the identified risks in impact process which could lead to contamination or physical injury. This execution of mitigation measures at site level may involve financial support exceeding USD 250,000. Updation of Community Engagement Plan about identified emergencies onsite and security arrangements.		



Desk-based EHSS Due Diligence Report as per IFC Sustainability Framework 2012

55 MW HFO-based Power Plant

Modonganj, Narayanganj, Bangladesh

May 2016

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Abbreviations

BPC	Bangladesh Petroleum Corporation
BPDB	Bangladesh Power Development Board
CAP	Corrective Action Plan
DoE	Department of Environment
E&S	Environmental and Social
EC	Environment Clearance
ECR	Environment Conservation Rules
EHS	Environmental, Health and Safety
EIA	Environment Impact Assessment
EMP	Environmental management Programs
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social due Diligence
ESMS	Environment and Social Management System
ETP	Effluent Treatment Plant
FTP	Fuel Treatment Plant
GHG	Greenhouse Gas
GRM	Grievance Redressal Mechanism
HFO	Heavy Fuel Oil
HIRA	Hazard Identification Risk Assessments
HR	Human Resource
ICP	Informed Consultation and Participation
IFC	International Finance Corporation
IMS	Integrated Management System
IPP	Independent Power Producer
MD	Management Director
MR	Management Representative
MSDS	Material Safety data Sheets
OHS	Occupational Health and Safety
PPA	Power Purchase Agreement
RO	Reverse Osmosis
SM	System Manual
SNPL	Summit Narayanganj Power Limited
SOP	Standard Operating Procedures
SOSCL	Summit Oil & Shipping Co. Ltd.
SPL	Summit Power Limited
SPM	Suspended Particulate Matter

Executive Summary

Summit Corporation Limited, a holding company sponsoring its subsidiary companies to own, build, and operate infrastructure projects in the power sector, has signed an appraisal letter with International Financial Corporation for investment in SCL. Summit Power Limited (SPL), a subsidiary of Summit Corporation Limited (SCL), is an Independent Power Producer (IPP) in Bangladesh that provides power directly to the national grid. SPL owns and operates eight (08) power plants at different locations across Bangladesh with a total capacity of 317 MW. As per IFC requirements, an Environmental and Social due diligence was conducted by two AECOM professionals on the 17th March 2016 before initiating the investment process. The ESDD was carried out to assess compliance of SCL's Environmental and Social management system (ESMS) with respect to Bangladesh Environmental, Health, Safety and Social regulations, IFC Performance Standards, 2012, The IFC General Environmental, Health and Safety ("EHS") Guidelines, dated 2007, IFC Sector EHS Guidelines for Thermal Power Plants dated 2008 and Power Sector EHS Guidelines for Electric Power Transmission and Distribution dated 2007.

As per the requirements of IFC, due diligence on Environmental & Social aspects of the company is required before making any decision on investment/financing in any company.

Summit Corporation Limited (hereinafter referred to as 'Summit') and International Finance Cooperation (hereinafter referred to as 'IFC' or 'lenders') engaged AECOM India Private Limited (hereinafter referred to as 'AECOM') as the Independent Environmental and Social Consultant to undertake an environment and social risk screening through desk based evaluation of its under construction 55MW HFO based Power Plant at Modonganj, Bonodor, sub district of Narayanganj, Bangladesh. The Plant is being developed through one of Summit's subsidiary company, Summit Narayanganj Power Limited (hereafter referred to as 'SNPL') in the same premises as an already operating asset referred as 102 MW HFO based power plant SNPL Unit –I.

The desktop based due diligence has been undertaken against the requirements of the following framework:

- Bangladesh Environmental, Health, Safety and Social regulations related to all aspects that are covered in the IFC Performance Standards, 2012;
- IFC Performance Standards 1 to 8 dated Jan 2012;
- The IFC General Environmental, Health and Safety ("EHS") Guidelines, dated 2007;
- The IFC Sector EHS Guidelines for Thermal Power Plants dated 2008;
- Power Sector EHS Guidelines for Electric Power Transmission and Distribution dated 2007 (except Section 3.2 and 3.3)

In accordance to the screening criteria of the IFC, the project can be categorized Project as Category B on the basis of the following:

- As per the land records furnished, out of the total requirement of 2.22 acres land, 1.5 acres of land was already in possession of Summit Group (under its public limited enterprise Summit Shipping Corporation). Summit had previously acquired this land as a part of a larger land acquisition for Unit-I of SNPL power plant. Rest, approximately 0.735 acres of land was procured from private land owners in the year 2013-2014 on willing-buyer-willing seller basis. A few displacement cases have been reported in the ESIA, for which fair compensation was made to the impacted people. As reported, currently, there are no issues pertaining to land acquisition.

- As per the ESIA Report, there will not be any further loss of land and displacement of people due to project.
- The impacts on environmental components i.e. air quality, receiving water body and ecology, as assessed through ESIA study and other related information are considered to be site specific and reversible and can be addressed through mitigation measures.

Key observations and findings (PS wise) as part of the Environmental and Social Due Diligence conducted at SNPL-II Power Plant are presented below:

PS-1: Assessment and Management of Social & Environmental Risks and Impacts

Based on the desk-based review, the Project is compliant to most of the requirement of PS-1, however the following issues need to be addressed as per the recommendations provided:

- Results of ecological survey conducted during the ESIA have not been included in the report;
- SNPL does not have any EHSS related policies and procedures for construction phase except a procedure on Construction Health and Safety Plan at corporate level. SNPL has also not developed any review and monitoring mechanisms to assess the implementation of EHS procedures by the EPC contractor during construction phase.
- SNPL does not have any management programs developed for the construction phase at the plant level.
- SPL and SNPL have not developed any emergency preparedness and response plan for the construction phase covering the construction workers at site and the nearby community

PS-2: Labour and Working Conditions

Based on the desk-based review, the Project is partially compliant to most of the requirement of PS-2, however the following issues need to be addressed as per the recommendations provided:

- HR Policy and Procedures of EPC contractor (UDECO) was unavailable for review and therefore, it is difficult to comment on its compliance with the applicable Labour Laws of Bangladesh. Also, wage and attendance register of the workers engaged at the construction site have not been provided to review the overtime compensation paid to the workers;
- Grievance redressal procedure for EPC contractor (UDECO) was not made available for review. SNPL has not developed any procedure for recording any grievances arising from any of its stakeholders (such as labour, subcontractor, sub-contractor workers) during the construction phase.
- HR Procedure of SNPL is not extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors.
- The HR procedure does not cover the compliance with requirement of local labour laws (Labour Act, 2006 and Bangladesh Labour Rules 2015 on the clauses such as provident fund, sick leave, annual leave, grievance redressal.
- Work order issued by SNPL-II does not have any clause on not engaging child or bounded labour.

PS-3: Resource Efficiency and Pollution Prevention

- A chimney of 50 meter height has been installed by the project, however, other air pollution control equipment such as Gas scrubber, Shoot blower cyclone system, as suggested in the ESIA have not been installed. As informed by the site representative, the mitigation measures specific to noise quality, as

suggested by M/S NT Technology have been implemented. Based on the desk-based review, prima facie, it seems that the Project is partially compliant to the requirement of PS-3. It cannot be ascertained whether the mitigation measures and management plans, as defined in EMP have been implemented on project site during the construction phase.

PS-4: Community Health Safety and Security

Based on the desk-based review, the Project is compliant to requirement of PS-4; however the issues related to security personnel need to be addressed as per the recommendations provided:

- Security risks during construction and operational activities have not been assessed. Security personnel are not provided with training on behavioural guidelines for personnel handling.

PS-5: Land Acquisition and Involuntary Resettlement

As understood by ESIA Report, SNPL-II is being constructed over a total land of 2.22 acres, which lies within the premises of SNPL Unit-I. This land was acquired earlier as part of a larger land acquisition for Unit-I of SNPL power plant. Approximately 1.485 acres of land belongs to Summit group on the name of Summit Shipping Corporation and remaining 0.735 acres of land was procured from different land owners in the year 2013-2014

During the land procurement process three (3) cases of physical displacement occurred. It was reported by the site management that fair cementation has been made to the affected families. It was also reported that the land was procured on the willing buyer – willing seller basis.

With respect to observations noted during the document review, the project is compliant with PS-5 and no issues pertaining to land have been identified.

PS-6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

With respect to observations noted during the document review, the project is compliant with PS-6 and no issues pertaining to Biodiversity Conservation and Sustainable Management of Living Natural Resources have been identified.

PS-7: Indigenous People

Owing to the small scale of plant operations, no direct social risks to the community at large, including the indigenous community if any, were identified. Therefore, Provisions prescribed under PS7 for environmental and social risks for indigenous community are not applicable to this project.

PS-8: Cultural Heritage

Construction Phase of the Plant has been completed. There are no sites of cultural or religious importance at site or its immediate vicinity. Inference may be made from the construction/ excavation activities carried out for existing plants around the area where no such cases appeared. It may be concluded that there is no possibility of chance find. Therefore, Performance Standard 8 does not get triggered in this case.

2.0 55 MW HFO-based Power Plant- Modonganj, Bangladesh

2.0 Background

Summit Power Limited (hereinafter known as 'SPL' or 'Company') owns and operates nine (09) power plants at different locations across Bangladesh with a total capacity of 372 MW. Currently, SPL is in process of developing one HFO-fired power plants at Barisal with generation capacity of 110 MW. SPL has 49% shareholding in these two projects, while the rest 51% shareholding is of other listed companies of Summit.

The current project (hereafter referred as SNPL-II or the 'project), at Narayanganj is being developed as Unit-II of an existing HFO based power plant of capacity 102 MW ((hereinafter known as 'SNPL-I'), in the same premises.

2.1 Current Status

SNPL-II has recently been commissioned and is presently operating (Commercial Operations Date (COD)- 29th February 2016 as informed by Site representative), with only minor construction activities taking place at site. M/S UDECO Limited, a leading engineering & construction company in the country, had been engaged as the EPC Contractor for the project (Work order dated 23rd Dec 2014). SNPL has entered into a 'Maintenance Agreement' with M/S Wartsila Bangladesh Ltd for O&M of Unit – I in year 2011. As informed by the site representative, a similar contract has been signed with Wartsila for O&M of Unit II. (However, no contract copy of this contract for Unit-II has been furnished for review).

SNPL has established an Integrated Management System incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007 at the corporate level. SNPL has also developed its IMS policy and IMS procedures which are applicable to both the units. SNPL's IMS is commensurate with the IMS maintained by its parent company, SPL.

As noted, SNPL-II has signed a Power Purchase Agreements ("PPA") with Bangladesh Power Development Board (BPDB) along with the Implementation Agreements ("IA") for the facilities with Government of Bangladesh (GOB). SNPL-II has also signed fuel supply agreement with Summit Oil & Shipping Company Ltd.

SNPL Unit I and Unit II are located in the same premises and share common utilities such as Effluent Treatment Plant (ETP), jetty for unloading HFO, oil pipeline etc.

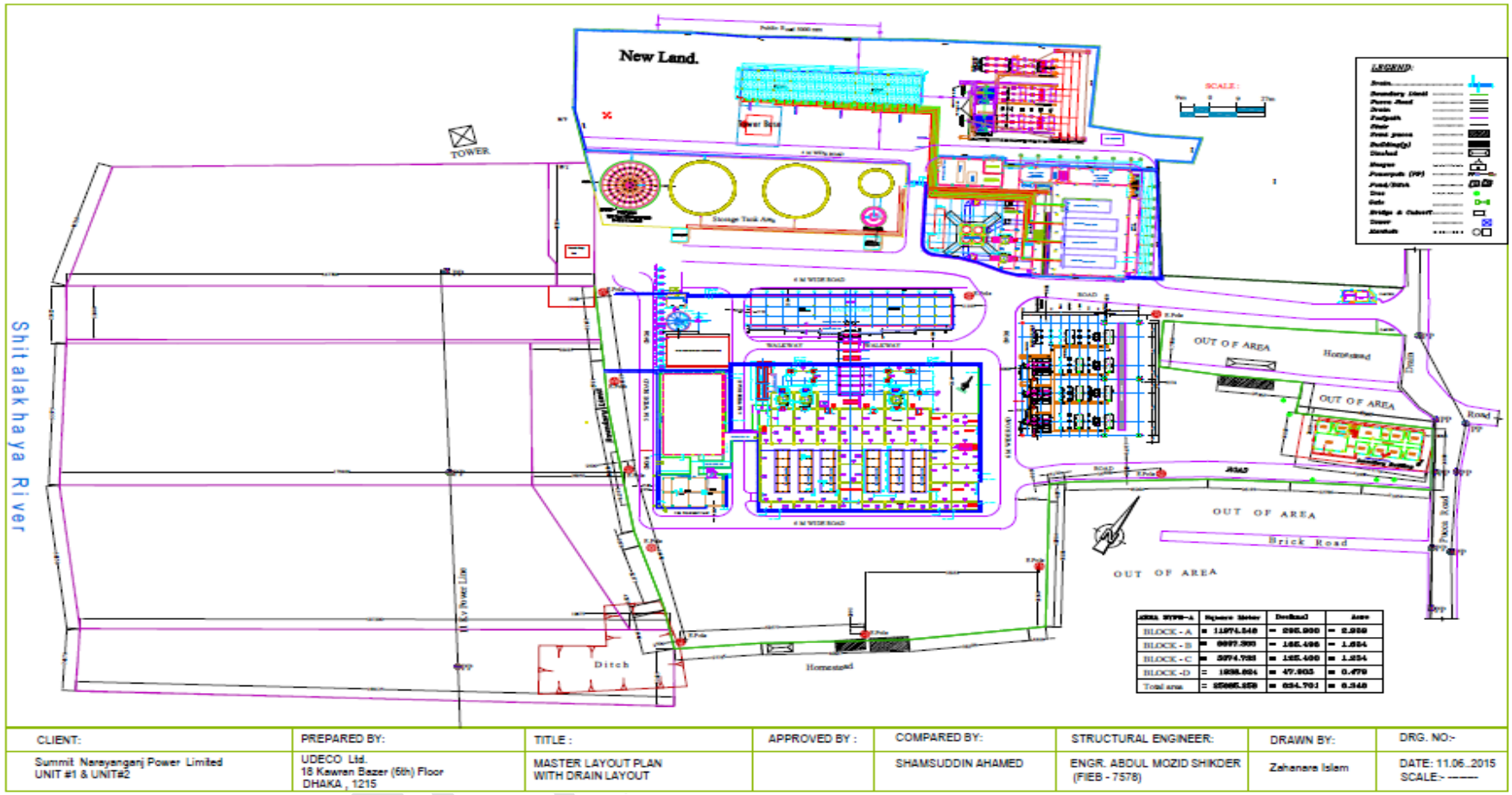


Figure 2-1: SNPL- I & II Layout

2.2 Project Location

The power plant is located at Modonganj, Upazilla Bondor, district Narayanganj in Bangladesh. The site is located in the north-eastern side of Dhaka-Chittagong Highway and at a distance of 11 kms. The plant site is approximately 1.5 kms from the Bondor Upazilla, Narayanganj, which is northeast to the proposed site. River Sitalakkha flows next to the plant site in the west direction.

Figure 2-2: Indicative Project Location

The geographical coordinates of the site surroundings are presented in Table 2-1 below.

Table 2-1: Site Setting

Side	Object	Coordinate points	Coordinate	Distance
North	Settlement and open space	NE corner	23°35'26.7"N 90°30'54.4"E	Adjacent to boundary
South	Bashundhara Cement	SW corner	23°35'23" N 90°30'55.2"E	Adjacent to boundary
East	Existing 102 MW Power Plant (SNPL-I)	SE corner	23º 35' 26.8" N 90º 30' 57.4" E	Adjacent to boundary
West	Sitalakkha River	NW corner	23°35'19.85" N 90°30'37.07" E	Adjacent to boundary

Based on ESIA Report and Google earth imagery, it was noted that the project site is surrounded by settlements at approximately 100 m distance in the northeast corner, a cement plant in the southwest corner, access road & market in the south east and Sitalakkha River Road in the west corner of the project site.

2.3 Agreements and Permits

The project had already entered in to the following agreements. Permissions obtained by the project have also been mentioned below:

1. Maintenance Agreement with Wartsila Bangladesh Limited and Summit Narayanganj Power Limited dated 17-7-2011
2. A Power Purchase Agreement (PPA) with Bangladesh Power Development Board (BPDB) - an off-taker of generated electricity,
3. Fire license
4. VAT registration certificate dated 10-12-13
5. Trade License dated 22-11-15
6. Boiler registration dated 05-01-2015 from Board of Investment, PM's Office
7. Separate contract with EPC contractors including:
    - UDECO Limited: Civil work
    - UDECO Limited and PEB Steel Alliance Limited: Mechanical work
    - AEG Engineering Limited, Power System Development Company Limited (PSDCL), PRAN-RFL and Energypac BD Limited for electrical work
8. Agreement with GDCON dated 01-01-13 for services related to IEE, ESIA, obtaining site clearance, Environment Clearance

2.4 Organisation Structure

As mentioned M/S UDECO Limited had been engaged as the EPC Contractor for the project. Details related to tentative number of labour engaged during the construction phase and personnel responsible for overall supervision of EHSS aspects during the construction phase has not been defined in any of the documents furnished during this ESDD. SNPL-II has not proposed any EHSS organisation structure for the construction phase.

As informed, the construction activities have been completed. Only minor spillover activities such as fittings, floor cementing, electrical panel installations at certain places are underway. As per records furnished, 3-4 UDECO staff are present at site for such supervision work. It was reported that SNPL is responsible for the operations of the plant. Currently 41 SNPL employees, including Plant manager and Deputy plant manager have been deployed at the plant. It was also reported that some of the SNPL employees share work responsibilities for both the Units (SNPL-I & SNPL-II).

As suggested in the ESIA report, the Plant Manager will directly report to the General Manager (corporate office). Assistant Executive EHS will be responsible for overall EHS related issues at the Plant site and shall report to Deputy Plant Manager. Executive Assistance Executive (Logistic), Assistant Executive (Security), Executive (Chemist) will also report to Deputy Plant Manager. All other staffs involve in plant's operation and maintenance reports to Assistant Manager and maintenance Engineer.

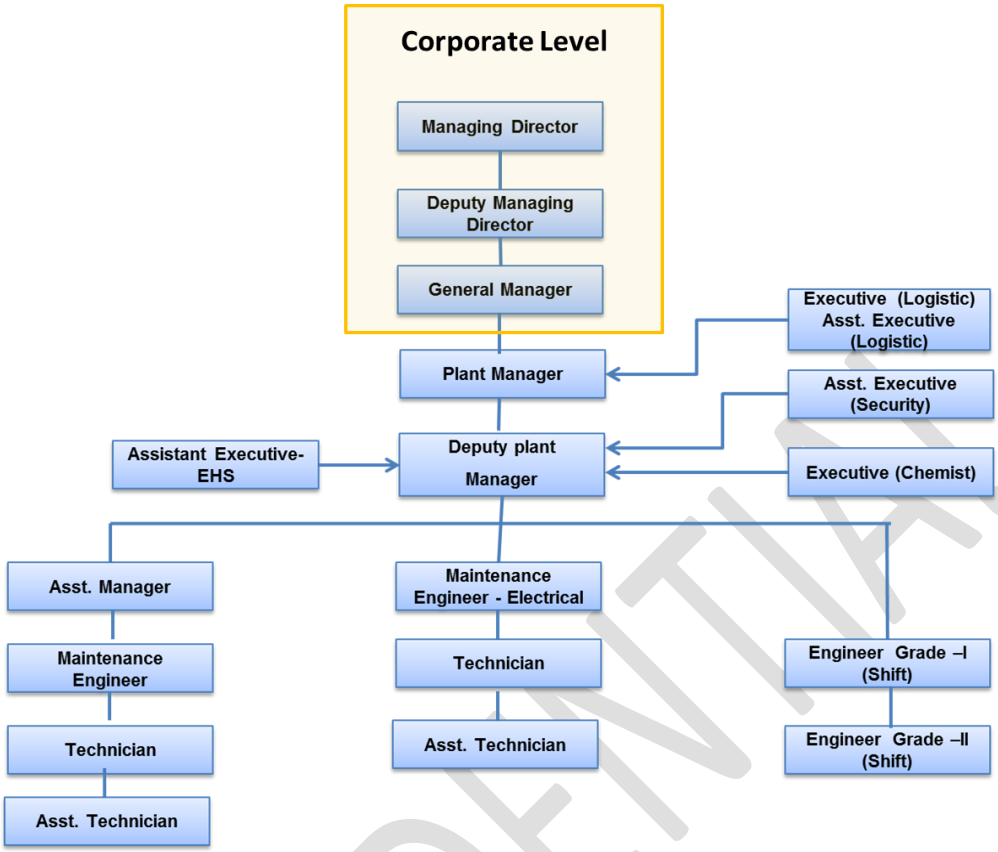


Figure 2-3: SNPL Organization Structure

2.5 Facility Details

2.5.1 Process and Engine Description

The power plant is designed to use heavy fuel oil as the main fuel. Diesel will be used as back up fuel. The HFO feeder unit feeds the HFO from the fuel tanks to the fuel circulation system. The feed pumps are electrically driven screw pumps equipped with suction strainers and built-in safety valves. The HFO and oxygen is injected into the combustion chamber generating smoke, which in turn runs the alternator. The process flow chart has been provided in Figure 2-2

The Project comprises four (4) numbers of Wartsila made of which 3 x 18V46 GD engines (076MW capacity each.) and 1 x 12V46 GD engine(11.38 MW capacity), each coupled with ABB made AMG 121 0M (or equivalent) of 17.076 MVA (21345 KVA) Generators. The engine is the four strokes, lean burn, pre chamber, spark ignited, port injected, trunk piston, turbocharged and intercooled design. The engine has a fully microprocessor based control system.

Each of the 18V46 GD engines produces 17.07 MW and 12V46 GD engine produces 11.38 MW. The optimized dual fuel injection system contributes to complete combustion of all fuels over the entire load stage. The engines are designed for continues on operation heavy fuel oil provided that the fuel is heated to the operating temperature

Radiator cooling system will be installed and therefore, there will be no need to extract cooling water from surface water. The stack height has been determined as 42 meter through US EPA approved ISC3P Model.

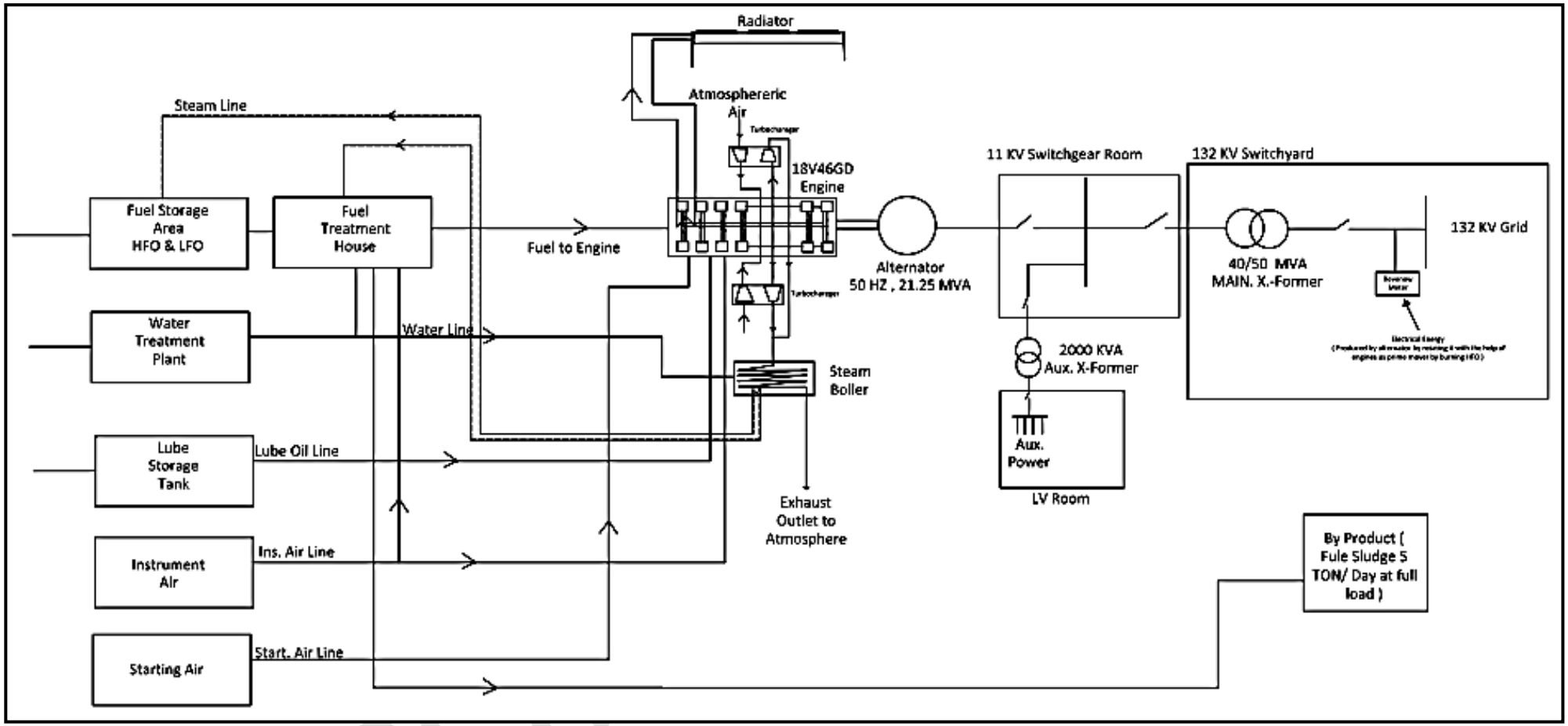


Figure 2-4: Process Flow Diagram

2.5.2 Status of Permits

The status of the various permits obtained from regulatory authorities is as provided in Table 2-2.

Table 2-2: Status of Permits

Sl. No	Name of Certificate or License	Issuing Authority	Present Status
1	Environment Site Clearance	Department of Environment	06-Aug-15
2	EIA Approval	Department of Environment	15-Feb-16
3	Environment Clearance Certificate	Department of Environment	14-March-16
4	Trade License	Narayanganj City Corporation	17-Nov-15
5	NOC	Narayanganj City Corporation	04-May-15
6	Fire License	Fire Service and Civil Defence	23-Aug-15
7	Explosive License	Department of Explosives	Applied on 21-Jan-16
8	Factory License	Office of Chief Factory Inspector, Bangladesh	Applied

2.6 Project Documents Reviewed

The list of project documents made available for the due diligence review is provided below.

Permits/ NOC/ Agreements

1. O&M contract with Wartsila Bangladesh Limited dated 17-7-2011
2. Certificate of incorporation, dated 18-11-13 from Office of the Registrar of Joint Stock, Companies and Firms
3. VAT registration certificate dated 10-12-13
4. List of EPC contractors
5. Trade License dated 22-11-15
6. Boiler registration dated 05-01-2015 from Board of Investment, PM's Office
7. Import Registration Certificate, Chief controller Import and Exports control office
8. Fire License
9. NOC from Narayanganj City Corporation

EHS procedures

10. SNPL's IMS Manual
11. SNPL's Procedure for Operation And Control Of Auxiliary Systems
12. SNPL's Procedure for Billing Process
13. SNPL's Procedure for Control Of Nonconforming Product
14. SNPL's Procedure for Document Control
15. SNPL's Procedure for Emergency Preparedness And Response
16. SNPL's Procedure for Identification of Environmental Aspects And Its Significant Impacts
17. SNPL's Procedure for Operation and Control Of Generation

18. SNPL's Procedure for Human Resource Development
19. SNPL's Procedure for Internal System Audit
20. SNPL's Procedure for Management Review
21. SNPL's Procedure for Non-conformance, Corrective and Preventive Action
22. SNPL's Procedure for Hazard Identification, Risk Assessment
23. SNPL's Procedure for Purchasing Process
24. SNPL's Plant Details

Miscellaneous

25. Plant structural design
26. Single line diagram
27. Master Layout Plan

Work order/ Purchase orders

28. Environmental consultants
29. Soil testing
30. Protection relays
31. Circuit breakers
32. Energy meters
33. Verhead crane
34. Tap changer
35. Deep tubewell
36. Cable ladder
37. Revenue meter
38. Valve and gauges
39. Ventilation fans
40. Black start unit
41. Painting works

2.7 Environment Health, Safety and Social Scenario

2.7.1 Environment

As described above, the Project has been developed through SNPL, which is a subsidiary of Summit Power Limited (SPL). SNPL has established an Integrated Management System incorporating the requirements of ISO 9001: 2008, ISO 14001: 2004 and OSHAS 18001: 2007. Under its IMS Policy, SNPL has committed itself to a series of policies including Quality Policy, Environmental management Policy and Occupational Health and Safety management policy. The policies for Environment Management and Occupational Health and Safety exhibit SNPL's commitment both at the corporate level and the plant level towards effective management of environment, and health and safety aspects. SNPL's IMS Policy and Procedures is being practiced at SNPL-I and reportedly will be applicable to SNPL-II as well.

SNPL has developed procedures for performance measurements and monitoring of both Environment and Health and safety aspects.The project has obtained Environment Clearance (EC) from Department of Environment (DoE), Government of Bangladesh (GoB) on 14-Mar-16. SNPL-II has conducted an Environmental and Social Impact Assessment (ESIA) study through a third party, M/s Green Development Consulting (GDCON) in January 2016. As mentioned in the ESIA Report, the assessment has been undertaken as per national environmental legal

requirements and the World Bank Operational Policies and procedures. Periodic mandatory environmental monitoring has been suggested in the ESIA report for SNPL-II during operation phase.

2.7.2 Health and Safety

SNPL has established an overarching Health and Safety Policy in order to effectively manage Occupational Health and Safety aspects associated with the plant operations whilst complying with statutory requirements. Additionally, SNPL has also outlined objectives to achieve zero occurrences of the accidents, lost time, and ill health due to occupation related activities in all plants.

Procedures for hazard identification, risk assessment, safety and health inspections, OHS legal and other requirements, OHS consultation and communication, performance measurement and monitoring, and evaluation of compliance against statutory requirements have been developed.

To monitor the health of the workers during the operation phase, tri-monthly medical checkups have been suggested in the ESIA, for workers who are deployed at critical locations of high noise and vibration, high temperature, fumes etc. proper treatment to be given to them in case some medical problem is diagnosed.

Prior to the ESIA study, SNPL-II engaged M/S NT Technology in April 2015 to conduct a noise survey at the plant location to assess cumulative impact of operations of SNPL-I and SNPL-II. Based on the noise survey, recommendations were made. Reportedly SNPL-II has considered the recommendations and has implemented the same to reduce the noise level. Details pertaining to Noise Survey can be referred under section 3.3.2. Social and Stakeholder.

During the ESIA, SNPL-II held public meetings in the project area where the all the stakeholders were invited to discuss their views and concerns, which were then incorporated into the ESIA report. Ad hoc discussions were also held on site with people and communities who could potentially be impacted by the project, so that views could be expressed in a less formal setting. SNPL has established HR policies and procedures as part of IMS to ensure fair and efficient management of workers. SNPL has incorporated procedures for emergency preparedness that takes into account potential risks associated with plant operations on the local community, and has also established procedures for grievance redressal for community to address their complaints and concern. According to the procedure grievance box will be placed outside the Plant gate to receive grievances and all the details will be recorded in the log book. SNPL-II also organizes meeting with the local community to discuss grievances (if any), welfare program and any other issues. Last such meeting was organized on 12-July-15 at SNPL conference room.

2.8 Project Categorization

The power plant falls under “red category” according to the Bangladesh Environment Conservation Rules 1997 (GoB, 1997). For projects under this category, it is mandatory to carry out Initial Environmental Examination (IEE) followed by Environmental Impact Assessment (EIA) including Environmental Management Plan for getting environmental clearance from the Department of Environment (DoE).

In accordance to the screening criteria of the IFC, the project can be categorized Project as Category B on the basis of the following:

- As per the land records furnished, out of the total requirement of 2.22 acres land, 1.5 acres of land was already in possession of Summit Group (under its public limited enterprise Summit Shipping Corporation).

Summit had previously acquired this land as a part of a larger land acquisition for Unit-I of SNPL power plant. Rest, approximately 0.735 acres of land was procured from private land owners in the year 2013-2014 on willing-buyer-willing seller basis. A few displacement cases have been reported in the ESIA, for which fair compensation was made to the impacted people. As reported, currently, there are no issues pertaining to land acquisition.

- As per the ESIA Report, there will not be any further loss of land and displacement of people due to project.
- The impacts on environmental components i.e. air quality, receiving water body and ecology, as assessed through ESIA study and other related information are considered to be site specific and reversible and can be addressed through mitigation measures.

Any adverse environmental and social impacts can be readily addressed through mitigation measures as outlined in the Environmental Management Plan (EMP) section of the ESIA conducted.

3.0 Document Review and Assessment of Compliance

This section details the compliance of the project with respect to requirements under IFC Sustainability Framework and applicable national and local regulations. The observations made during the due diligence and gaps identified are discussed herewith.

3.1 Performance Standard (PS) 1: Management of Social & Environmental Risks and Impacts

3.1.1 Environment and Social Management System

Requirement 1:

Environment and Social Management System: The client is responsible to establish and maintain an ESMS, appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; vi) stakeholder engagement; and (vii) monitoring and review.

Policy: The client will establish an overarching policy defining the environmental and social objectives and principles that guide the project to achieve sound environmental and social performance. The policy will indicate who, within the client's organization, will ensure conformance with the policy and be responsible for its execution (with reference to an appropriate responsible government agency or third party, as necessary). The client will communicate the policy to all levels of its organization.

Observation 1: The following observations have been recorded with respect to Policy requirements:

- SPL (which is the holding company of SNPL), as an extension of its corporate objectives, has established an Integrated Management System (IMS) incorporating the requirements of ISO 9001: 2008 - Quality Management System, ISO 14001: 2004 - Environmental Management System and OHSAS18001: 2007 - Occupational Health and Safety Management System at all its operation plants (eight in number) in Bangladesh. Under its IMS Policy, SPL has committed itself to a series of policies including Quality Policy, Environmental management Policy and Occupational Health and Safety management policy which **are applicable for corporate level and project level.**

  SNPL has also developed its own project level IMS policy and procedures which are consistent with SPL's IMS Procedures. SNPL's IMS is applicable to both the units I and II. SNPL's IMS manual contains the following elements:

  - Quality Policy, Environmental Policy and Occupational Health Protection & Safety (OHS) Policy;
  - Procedure for identification of environmental aspects and its significant impacts;
  - Procedure for hazard identification, risk assessment;
  - Organogram;
  - Emergency Preparedness and Response Plan;
  - Procedure for human resource development which includes disciplinary measures/grievance procedure; and
  - Procedure for monitoring and measurement environmental and Occupational Health & Safety performances.

- SNPL's Environment Management Policy and Occupational Health and Safety Policy exhibit company's commitment both at the corporate level and the plant level towards effective management of environment, and health and safety aspects. These include commitments to comply with legislation, applicable standards, and other requirements, minimize significant environmental and health & safety impacts associated with plant operations, provide adequate facilities as may be applicable for effective environment and H&S management, encourage the adoption of principles adopted in these policies by its suppliers / partners / service providers, and meet training requirements for diligent implementation of procedural requirements of EMS and OHSMS.
- However, SNPL has not formulated any policy to safeguard social aspects related to the project.
- As per the review of the work order issued to UDECO, all the EHS policy and procedure of SNPL are applicable to EPC contractor. However, SNPL has not developed review and monitoring procedures for ascertaining the implementation of such procedures by the EPC contractor.
- For construction phase, SPL has developed two EHSS related procedures - Construction Health and Safety Plan and procedure for purchasing process. Besides these no other procedures have been developed at the corporate or project level. No records have been furnished to ascertain whether EHS procedures were implemented by the EPC contractor (UDECO) during construction phase.

3.1.2 Identification of Risks and Impacts

Requirement 2:

The client will establish and maintain a process for identifying the environmental and social risks and impacts of the project. The type, scale, and location of the project guide the scope and level of effort devoted to the risks and impacts identification process. The process may comprise a full-scale environmental and social impact assessment, a limited or focused environmental and social assessment, or straightforward application of environmental siting, pollution standards, design criteria, or construction standards.

The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail.

The client will establish legal requirements for both social and environmental parameters, including those laws implementing host country obligations under international law, will also be taken into account.

Observation 2: The following observations have been recorded with respect to Identification of Risks and Impacts:

- SNPL-II has conducted an Environmental and Social Impact Assessment (ESIA) study through a third party, M/s Green Development Consulting (GDCON) in January 2016. As mentioned in the ESIA Report, the assessment has been undertaken as per national environmental legal requirements and the World Bank Operational Policies and procedures. The scope of ESIA includes chapters on description of the project, the process and activities under the program, baseline status related to environmental, biodiversity health and social parameters, impact identification and evaluation, environmental management plan, environmental monitoring plan, public consultation.
- The ESIA report has detailed out a chapter on environmental and social baseline, which presents project related information on geographical location, landuse, physiography, geology, soil, hydrology, water quality-surface water, tidal river water, soil characteristics, air quality, noise, meteorological analysis, natural hazards analysis, traffic survey, socio-economic environment. However, the details provided under the baseline information do not provide the following:

  - The results of the ecological survey have not been provided in the copy furnished for review. Conservation status of the species as per IUCN Red data list not available. (Methodology for conducting ecological survey has been provided)
  - Rationale for selection of sampling/ environment monitoring location and frequency
  - Interpretation of primary monitoring undertaken for baseline is inadequate (air quality, water quality).
  - Soil quality sampling and sediment analysis.

- The ESIA report has provided an environmental impact identification matrix for construction phase and operation phase. Evaluation of potential risks along with suggested mitigation measures has also been provided in the report, detailing out impact on land, impact due to construction activities, material transport, storage and handling, cultural conflict, vehicular pollution, traffic, noise and vibration, surface water, sanitation, Occupational Health and Safety (OHS), Labor Condition. The EIA report does not cover the following aspects with respect to impacts and risks:

  - There are no impact identification criteria to decide on what constitutes an insignificant, minor or major impact.
  - Impacts are generic and do not mention issues pertaining to the site.
  - Location specific factors, vulnerable points of soil erosion, traffic congestion points are not provided.
  - Storm water issues during construction not addressed
  - Issue pertaining to increased construction related traffic and safety not addressed.
  - Labour Impacts and migrant labour impacts are not captured satisfactorily.
  - Community issues are not addressed.

- Environmental impacts during operation phase have been discussed in the report, which include impact on air quality, water quality, soil, OHS, Socio-economic Environment, noise, solid waste generation, sanitary waste water, land, fire/ explosion, traffic, biodiversity, vibration.

- ESIA has also included a chapter on Disaster / Risk Management and Emergency Response. Onsite emergency plan along with the roles and responsibility of designated personnel have been defined. Disaster have been categorised into High, Mid and Low and actions required during such emergencies have been suggested. It has been recommended that during operation phase, personnel associated with the HFO and LFO handling and storage will be suitably trained to exercise the specified procedures/measures/action plan, in case of a major accidental events of fuel oil spillage and leakage in and around the plants site . It has been planned to install an HFO-leak detection network and alarm system at the vulnerable position of the plant. However, no such training records for SNPL-II have been furnished.

- An air dispersion modelling has also been undertaken as a part of ESIA, to predict ground level concentrations (GLCs) of different pollutants (NOx, PM1O and SO2) for the required averaging period across modelled domain (7.5km $\times$ 7.5 km around the stack). Details have been provided in Section 3.3.

- The ESIA provides a section on applicable legislations and other applicable standards / guidelines. However, a list of applicable permits/ NOC to be secured prior to and during operation has not been developed.

- As a part of their IMS manual, SNPL has developed a procedure on identification of risks and impacts, “Hazard Identification and Risk Assessment”. This procedure establishes a standard method for developing, using and maintaining the identified hazards in two forms - Job Risk Assessment (JRA) Form and Facility Risk Assessment (FRA) Form. The procedure specifies various aspects which are to be taken into account while identifying risks. These include:

- routine and non-routine activities,
- activities of all persons having access to the workplace (including contractors and visitors),
- human behaviour, capabilities and other human factors;
- hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace,
- hazards created in the vicinity of the workplace, infrastructure, equipment and materials at the workplace, whether provided by the organization or others, changes or proposed changes in the organization, its activities, or materials, modifications to the OH&S management system, including temporary changes, and their impacts on operations, processes, and activities,
- Any applicable legal obligations relating to risk assessment and implementation of necessary controls and design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

- However, JRA and FRA have not been developed for SNPL-II. No related documents have been furnished.

- A separate procedure for identification of environmental aspects and its significant impacts has also been developed setting out how the organization shall determine the relative significance of environmental aspects, set objectives and targets for improvement, and set the resulting action.

3.1.3 Management Programs

Requirement -3:

The client will establish management programs, that, in sum, will describe mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the project.

Depending on the nature and scale of the project, these programs may consist of some documented combination of operational procedures, practices, plans, and related supporting documents (including legal agreements) that are managed in a systematic way.

The level of detail and complexity of this collective management program and the priority of the identified measures and actions will be commensurate with the project's risks and impacts, and will take account of the outcome of the engagement process with Affected Communities as appropriate.

The management programs will establish environmental and social Action Plans, which will define desired outcomes and actions to address the issues raised in the risks and impacts identification process, as measurable events to the extent possible, with elements such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods, and with estimates of the resources and responsibilities for implementation.

Observation 3:

- SPL has developed Construction Health and Safety Management Plan (CHSMP), which demonstrates management's commitment towards protecting workforce against health and safety risk at the construction site. Details have been discussion section 3.2.7 Occupational Health and Safety. SNPL does not have any management programs developed for the construction phase at the plant level.

- As per the IMS Manual, SNPL has adopted the ISO 14001:2004 (Environmental Management System-EMS) standard as the foundation of their "Environmental Care System". The plan for developing and maintaining EMS by SNPL is includes:

    - Identifying the legal and other requirements followed by identifying and evaluating environmental aspects, related operations and activities;
    - Defining views of interested parties
    - Preparing environmental policy;
    - Defining key roles and responsibilities of associated personnel;
    - Establishing objectives and targets;
    - Environmental management Programs (EMPs);
    - Identifying operational controls;
    - Identifying monitoring and measurement needs and when required implement the needs in the EMPs;
    - Establishing procedures for corrective/preventive action, document control & records management;
    - Establishing operational controls & monitoring processes;
    - Defining job-specific roles and responsibilities;
    - Conducting initial employee awareness;
    - Establishing other-system level procedures;
    - Preparing Environment Management System (EMS) documentation (manual)
    - Conducting specific employee training;
    - Conducting internal EMS audits; and
    - Conducting management reviews.
- SNPL's IMS manual also establishes requirements for documentation and control of records, supply management, and continual improvement process. A procedure has been developed for Document Control with the purpose to identify the current revision status of documents, ensure that relevant version of applicable documents are used, documents remain legible, readily identifiable and available at point of use and prevent the unintended use of obsolete documents and to apply suitable identification to them if they are retained for any purpose.
- SNPL-II's Environment and Social Impact Assessment Report (ESIA) has provided a section on Environment Management Plan (EMP) that mentions remedial measures, time- frame and responsibility for implementation during construction phase and operation phase, for the following aspects – water, ground water, surface water, drinking water, wastewater, vehicular pollution, air quality, emission quality, water quality, noise, solid waste, hazardous waste, occupational health and safety, fire safety, traffic and socio economic, labour condition, influx of labour, fire explosion. It was informed by the site management that the EMP has been shared with the EPC contractor and all the recommendation made in EMP has been implemented during the construction phase.
- A Safety Hazard Prevention-Control Mitigation Measures has also been developed as a part of ESIA report, where mitigation measures pertaining to the maintenance of equipment, traffic hazard, falling hazards, excessive illumination, PPEs, testing & commissioning have been provided. It is understood that SNPL-II will implement this during operation phase.
- SNPL has not established management procedure for the pre-construction screening and construction to manage EHS&S related issues.

3.1.4 Organizational Capacity and Competency

Requirement 4:

The client, in collaboration with appropriate and relevant third parties, will establish, maintain, and strengthen as necessary an organizational structure that defines roles, responsibilities, and authority to implement the ESMS.

Personnel within the client's organization with direct responsibility for the project's environmental and social performance will have the knowledge, skills, and experience necessary to perform their work.

Training to employees and contractors with direct responsibilities for activities related to the project's social and environmental performance.

Observation 4: The following observations have been recorded with respect to Organizational Capacity and Competency:

Organizational Capacity:

- As informed by the site representative, during the construction phase, 60 to 70 workers were engaged. Deputy Management Representative (DRM) from SNPL was overall responsible for handling EHS related issues during the construction. EHS supervisors (of the EPC contractor) at the project site reported to him on daily basis. Responsibility matrix for the construction phase has not been outlined in the organogram of SNPL.
- During operations, the Plant is headed by the Plant Manager, who is supported by Deputy Plant Manager, Assistant Manager (mechanical maintenance), Maintenance Engineers (electrical). The Plant Manager directly report to SPL's corporate Deputy Managing Director, who further report to the Company Managing Director. (Refer Figure 2-1 placed in section 2.5). .
- SNPL has formulated a joint Environment, Health and Safety Committee (JEHSC), under its 'Work Instructions on OH&S Programme', to deal with hazard identification, risk assessments and determination of controls, incident investigation, development and review of policies and objectives, consultation where there are any changes that affect the system and representation on Environment & OH&S matters. It has been informed that the same JEHSC shall overlook EHS aspects in SNPL-II.

Trainings:

- The ESIA has suggested conducting basic safety training for all the employees, contractors, sub-contractors and visitors suited to their nature of job. It has been suggested that the trainings should cover the following topics- Company safety policy and procedures, Specific job hazards, Safety precautions, Job responsibilities, Regulatory requirements, Company enforcement policy, and Worker right-to-know and authority to refuse unsafe work.
- SPL, under its IMS, has developed an Annual Training Plan for year 2016 to be implemented at all its project sites covering topics on operational aspects and environment and safety. However, similar training schedule/ plan and records for SNPL units have not been developed.
- A separate Drill Plan for Emergency Preparedness and Response Plan for year 2016 has been reviewed which provides date wise drill schedule for SPL and SNPL.

- Since the plant has started its commercial operations recently (29th February, 2016), it was informed that the project is in process of implementing trainings requirements as given in the ESIA report. As stated in the IMS Manual, to ensure competence of personnel, SNPL has maintained definitions of job requirements through Job Descriptions and ensures that individuals receive necessary training to perform assigned tasks competently. Evaluation mechanism to test the effectiveness of the trainings has also been established by SNPL. IMS Manual mandates that records of qualification and competence (education, experience and training) are to be maintained. SNPL's Procedure for Human Resource Development also specifies training need assessment to be carried out periodically. The GM HR is to prepare an Annual Training Plan to list and plan all the training courses to be conducted in a particular year. The training courses will be identified by the line managers and also by GM (HR). The Annual Training Plan lists the courses to be organized along with course objectives, target group, instructors, methodologies, course content etc. SNPL-II will ensure that these are implemented during the project operation phase. SNPL has also formulated Annual training Plan for the year 2016, which includes training on various technical and EHS aspects.

3.1.5 Emergency Preparedness and Response

Requirement 5:

Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment.

Where applicable, the client will also assist and collaborate with the potentially Affected Communities and the local government agencies in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to ensure effective response. The client will document its emergency preparedness and response activities, resources, and responsibilities, and will provide appropriate information to potentially Affected Community and relevant government agencies.

Observation- 5: The following observations have been recorded with respect to Emergency Preparedness and Response (EPR):

- For the construction phase, neither SPL at the corporate level nor SNPL at facility level, have developed any emergency preparedness and response plan covering the construction workers at site and the nearby community.
- SPL, as a part of its IMS manual has prepared an Emergency Management Procedure at corporate level to control potential emergency situations that could adversely impact the environmental and OH&S aspects in and around the project area. The emergency situations identified in procedure include the following:
    - incidents leading to serious injuries or ill health,
    - fires and explosions,
    - release of hazardous materials/gases,
    - natural disasters, bad weather,
    - loss of utility supply (e.g. loss of electric power),
    - pandemics/epidemics/outbreaks of communicable disease,
    - civil disturbance, terrorism, sabotage, workplace violence,
    - failure of critical equipment,
    - traffic accidents

- Based on the SPL's IMS Manual SNPL has also developed an Emergency Management Procedure covering all the aspects mentioned above.
- The ERP procedure states that while developing emergency response procedure(s) existence and/or capability of the following will be considered (while formulating a SNPL-II specific procedure):

    - inventory and location of hazardous materials storage,
    - numbers and locations of people,
    - critical systems that can impact on OH&S,
    - the provision of emergency training,
    - detection and emergency control measures,
    - medical equipment, first aid kits, etc.,
    - control systems, and any supporting secondary or parallel/multiple control systems,
    - monitoring systems for hazardous materials,
    - fire detection and suppression systems
- For the project level, SNPL has formulated a Drill Plan for Emergency Preparedness and Response Plan for year 2016 covering EHS aspects such as fire drill, Electric shock drill, gas leak drill etc. SNPL has recently conducted emergency rescue training dated 29-April-16.
- SNPL's EPR procedure mandates that there will be periodic training for the designated personnel initiate the emergency response and evacuation procedures. Also, periodic testing of emergency procedures shall be done in order to check the response time and effectiveness of the plan. However,
- The project's ESIA has recommended a Fire and Safety Preparedness Plan for the project, detailing action points for the Plant Manager, Fire Marshal and employees, general principle of firefighting, planning in case of a fire emergency situation.
- Training requirements associated with emergency response for fire drill, gas leak drill, electric shock, severe weather, and earthquake response have also been established by SNPL.
- Although, the project, as a part of the ESIA, has identified risks pertaining to emergency situations such as fire and explosion risks, it has not quantified the risks of identified emergencies such as explosion and fire, identifying potential areas of concern along with significance of impact in and around the plant vicinity, as per Chapter VIII of Factory Rules, 1979, and has not been addressed as part of Emergency Preparedness and Response plan.

3.1.6 Monitoring and Review

Requirement 6:

The client will establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements. Where appropriate, clients will consider involving representatives from Affected Communities to participate in monitoring activities

Observation 6: The following observations have been recorded with respect to Monitoring and Review:

- For construction phase, SNPL has not developed any monitoring and review mechanisms to review EHSS aspects.

- SPL, at the corporate level, conducts external audits through Bureau Veritas once every three years to verify conformance and renew certification of its Integrated Management System. The internal audits are to be conducted on a quarterly basis wherein Plant incharge or Deputy Plant incharge from other SPL sites, shall initiate site visits to conduct compliance check for implementation of IMS. SPL at the corporate level has established "procedures for internal system audit". The site maintains findings and records of quarterly audit reports.
- SNPL has developed procedures for performance measurements and monitoring of both Environment and Health and safety aspects. As confirmed by the site representative, SNPL-II will adopt these procedures during the course of operations.
- SNPL's Senior Management periodically reviews the suitability and effectiveness of the IMS through the Management Review Committee (MRC) and makes recommendations for improvement where appropriate. The frequency and conduct of these reviews have been established under Procedures for Management Review. SNPL mandates that a nine member site level Joint Environment and Health & Safety Committee is to be constituted which shall meet on a monthly basis to assess plant level Environment and H&S issues.

3.1.7 Stakeholder Engagement

Requirement 7:

Stakeholder Analysis and Engagement Planning: Clients should identify the range of stakeholders that may be interested in their actions and consider how external communications might facilitate a dialog with all stakeholders. The client will develop and implement a Stakeholder Engagement Plan that is scaled to the project risks and impacts and development stage, and be tailored to the characteristics and interests of the Affected Communities.

Disclosure of Information: The client will provide Affected Communities with access to relevant information on: (i) the purpose, nature, and scale of the project; (ii) the duration of project activities; (iii) any risks to and potential impacts on such communities and relevant mitigation measures; (iv) the envisaged stakeholder engagement process; and (v) the grievance mechanism.

Consultation: When Affected Communities are subject to identified risks and adverse impacts from a project, the client will undertake a process of consultation in a manner that provides the Affected Communities with opportunities to express their views on project risks, impacts and mitigation measures, and allows the client to consider and respond to them.

The client will tailor its consultation process to the language preferences of the Affected Communities, their decision-making process, and the needs of disadvantaged or vulnerable groups. The consultation should also focus inclusive engagement and be documented.

Observation 7: The following observations have been recorded with respect to Stakeholder engagement:

- SPL has developed and implemented systems to facilitate effective customer communications in regards to product information, inquiries, contracts, complaint handling, and customer feedback (customers being Bangladesh Power Development Board, and Rural Electrification Board).
- For SNPL-II, during the ESIA, public meetings were held in the project area where the all the stakeholders were invited to discuss their views and concerns, which were then incorporated into the ESIA report. Ad hoc discussions were also held on site with people and communities who could potentially be impacted by the

project, so that views could be expressed in a less formal setting. Clear information was disclosed to the stakeholders including mitigation measures planned for reducing the noise level during plant operation, employment generation, electricity supply in the villages, increase of land prices in the area. Photographic evidence of such meetings has been furnished.

- SNPL-II, during the stakeholder meetings have disclosed to the stakeholders that the project shall support the following village level initiatives:

    - Donation of about 25,000 Bangaldeshi Taka each for 8 Local Mosques
    - Warm Clothes distribution in winters
    - Financial support up to a certain extent of people to repair their house
    - Financial support for Graveyard Land Filling
    - Awareness programs

As informed by the site representative, these initiatives shall be taken up by SNPL shortly within 4-5 months.

- SNPL has incorporated procedures for emergency preparedness that takes into account potential risks associated with plant operations on the local community.
- SNPL has not formulated any Community engagement plan; however, SNPL organizes meetings with the local community to discuss grievances (if any), welfare program and any other issues. Last such meeting was organized on 12-July-15 at SNPL conference room. As informed, similar meetings shall be conducted for SNPL-II.

3.1.8 External Communications and Grievance Mechanism

Requirement 8:

External Communications: Clients will implement and maintain a procedure for external communications. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability.

Grievance mechanism for Affected Communities: Where there are Affected Communities, the client will establish a grievance mechanism to receive and facilitate resolution of Affected Communities' concerns and grievances about the client's environmental and social performance. The client will inform the Affected Communities about the mechanism in the course of the stakeholder engagement process.

Observation 8: The following observations have been recorded with respect to External Communication and Grievance Mechanism:

- As part of IMS, SPL has developed a procedure on Environmental Communications, which ensures that all communications received by the organization from external parties (including grievances nearby community) relating to its environmental performance are properly handled. The procedure also addresses the requirements for communication within the organization relating to the environment. The procedure addresses communication of the following information:

    - SPL's Environmental Care Policy

- Elements of the Environmental Care System
- Significant Environmental Aspects as determined for the Site and the Company
- Environmental Objectives for the Site and the Company
- Procedures necessary to improve the impact of significant Environmental Aspects

- SNPL has also developed procedure for receiving and addressing grievance from community. As per the procedure, for receiving such grievances a box will be placed just outside the gate with marking External communication box. As informed, SNPL has not received any grievance from the community.
- "External Complaint Log" has also been developed for maintaining details of external complaints. Grievances recognized as "non-conformances" with respect to environmental procedures set out by the IMS manual, are to be registered as such under "Non-conformance, corrective and preventive action" register and "Environmental Non-conformance/ Incident Report". Time specific responsibilities for managing such external communications have also been established under "Procedures for Environmental Communications". No past record document has been furnished for SNPL-II, wherein a grievance has been reported by any stakeholder during the preconstruction and construction phase.

3.1.9 Ongoing Reporting to Affected Communities

Requirement 9:

The client will provide periodic reports to the Affected Communities that describe progress with implementation of the project Action Plans on issues that involve ongoing risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities.

Observation 9:

- As discussed in section 3.1.7 Stakeholder engagement, public meetings were held in the project area where the all the stakeholders were invited to discuss their views and concerns, which were then incorporated into the ESIA report. Ad hoc discussions were also held on site with people and communities who could potentially be impacted by the project, so that views could be expressed in a less formal setting. Clear information was disclosed to the stakeholders regarding the project components and mitigation measures planned.
- SNPL has developed "Procedure for Environmental Communication" which describes process of information disclosure to the local community. As per the laid out procedure, SNPL_II will form a committee comprises of representatives from various groups such as nearby community, Government bodies, Local NGO, Workers organization, SNPL management. The committee will meets in every four months to discuss EHS related issues due to plants operations. The discussion & decision of the meeting will be communicated to the community and complainer through community representatives.

3.1.10 Status of Compliance to PS-1

- Based on the desk-based review, the Project is compliant to most of the requirement of PS-1, however the following issues need to be addressed as per the recommendations provided:

    - Results of ecological survey conducted during the ESIA have not been included in the report;

- SNPL does not have any EHSS related policies and procedures for construction phase except a procedure on Construction Health and Safety Plan at corporate level
- SNPL does not have any management programs developed for the construction phase at the plant level.
- It was noted that neither SPL at the corporate level nor SNPL at facility level have developed any emergency preparedness and response plan for the construction phase covering the construction workers at site and the nearby community
- SNPL-II has not quantified fire / explosion risk for the project.

3.1.11 Recommendations

- Details on flora and fauna in the project area should be recorded and maintained for any future references.
- Specific for construction phase, SNPL should develop EHSS procedures and management programs for expansion / future projects. SNPL should also develop review and monitoring procedures for ascertaining the implementation of such procedures by the EPC contractor.
- SNPL to develop EHS&S Management procedures for pre-construction screening and construction stages
- SNPL should develop emergency preparedness and response plan for the construction phase covering the construction workers at site and the nearby community
- SNPL-II should develop an EHSS impact assessment matrix for the project, categorizing them into high, medium and low risks, along with their mitigation measures. SNPL to also quantify the risks associated with explosion and fire, identifying potential areas of concern along with significance of impact in and around the plant vicinity.

3.1.12 Material Threshold

- Considering the requirements of PS-1, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3

3.2 Performance Standard (PS) 2: Labour and Working Conditions

3.2.1 Human Resource Management Policy

Requirement 10:

The client will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of the Performance Standard and national law.

The client will provide workers with documented information that is clear and understandable, regarding their rights under national labour and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

Observation 2: The following observations have been noted with respect to HR policies and procedures:

- The project is under operation phase, except some minor civil work pending such as fittings, painting etc. As informed, about 3-4 staff of EPC Contractor (UDECO) are still deployed at site for supervision work. It was reported that SNPL is responsible for the operations. Currently 41 SNPL employees including plant

manager and deputy plant manager are stationed at the plant. It was also reported that some of the employees are also responsible for both the Units (SNPL-I & SNPL-II)

- EPC contractor's HR Policy and Procedure (which was followed during construction phase) for the construction workers was unavailable for review.
- SNPL has developed an HR Procedure and the following observations have been noted with respect to HR policies and procedures:

    - The HR division of SNPL deals with planning and development of human resources and their discipline, other services such as security and safety, welfare, transport, accommodation, and industrial relations. SNPL has established HR policies and procedures to ensure fair and efficient management of workers.
    - These procedures have been integrated as part of IMS and cover Human Resource Planning and Management measures for advertisement, recruitment, induction, training, performance evaluation and incentives, HR management, non-discrimination and equal opportunity, non- engagement of child labour, working condition and terms of employment, grievance management and retrenchment of permanent, temporary and contractual staff engaged by SPL.
    - It is to be noted that HR Procedure of SNPL is applicable to its permanent employees and contracted workers but is not extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors.

3.2.2 Working conditions and terms of employment

Requirement 10:

Where the client is a party to a collective bargaining agreement with a workers' organization, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment, the client will provide reasonable working conditions and terms of employment.

The client will identify migrant workers and ensure that they are engaged on substantially equivalent terms and conditions to non-migrant workers carrying out similar work.

Where accommodation services are provided to workers covered by the scope of this Performance Standard, the client will put in place and implement policies on the quality and management of the accommodation and provision of basic services.

Observation 10: The following observations have been noted with respect to working conditions and terms of employment:

Construction Phase

- HR Policy and Procedures of EPC contractor (UDECO) was unavailable for review and therefore, it is difficult to comment on its compliance with the applicable Labour Laws of Bangladesh. Also, wage and attendance register of the workers engaged at the construction site have not been provided for assessing the overtime compensation paid to the workers.

Operational Phase

- *Wages:* As per the HR Procedure of SNPL salary structure for all permanent staff members comprise of basic pay, house rent, conveyance and medical allowances. All Staff Members of SNPL-II are entitled for

receiving 2 (two) festival bonuses in a year. Festival Bonus is equivalent to the respective employee's Monthly Basic Salary. Employees are also entitled performance based bonus. Annual Leave can be accumulated by an employee if employee does not avail the leave. Permanent staff member who completes 5 (five) years of service are eligible for Gratuity on final separation, retirement from the services of SNPL or death of an employee. Employees are eligible to receive Company Contribution in the provident fund after completion of 3 years of continues services with the company. Requirements stated in the applicable laws have been discussed in the Section 3.2.10 Status of Compliance.

- *Overtime arrangements and overtime compensation:* As per the HR Procedure, SNPL has formulated the policy for employee over time which is covered in 'Annexure C' of the IMS HR Procedure. SNPL's Overtime Policy, wage and attendance register of the workers engaged at the construction site have not been made available for review as on date of issue of this report and therefore, compliance against requirements mandated under Bangladesh Labour Rule, 2015 could not be assessed."
- *Leave for illness:* As per HR Procedure employees are entitled for 10 (ten) days of sick leave in a year with full pay on the recommendation of a doctor. Sick leave in excess of ten days will be adjusted with Earned Leave and / or will be treated as leave without pay or otherwise decided by the Company.
- *Leaves, maternity, vacation or holiday:* As per HR Procedure, SNPL employees who have completed a period of 12 (twelve) months' continuous service (inclusive of the stipulated probation period) is entitled for 15 (fifteen) calendar days (1 day for every 20 working days) with salary. Casual Leave is limited to total 10 (ten) days in a calendar year. Staff Members located in corporate office of SNPL is entitled festival holidays in a year as announced and subsequently adopted by Bangladesh Chamber of Commerce & Industries.

  The SNPL employees stationed at plant are entitled for festival holidays as per list drawn up from time to time by the Management. All married female employees are entitled for one hundred eighty (180) calendar days Maternity Leave per child. Maternity Leave is granted up to two (2) children.
- *Health Care Policy*: As per the HR procedure, SNPL is committed in providing medical assistance as per policies /procedures of the Company. Such policies are applicable to the Management Staff as determined by the Company. However, Company will establish First Aid center to its all Plant with adequate medical support including Doctors, Nurse and required lifesaving drug for handling all type of accident injury. Company will also provide Ambulance service for transporting emergency patient to nearest Hospital/Clinic.

3.2.3 Grievance Mechanism

Requirement 11:

The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.

Observation 11: The following observations have been noted with respect to grievance mechanism:

- For the construction phase, SNPL and UDECO has not developed any grievance redressal procedure for the contract labour. It cannot be ascertained from the desktop review, whether any grievances were reported during the construction phase.
- For its employees, SNPL has established three tier grievance mechanism in their HR Manual. As per these procedures, complaints / grievances of employees are required to be addressed to the management in

writing, to be officially considered for addressal. Workers / employees are required to follow hierarchy structure for submission of their grievances. Any individual employee, who has a grievance in respect of anything, connected with his employment in the Company follow the given steps:

- Employees need to submit grievances in writing to their immediate supervisor. If the employee is not satisfied with the response from their supervisor then the he can write to the next level supervisor or directly write to GM HR giving copy to the Departmental Head.
- The concerned employee must bring his grievance to the employer's notice within 30 days of the occurrence of the cause of such grievance, and the employer must within 30 days of the receipt of such grievance, enquire into the matter and give concerned employee an opportunity of being heard and communicate the decision in writing to the said employees.
- As per the policy, anonymous grievances or allegations will not be considered under any circumstances.

- SNPL has also developed procedure for receiving and addressing grievance from community. As per the procedure, for receiving such grievances a box will be placed just outside the gate with marking External communication box.

3.2.4 Workers' Organisation

Requirement 12:

In countries where national law recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment.

In either case described above, and where national law is silent, the client will not discourage workers from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining. The client will engage with such workers' representatives and workers' organizations, and provide them with information needed for meaningful negotiation in a timely manner.

Observation 12: The following observations have been noted with respect to workers' organizations:

- Although the HR department has not established policies and procedures for recognition and management of workers' unions, the site management has, neither formally nor informally, restricted formation of such organizations.

3.2.5 Non-discrimination and equal opportunity

Requirement 13:

The client will base the employment relationship on the principle of equal opportunity and fair treatment, and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job

assignment, promotion, termination of employment or retirement, and disciplinary practices. The principles of non-discrimination apply to migrant workers.

Observation 13:

- Procedure pertaining to non-discrimination and equal opportunity for EPC contractor (UDECO) was not made available for review and hence AECOM cannot comment on its compliance with Bangladesh Labour Law Act, 2006 and IFC PS-2.
- HR policy clearly outlines management's commitment on behalf of the Group and the Company towards non-discrimination. SNPL has also established anti-harassment policy under the same document which outlines the disciplinary actions to be taken in case such incidents are brought to the notice of the
- management.

3.2.6 Retrenchment

Requirement 14:

Prior to implementing any collective dismissals, the client will carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers.

Observation 14: The following observations have been noted with respect to non-discrimination and equal opportunity:

- HR policy of SNPL outlines procedures relating termination under "Separation from service" for resignation, retirement, discharge for medical reasons, and termination, whilst outlining payment tenure for closure of exit formalities with payment obligations from either parties (both SNPL and the employee as the case may be). Requirements for exit interview, notice period, and final settlement of accounts have also been outlined as part of exit procedures.

3.2.7 Child and Forced Labour

Requirement 15: As per PS2, SNPL shall not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. SNPL also shall not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty.

Observation 15: The following observations have been noted with respect to employment of Child and Forced labour at plant:

- Policy restricting engagement of child labour or forced labour by EPC contractor was unavailable for review. However, in discussion with SNPL site management, it was reported that no child or forced labour was engaged during construction phase.
- SNPL has established Appointment Procedures that outlines screening process for permanent, temporary, contractual and apprenticeship staff. All permanent staff and casual staff engaged onsite at the plant are required to go through formal recruitment procedures before being engaged for work. It was reported that reference / overall check is conducted to verify personal / professional information before issuing the appointment / engagement letter and therefore, avoiding child and forced labour issues. Additionally, HR

Procedure clearly states that No person below 18 years of age can be hired as an employee for SNPL on regular, contract or temporary status.

3.2.8 Occupational Health and Safety

Requirement 16:

The client will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women.

Observation 16: The following observations have been noted with respect to health and safety aspects:

- SNPL has not established procedure to manage health and safety during construction phase. However SPL (having 49% stake in SNPL-II) has developed Construction Health and Safety Management Plan (CHSMP).Reportedly CHSMP had been followed during construction phase of SNPL-II. Documents supporting the implementation of CHSMP during construction phase of SNPL-II were unavailable for review.
- SPL has developed Construction Health and Safety Management Plan (CHSMP), which clearly shows management's commitment towards protecting workforce against health and safety risk at the construction site. Procedure details the steps to be followed for the various activities during construction phase of the project. Various topics included in the procedure is listed below:
    - Roles and responsibility
    - Joint occupational health and safety committee
    - Health and safety rules
    - Correct work procedures
    - Employee orientation
    - Training
    - Workplace inspections
    - Reporting and investigating accidents
    - Emergency procedures
    - Medical and first aid
    - Health and safety promotion
- SPL's Construction Health and safety Management Plan also states that Joint Environment, Health and Safety Committee (JEOHSC) should be formed for every project under the company. The Committee shall
- Implement site specific CHSMP. The JEOHSC to have members from the management, contractor and workers representative. However, documented evidence has not been provided for formation of such a Committee for SNPL-II.
- SNPL has developed procedure for Hazard Identification and Risk Assessment (HIRA) applicable to operation phase of the plant and requires the identification process to cover non-routine as well as routine activities. It includes abnormal, unusual, and non-routine operations such as major repair events, weekend operations, night shifts, contractor activities, and operations conducted at remote locations, maintenance operations that are carried out infrequently but may have a high risk, and situations that involve response to

emergencies. HIRA Procedure also details topics such as review of facility hazards and risks, review of job hazards and risks.

- SNPL has also developed Procedure for Health and Safety Inspection detailing job identification process (non-routine as well as routine) activities. This procedure sets forth the responsibilities and elements of the Safety and Health (S&H) Inspections. Purpose of this procedure is to eliminate/reduce the diverse and changing potential for unsafe conditions, and to increase the safety awareness of individual employees by conducting regular inspection.
- SNPL's Procedure for OHS Legal and Other Requirement details the steps to be followed for identifying relevant information on current health and safety statutes and regulations, as well as other requirements that SNPL has established or adopted.
- Procedure for OHS Consultation and Communication is also being developed by SNPL to ensure that occupational safety and health (OHS) information is communicated to all the employees. It shows the commitment of the SNPL management towards communicating OHS policies, its objectives, procedures, roles, responsibilities, authorities, and other components of the occupational safety and health management system (OHS MS) so that an employee will safely complete an assigned task.

3.2.9 Supply Chain

Requirement 17:

Where there is a high risk of child labour or forced labour in the primary supply chain, the client will identify those risks. If child labour or forced labour cases are identified, the client will take appropriate steps to remedy them. The client will monitor its primary supply chain on an ongoing basis in order to identify any significant changes in its supply chain and if new risks or incidents of child and/or forced labour are identified, the client will take appropriate steps to remedy them.

Where there is a high risk of significant safety issues related to supply chain workers, the client will introduce procedures and mitigation measures to ensure that primary suppliers within the supply chain are taking steps to prevent or to correct life-threatening situations.

Observation 17: The following observations have been noted with respect to supply chain aspects:

- SNPL has developed separate procedure for purchasing process, which details the steps to be followed during the purchase of Machinery, Materials, Spare parts and equipment. Before purchase of any material or services SNPL or its subsidiary company issues work order to the contractor or supplier. During the review of the work order issued by SNPL-II to different suppliers and contractors, it was noted that clauses pertaining to worker's health and safety has been included in the work order. However, clauses on not engaging child or bounded labour have not been included in the work order.

Table 3-1: List of Suppliers and Contractors

Name of the Supplier/contractors	Nature of Work
Nippon and McDonald	Purchase of 34 sheets & 1 pc scrap
Konecranes (Bangladesh) Ltd.	Purchase of Remox Radio Control System for EOT 6 ton crane

Name of the Supplier/contractors	Nature of Work
M/S UDECO Ltd	Civil works construction (Piling)
Barkat Business Co.	transportation of engines, from Mongla port to plant site
Beehive Engineers Limited	Civil works construction
	Design, fabrication, erection of steel structure for fuel treatment plant and stack.
PEB Steel Alliance Ltd	Design, fabrication, erection of steel structure for engine hall
	Design, fabrication, erection of steel structure for engine hall
Green Development Consulting	Conducting ESIA and IEE and preparation of report incorporating Air and Noise Dispersion modelling based.
M/S UDECO Ltd	soil test in the land where for boring
M/S UDECO Ltd	Design, fabrication and erection work on 300 cum day tank and 150 cum sludge tank on turnkey basis
Alliance Building Materials Limited	Fibre cement board supply and installation at engine hall wall
Walton Plaza	Supply and installation of split wall type A/C for office building
Hamidia	Installation of deep tube well at SNPL-II site
Nippon and McDonald	Purchase of 34 sheets & 1 pc scrap
Konecranes (Bangladesh) Ltd.	Purchase of Remox Radio Control System for EOT 6 ton crane
M/S UDECO Ltd	Civil works construction (Piling)
Barkat Business Co.	transportation of engines, from Mongla port to plant site
Beehive Engineers Limited	Civil works construction, Design, fabrication, erection of steel structure for fuel treatment plant and stack.

NOTE: *Observations presented under "Labour and working Conditions – PS-2" are based on the policies and procedures established by SNPL and are applicable to only the permanent staff (if any). The construction phase of the plant is over and operation started in February 2016. Since the construction has completed recently, working conditions / terms of employment of the construction workers engaged by the contractors at the site need to be assessed as part of due-diligence exercise. However, document pertaining working condition and terms of employment such as wage and attendance register for the construction workers engaged by contractors at the site have not been provided for review. Also, details of the labour camp (if any), health and safety procedure followed at the construction site, facilities given to workers, working hour, overtime payment etc. was unavailable for review. Since, this is a desk based due diligence based on the document review, AECOM cannot comments on its compliance with the Bangladesh Labour Law Act, 2006 and requirements detailed out in IFC PS 2*.

3.2.10 Status of Compliance to PS 2

Based on the desk-based review, the Project is partially compliant to most of the requirement of PS-2, however the following issues need to be addressed as per the recommendations provided:

- HR Policy and Procedures of EPC contractor (UDECO) was unavailable for review and therefore AECOM cannot comment on its compliance with the applicable Labour Law in Bangladesh. Also, wage and attendance register of the workers engaged at the construction site have not been provided to review the overtime compensation paid to the workers;
- Grievance redressal procedure for EPC contractor (UDECO) was not made available for review.

- SNPL has not developed any procedure for recording any grievances arising from any of its stakeholders (such as labour, subcontractor, sub-contractor workers) during the construction phase.
- Procedure pertaining to non-discrimination and equal opportunity for EPC contractor (UDECO) was not made available for review.
- HR Procedure of SNPL is not extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors.
- As per the HR Procedure, SNPL employees are eligible to receive Company Contribution in the provident fund after completion of 3 years of continues services with the company, which is against the Section 9, Chapter XVIII of Bangladesh Labour Act, 2006. As per the law, "Every permanent worker shall, after the completion of his one year of service in the establishment constituting the provident fund, subscribe to the fund, every month, a sum, unless otherwise mutually agreed, not less than seven per cent and not more than eight per cent of his monthly basic wages and the employer shall contribute to it an equal amount".
- As per HR Procedure employees are entitled for 10 (ten) days of sick leave in a year with full pay on the recommendation of a doctor which is against the Section 116 of Bangladesh Labour Act, 2006. As per the law "Every worker other than a newspaper worker, shall be entitled to sick leave with full wages for fourteen days in a calendar year".
- As per HR Procedure, SNPL employees who have completed a period of twelve (12) months' continuous service (inclusive of the stipulated probation period) is entitled for fifteen (15) calendar days (1 day for every 20 working days) with salary which is against the Section 117 of Bangladesh Labour Act, 2006. As per the law "in the case of a shop or commercial or industrial establishment or factory or road transport service, every adult worker, who has completed one year of continuous service in an establishment, shall be allowed during the subsequent period of twelve months leave with wages for a number of days calculated at the rate of one day for every eighteen days of work"
- Grievance redressal policy in HR Procedure does not talk on the aspects pertaining to employees being laid off, retrenched, discharged, dismissed, removed or otherwise removed from employment who seeks redressal of their grievances as defined in Section 33, Chapter II of Labour Act, 2006.
- Work order issued by SNPL-II does not have any clause on not engaging child or bounded labour.

3.2.11 Recommendations

- SNPL –II is recommended to ensure that all third party contractors engaged in the construction phase to follow the terms of employment as per the Bangladesh Labour Act, 2006 and Bangladesh Labour Rules, 2015 for expansion / future projects.
- SNPL-II to mentions clauses related to working condition and terms of employment in the agreement with the third part contractors;
- SNPL –II to develop a mechanism to verify and ensure that all the condition mentioned in the agreement are actually implemented by the contractors at construction site.
- SNPL-II is required to ensure that the following requirements mandated under Section 108 (Chapter IX – 'Working hours and leave') of Bangladesh Labour Act, 2006 and Bangladesh Labour Rules, 2015 are captured as part of its overtime policy for the permanent employee:
    - Staff working more than normal working hours (eight hours per day) shall be restricted to an additional work hours of two hours

- Staff engaged in works considered hazardous shall be given 30 minutes break for every two hours of work performed onsite
- The hourly overtime rate shall be equal to (monthly salary + DA + Ad hoc wage if any) X 2 X Overtime hours / 208"

- Applicability of the HR Procedure of SNPL-II to be extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors.
- The period of time when a permanent employee is eligible for Provident Fund is to be in compliance with Section 9, Chapter XVIII of Bangladesh Labour Act, 2006.
- The number of sick leaves that employees under SNPL-II are eligible is to be consistent with Section 116 of Bangladesh Labour Act, 2006.
- The number of annual leaves that employees under SNPL-II are eligible is to be consistent with Section 117 of Bangladesh Labour Act, 2006.
- The Grievance Mechanism developed in the HR Procedure should include within its purview aspects pertaining to employees being laid off, retrenched, discharged, dismissed, removed or otherwise removed from employment who seeks redressal of their grievances as defined in Section 33, Chapter II of Labour Act, 2006.
- Elements relating to prohibition of engagement of child labour/forced labour to be included within work order or the contractual agreement.

3.2.12 Material Threshold

- Considering the requirements of PS-1, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.4

3.3 Performance Standard (PS) 3: Resource Efficiency and Pollution Prevention

3.3.1 Resource Efficiency

Requirement 18:

Resource Efficiency: The client will implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water.

Water Consumption: The client shall undertake an assessment to identify opportunities to avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others.

Greenhouse Gases: In addition to the resource, efficiency measures described above, the client will consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project.

Observation 18: The following observations have been noted with respect to resource efficiency:

- The plant has installed four (4) numbers of Wartsila engines of configuration, 3 x 18V46 GD engines and 1 x 12V46 GD engine, each coupled with ABB made AMG 121 0M (or equivalent) of 17.076 MVA (21345 KVA) Generators. The Wartsila engine combines high efficiency with low emissions. The engine is the four strokes, lean burn, pre-chamber, spark ignited, port injected, trunk piston, turbocharged and intercooled design. The engine has a fully microprocessor based control system. The equipment is designed to prevent accidental contact with moving, hot or tensional part and to minimse ingress of dust and dirt. Wartsila's quality and environmental managements system
- The project has installed radiator cooling system and therefore, does not have huge water demand for its cooling requirements. As per discussion with the site representative, the project does not extract river water for any industrial usage. The water is abstracted from borewell installed within the premises of SNPL project. However, the facility has not undertaken any assessment to evaluate sustainable supply and use of ground water.
- The utility requirements (water, fuel, electricity and land) for the construction and operation phase are given below:

Table 3-2: Utility Requirements

S. no	Requirement	Construction phase	Operation phase	Remarks
1.	Water	120 cum/day Extracted from river	10 cu.m/ day, extracted from bore well installed within the SNPL project site.	River water was extracted and used for construction purpose. During operation phase, water required by the project is abstracted from borewell installed within the project site
2.	Fuel oil	30-60 litre/ day	307 MT/ day (365 days operations)	-

3.	Electricity	1.08 MWh/ day	+ 337260 MW (production)	DG sets were reported used during construction phase
4.	Land	-	2.22 acres	SNPL-II has been constructed over a total land of 2.22 acres and lies within the premises of SNPL Unit-I. Out of the total requirement of 2.22 acres, approximately 0.735 acres of land was procured from private land owners in the year 2013-2014 on willing-buyer-willing seller basis. Rest, 1.5 acres of land was already in possession of Summit Group (under its public limited enterprise Summit Shipping Corporation). Summit had previously acquired this land as a part of a larger land acquisition for Unit-I of SNPL power plant. Based on the historical imagery (Source: Google Earth) land was previously used for agriculture purpose. More details have been provided in Section 3.5

Source: Chapter 3 and 7, ESIA, Jan-2016

- Greenhouse Gases: HFO is a carbon-intensive fuel, releases sulphur dioxide and other pollutants into the atmosphere on combustion, contributes to greenhouse gas (GHG) emissions. Currently there are no details of calculation of GHGs in terms of CO2 equivalent by SNPL. There are no reports available on quantification of GHG emissions or on voluntary disclosure done by SNPL-II.

3.3.2 Pollution Prevention

Requirement 19:

*Pollution prevention-General***:** The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts.

Air emissions: The primary emissions to air from the combustion of fossil fuels or biomass are sulfur dioxide (SO 2), nitrogen oxides (NOX), particulate matter (PM), carbon monoxide (CO), and greenhouse gases, such as carbon dioxide (CO2). The amount and nature of air emissions depends on factors such as the fuel (e.g., coal, fuel oil, natural gas, or biomass), the type and design of the combustion unit (e.g., reciprocating engines, combustion turbines, or boilers), operating practices, emission control measures (e.g., primary combustion control, secondary flue gas treatment), and the overall system efficiency. Measures to prevent minimize and control air emissions should be implemented.

Wastewater: The Client will monitor wastewater sources of the project and water quality of each wastewater stream (Thermal Discharge, Liquid Waste and Sanitary Wastewater).

Thermal Discharges: As per IFC's EHS Guidelines for Thermal Power Plants: Effluents, Thermal power plants with steam-powered generators and once-through cooling systems use significant volume of water to cool and condense the steam for return to the boiler. The heated water is normally discharged back to the source water (i.e., river, lake, estuary, or the ocean) or the nearest surface water body. The client will implement measures to prevent, minimize and control thermal discharges.

Solid waste: The client will avoid the generation of hazardous and non-hazardous waste materials. Where waste generation cannot be avoided, the client will reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment. Where waste cannot be recovered or reused, the client will treat, destroy, or dispose of it in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material.

Hazardous material: The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials. In this context, the production, transportation, handling, storage, and use of hazardous materials for project activities should be assessed.

Pesticide Use and Management - The client will not purchase, store, use, manufacture, or trade in products that fall in WHO Recommended Classification of Pesticides by Hazard Class Ia (extremely hazardous); or Ib (highly hazardous). The client will not purchase, store, use, manufacture or trade in Class II (moderately hazardous) pesticides, unless the project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals.

Observation 19: The following observations have been noted with respect to pollution prevention

- As a part of ESIA, SNPL-II carried out environmental monitoring for assessing water quality, air quality, noise quality. SNPL-II also engaged a third party, M/S NT Technology to conduct a noise survey to determine cumulative impact due to operations of the existing SNPL-I and under construction SNPL-II. The details have been discussed under Section 3.3.2 Pollution Prevention.
- The EMP under the ESIA report has suggested several mitigation measures and management plans pertaining to environment health safety and social aspects. During the construction phase, various measures, as mentioned below have been suggested; however, the implementation status of these is not clear from the documentation furnished for review.

    - Air emissions
        - Sprinkling of water for dust suppression on the un-metalled roads which are to be used by vehicles carrying construction material and heavy equipment
        - Use of well-maintained construction equipment to minimize any potential breakdown time and also minimize SOx emission.
        - Vehicles and machineries to be regularly maintained to conform to the emission standards stipulated under Environment Conservation Rules, 1997.
        - Stockpiles shall be covered and kept damp and wheel washing facility to be provided
    - Traffic
        - Construction materials to be transported at night after 10 pm when the private vehicular movement declines significantly
    - Noise
        - All construction vehicles to be maintained and monitored to confirm the noise level within the prescribed limit.
        - Construction activity to be restricted from 6 p.m. to 9 a.m.
        - Noise barrier wall of 7.5 m height proposed
    - Surface water
        - Construction wash-water to be managed by mud-tank
        - Worker colony houses to have sanitary latrines to treat sanitary waste.

- Occupational Health and Safety
  - Contractors to be made aware of Occupational Health and Safety issues and their responsibilities.
  - Reasonable and safe work conditions and safe and employees are free from any types of discrimination.
  - Proper restriction signs and other methods will be applied to prevent unwanted entry of people.

- Solid Waste
  - Burning of refuse on construction sites to be prohibited.
  - General refuse generated on-site to be collected in waste skips and separated from construction and chemical waste.
  - A local authorized waste handler to be employed to remove general refuse from the site, separately from construction waste and hazardous wastes,

- As informed by the project representative, the EMP had been shared with the UDECO, who is the EPC contractor prior to construction of the power plant. However, no records of construction phase, pertaining to implementation of various mitigation measures as suggested in the EMP have been provided for review. It may be inferred that SNPL has not established any review mechanisms for the monitoring the implementation of the EMP by the contractor (suggested in ESIA for the construction phase).
- The project's ESIA has suggested that SNPL-II, during operation phase should establish an Environment Cell, which will be overall responsible for implementation, monitoring and review of the procedures related to environment and social aspects. The Cell will include trained EHS manpower, equipped with necessary equipment and other logistics along with required budget (detailed below).
- The report has also suggested monitoring of different environmental parameters to be carried out in and around the plant. SNPL-II has already engaged the Green Development Consulting, a Bangladesh based environment consultancy firm to conduct environmental monitoring as mentioned below and submit report to the DoE for the Project. As informed by the site representative, the plant has not initiated such environmental monitoring for Unit-II as yet, as it was commissioned only 2.5 months back, on 29th Feb 2016.

The key mitigation measures to be adopted during the **operation phase**, as suggested in the ESIA report , have been placed below

Table 3-3: Compliance Status against EMP's Key Mitigation Measure

Aspect	Suggested in EMP for operation phase	Compliance status as confirmed with the site representative
Air emissions	• A chimney of 50 meter height to be installed to help dispersion of potential pollutants. (a 42-meter high chimney exists for the existing 102 MW unit). • SNPL-II will provided a gas scrubber with compressor system for capturing of SOx, NOx from the power plant boiler chimney & also provide a shoot blower cyclone system with dust collector. • Speed regulations shall be imposed for automobiles and the haulage and delivery vehicles to be confined to designated roadways	• Chimney of 50 meter height installed. • Gas scrubber with compressor system not installed • Shoot blower cyclone system not installed

Aspect	Suggested in EMP for operation phase	Compliance status as confirmed with the site representative
	inside the site • Dust suppression measures to curtail fugitive emissions	
Water	• In the plant, water would be mainly used for generating steam in the boiler and for cooling the heated machinery. Radiator cooling system will be installed. • Main liquid waste of the power plant is lube oil, which may have a possibility of oil spillage during handling activities such as unloading, storing, transportation in pipes etc. any spilled oil will be collected in a tank for the separation of oil and water using an oil separator. The separated oil to be sold to DoE certified vendors. • A septic tank with a soak pit to be provided for sewage disposal • An Effluent Treatment Plant (ETP) of 1 cu.m per hour capacity to be installed to treat the separated water from the oil water separator.	• Radiator cooling system installed • Waste oil is disposed of through DOE approved M/S Maahim Enterprise. The related Agreement and validity could not be evaluated as no documentary evidence has been provided. • 5 septic tanks are constructed within SNPL premises, which cater to both the Units. Their capacities are unknown as no detail has been furnished. • SNPL-II transports the waste water for treatment to the existing Effluent Treatment Plant at SNPL Unit -I
Occupational Health	• Protective clothing and accessories to be provided to the workers, who would be subjected to exposure to hazardous substances and situation. • Regular health check-ups considering chemical exposure, noise, temperature, humidity, and respiratory protection and medical monitoring. • Adequate training arrangements for workers in occupational health	• As informed by the site representative, the plant has not initiated trainings of their staff after commissioning of the project. However, it is expected that a training schedule will be developed and executed, covering topics related to occupational health and safety.
Noise/ vibration	• Using PPEs such as ear plugs • Using sound barrier like Styrofoam filler in between brick wall (150 mm of each) • Using low noise generating equipment • Use of shock absorber, damper/isolator, and spring isolator. • Periodic maintenance of equipment for diesel generators units. Air compressors, engines, etc to maintain efficiencies by replacing warn out parts and lubricating rotating parts. • Implementation of green belt, landscaping with horticulture for noise reduction near approach road and parking areas.	• No records pertaining to PPEs , greenbelt development, maintenance of equipment and vehicles have been furnished for the project.
Waste Management	• Four bin system suggested for the project site • Green colored bin: paper/cardboard waste; Blue bin for plastics; Brown bin for food waste; and Black bin general types of wastes. • All plastic and paper materials to be sold DoE authorised vendor for recycling. Biodegradable waste could be distributed to the farmers for compost and later on use as fertilizer. • Hazardous waste not to be mixed with general waste and disposed through a DOE approved vendor.	• As per discussions with site representative, as of now segregation of waste into 4 streams has yet not initiated at site. • Two types of hazardous waste are being generated at the project site – ETP sludge and waste oil, oil contaminated rugs. These wastes are disposed off through DOE approved waste recycler M/S Maahim Enterprise. However, no documentary evidence

Aspect	Suggested in EMP for operation phase	Compliance status as confirmed with the site representative
		has been furnished regarding the same.
Waste Water	• septic tank and soak pit for 100 persons planned	• Five septic tank are present at SNPL site, which are shared between UNIT-I and Unit-II.
Fire/explosion	• Establish own firefighting system and maintain collaboration with government firefighting and civil defense department locally. • Organize fire drill and training for staffs.	• Firefighting equipment inventory has been maintained including fire alarm control, fire extinguishers, Smoke detector, signs etc • A fire drill has been conducted on 29th April 2016

- Periodic mandatory environmental monitoring has been suggested in the ESIA report for SNPL-II during operation phase. Following parameters, will have to be monitored periodically at SNPL-II project site:
    - Ambient Air quality:
        - Ambient air quality to be monitored periodically at selected locations. The parameters to be monitored include SPM, SO2 and NO2 and CO.

    - Stack Monitoring:
        - Continuous Emission Monitoring system (CEMS) to be installed in the stack system for monitoring of NOx, CO 2 , SOx, temperature, humidity, pressure, and flue gas flow volume. The meters shall be located in the control room. As mentioned above, ESIA had recommend to install a gas scrubber with compressor system for capturing of SOx, NOx from the power plant boiler chimney & also provide a shoot blower cyclone system with dust collector,to minimize the cumulative impact due to emissions from 50 m chimney of the project and 42-meter high chimney of the older 102 MW SNPL Unit-I.

    - Noise:
        - Noise monitoring to be carried out inside the units near the high noise generating areas once in a month. Ambient noise monitoring just outside the plant limit to be conducted quarterly of the year.

        - Prior to the ESIA study, SNPL-II engaged M/S NT Technology in April 2015 to conduct a noise survey at the plant location. The aim of the survey was to determine the current boundary noise level from the existing power house, of SNPL-I. The equipment used for noise level measurement was Ono Sokki precision integrating sound level type LA-5110. The equipment was calibrated suing a Cesva sound calibrator type CB -5.
        - The maximum noise level at the power plant boundary as set out in the Schedule 4, standards for sound under the category of mixed area are: 60 dB (A) Daytime (6am-9pm) and 50 dB(A) Nighttime (9pm-6am). Noise levels were measured along the north boundary of the plant, adjacent to village houses. The monitored values ranged from 63 -72 dB (A).
        - Noise levels were also monitored at various locations inside the power plant site. The major sources identified were radiators and exhaust stacks, especially towards the north-west boundary, near the existing mosque. Recommendations given to reduce the noise from existing Unit-I and to minimize impact of the new power station of SNPL-II include:
            - Erection of 7.5 m high noise barrier wall at the north and north-east boundary to reduce noise form current and new radiators. The wall should be sound absorptive at the upper part. The height is based on a maximum height of the new radiators not exceeding 7m.

- Improve the sound insulation of power house with – full height brickwall on 3 walls (excluding the wall to the switchgear room), double skin roof, acoustic doors at power house, acoustic lagging to the pipe between turbocharger and silencer.
- Inspecting internal condition of existing exhaust silencers and repair if degraded. Additional silencers may also be required in horizontal exhaust pile near new power house

As informed by the site representative, the above mentioned mitigation measures have been implemented.

- Water Quality:
  - Drinking water and water for domestic use is to be monitored quarterly or as directed by statutory authorities.
- For water supply and drainage:
  - The water requirement for the plant is only for cooling purpose and for domestic use, which will be sourced through a deep tube well installed at site. Metering devices to be installed on the main inlet pipes and discharge pipes of the freshwater system so as to enable supervision and management of main process systems.

- Frequency of monitoring and parameters to be analyzed has also been mentioned in the Monitoring Plan of the ESIA report and has been replicated in table below.

Table 3-4: Monitoring Frequency

Sno	Parameter	Location of sample collection	Sample number and frequency	Parameters to be tested
1.	Surface Water	Surface water samples collected from the adjacent river from where the baseline sample was collected	Half Yearly (2 times in a year)	pH, DO, BOD, COD, Oil & grease, TSS, EC, salinity
2.	Ground Water	Ground water samples from plant deep tubewell		pH, Hardness, Iron, Arsenic, chloride, salinity
3.	Air pollution	depending on wind direction	Half yearly (2 times in a year)	SPM, NO X , SO X
4.	Noise	Plant boundary and production area	Half yearly (2 times in a year)	Sound Level in dbA

However, this appears to be inadequate since the Plant shall be required to submit a quarterly compliance monitoring report to DOE.

The cost for monitoring plan has been estimated to be approximately, Bangladeshi taka 78.00 Lakh. The breakup is as follows

Table 3-5: Tentative Costing for Environmental Monitoring

Sno	Parameter	Location of sample collection	Tentative cost estimated for 5 years Bangladeshi taka, Lac
1.	Monitoring Ambient Air Quality	SPM, SOx, NOx, CO, CO 2	10

2.	Monitoring Ambient Noise and Occupational Noise Exposure	Ambient sound level, Noise Exposure, workplace noise level	8
1.	Monitoring of Water Quality of the River	Temperature, pH, BOD, COD, TSS, Oil and Grease, EC, Salinity, DO	10
2.	Monitoring of Environmental Compliance	EMP, Monitoring Plan, rules and regulations, IFC standards, MoEF' standards, etc.)	20
3.	Monitoring Community Health, Safety and Security	Community safety, health, CSR program, Security, compliance to applicable social and environmental rules, etc	15
4.	Monitoring Occupational Health and Safety	Health, Safety, Audiometric testing, use of PPE, awareness, safety knowledge, etc	10
5.	Green belt, Landscaping, Reuse/ Recycling of Waste	-	5
	Total Cost for years		78

Air Quality

Air Quality monitoring was conducted for the purpose of ESIA in November 2015 by a third party agency, Enviro Quality Laboratory, Dhaka (24 hourly data). All the parameters were found within the permissible limits as prescribed by DOE, Bangladesh and IFC standards. The data has been presented below:

Table 3-6: Permissible limits as prescribed by DOE, Bangladesh

Location	Date	SPM	PM10	NO2	SO2	CO	Remarks
1.	21.11.2015	190.17	143.90	70.11	50.34	Nil	NE Corner Settlement and open space
2.	22.11.2015	210.74	147.54	74.40	53.03	Nil	SW Corner Basundhara Cement
3.	23.11.2015	205.48	139.36	71.44	47.56	Nil	SE Corner Road and market
4.	24.11.2015	180.48	131.54	69.59	46.83	Nil	NW Corner Sitalaks hya River
Bangladesh Air Quality Standard µg/m3		200 Annually	150 24 Hourly	100 Annually	80 Annually	10 mg/m3 8 hourly	
IFC standards **(µg/m3)**		-	150	200	125	-	

To monitor the health of the workers, tri-monthly medical checkups have been suggested in the ESIA, for workers who are deployed at critical locations of high noise and vibration, high temperature, fumes etc. proper treatment to be given to them in case some medical problem is diagnosed.

- As reported in the ESIA, SNPL-II will install an automated fire alarm monitoring device at strategic locations near critical equipment.
- SNPL-II has monitored water quality, air quality, noise levels (in Nov 2015) at the project site for the purpose of incorporation into the ESIA report. The details are as below.

River water quality

Two samples were collected, one at upstream location (22°18'59.27"N , 91°49'21.24"E) of Shitalakshya river and second at downstream location (22°18'46.27"N , 91°49'4.26"E).

Table 3-7: River Water Quality

S no	Parameter	Location 1	Location 2	Bangladesh Standard	IFC standards
1.	pH	7.71	6.90	6.5-8.5	6 to 9
2.	TDS (ppm)	190	230	1000	-
3.	EC (ȝ S/cm)	390	420	1200	-
4.	Temperature (oC)	27.1	25.1	-	-
5.	DO (ppm)	3.91	3.84	4.8-8	-
6.	BOD 5	64	57	50	30 mg/l

The reason for lower values of EC and TDS is unclear and has been attributed to dilution due to upstream water flow and tidal influence and open connection with Bay of Bengal. The likely reason for high BOD has not been ascertained in the ESIA report,

Treated waste water from ETP

SNPL-II transports the waste water generated during the plant operations to the existing Effluent Treatment Plant (ETP) installed in the earlier unit-I of the project for treatment, which is located in the same premises. As reported in the ESIA report of SNPL-II, testing of treated waste water from the ETP (located at Unit-I) was conducted in year 2013 and 2014. The results, as provided in the DoE monitoring Report of SNPL have been replicated below.

Table 3-8: Treated Waste Water from ETP

Date	Parameters	pH	DO	BOD	COD	TDS
25-03-2013	Inlet	8.1	0	150	508	1006
	ETP Outlet	7.71	4.8	12	48	565
15-04-2014						
	Inlet	6.75	0	250	729	2320
	ETP Outlet	7.8	6	36	99	510
	Industrial Wastewater Standard, ECR 1997	6.0-9.0	4.5-8.0	50.0	200.0	2100.0
	IFC Standard Limit	6 to 9	-	30	125	-

Source: DoE monitoring Report, 2013 and 2014

The ESIA report recommends that there should not be any discharge of untreated wastewater outside the municipal drainage. However, no information is available regarding any possible use of the treated waste water (eg. gardening) within the premises or its discharge into the river.

3.3.3 Status of Compliance to PS-3

- Based on the desk-based review, prima facie, it seems that the Project is partially compliant to the requirement of PS-3. It cannot be ascertained if the mitigation measures and management plans, as defined

in ESIA, specific for construction phase and operation phase and recommendations on control noise levels made by M/S NT technology have been implemented on project site. However, boundary wall with acoustic enclosure is visible in one of the project site photographs provided.

3.3.4 Recommendations

- Since SNPL-II has recently started its operations (COD: 29th Feb 2016, as informed by project representative) the project should implement all the mitigation measures, monitoring plans and management plans as suggested in the ESIA report. Periodic evaluation of the compliance of EMP should be undertaken and status should be recorded.
- As the Plant is required to submit a quarterly environmental compliance report to DOE, the frequency of environmental monitoring should be increased from half yearly (as has been suggested in the ESIA report) to at least quarterly monitoring of environmental parameters.
- SPL and SNPL should establish review mechanisms for the monitoring the implementation of EMP by the EPC contractor during the construction phase;
- SNPL –II should incorporate all the suggestions made by M/S NT Technology pertaining to reducing cumulative noise from existing SNPL-I and under construction SNPL-II, including erection of 7.5 m high noise barrier wall, Improve the sound insulation of power house with – full height brickwall on 3 walls, Inspecting internal condition of existing exhaust silencer.

3.3.5 Material Threshold

- Considering the requirements of PS-3, none of observations made during the desk based ESDD exceed the material threshold as defined in Section 1.3

3.4 Performance Standard (PS) 4: Community Health Safety and Security

Reportedly, two (2) forms of public consultation were held during preparation of the ESIA to discuss the project and involve the community in planning the mitigation measures and developing the Environmental Monitoring Plan. Various issues such as project background, overall impacts on surrounding physical, biological and social environment were discussed.

3.4.1 Community Health and Safety

Requirement 20:

The client will evaluate the risks and impacts to the health and safety of the Affected Communities during the project life-cycle and will establish preventive and control measures consistent with good international industry practice. The client will identify risks and impacts and propose mitigation measures that are commensurate with their nature and magnitude. These measures will favor the avoidance of risks and impacts over minimization.

Observations 20

- The Project is an extension of 102 MW power plant (SNPL-I) and is located in the same premises. The construction phase of the project is completed and commercial operations started in February, 2016. As the part of ESIA, various mitigation measures have been suggested, specific to construction phase.

- Dust: Dust emissions generated from the operations of construction equipment and machineries, vehicles carrying construction materials to the site and taking construction debris out of the site, stone crushers (if any) is used at the site can have adverse impact on the workers and nearby community. Since construction of the power plant involves significant earthworks, increase in particulate matters in air from wind-blown dust is also a concern.
- As per the ESIA, dust suppression methods such as sprinkling of water in dust prone activities like transportation on unmetalled road, excavation works, material handling etc. to be adopted to reduce the impact.
- Gas: SOx generated from the diesel based construction equipment and vehicles; marginally affect local air quality around the site. As a mitigation measures suggested in ESIA, vehicles and machineries to be regularly maintained to conform to the emission standards stipulated under Environment Conservation Rules, 1997.
- Traffic: construction materials such as sand, cement, steel, heavy equipment of power plant, are mostly brought by road. As the part of ESIA, traffic survey was conducted which states that project site has good accessibility in regard of close proximity to national highway and regional roads and thoroughfare, it was assumed that there will be no significant adverse impact due to traffic movement during construction phase as there are already enough traffic movements.
- Noise and Vibration: The major sources of noise pollution are construction activities, movement of vehicles transporting the construction material and equipment to the site during construction phase. As mentioned in the ESIA report, local people had some objection regarding the noise of the existing unit of power plant. To resolve the issue regarding noise of existing unit along with the second unit, expert was hired (M/s ND Technology (Sea) Pvt. Ltd.) to study cumulative impact of noise. As mitigation measures suggested in ESIA, the major construction works to be carried out during the day time and if require, construction activity to be restricted from 6 p.m. to 9 a.m. All vehicles to be maintained and monitored to confirm the noise level within the prescribed limit. In addition, vehicle horn to be restricted. For protecting the permanent hearing loss of construction workers, it is to be ensured that they are not exposed for a prolonged period. Because most of construction equipment produce high level of noise at close range and exposure to high level of noise for a long period in most cases results into permanent hearing loss. SNPL-II to follow the noise levels of machineries used relevant standards prescribed in Environment Conservation Rules, 1997.
- Surface water: As mentioned in ESIA report, it was assumed that there will be no significant adverse impact on the surface water quality in the Project area. Contamination to water bodies due to oil spillage during construction activities and/or surface runoff from the construction site to the nearby water body was identified as risk.
- As suggested in the ESIA report, construction wash-water to be managed by mud-tank. Construction equipment and devices of good condition to be used to reduce diesel and lube oil spillage. Provision for adequate washing and toilet facilities with septic tanks and appropriate refuse collection and disposal system to be made obligatory to reduce the surface water pollution.

In discussion with the SNPL-II management, it was reported that all the mitigation measures suggested in ESIA to reduce the adverse impact on the nearby community were implemented during the construction phase. However, any supporting documents such as monitoring records, waste disposal records during construction phase were unavailable for review.

3.4.2 Infrastructure and Equipment Design and Safety

Requirement 20:

The client will design, construct, operate, and decommission the structural elements or components of the project in accordance with GIIP (good international industry practice), taking into consideration safety risks to third parties or Affected Communities.

The structural elements will be designed and constructed by competent professionals. The structural elements will be certified or approved by competent authorities or professionals.

When structural elements or components, such as dams, tailings dams, or ash ponds are situated in high-risk locations, and their failure or malfunction may threaten the safety of communities, the client will engage one or more external experts with relevant and recognized experience in similar projects, separate from those responsible for the design and construction, to conduct a review as early as possible in project development and throughout the stages of project design, construction, operation, and decommissioning.

Observations 20: The following observations have been noted with respect to Infrastructure and Equipment Design and Safety:

- As reported in the ESIA, the transmission of vibration and structure borne noise shall be minimised by having the engine generator set flexibly mounted on the concrete foundation. The engine generator set is isolated from the building, piping and steel structures. Torsional vibration in the engine generator shaft system is minimised by means of a flexible coupling between the engine and the generator.
- Local people had some objection regarding the noise of the existing unit of power plant. To resolve the issue regarding noise of existing unit along with the second unit, a third party consulting agency was hired (M/s ND Technology (Sea) Pvt. Ltd.) to study cumulative impact of noise. Major noise sources identified were the radiators and the exhaust stack towards the north-east boundary (of existing 102 MW SNPL-I plant). Measures suggested includes:
    - Erection of 7.5 m high noise barrier wall at the north and north-east boundary to reduce noise form current and new radiators. The wall should be sound absorptive at the upper part. The height is based on a maximum height of the new radiators not exceeding 7m.
    - Improve the sound insulation of power house with – full height brickwall on 3 walls (excluding the wall to the switchgear room), double skin roof, acoustic doors at power house, acoustic lagging to the pipe between turbocharger and silencer.
    - Inspecting internal condition of existing exhaust silencers and repair if degraded. Additional silencers may also be required in horizontal exhaust pile near new power house

- As mitigation measures suggested in ESIA, the major construction works to be carried out during the day time and if require, construction activity to be restricted from 6 p.m. to 9 a.m. All vehicles to be maintained and monitored to confirm the noise level within the prescribed limit. In addition, vehicle horn to be restricted. For protecting the permanent hearing loss of construction workers, it is to be ensured that they are not exposed for a prolonged period. Because most of construction equipment produce high level of noise at close range and exposure to high level of noise for a long period in most cases results into permanent hearing loss. SNPL-II to follow the noise levels of machineries used relevant standards prescribed in Environment Conservation Rules, 1997. However, the implementation status of these is not clear from the documentation furnished for review.

3.4.3 Hazardous Materials Management and Safety

Requirement 21:

The client will avoid or minimize the potential for community exposure to hazardous materials. Exercise commercially reasonable efforts to control the safety of deliveries of hazardous materials, and of transportation and disposal of hazardous wastes, and will implement measures to avoid or control community exposure to pesticides.

Observations 21: The following observations have been noted with respect to hazardous Material Management

- SNPL has developed Procedure for Identification of Environmental Aspect and its Significant Impact, which details the procedure for storage, handling and disposal of hazardous waste such as used oil, oil soaked cotton. In addition, SNPL IMS Manual states that plant will use techniques and resources that judiciously minimize the generation of waste that is hazardous to the environment. IMS manual also has a section on Hazardous material handling and oil spillage control. It also states that a less hazardous material will be used or reduce the system energy (e.g. lower the force, amperage, pressure, temperature, etc.).

3.4.4 Ecosystem Services

Requirement 22:

Where appropriate and feasible, the client will identify those risks and potential impacts on priority ecosystem services that may be exacerbated by climate change. Adverse impacts should be avoided, and if these impacts are unavoidable, the client will implement mitigation measures. With respect to the use of and loss of access to provisioning services, clients will implement mitigation measures.

Observations 22: The following observations have been noted with respect to ecosystem services

- The project lies in an urban setting and does not have direct impacts on priority ecosystem services that may result in adverse health and safety risks and impacts to the Affected Communities. Thus this PS-4 is not triggered.

3.4.5 Community Exposure to disease

Requirement 23:

The client will avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. Where specific diseases are endemic in communities in the project area of influence, the client is encouraged to explore opportunities during the project life cycle to improve environmental conditions that could help minimize their incidence.
The client will avoid or minimize transmission of communicable diseases that may be associated with the influx of temporary or permanent project labour.

Observations 23: The following observations have been noted with respect to community exposure to disease:

- Water logging arising from discharge of construction wash-water and domestic waste water generated in and around the vicinity of the site premises may lead to water born dieses. As suggested in the ESIA report, construction wash-water to be managed by mud-tank. Construction equipment and devices of good condition to be used to reduce diesel and lube oil spillage. Provision for adequate washing and toilet facilities with septic tanks and appropriate refuse collection and disposal system to be made obligatory to

reduce the surface water pollution. It was reported by the site management that all the mitigation measures suggested in ESIA has been implemented during construction phase; however any supporting documents were not available for review.

3.4.6 Emergency Preparedness and Response

Requirement 24:

The client will assist and collaborate with the Affected Communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergencies, especially when their participation and collaboration are necessary to respond to such emergencies.

The client will document its emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information to Affected Communities, relevant government agencies, or other relevant parties.

Observations 24: The following observations have been noted with respect to emergency preparedness and response

- SNPL has not developed any Emergency Preparedness and Response Procedure (ERP) for the construction phase.
- The Emergency response plan includes procedures for external notifications, actions for community evacuation for emergency instances including fire / explosion, hazardous material and / or gas release (section 2.6, 2.11, 3.0, and 4.0 in “Procedure for Emergency Preparedness and Response” doc. No. SP-EMR-1). These procedures also cover training and reporting parameters for project staff during an event of emergency.
- Although the project has theoretically identified risks pertaining to emergency situations such as fire and explosion risks under the emergency response plan of SNPL, project specific off- site emergency response plan has not been developed.

3.4.7 Security Personnel

Requirement 25:

When the client retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by its security arrangements to those within and outside the project site. In making such arrangements, the client will be guided by the principles of proportionality and good international practice in relation to hiring, rules of conduct, training, equipping, and monitoring of such workers, and by applicable law.

The client will assess and document risks arising from the project’s use of government security personnel deployed to provide security services. The client will consider and, where appropriate, investigate all allegations of unlawful or abusive acts of security personnel take action (or urge appropriate parties to take (action) to prevent recurrence, and report unlawful and abusive acts to public authorities.

Observations 25: The following observations have been noted with respect to security personnel

- Reportedly, SNPL has engaged 50 security personnel at site through M/s Falcon Security Limited to safeguard the life and property for both the Units. These personnel work in three shifts on rotational basis. Falcon provides general training to the security personnel on rules of conduct, dealing with the locals and other related issues. Details pertaining to number of security guards deployed at the construction site and the trainings imparted to them have not been furnished.

- As per the SP-EMR-1, all the plants under SPL will be manned continuously, 7 days a week, 24 hours a day. The plant will be secured by boundary wall and deployed security personnel on site.
- However documents pertaining to risk and impacts identification process which considers security risks associated with the entire range and all stages of the project's construction and operational activities, including personnel, products, and materials being transported was unavailable for review. No details on communication of project security arrangements to the stakeholders were available for review. There is no employment record available for review of the security personnel.

3.4.8 Status of Compliance to PS-4

Based on the desk-based review, the Project is compliant to most of the requirement of PS-4; however the issues related to security personnel need to be addressed as per the recommendations provided:

Security risks associated with the entire range and all stages of the project's construction and operational activities have not been assessed. Security personnel are not provided with training on behavioural guidelines for personnel handling.

3.4.9 Recommendations

- SNPL-II should ensure that the structures and buildings accessible to workers and the public obtain certification of structural and fire safety aspects by engineering and fire safety professionals registered with national or international professional organizations to perform such certification and/or local regulatory agencies with oversight on these matters. Buildings accessible to the public should be designed, constructed, and operated in full compliance with local building codes, local fire department regulations, local legal/insurance requirements, and in accordance with an internationally accepted life and fire safety (L&FS) standard.
- SNPL-II should promote traffic safety during displacement to and from the workplace, and during operation of project equipment on private or public roads. Prevention and control of traffic related injuries and fatalities should include the adoption of safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accidents. The plant should implement driver and traffic safety programs proportional to the scope and nature of project activities which includes:
    - Adoption of best transport safety practices across all aspects of project operations with the goal of preventing traffic accidents and minimizing injuries suffered by project personnel and the public. Measures should include:
    - Emphasizing safety aspects among drivers
    - Improving driving skills and requiring licensing of drivers
    - Adopting limits for trip duration and arranging driver rosters to avoid overtiredness
    - Avoiding dangerous routes and times of day to reduce the risk of accidents
    - Use of speed control devices (governors) on trucks, and remote monitoring of driver actions
    - Regular maintenance of vehicles and use of manufacturer approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.
- SNPL-II should implement mitigation measures to limit possible habitats for vectors linked to water-based and water related diseases
- SNPL-II is recommended to assist and collaborate with the affected communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to respond to such emergency

situations. SNPL-II to document its emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information to affected communities, relevant government agencies, or other relevant parties.

- SNPL-II should consider security risks associated with the entire range and all stages of their construction and operational activities, including personnel, products, and materials being transported. The risks and impacts identification process should also address negative impacts on workers and the surrounding communities, such as the potential for increased communal tensions due to the presence of security personnel or the risk of theft and circulation of firearms used by security personnel.
- SNPL-II may consider the inclusion of female security staff for frisking women and to identify and handle associated security risks.
- Security personnel should have clear instructions on the objectives of their work and permissible actions. The conduct of security personnel should be based on the principle that providing security and respecting human rights should be consistent.
- When employing or engaging any security personnel, SNPL-II should make reasonable inquiries to investigate the employment record and other available records, including any criminal record, of individuals or firms and should not employ or use any individuals or companies that have abused or violated human rights in the past. SNPL-II should use only security professionals who are, and continue to be, adequately trained.
- SNPL-II should record and investigate security incidents to identify any necessary corrective or preventive actions for continuing security operations. To promote accountability, SNPL-II (or other appropriate party such as the security contractor or appropriate public or military authority) should take corrective and/or disciplinary action to prevent or avoid a repetition if the incident was not handled according to instructions.

3.4.10 Material Threshold

- Considering the requirements of PS-4, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3.

3.5 Performance Standard (PS) 5: Land Acquisition and Involuntary Resettlement

3.5.1 Land acquisition and resettlement

Requirement26:

The client will consider feasible alternative project designs to avoid or minimize physical and/or economic displacement (*), while balancing environmental, social, and financial costs and benefits, paying particular attention to impacts on the poor and vulnerable.*(*) Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) because of project-related land acquisition and/or restrictions on land use.*

When displacement cannot be avoided, the client will offer displaced communities and persons compensation for loss of assets at full replacement cost and other assistance to help them improve or restore their standards of living or livelihoods.

Observation 26: The following observations have been noted with respect to PS-5 land acquisition and resettlement:

- As understood by ESIA Report, SNPL-II is being constructed over a total land of 2.22 acres, which lies within the premises of SNPL Unit-I. This land was acquired earlier as part of a larger land acquisition for Unit-I of SNPL power plant. Approximately 1.485 acres of land belongs to Summit group on the name of Summit Shipping Corporation and remaining 0.735 acres of land was procured from different land owners in the year 2013-2014.
- During the land procurement process three (3) cases of physical displacement occurred. It was reported by the site management that fair cementation has been made to the affected families. It was also reported that the land was procured on the willing buyer – willing seller basis.
- Based on the historical imagery (Source: Google Earth) land was previously used for agriculture purpose.
- As per the EIA study conducted for the project, there will not be any further loss of land and displacement of people due to project.

Table 3-9: Land Details

Sr. No.	Purchase Date	Total Land (Acres)	Land Owners	Displacement (If any)
1	21-July-14	0.13	Tazul Islam, Sahabuddin, Ali hossain	
2	03-Dec-13	0.20	Tazul Islam, Sahabuddin, Ali Hossain	
3	31-Aug-14	0.10	Ali Hossain	Physical Displacement
4	03-Dec-13	0.03	Md. Liakot Ali	Physical Displacement
5	11-Jul-14	0.05	Ashura/Abdul Halim	Physical Displacement
6	03-Dec-13	0.05	Sahin Mia	
7	02-Dec-14	0.04	Giasuddin , Jamila Khatun	
8	23-Nov-14	0.06	Jahinur Mia	
9	05-Feb-15	0.08	Awlad Hossain Poka	
10		1.4845	Summit Shipping	

3.5.2 Status of Compliance to PS-5

- With respect to observations noted during the document review, the project is compliant with PS-5 and no issues pertaining to land have been identified.

3.5.3 Recommendations

- Based on the compliance status regarding PS- 5, no specific recommendations are made.

3.5.4 Material Threshold

- Considering the requirements of PS-5, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3.

3.6 Performance Standard (PS) 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

3.6.1 Protection and Conservation of Biodiversity

Requirement 27:

The client will avoid impacts on biodiversity and ecosystem services. When avoidance of impacts is not possible, measures to minimize impacts and restore biodiversity and ecosystem services should be implemented. Client will consider direct and indirect project-related impacts on biodiversity and ecosystem services and identify any significant residual impacts in the ESIA.

The client should minimize possibilities of habitat destruction including modified, natural, and critical habitats.

If the project is located within legally protected areas, the client to act in a manner consistent with the protected area management plan, consult stakeholder on the project and implement additional programme to promote and enhance conservation aims.

Observation 27: The following observations have been noted with respect to Biodiversity Conservation and Sustainable Management of Living Natural Resources

- It has been suggested in the ESIA report that during construction phase, the following measures are to be followed to minimise adverse impact on the nearby river Sitalakkha:
    - Construction of temporary internal drainage system at the site to direct surface runoff into existing interception.
    - Installation of bar traps at the drain inlets to prevent blockage from waste material generated during concreting, plastering, cleaning work and similar activities

      However, implementation status of the above recommendations could not be established during the deskbased review.
- As the part of ESIA, an ecological study was conducted wherein details on flora and fauna were collected. However, the details have not been appended in the ESIA report. The report also does not discuss impact on ecological aspects during the construction phase.
- Treated Waste Water from ETP is being utilized for gardening purposes and there is no direct discharge of treated or un-treated waste water in Shitkalya River ecosystem;
- The project site and its surroundings do not fall under any national park, wild life sanctuary or any other eco-sensitive zone. The project lies in an urban setting and does not have direct impacts on priority ecosystem services that may result in adverse health and safety risks and impacts to the Affected Communities.

3.6.2 Status of Compliance to PS-6

- With respect to observations noted during the document review, the project is compliant with PS-6 and no issues pertaining to Biodiversity Conservation and Sustainable Management of Living Natural Resources have been identified.

3.6.3 Recommendations

- Based on the compliance status regarding PS- 6, no specific recommendations are made.

3.6.4 Material Threshold

- Considering the requirements of PS-6, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3

3.7 Performance Standard (PS) -7: Indigenous People

3.7.1 Indigenous communities

Requirement 28:

Client will avoid impacts on indigenous communities, to the extent feasible, and where not, mitigate or compensate in a culturally appropriate manner. Client to develop an ongoing relationship with such communities through the life of the project, involving their representatives (e.g. council of elders) and inclusive of women and men and allowing them time for collective decision making. Client to safeguard cultural heritage of indigenous people.

Observation 28: The following observations have been noted with respect to indigenous community

- Owing to the small scale of plant operations, no direct social risks to the community at large, including the indigenous community if any, were identified. Therefore, Provisions prescribed under PS7 for environmental and social risks for indigenous community are not applicable to this project.

3.7.2 Status of Compliance to PS-7

- As per the project documents furnished, no indigenous communities are reported by local community and the project representatives. PS 7 does not get triggered.

3.7.3 Recommendations

- Based on the compliance status regarding PS- 7, no specific recommendations are made.

3.7.4 Material Threshold

- Considering the requirements of PS-7, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3

3.8 Performance Standard (PS) - 8: Cultural Heritage

3.8.1 Cultural Heritage

Requirement 29:

Client will avoid removing cultural heritage unless there are no alternatives, and benefits outweigh costs. Client will implement chance find procedures established through the ESA process wherever necessary. Client will consult with the affected communities who use or have used the cultural heritage.

Observation 29: The following observations have been noted with respect to cultural heritage

- Construction Phase of the Plant has been completed. There are no sites of cultural or religious importance at site or its immediate vicinity. Inference may be made from the construction/ excavation activities carried out for existing plants around the area where no such cases appeared. It may be concluded that there is no possibility of chance find. Therefore, Performance Standard 8 does not get triggered in this case.

3.8.2 Status of Compliance to PS-8

- With respect to observations noted during the document review, the project is compliant with PS-8 and no issues pertaining to Indigenous People have been identified and hence PS-8 is not triggered.

3.8.3 Recommendations

- Based on the compliance status regarding PS- 8, no specific recommendations are made.

3.8.4 Material Threshold

- Considering the requirements of PS-8, none of observations made during the desk based ESDD are above the material threshold as defined in Section 1.3

This section delineates the list of actions required to be undertaken by the management to ensure closure of the gaps as identified in Section 3.0 of the report. The Corrective Action Plan is provided below with timelines, responsibilities and specific action items. The CAP for the same has been furnished below:

The gaps are categorised as red, orange and yellow flag issues based on the severity of impact on the EHS and Social aspect

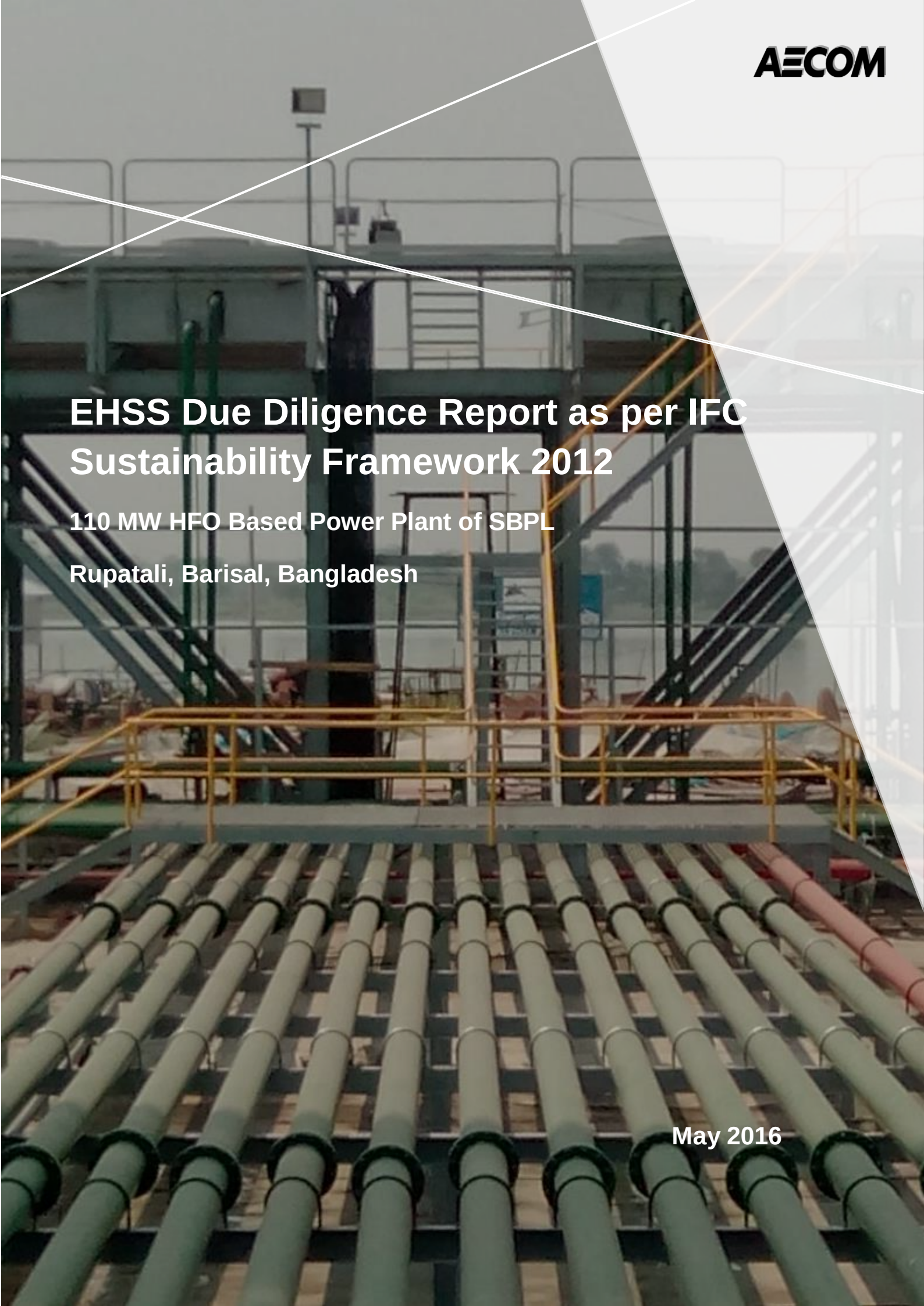
Flags		Remarks
	Red Flag Issues	These are observations which pose high impact on the environment, health, safety and social aspects and may have legal implications.
	Orange Flag Issues	These are observations which pose moderate impact on the environment, health, safety and social aspects.
	Yellow Flag Issues	These are observations which pose low or least impact on the environment, health, safety and social aspects.

Table 3-10: Summary of Observations and Recommendations

S. No.	Applicable Performance Standard	Aspect	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
1.	PS-1	Ecology	• Results of ecological survey conducted during the ESIA have not been included in the ESIA report.		• Details on flora and fauna in the project area should be recorded and maintained for any future references.	No additional budget or resource	Ecological Survey Report SNPL-II Management	Two (2) Months
2.	PS-1	EHSS Supervision during Construction Phase.	• Responsibility of overall supervision of EHSS aspects during the construction phase of the project has not been defined by SPL.		• SPL should clearly define the roles and responsibilities of all the identified experts within the IMS organogram. Qualified personnel should be identified who will be responsible for overall supervision of EHSS aspects during the construction phase. The organogram should clearly mention the reporting structure between the EHS Manager (of SPL) and the civil contractor during construction phase.	No additional budget or resource	Deployment of EHS Supervisor at the construction. SNPL-II Management and Contractor.	One (1) Month
3.	PS-1	EHS&S Management Program for Pre construction screening and Construction Phase	• SNPL does not have any Management procedure to manage EHS&S related issues		• SNPL to develop EHS&S Management procedures for pre-construction screening and construction stages	Engagement of third party consultant to develop procedures (Approximately $3000)	Implementation of the procedures at project level and maintenance of related records. Plant Manager	Three (3) Months
4.	PS-1	Fire/ Explosion	• SNPL-II has not quantified fire / explosion risk for the project.		• SNPL-II should quantify the risks associated with explosion and fire, identifying potential areas of concern along with significance of impact in and around the plant vicinity.	Engagement of third party consultant to undertake Fire/explosion Risk Assessment. (Approximately $2500)	Updated Hazard identification and Risk Assessment (HIRA) SNPL-II Management	Three (3) Months
5.	PS-1	Off Site Emergency Response Plan	• SPL has not developed procedures for information disclosure and training requirements for community with respect to emergencies and risks identified as part of the Emergency Preparedness and Response		• SPL should outline procedures for information disclosure and training requirements for community with respect to emergencies and risks identified as part of the Emergency Preparedness and Response Plan.	No additional budget or resource	Documented Off-site Emergency Response Plan.	One (1) Month

S. No.	Applicable Performance Standard	Aspect	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
			Plan.		• SNPL-II is recommended to assist and collaborate with the affected communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to respond to such emergency situations. SNPL-II to document its emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information to affected communities, relevant government agencies, or other relevant parties.		SNPL-II Management	
6.	PS-2	HR Procedure	Following gaps identified with respect to HR Procedure: • HR Procedure of SPL is not extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors. • SPL employees are eligible to receive Company Contribution in the provident fund after completion of 3 years of continues services with the company, which is against the Section 9, Chapter XVIII of Bangladesh Labour Act, 2006 • Employees are entitled for 10 (ten) days of sick leave in a year with full pay on the recommendation of a doctor which is against the Section 116 of Bangladesh Labour Act, 2006. • SPL employees who have completed a period of twelve (12) months' continuous service (inclusive of the stipulated probation period) is entitled for fifteen (15) calendar days (1 day for every 20 working days) with salary which is against the Section 117 of Bangladesh Labour Act, 2006. • Grievance redressal policy in HR Procedure does not talk on the aspects pertaining to employees being laid off, retrenched, discharged, dismissed, removed or otherwise removed from employment who seeks redressal of their grievances as defined in Section 33, Chapter II of Labour Act, 2006.		• Applicability of the HR Procedure of SPL or SNPL-II to be extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors. • The period of time when a permanent employee is eligible for Provident Fund is to be in compliance with Section 9, Chapter XVIII of Bangladesh Labour Act, 2006. • The number of sick leaves that employees under SPL or SNPL-II are eligible is to be consistent with Section 116 of Bangladesh Labour Act, 2006. • The number of annual leaves that employees under SPL or SNPL-II are eligible is to be consistent with Section 117 of Bangladesh Labour Act, 2006. • The Grievance Mechanism developed in the HR Procedure should include within its purview aspects pertaining to employees being laid off, retrenched, discharged, dismissed, removed or otherwise removed from employment who seeks redressal of their grievances as defined in Section 33, Chapter II of Labour Act, 2006.	No additional budget or resource	Revised HR Procedure with respect to: • applicability on third party workers • Provident Fund. • Sick leave • Annual leave. • Grievance redressal Plan. SNPL-II Management	Two (2) Months
7.	PS-2	Clause on Child /bounded Labour	• Work order issued by SNPL-II does not have any clause on not engaging child or bounded labour.		• Elements relating to prohibition of engagement of child labour/forced labour to be included within work order or the contractual agreement.	No additional budget or resource	Revised work order template. SNPL-II Management	One (1) Month
8.	PS-4	Security Personnel	• Security risks associated with the entire range and all stages of the project's construction and operational activities have not been assessed. Security personnel are not provided with training on behavioral guidelines for personnel handling.		• SNPL-II should consider security risks associated with the entire range and all stages of their construction and operational activities, including personnel, products, and materials being transported. • Security Personnel to be trained on behavioral aspects.	No additional budget or resource	Security personnel screening process and training records. SNPL-II Management	Two (2) Months

S. No.	Applicable Performance Standard	Aspect	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
					• SNPL-II should require the appropriate conduct of security personnel they employ or engage. Security personnel should have clear instructions on the objectives of their work and permissible actions. • When employing or engaging any security personnel, SNPL-II should make reasonable inquiries to investigate the employment record and other available records, including any criminal record, of individuals or firms and should not employ or use any individuals or companies.			



EHSS Due Diligence Report as per IFC Sustainability Framework 2012

110 MW HFO Based Power Plant of SBPL

Rupatali, Barisal, Bangladesh

May 2016

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Abbreviations

BIWTA	Bangladesh Inland Water Transport Authority
BLL	Bangladesh Labour Law
BPDB	Bangladesh Power Development Board
dB	Decibel
DM	Demineralization
EHS&S	Environment Health & Safety and Social
ESMS	Environmental and Social Management System
EMS	Environment Management System
EPRP	Emergency Preparedness and Response Plan
E&SDD	Environmental & Social Due Diligence
GHG	Greenhouse Gases
GIIP	Good International Industry Practice
HFO	Heavy Fuel Oil
HIRA	Hazard Identification Risk Assessment
HT	High-temperature
IFC	International Finance Corporation
ILO	International Labour Organization
IPP	Independent Power Producer
IMS	Integrated Management Systems
LFO	Light Fuel Oil
LT	Low-temperature
MW	Megawatt
NGO	Non-Governmental Organization
OH&S	Occupational Health and Safety
OHSAS	Occupational Health and Safety Advisory Services
O & M	Operation & Maintenance
PDCA	Plan-Do-Check-Act
PPE	Personal Protection Equipment
PS	Performance Standard
SPM	Suspended Particulate Matter

Executive Summary

Summit Corporation Limited (hereinafter referred to as 'SCL') established in 1985, is a holding company sponsoring its subsidiary companies to own, build and operate infrastructure projects in Power sector. The Group currently produces around 1,260 MW (including two under commissioning plant), which is around 13% of total capacity of the country. Summit intends to hold 20% of the country's generation capacity and has signed an Appraisal letter with International Finance Corporation (IFC) for investment to be made by latter.

As per IFC requirements, an Environmental and Social due diligence (ESDD) is required to undertaken for the holding company and individual assets of Summit. SCL and IFC have thereby engaged AECOM India Private Limited to conduct the ESDD for one of its under-construction Power Plant at Rupatali Mouza under the jurisdiction of Barisal City Corporation, Barisal district. The plant is the early stage of commissioning, wherein Engine Performance test completed on 9th March 2015 and reliability run test is to be undertaken. Most of the construction works (which started on 3rd March 2015) are complete and a significant section of construction contractors has left the site.

Two AECOM professionals visited the 110 MW HFO based power plant at Rupatali, Barisal (hereinafter referred to as 'Project') on 18th March 2016. The ESDD was carried out to assess the project's EHS performance with respect to Bangladesh Environmental, Health, Safety and Social regulations, IFC Performance Standards, 2012, The IFC General Environmental, Health and Safety ("EHS") Guidelines, dated 2007, IFC Sector EHS Guidelines for Thermal Power Plants dated 2008 and Power Sector EHS Guidelines for Electric Power Transmission and Distribution dated 2007.

Key observations and findings as part of the Environmental and Social Due Diligence conducted for the Project are presented below. Detailed observation and recommendations in the form of a Corrective Action Plan has been presented in subsequent sections of this report.

PS-1: Assessment and Management of Social & Environmental Risks and Impacts

SPL Plants have been certified under ISO 9001:2008 (quality management), ISO 14001: 2004 (environmental management) and OHSAS 18001:2007 (occupational health and safety management) for policy and procedures established under its Integrated Management System (IMS). SBPL will also adopt the IMS of SPL and develop project specific procedures for operational phase, in line with the requirements of the IMS. SBPL has not yet undergone any certification process, although the key staff managing the facility at the current stage of transition is all trained on IMS. An Environmental and Social Impact Assessment (ESIA) study was conducted for the project through Bangladesh Centre for Advanced Studies (BCAS) and submitted in February 2016.

It was observed that SBPL is not compliant to the requirements of PS-1. There is no management system for EH&S and Social aspects for construction phase of the project. The EHS staff at site is inadequate and ESMP developed as part of the ESIA is not being followed at site. There is no documented procedure or plan at site for management of E&S issues at during construction. The existing engagement with community informal and there is no documented process for grievance redressal.

PS-2: Labour and Working Conditions

SBPL is a subsidiary company of Summit Power Limited (SPL) and the corporate policies and procedures of SPL shall be applicable to SBPL employees. SPL has developed an HR Policy and Procedure that is partially compliant with requirements of PS-2. The HR Policy does not cover the working conditions and requirements of the contractors

and its workers. There is no verification process for wages being paid to the workers of contractors. Also, there is no defined process for verification of age. The labour camp provided is inadequate and provides poor living conditions. Health and Safety requirements neither documented nor applied with a purpose.

PS-3: Resource Efficiency and Pollution Prevention

In order to ensure resource efficiency and prevention of pollution, SPL has put in place a detailed Environmental Management System, implemented through the IMS; however it is not applicable to construction phase of projects. Additionally, SPL has also established environmental objectives for reduction in waste oil generation, water consumption and electricity consumption for its existing operational plants. The policy shall be applicable to the SBPL power plant.

The plant has installed heat recovery boilers in order to achieve conservation of fuel. Details of water consumption for construction phase was not available, however for operations, the consumption of water for operations will be limited to make-up water for boilers, as the engines are provided with radiators for cooling.

As part of the ESIA study, ambient air quality monitoring was undertaken, although the standards are not comparable to monitored value due to difference in monitoring period. Baseline noise levels are within Bangladesh Environmental Quality Standard as well as WB General EHS Guidelines 2007 for residential zone, however, calculation of average is not correct and the values are same as Leq values considering the hourly values given. As per baseline monitoring values of water samples from Kirtonkhola River, BOD levels are observed to be above the DOE standards, while other parameters are within the limits. Similarly results of ground water sample collected from tube well within site premises shows that all the parameters remain within the allowable limit of drinking water value as per as Environmental Quality Standards for Bangladesh.

There are no monitoring results for construction period; therefore, the status of air quality and noise levels during the construction in the adjoining area was not available. The plant is expected to be compliant to emission requirements for operational phase of the project as provisions of Low Nox burners are provided for the engines. The Sulphur content in HFO is proposed to be 3.5% and emission levels from similar engine of other plants of Summit are observed to be within the limits.

The compliance is thus observed to be partial as the requirements for operation phase is well covered but monitoring and adherence to commitments of ESIA –ESMP is not observed during the construction phase.

PS-4: Community Health Safety and Security

The plant has about 7000m^3 of HFO storage facility within its boundary, however no risk assessment study has been conducted to understand tank fire and dyke fire scenario for the storage area. The project is compliant to the requirements of PS-4, however risk from tank failure needs to be assessed prior to full scale operations. The project undertakes pre-employment medical test (general health check-up) for workers directly engaged by SBPL/SPL, however no pre-employment medical test is conducted for construction workers engaged on contract basis by contractors to identify any communicable diseases.

PS-5: Land Acquisition and Involuntary Resettlement

The project has procured 9.0349 acre of private land for the project. Summit Power has procured the land from willing sellers at a mutually negotiated price. Based on the discussions with some of the past landowners it is inferred that they were adequately compensated as per the market value. The site was previously used for agriculture and

growing vegetable, some parts of the land was barren land. The site had agricultural labourers, sharecroppers and squatters who were either physically or economically displaced for the project. It is also understood that the land owner have willingly sold the land/property. However, with respect to those with informal rights it was a negotiated settlement as they had no option but to vacate the land and therefore PS-5 is triggered.

No Resettlement Action plan and Livelihood restoration Plan has been prepared as part of the ESIA, it is therefore difficult to verify whether the resettlement assistance offered is sufficient to restore their standards of living as earlier. Also, there is not independent verification of the process on its correctness and adequacy with respect to IFC Performance Standards. The project is therefore not compliant to requirements of PS-5, a Resettlement Action Plan was required to be prepared as part of the ESIA studies as there are people with informal rights for whom the process and calculation of compensation is not clear.

PS-6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The historic images of the site show that it was agricultural land with almost no tree cover. The site is located far away from any identified eco-sensitive location. An ecological assessment was carried out as part of ESIA. However the baseline ecology section of the report has no reference to site vegetation and hence no details on any vegetation / tree loss is provided. The study is based on secondary information only, no methodology or process is provided.

Further, information provided under ecology is incorrect at places. One of the species identified is *Gavialis gangeticus,* which is critically endangered as per IUCN. However the report states that the flora and fauna in the project area have been compared with IUCN Red List and none of the species are found to be extinct or threatened.

Though there will not be any thermal discharges into the river, due to adoption of closed loop cooling system, it is understood that waste water (such as treated effluent, DM plant rejects, etc.) will be discharged into the river. However, the presence of any aquatic species of significance in the Kirtonkhola River has not been established in the ESIA.

PS-7: Indigenous People

Based on the review of secondary literature, it is understood that the indigenous peoples of Bangladesh refer to native ethnic minorities in south-eastern, north-western, north-central and north-eastern regions of the country. These regions include the Chittagong Hill Tracts, Sylhet Division, Rajshahi Division and Mymensingh District. The project area has not reported presence of any indigenous community.

PS-8: Cultural Heritage

There are no structures of cultural significance in or around the plant site. However, –five to six graves were located within the site, which were reportedly shifted to a new location. This was done after due consultation with the concerned community members. Adequate compensation was paid for relocation of the graves and no cultural issues were raised because of the same.

Project Categorization

The project is categorized as ***Category A***, based on the review of documents and on-site assessment of environmental and social aspects. The categorization is based on the following observations:

- The land for project is agricultural land with displacement of informal occupants. Although compensation has been paid, there was no process followed in identifying the affected persons and the mechanism for deciding compensation is not clear.
- Wastewater discharges form the plant into the Kirtankhola River which could have potential impacts on the aquatic ecology.
- The facility uses HFO as fuel which will result in significant air pollution in the ambient environment in the form of particulate matter, Sulphur dioxide and oxides of nitrogen levels along with greenhouse gas emissions which contributes to climate change.
- The plant operations can have significant noise generation, that can potentially impact the employees and surrounding community.
- Use of HFO will result in generation of significant amounts of oily sludge which is hazardous in nature and requires proper storage and disposal mechanism; and
- Large quantities of fuel storage on site pose potential safety hazards for workers and surrounding community.

2.0 Summit Barisal Power Limited

2.1 Background

Summit Power Limited (SPL), a subsidiary of Summit Corporation Limited (SCL), is an Independent Power Producer (IPP) in Bangladesh that provides power directly to the national grid. SPL was incorporated in Bangladesh on 30th March 1997 as a Private Limited Company and subsequently converted into Public Limited Company on the 7th of June 2004 as per Companies Act 1994. SPL owns and operates nine (09) power plants at different locations across Bangladesh with a total capacity of 372 MW. SPL's plants have been established and manufactured by companies including Wartsila – Finland, Caterpillar -USA, and GE Jenbacher, Austria. One power plant is currently under construction at Barisal and being managed by Summit Barisal Power Limited (SBPL).

Summit Barisal Power Limited (SBPL) project is a proposed HFO based 110 MW power plant being located at Rupatali of Barisal City Corporation, Barisal. A significant portion of the proposed power plant falls in Rupatali, Barisal and a small portion of land falls under the jurisdiction area of Nalchity Upazilla in Jhalokati District of Barisal in Bangladesh.

The Project comprises seven (7) numbers of Wartsila made 18V46 reciprocating type (17.076 MW each) heavy fuel engines. The engine is of the four strokes, direct injected, piston, turbo charged and intercooled design. The optimized Fuel injection system contributes to complete combustion of all fuels over the entire load stage. Fuel Oil Operation is based on the use of normal fuel oil injection pumps and can run on crude oil, LFO or HFO, where, HFO is the main source of energy. Power evacuation will be done as per provision of the PPA. The plant will be connected with the nearby 132 KV Substation of BPDB. Through this substation, electricity generated by the plant will be distributed to the greater Barisal.

The site is about five kilometers from the centre of Barisal City and within two kilometer of the Barisal-Barguna highway. In North of the proposed plant there is residential area of Rupatali village, BPDB sub- station at 2.5 km distance from plant in the North side, residential area in the East side and Kritonkhola river along the West side of the plant.

2.1.1 Project Agreement

- **PPA:** Summit Barisal Power Limited has signed Power Purchase Agreement (PPA) with Bangladesh Power Development Board and Implementation Agreement (IA) with the Government of Bangladesh to implement and operate 110 MW power plant at Rupatoli, Barisal, Bangladesh..
- **Off taker:** Off-taker for the project is Bangladesh Power Development Board (BPDB) who is fully owned by the Government of Bangladesh and engaged to develop the power sector in Bangladesh as instructed by the Government.
- **O&M:** Operation and maintenance of the project will be done by the SBPL team. A maintenance agreement will remain with Engine supplier (Wartsila, Bangladesh under guidance of Wartsila, Finland) who will looks after schedule maintenance.
- **Fuel:** The project has entered into a fuel supply agreement with Summit Oil and Shipping Company Limited to ensure required fuel supply to the project.

2.1.2 Current Status

The plant is in the early stage of commissioning, wherein Engine Performance test was completed on 9th March 2015 and reliability run test is to be undertaken. Most of the construction works (which started on 3rd March 2015) are complete and a significant section of construction contractors has left the site. As of now, only UDECO and its sub-

contractors are the contractors working at site. UDECO has ten (10) Civil & Mechanical workers at site while there are thirty (30) sub contracted workers (mostly unskilled). About 51 engineers and technical staff, along with 35 supporting staff from SBPL are currently engaged at site.

The plant is in a transition phase and cannot be classified as either under construction or operation. A set of Operational team designated by SPL corporate is currently managing the plant however tertiary level construction works are still being undertaken at site through contractors.

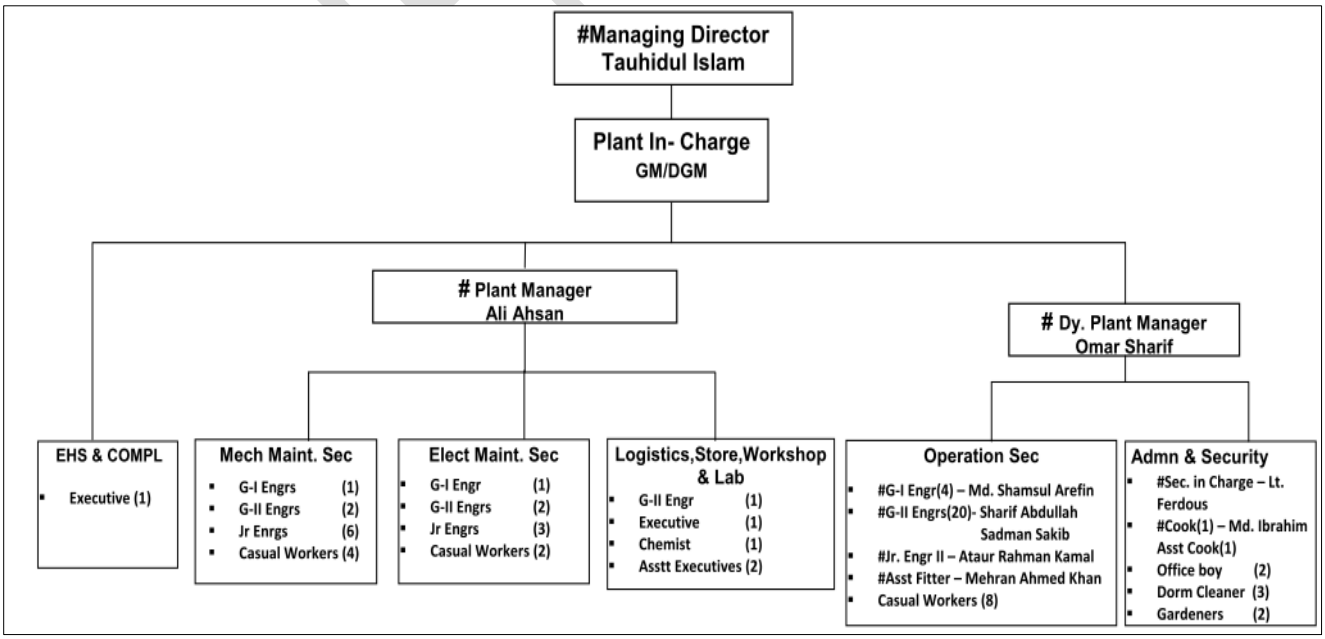
On the day of the site visit, the plant and engine room was observed as fully installed, wherein preparations for engine trials were being planned and all electrical cables were being re-instated after verification of fault observed as part of previous trial. Fuel storage tanks, boiler, radiators, fire system were all observed as installed and ready for commissioning. Construction of Jetty, internal roads and office building was being undertaken at the site and activities such as bar bending, wielding, leveling of roads etc. were in full swing.

2.2 Organisation Structure

The Organogram for Summit Barisal Power Limited (SBPL) during implementation stage (construction) and during O&M stage after commissioning is presented in Figure 2-1.

- During implementation stage, Post "#" marked (i.e. Plant Manager and Deputy Plant Manager) along with a set of supervisory staff and managers of contract team were responsible for all the activities.
- This organogram is for persons/employees who will work exclusively for Plant Management of Summit Barishal Power Limited (SBPL) during O&M stage after commissioning.
- In addition, during implementation of the project and subsequent O&M of the plant, these exclusive personnel of the SBPL are supported by officials of Summit Power Limited (SPL) in Planning, Recruitment, Training, Procurement, Financing, Accounting, Logistics etc. by relevant departments of SPL.
- Most of the posts in this organogram are being filled up and will be completed prior to commissioning.

Figure 2-1 : Organogram SBPL



2.3 Facility Details

Major portion of the proposed power plant is located at Rupatali, Barisal and a little portion of land falls under the jurisdiction area of Nalchity Upazilla in Jhalokati District of Barisal in Bangladesh. The site is situated in the North-Western side of Barisal-Barguna Highway and Barisal-Pirojpur Highway and at a distance of 1.5 kilometer from Barisal-Barguna Highway and 1 kilometer from Barisal-Pirojpur Highway.

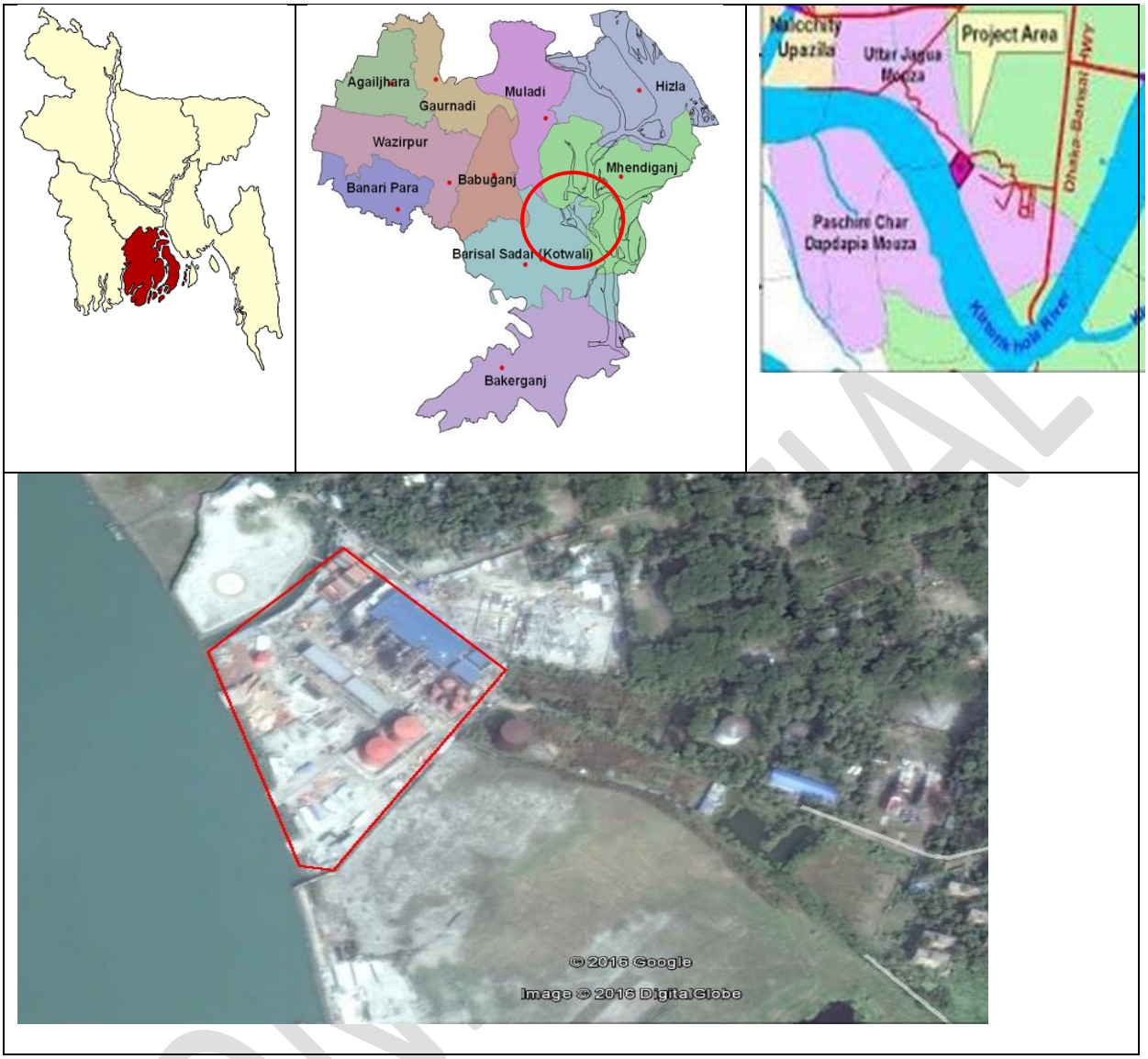
- The site location is at a distance of 3 kilometer from the Barisal city, which is south-east to the proposed site.
- The exact location is in ward no. 25, Rupatali.
- The site is adjacent to existing pucca road of 15 feet, connecting the ward no. 25 of Rupatali.
- The site has Kirtonkhola River to its West along its boundary.
- The site is roughly rhombic in shape with the north –south and east-west axis along the diagonals.

Table 2-1 : Features Surrounding the Site

Side	Object	Coordinate points	Coordinate
North	Canal	NE corner	22°39'25.43"N; 90°20'8.60"E
South	Opsonin (pharmaceutical facility) and BPDB substation	SW corner	22°39'20.72"N; 90°20'14.88"E
East	Settlement and open space	SE corner	22°39'26.82"N; 90°20'11.95"E
West	Kirtonkhola River	NW corner	22°39'22.79"N; 90°20'8.41"E

The location of the plant on the eastern bank of Kirtonkhola River is illustrated in the Figure 2.2.

Figure 2-2: Location of the SBPL



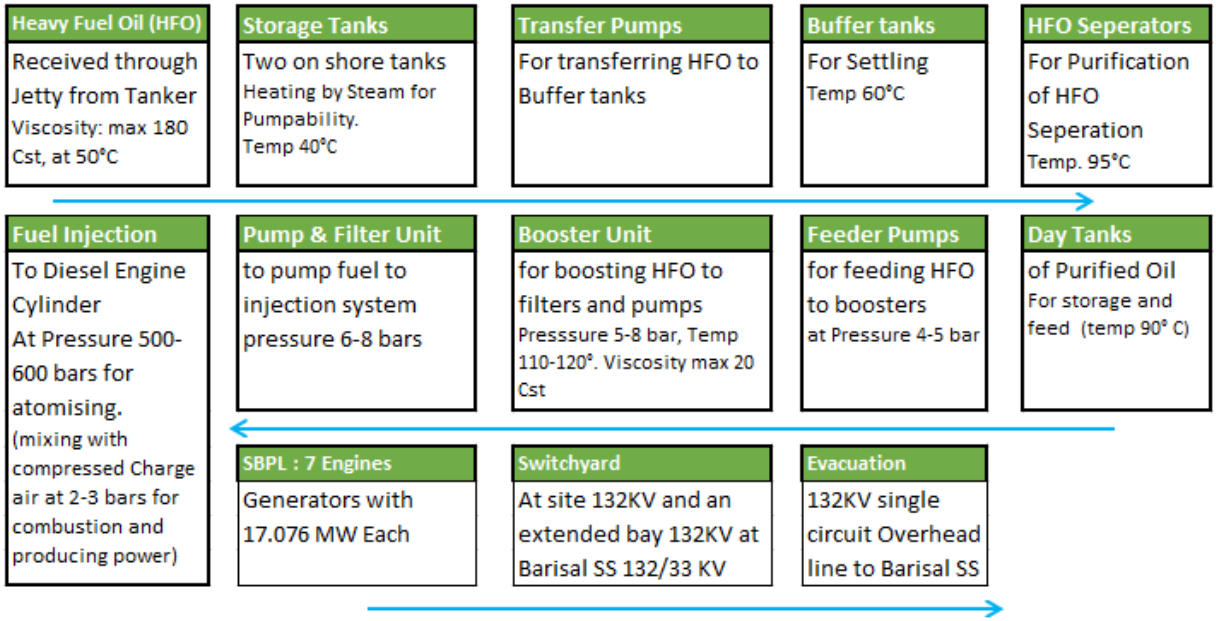
2.3.1 Process Description

The proposed power plant will use HFO as fuel. The Project comprises seven (7) numbers of Wartsila made 18V46 reciprocating type heavy fuel engines. The engine is of the four strokes, direct injected, piston, turbo charged and intercooled design. The optimized Fuel injection system contributes to complete combustion of all fuels over the entire load stage. Fuel Oil Operation is based on the use of normal fuel oil injection pumps and can run on crude oil, LFO or HFO. Where, HFO is the main source of energy. Fuel Sharing is available between 35% and 87.5% of rated load.

Operational software consist of PLC based WECS system which is a fully integrated engine control system, designed for harsh environments. The system is built on the engine and handles all necessary monitoring, control and protection functions needed on the engine. The system architecture is based on distributed electronic modules, with measurements and controls occurring locally where needed on the engine.

The plant will be connected with the nearby 132 KV Substation of PDB. Through this substation, electricity generated by the plant will be distributed to the greater Barisal

Figure 2-3: Process flow Diagram : Summit Barisal Power Limited



2.3.2 Details of Engine and Specifications

The plant is based on reciprocating engines with five [18V-46] Reciprocating type engines of Wartsila –Finland make. It has a modular structure and consists of multiple parallel engine-generator sets with an output of 17.076 MW each (installed capacity). Modules are mutually independent from functional point of view, their only common systems are fuel supply system, switchgear and transformer station, and other systems used to top-up process media. All electrical, automation, cooling and exhaust systems are engine-specific, thus improving general reliability of the plant.

The Wartsila 46 is equipped with a Variable Inlet Valve Closure (VIC) unit. This makes it possible to apply early inlet valve closure at high load, which in turn enables minimized NOx levels and reduced fuel consumption. By switching to late inlet valve closure, good part load and transient performance is assured. The overall operational benefits include improved part load performance, smoke reduction, and improved load acceptance. The engine control system incorporates automatic monitoring and control for optimal operating efficiency.

Table 2-2: Technical data Wartsila 18V46

S. No.	Aspect	Unit	Value
500 rpm- 18V46			
1.	Power, electrical	MW	17.076
3	Heat rate	kJ/kWh	8167
4	Electrical efficiency	%	44.7
5	Length	m	18.781
6	Width	m	5.324
7	Height	m	6.020

S. No.	Aspect	Unit	Value
8	Weight (Dry weight)	Kg	358,870

2.3.3 Status of Construction of Utilities and Associated Facilities

Fuel Storage

Under the fuel supply agreement Summit Oil and Shipping Company Limited (SOSCL) imports fuel for the plant and store it in their two bulk storage tanks each having a capacity of 3500 m^3. The tanks are situated at SOSCL's land just adjacent to the plant. SBPL will receive oil from these storage tanks by a transfer pump. Quantity of oil will be measured at the intake of transfer pump by flow meter. These tanks shall therefore be treated as associated facilities.

Another tank farm area is located on the eastern side of the plant, within the SBPL premises. It comprises a HFO buffer tank (Capacity 100 m^3), Sludge tank (Capacity 500m^3), used Lube Oil tank (Capacity 55m^3), HFO day tank (Capacity 300 m^3) and LFO tank (200 m^3). Both the tank farm areas are provided with a secondary containment (2.0m high and 1.5m approx.) and are connected to the oil water separation tank. The tank farms were observed to be constructed and ready for utilization.

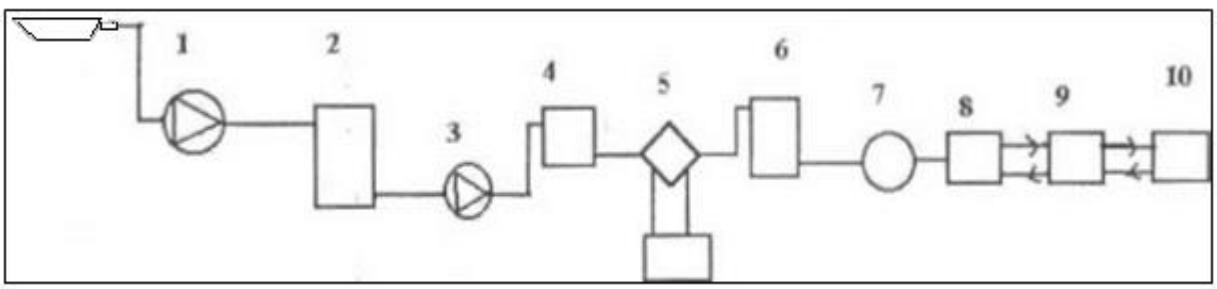
HFO Separators

The HFO contains a large amount of impurities and it has to be purified before it can be used, hence it is passed through a HFO separator (2 units) which uses a centrifugal action to clean the fuel off impurities. HFO separator is a mechanical device which is used to separate unwanted liquid and solid particle from HFO. HFO separator works on the basis of centrifugal force. This centrifugal force generated by the rotation of the bowl (rotor). When liquid or particles of different specific gravity enters to the bowl, the different centrifugal force acts on them. Liquid or particle having higher specific gravity faces higher centrifugal force and moves away from the Centre. So heavier liquid and particles move toward the periphery of the bowl and collect into sludge space. This heavier liquid and particles are known as sludge which is discharged from the bowl by opening sludge port.

The fuel is then stored in a HFO day tank. The HFO day tank contains clean purified fuel ready for use. The sludge from the HFO separator is collected in a sludge tank and sent for treatment. The HFO feeder pump pumps the fuel to the HFO booster unit at a pressure of around 4 to 5 bar. From here, fuel passes to the fuel oil unit and finally to the engine.

The fuel system is the most important auxiliary system of an engine, the fuel being the most necessary criterion for the engine to function. The outline of fuel system is provided in **Figure 2.4.**

Figure 2-4: Fuel System



1. Unloading pump, 2. HFO storage tank, 3.HFO transfer pump, 4. HFO buffer tank, 5. HFO separator, 6. HFO day tank, 7. HFO feeder pump, 8. HFO booster unit, 9. Fuel oil unit, 10. Diesel engine, 11. Storage tank

Cooling System

The main task of the cooling system is to provide adequate cooling of critical engine components such as cylinder jackets, cylinder heads and turbochargers as well as to cool the lubrication oil and charge air entering the cylinder after it has been compressed by the turbocharger.

The engine cooling water cools the low temperature charge air cooler, lubricating oil cooler, high temperature change air cooler and engine jackets, and the high temperature circuit is cooled in a single circuit radiator. It is proposed that radiator cooling system will be installed and therefore there will be no need to extract cooling water from surface water. The installations of radiators were observed as complete during the site visit.

Demineralizing Plant

Water used in the plant has to be free from minerals, harmful chemicals to avoid corrosion. The dematerialized water from the DM plant is mainly supplied to the boiler and floor use. Demineralization is done using the principle of reverse osmosis. Firstly it is passed through dual media filter (DMF).The output of this unit is fed to cartridge filter in which particle sized up to 10 microns are sieved out. From cartridge filter water is passed through softener which contains resins. Water is then fed to the Reverse Osmosis (RO) unit for reverse osmosis. The DM water is stored in a storage tank from which it is supplied to the necessary units.

Jetty

A floating jetty is under construction along the western boundary. The jetty will be provided with hose pipe to draw oil from supply tankers with the help of a pump dedicated for unloading to the SOSCL tanks, and will be transferred to the SOSCL tanks through pipeline.

Evacuation Facility

As per the Power Purchase Agreement, the company has to build a 132kV switchyard within the site premises and extended one 132kV at the Barisal 132/33 kV Substation (located at 2.5 km from site), as well as build the required interconnection line for evacuation of power (the Electrical Interconnection Facility). The evacuation will be through underground transmission lines installed by SBPL, which will be handed over to BPDB post commissioning. The evacuation facility is reportedly complete.

Access Road

It was reported that the existing village road (less than 1 km in length) connecting to the Dhaka Barisal highway was widened for the purpose of transportation of construction materials. No new access roads were constructed.

Wastewater Disposal System

On-site effluent disposal system is proposed to be installed to effectively treat and dispose of project effluents. All effluents will be passed through the ETP before discharge. The key wastewater generated will be oily water. Oily water will be collected in a buffer tank and then transferred after adding the emulsifying agent to the multistage filter where multiphase emulsion process will separate oil from water. The construction of ETP was underway during the site visit. The treated effluent will reportedly be discharged into the Kirtankhola river post analysis of samples, as provided in the ESIA report. The capacity of ETP as mentioned in the ESIA report is 0.5 m^3/ hour.

Dormitory

A dormitory is proposed for the workers during the operation of the plant, which will accommodate about 50 workers. The Dormitory will be located within the plant boundary.

2.3.4 Status of Permits

The plant has obtained following consents and approvals from various government agencies:

Table 2-3: Status of Permits

S. No.	Law	Status	Validity	Remarks
1.	The Environment Conservation Rules 1997/01-04-2003	• Environmental clearance certificate Dated 16th March 2016	Valid for one year	--
2.	The Factories Rules, 1979	• Factory License dated 16th Sept 2015	Valid up to 31st Dec 2015	Renewal has been applied for as per discussions
		• Factory Inspector's certificate for Lifting devices and pressure vessels for a year	Not available for review	--
3.	The Boilers Act, 1923	• Registration of Boilers	--	Details not available
4.	Petroleum Act, 1937	• License from Explosive Inspector for fuel storage	--	--
5.	Energy Regulatory Commission Act 2003; Energy regulatory commission License regulation 2006	• Applied 14th July 2015	--	Payment made to BERC towards license with cheque dated 13th July 2015
6.	Power purchase/ Rental Agreement with BPDB	• Contract no 09988 darted 2nd March 2015	15 years	--
7.	Fuel Supply Agreement	• With SOSCL, dated 17th Sept 2015	--	--

2.4 Environment Health, Safety and Social Scenario

2.4.1 Environment

SPL Plants have been certified for ISO 14001: 2004 - Environmental Management System for policy and procedures established under its IMS. The Environmental Management System (EMS) has been developed at the corporate level (SPL) and the proposed plant management shall be responsible for implementing measures prescribed in the IMS. Project specific operational procedures will be developed by SBPL management in line with the IMS requirements. As part of the EMS, SPL has established an overarching Environment policy in order to effectively manage environmental impacts associated with the plant operations whilst complying with statutory requirements. Additionally, SPL has also established environmental objectives for reduction in waste oil generation, water consumption and electricity consumption for its existing plants. The policy shall be applicable to the proposed power plant and will be adopted by SBPL for implementation.

The EMS constitutes procedures for meeting environmental legal and other requirements, along with evaluation of compliance, identification and disposal of controlled waste / special wastes, environmental aspects and its significant

impacts identification, management review, monitoring and measurement, waste handling and segregation, significance of environmental aspect amongst others. The same aspects shall be applicable to the proposed project.

SBPL has not yet undergone any certification process, although the key staff managing the facility at the current stage of transition is all trained on IMS. It is to be mentioned that there is no document procedures or policy at site for construction phase environment management. The IMS is only applicable for operational phase.

2.4.2 Health and Safety

SPL has been certified for OHSAS18001: 2007 - Occupational Health and Safety Management System (OHSMS) for policy and procedures established under IMS. The OSHMS has been developed at the corporate level (SPL) and the plant incharge of the proposed power plant shall be responsible for implementing measures prescribed thereunder. As part of the OSHMS, SPL has established an overarching Health and Safety Policy in order to effectively manage Occupational Health and Safety aspects associated with the plant operations whilst complying with statutory requirements. Additionally, SPL has also outlined objectives to achieve zero occurrences of the accidents, lost time, and ill health due to occupation related activities in all existing plants, so the same shall be applicable to this proposed plant and will be adopted by SBPL for implementation.

However, as the IMS has not been extended to the construction phase of the plant, there is no construction phase mechanism and procedures, the Health & Safety procedures at site were observed as inadequately documented and maintained in a very informal manner. There are no written procedures of protocols and the reporting on accident/incidents etc. are also maintained informally. There is however a designated safety officer, who ensure use of PPE and recording of H&S issue informally and takes requisite corrective action. No H&S person of the existing contractor's team (UDECO) was available during the site visit.

2.4.3 Social and Stakeholder

The project has conducted a socio-economic study as part of ESIA study and has surveyed 100 families, that comprised of adjoining local community and project affected persons. The methodology for the social baseline study included household survey, Focus Group Discussions (FGD) with day laborers, women groups and the land owners who have lost the land to the power plant project; and Consultations with project affected persons, representatives of the local elite, local government, local administration and chairman of the local Union Parishad (the local government administration and members of the Union Parishad).

Community members interacted with during the site visit also confirmed periodic communication with the project person on various matters. The EIA report has identified a Liaison officer, however no designated person was observed at site during the visit.

2.5 Project Categorization

The project is categorized as ***Category A***, based on the review of documents and on-site assessment of environmental and social aspects. The categorization is based on the following observations (which are detailed in the subsequent sections):

- The land for project is agricultural land with displacement of informal occupants. Although compensation has been paid, there was no process followed in identifying the affected persons and the mechanism for deciding compensation is not clear.
- Wastewater discharges form the plant into the Kirtankhola River which could have potential impacts on the aquatic ecology.

- The facility uses HFO as fuel which will result in significant air pollution in the ambient environment in the form of particulate matter, Sulphur dioxide and oxides of nitrogen levels along with greenhouse gas emissions which contributes to climate change.
- The plant operations can have significant noise generation, that can potentially impact the employees and surrounding community.
- Use of HFO will result in generation of significant amounts of oily sludge which is hazardous in nature and requires proper storage and disposal mechanism; and
- Large quantities of fuel storage on site pose potential safety hazards for workers and surrounding community.

3.0 Document Review and Assessment of Compliance

This section details the compliance of the project with respect to requirements under IFC Sustainability Framework and applicable national and local regulations. The observations made during the due diligence and gaps identified are discussed herewith.

3.1 Performance Standard (PS) 1: Assessment and Management of Social & Environmental Risks and Impacts

3.1.1 Environment and Social Management System

Requirement -1

Performance Standard 1 emphasizes on the need of an effective Environmental and Social Management System (ESMS) focusing on dynamic and continuous process initiated and supported by management, and involves engagement between the client, its workers, local communities directly affected by the project (the Affected Communities) and, where appropriate, other stakeholders.

The client, in coordination with other responsible government agencies and third parties as appropriate, will conduct a process of environmental and social assessment, and establish and maintain an ESMS appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements: (i) policy; (ii) identification of risks and impacts;
(iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.

Observation 1

SPL has an existing IMS for all its operational projects, however SBPL is not yet covered as part of it, since it's not yet operational. SPL does not have corporate level Environment and Social Management System (ESMS) that covers planning, construction, operational and decommissioning phases of projects. There are no documented procedures or plan for the construction phase of the project, nor any ad-hoc E&S management arrangement for the transition phase of the project (i.e. till the time when project is completely operational). The basic inadequacies observed during the site visit are:

- There are no protocols or documentation on waste generation, waste handling and disposal
- There is no monitoring mechanism for any environmental parameter during the construction and transition phase
- There is no reporting mechanism to corporate level of SPL on EHS &S performance parameters
- No records of grievance from community is maintained as per grievance mechanism suggest in ESIA
- No adherence to the commitments under ESMP prepared as part of ESIA was observed at site.
- The primary contractor engaged at site for civil and mechanical works, i.e. UDECO, also did not have any ESMS or EHS management guidelines or procedures for implementation at site.

3.1.2 Policy

Requirement 2

The client will establish an overarching policy defining the environmental and social objectives and principles that guide the project to achieve sound environmental and social performance. The policy should reflect the client's philosophy regarding management of environmental and social risks and impacts, and include specific objectives

and aspirations the client has set in regard to its environmental and social performance, consistent with applicable Performance Standards.

Observations 2

SPL has an Environmental Management System Policy which states its commitment to sound environmental performance through identification and control of the impact of its activities; and to comply with the applicable laws and regulations of Bangladesh. Clause number 3 of SPL's Environment Policy states that the company aims to minimize any significant adverse environmental impacts of new developments using integrated environmental management procedures and planning. This clause in the policy explains that SPL management is environment conscious and has commitment to minimize adverse impact of upcoming new plants.

As part of its IMS, SPL has also adopted policy for Occupational Health and Safety management to exhibit SPL's commitment both at the corporate level and plant levels towards effective management of health and safety aspects. Both the environment and OH&S policies will be applicable to the project operations and will be adopted by SBPL as part of project specific IMS.

SPL is required to establish an overarching policy defining its social objectives and principles that guide the project to achieve sound social performance. SPL has neither established an overarching social policy at the corporate level nor a plant specific social policy at the unit level.

The project site is managed by staff who are certified to IMS, however there are no procedures at SBPL to work towards the policy objectives.

3.1.3 Identification of Risks and Impacts

Requirement 3

The client will establish and maintain a process for identifying the environmental and social risks and impacts of the project. The type, scale, and location of the project guide the scope and level of effort devoted to the risks and impacts identification process. When the project involves existing assets, environmental and/or social audits or risk/hazard assessments can be appropriate and sufficient to identify risks and impacts.

Observations 3

The client has undertaken an Environmental and Social Impact Assessment through Bangladesh Centre For Advanced Studies and submitted in February 2016. A draft report of the study was available for review. The observations on the ESIA study conducted are as provided:

Project Details

The Environmental and Social Impact Assessment does not provide:

Construction Phase:

- Project activity wise schedule
- Details of construction phase including peak labour force and average labour force.
- Details of labour accommodation
- Details of campsite, layout and facilities (water, fuel, sanitation, health, welfare) to be provided.
- Arrangements for construction-phase fire safety
- Details of waste management (construction debris, used oil etc.)

Operations Phase

- Plant layout depicting various facilities

- Details of Jetty and its operations
- Details of green areas
- Pollution control equipment planned
- Details workers engaged

Applicable Legislations and Performance Standards

The section fails to sum up all the requirements for the project:

- The EIA report does not provide details on applicability of various national laws.
- Details of applicable permits and consents.
- Applicability and IFC performance standards is also not provided
- Applicable Emission/ discharge Standards are not provided in the report

Baseline

The baseline section has covered the basic environmental aspects, however the following aspects are inadequate:

- The land use map and spot height maps related to site and surroundings is of poor quality and do not have adequate resolution to decipher various components of the map.
- There is no analysis of the land use of project area.
- Site specific details in terms of historic use, presence of grave yards, squatters at site is not elaborated
- Ecology section has no reference to site vegetation and hence no details on any vegetation / tree loss, the study is based on secondary information only, no methodology or process is provided.
- Information provided under ecology is incorrect at place. It is stated "The flora fauna in the project area have been compared with IUCN Red List and none of the species are found to be extinct or threatened." However, on a random check one of the species mentioned *Gavialis gangeticus* shows that it is critically endangered as per IUCN. (ref: http://www.iucnredlist.org/details/8966/0)
- The averaging value for Noise monitoring provided is not correct and hence the interpretation
- The possibility of flood and cyclone is not adequately elaborated with respect to project site
- Details of eco-sensitive zone in terms of their distance from the project needs to be included

Social Survey

- The social survey does not cover the Project Affected Families and no separate evaluation of their perception and expectation is covered
- There is no details on the squatters, share croppers, land loser (incl. landlessness, vulnerability etc.) in the social section
- No details about presence of vulnerable community or Indigenous people

Impact Evaluation

- The Air Modelling exercise does not provide adequate interpretation of the spread of pollutant in spatial terms. The isopleths shall be placed on a base map top understand the regional spread. Also, the incremental concentration at each monitoring location shall be added to the monitored result.
- Evaluation of Noise around residential area is inadequate and the assumption of 85dB(A) from Engine room is an underestimation.
- Mitigation for Noise is generic and needs to include reduction at source
- Risk due to flood considering 2000mm of rainfall with 80% in monsoon and tidal surge of about 2m, is not adequately covered and if mitigations are already provided it must be included.
- Impact evaluation criteria in very elementary and not adequately defined
- Impact assessment for Jetty construction not included
- The process of land procurement, Impact to displaced, is not covered and no plans pertaining to the same has been discussed in the report

- Oil Spill from Unloading not covered in ESIA
- Tank Failure, Rupture, Dyke fire, Domino effect is not modelled to understand zone of risks and preparedness required

Management Plans

ESMP is generic and does not discuss specific concerns about residential areas in the vicinity, vehicular movement through villages, migrant workers, noise, employment etc.

The following plans are not provided:

- Occupational Health and Safety Plan
- Construction Labour Management Plan
- Oil Spill Contingency Plan
- Emergency Preparedness Plan (w.r.t to tank failure)
- Livelihood Restoration Plan (as applicable)

Cumulative impact assessment has not been undertaken as part of the ESIA study, however since there are no similar industrial units in the vicinity of the plant, it was not required to be undertaken. Transmission lines installation does not need any additional land hence cumulative impacts were not assessed. With regard to associated facilities, the ESIA has not detailed out the risks and hazards from two storage tanks that belongs to SOSCL and impacts from construction of jetty has also not been covered.

The project has identified key social issues, though no records have been maintained to verify if all affected persons were included. Entitlement to the project affected families have been worked out on random basis and no formal mechanism was adopted to arrive at compensation amount.

3.1.4 Management Programs

Requirement 4

Consistent with the client's policy and the objectives and principles described therein, the client will establish management programs that, in sum, will describe mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the project. As part of the management program, the client may wish to establish its own internal performance measures to enhance positive impacts and the desired outcomes as measurable events to the extent possible. These include measures such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods, to ensure continuous improvement of performance in these areas.

Observations 4

SPL has developed a Construction Health and Safety Management Plan; however the plan is generic and provides only the outline of definitions and guidance to the management. It does not lay down the clear procedures for construction phase and at places it refers to the IMS which may not be existent during construction Phase. A Joint Environment, Health & Safety Committee is proposed for measuring effectiveness of community health and safety plan during construction.

As evident from the site visit, the plant has not put in place any management program till this stage. The site had no copy of ESMP or ESIA report and there is no documented instruction to follow the commitments under the ESMP. The ESIA has not identified any monitoring plan or program for continual improvement in E&S parameters of the project. No documentation of any planned approach towards improving E&S aspects was observed at site. It was informed that once the plant becomes operational the requirements under IMS will have specific programs for compliance with various E&S requirements under regulatory permits and as part of ISO requirements.

There was no copy of Construction Health and Safety Management Plan available at site and there is no adherence to the guidance provided in the document.

3.1.5 Organizational Capacity and Competency

Requirement 5

The client, in collaboration with appropriate and relevant third parties, will establish, maintain, and strengthen as necessary an organizational structure that defines roles, responsibilities, and authority to implement the ESMS. Specific personnel, including management representative(s), with clear lines of responsibility and authority should be designated.

Observation 5

It was understood from the discussion with site management that the Project Manager maintains direct interaction with the community, while there is an identified H&S officer who is responsible for overview of H&S aspects of all the workers including the contractors. There is no designated person for environment management or related aspects of waste management. As per the discussions it is informed that each engineer who is assigned a particular task also undertakes the responsibility of managing the environmental aspect of that activity

The construction phase and transition phase organizational structure is observed to be in sufficient to manage the Environmental aspects of the project. H&S officer of SBPL maintains informal records about PPE, Fire extinguisher, accident/incident etc. in his own file (as daily notes). However there is no formal reporting or follow-up of this.

3.1.6 Emergency Preparedness and Response

Requirement 6

Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment.

Observation 6

The site has provided adequate fire safety arrangements at site, fire extinguishers, fire hydrants, first aid boxes etc. were observed to be provided as per the project plan. The fire extinguisher at site were new were observed to have been inspected recently and in usable condition.

However, it is difficult to assess that whether all these facilities were available during key construction phase or it was brought in post completion of main construction works.

There is no documented mechanism for emergency response. The workers were not aware about any such mechanism at site. The arrangements at site currently are adequate for fires safety, there is need address other aspects such as Oil spill (since tanks are already storing fuel for interim testing), Man overboard (as jetty construction is ongoing), Fatal Human Injury (as people are working at height) etc.

It is reported that all contractors maintain first aid boxes and the nearest hospital is 10 mins from the site. The project car is used for transportation of workers if any emergency arises. No incident of emergency was reported from the site management or workers.

Emergency numbers were not displayed at the site, no evacuation plan or assembly area was observed during the site visit.

The Plant will be implementing IMS as applicable for its other plants and therein Emergency Response Plan will be prepared, however as on date there is a significant lapse.

Table 3-1: Fire Equipment (As per the notes of SBPL's H&S Officer)

S. No.	Equipment	Type	Quantity
1.	Portable Extinguisher (5Kg)	ABC Dry Controlled Powder (DCP)	32
2.	Portable Extinguisher (5Kg)	CO_2	08
3.	Extinguisher (25Kg)	Dry Controlled Powder (DCP)	05

3.1.7 Monitoring and Review

Requirement 7

The client will establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements. In addition to recording information to track performance and establishing relevant operational controls, the client should use dynamic mechanisms, such as internal inspections and audits, where relevant, to verify compliance and progress toward the desired outcomes.

Observation 7

UDECO was the civil and mechanical contractor for the project. SBPL has not entered into one consolidated EPC contract with UDECO but has awarded separate work orders to UDECO and other contractors (such as PSDCL) for various types of construction works. The work orders were reviewed and it was observed that conditions related to adherence to health and safety requirements and labour law compliances have not been included in the work order.

The monitoring and review at site was limited to H&S aspects, which was being undertaken by the H&S officer at site. It included,

- monitoring of Contractors for use of PPE
- monitoring of underage workers
- verification of extinguishers (refilling)

As such, no objectives are determined for improvement and there are no targets to achieve. All observations are recorded informally. It is observed that action is taken on defaulters for not using PPE, or engaging underage workers, however this is not governed by the system but on sole discretion of the H&S officer.

The monitoring and review at site is inadequate and not to the scale of operations. The ESIA report has outlined a construction phase ESMP and included monitoring requirements, however it was observed that the same has not been implemented at site.

3.1.8 Stakeholder Analysis and Engagement Planning

Requirement 8

The Client should identify the range of stakeholders that may be interested in their actions and consider how external communications might facilitate a dialog with all stakeholders. If it is known that the project will directly and adversely impact a local community (i.e., Affected Community), a Stakeholder Engagement Plan is required. The level of

complexity and detail of this Plan should be commensurate with the project risks to and impacts on the Affected Community and, in some cases; it could include engagement with a broader set of stakeholders.

Observation 8

As part of ESIA study involving consultations and engagement process with people in the Project locality, the field staff explained impacts and benefits of the Project, payment of required compensation for the damage to crops, trees, residential structures, ponds etc., and measures taken by the Project to avoid public utilities and community infrastructure such as schools, roads, common property resources etc.

Two forms of public consultation were used during preparation of the ESIA to discuss the project and involve the community in planning the mitigation measures and developing the Environmental Monitoring Plan. These are:

- Public meetings were held in the project area, to which representatives of the stakeholders were invited. Attendees were informed about the aim of the relevant project and the benefits they would bring, together with their likely impacts and the ways in which they would be mitigated. Participants were invited to discuss their views and concerns, which were then incorporated into the ESIA.

- Ad hoc discussions were also held on site with people and communities who could be affected by the project, so that views could be expressed in a less formal setting. These were also considered in preparing the ESIA.

Consultation with local community, Project Affected Families, and regulatory authorities is maintained during the project construction phase. It was observed that the project does engage with its stakeholders through community development works. It is reported that the project has donated money for local mosque, maternity care and other request of the community. The project has also worked towards widening of access road beyond their own requirement on request of the community. There is an outline stakeholder engagement plan provided in the ESIA report, however it is inadequate and also not being implemented at site.

The existing mechanism of stakeholder engagement is a passive one wherein the project responds to the community on their request. There is no plan with SBPL to actively engage with the community after the land acquisition process was over.

3.1.9 Disclosure of information

Requirement 9

Disclosure of information is normally expected as part of the process of identification of impacts and risks, but if the project is expected to create ongoing impacts and risks to the Affected Communities, the client should continue to provide information during the life of the project.

Observation 9

The details of project and ESIA finding were adequately disclosed with the community. A consultation meeting on Environmental and Social Impact Assessment (ESIA) of the Summit Barisal Power Limited was held in the Plant premises on 13th February 2016. The meeting was presided over by Mr. Lutfor Rahman, Community Leader of West Rupatali, Ward No. 25, Barisal City Corporation, Barisal.

The status of project during construction and its aspects are not being disclosed to the community in a formal and organised manner. There is no established procedure or plan for disclosure to community.

3.1.10 External Communications and Grievance Mechanisms

Requirement 10

Client will implement and maintain a procedure for external communications that includes methods to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability.

Observation 10

External Communication and Grievance mechanism maintained by SBPL is informal in nature; people directly approach the plant official in case of concerns and queries. There is no documentation for the complaints received from the community; the follow up of issues is also not documented. The ESIA has suggested a mechanism but there was no evidence of its implementation at site.

3.1.11 Status of Compliance to PS-1

SBPL is not compliant to the requirements of PS-1. There is no management system for EH&S and Social aspects for construction phase of the project. The EHS staff at site is inadequate and ESMP developed as part of the ESIA is not being followed at site. There is no documented procedure or plan at site for management of E&S issues at during construction. The existing engagement with community informal and there is no documented process for grievance redressal.

3.1.12 Recommendations

- SPL shall develop a corporate level ESMS covering planning, construction, operation and decommissioning phases, that will be implemented for all project developed under it.
- The Project shall develop an ESMS for construction phase and transition phase, till the IMS procedures are fully implemented in the operation phase. The system shall cover:
    - Protocols and procedures for EHS&S management
    - Monitoring mechanism for any environmental parameter during the construction and transition phase
    - OH&S safety plans and procedures
    - Improvement targets and objectives for EHS aspects
    - Organisational structure with responsibilities
    - Grievance mechanism for community
    - Disclosure mechanism
    - Social Policy
- All records such as observations, meetings, follow-up, reports etc. shall be documented and maintained
- As the construction phase is almost over, the ESIA report shall be updated to include:
    - The project details shall be updated to current status
    - Update and corrected baseline information on ecology to ensure that there is no harm to ecology during operations
    - Noise values to corrected and included
    - The process of land procurement, Impact to displaced, shall be covered and plans pertaining to the same shall be discussed in the report

- Flood Risk Assessment of the Site to understand need for additional bunding/drainage or protection
- Risk Assessment from tank failure
- Oil Spill Contingency Plan with response Plan
- Updated Management Plans
- Monitoring Plans
- Census survey of all project affected families will need to be undertaken

- The plan shall identify and put in place applicable EHS&S requirements (including those from ESMP), for remaining construction period until implementation of IMS. The plan shall be accompanied with adequate monitoring process.
- An Emergency Response Plan shall be adopted for the interim period and adequate training shall be provided on the same. Emergency numbers and evacuation plan shall be displayed at multiple locations within the plant.
- An assembly area shall be marked and communicated
- An appropriate mechanism for engaging with community shall be developed, which shall be disclosed to the community along with mechanism for grievance redressal.

3.1.13 Material Liability

There is material liability as the existing operations are un-monitored in terms of EHS aspect. There is a fair potential for accidents from existing activities or any claim from past accident which has not been recorded. The risk of fatal injury or severe injury to workers cannot be ruled out.

3.2 Performance Standard (PS) 2: Labour and Working Conditions

Performance Standard 2 is in part guided by a number of International Labour Organization (ILO) and United Nations (UN) Conventions. By applying Performance Standard 2, the client will be able to operate its business in a manner consistent with the four core ILO labor Conventions. In addition, Performance Standard 2 also addresses other areas such as working conditions and terms of employment, retrenchment, grievance mechanism, workers' accommodation and occupational health and safety (OHS) issues. Some of these requirements refer the client to the applicable national law. Where national law establishes standards that are less stringent than those in Performance Standard 2, or are silent, clients will meet the requirements of Performance Standard 2.

3.2.1 Working Conditions and Management of Worker Relationship

Requirement 11

The client will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law. The client will document and communicate to all employees and workers directly contracted by the client their working conditions and terms of employment, including their entitlement to wages and any benefits

The client will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

Observation 11

SBPI is a subsidiary company Summit Power Limited (SPL) and the corporate policies and procedures of SPL shall be applicable to SBPL employees. SPL has developed an HR Procedure and the following observations have been noted with respect to HR policies and procedures:

- The HR division of SPL deals with planning and development of human resources and their discipline, other services such as security and safety, welfare, transport, accommodation, and industrial relations. SPL has established HR policies and procedures to ensure fair and efficient management of workers.
- These procedures cover Human Resource Planning and Management measures for advertisement, recruitment, induction, training, performance evaluation and incentives, HR management, non-discrimination and equal opportunity, non- engagement of child labour, working condition and terms of employment, grievance management and retrenchment of permanent, temporary and contractual staff engaged by SPL.
- It is to be noted that HR Procedure of SPL is applicable to its permanent employees and is not extended to third party workers i.e. any workers engaged in the Plant premises by or through contractors.
- All employees on the rolls of SPL who are managing activities at SBPL and those engaged as employees of SBPL are covered by the HR Policy.
- The work orders issued to various contractors do not have any clause pertaining to compliance to labour laws or to HR policy of SPL. This includes UDECO which was at site during the site survey.

3.2.2 Workers' Organization

Requirement 12

Where the client is a party to a collective bargaining agreement with a workers' organization, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment, the client will provide reasonable working conditions and terms of employment. In countries where national law recognizes workers' rights to form and to join workers 'organizations of their choosing without interference and to bargain collectively, the client will comply with national law. The client will identify migrant workers and ensure that they are engaged on substantially equivalent terms and conditions to non-migrant workers carrying out similar work.

Observation 12

- It was reported by the management that the SPL and SBPL staff work eight hour shifts and are not generally required to do overtime and that they are paid as per Labour Rules for additional number of hours worked. Although overtime details are not provided in the HR policy.
- The direct employees at SBPL are provided with appointment letters describing the terms of employment.
- No direct staff members are currently accommodated at site. The existing labourers are accommodated in temporary campsite immediately outside the plant boundary. It was observed that campsite made of corrugated metal sheet do not meet the IFC guidelines in terms of space, material, construction and facility.
- There are no guidelines or requirements shared with the contractors to maintain a minimum requirement for the labour campsite. No documents or process to verify age of workers or wages being paid were available at site.
- HR policy of SPL does not cover contractors at site or their employees; neither such a clause is added to the work order issued.
- Adequate toilets and drinking water was observed to be available for the workers at site.

- Although the HR department has not established policies and procedures for recognition and management of workers' unions, the site management has, neither formally nor informally, restricted formation of such organizations.
- The HR Policy Of UDECO was not available for review

3.2.3 Non-Discrimination and Equal Opportunity

Requirement 13

The client will base the employment relationship on the principle of equal opportunity and fair treatment, and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. The client will take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women. The principles of non-discrimination apply to migrant workers.

Observation 13

HR policy clearly outlines management's commitment on behalf of the Group and the Company towards non-discrimination. SPL has also established anti-harassment policy under the same document which outlines the disciplinary actions to be taken in case such incidents are brought to the notice of the management. However the policy is not applicable for contract workers.

3.2.4 Retrenchment

Requirement 14

Prior to implementing any collective dismissals, the client will carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers. The retrenchment plan will be based on the principle of non-discrimination and will reflect the client's consultation with workers, their organizations, and, here appropriate, the government, and comply with collective bargaining agreements if they exist.

Observation 14

There has been a decline in contract workers after completion of major civil works, however it cannot be termed as retrenchment as most of the workers were associated with their contractors and they will be retained by them. As such no retrenchment is foreseen as the plant is yet to commence its operations.

3.2.5 Grievance Mechanism

Requirement 15

Client shall put in place a grievance mechanism through which workers may raise workplace concerns, the client should ensure that matters are brought to management's attention and addressed expeditiously. It should also provide feedback to those involved and should bar retribution for filing complaints. Grievance mechanisms may be designed to direct complaints through an appropriate process in order to protect the confidentiality of the worker, and should ensure that workers can raise concerns other than to immediate supervisors. The client needs to document

all grievances and follow up on any corrective action. The client will appoint a committee to deal with grievances, which will include management, supervisors and workers' representatives.

Observations 15

SPL has established three tier employee grievance mechanism in their HR Manual (section 2.20.9 of doc. no. SP-HRM-1). As per these procedures, complaints / grievances of employees are required to be addressed to the management in writing, to be officially considered for addressal. Workers / employees are required to follow hierarchy structure for submission of their grievances. Any individual employee, who has a grievance in respect of anything, connected with his employment in the Company follow the given steps:

- Employees need to submit grievances in writing to their immediate supervisor. If the employee is not satisfied with the response from their supervisor then the he can write to the next level supervisor or directly write to GM HR giving copy to the Departmental Head.
- The concerned employee must bring his grievance to the employer's notice within 30 days of the occurrence of the cause of such grievance, and the employer must within 30 days of the receipt of such grievance, enquire into the matter and give concerned employee an opportunity of being heard and communicate the decision in writing to the said employees.
- Anonymous grievances or allegations will not be considered under any circumstances.

Grievance of contractors and its workers are not being formally recorded. There is no documented process being followed for recording complaints, follow-up and response to grievance.

3.2.6 Protecting the Work Force

Child Labour

Requirement 16

The client will not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. The client will identify the presence of all persons under the age of 18. Where national laws have provisions for the employment of minors, the client will follow those laws applicable to the client.

Observation 16

SPL has clear policy of not employing any person below the age of 18. Proof of age is verified prior to all employment. The policy of SPL is not extended to contract workers, and therefore any check on age workers could not be verified. No child labour was observed at site and it was informed that the H&S officer makes observations on the age of worker. The informal records maintained at site show observation of underage worker at site, who were turned away.

Forced Labour

Requirement 17

The client will not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements.

Observation 17

Although not mentioned in the policy, there is no evidence of any policy being thrusted on the workers involuntarily.

3.2.7 Occupational Health and Safety

Requirement 18

The client will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The client will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice, as reflected in various internationally recognized sources including the World Bank Group Environmental, Health and Safety Guidelines.

Observation 18

There is no H&S management system developed by SBPL for construction phase of the project. There was no H&S plan available at site for review. It was observed that most of the workers were provided with Personal Protection Equipment (PPE), however a very few workers had the complete set with safety shoes, helmet and gloves.

- Overall management of H&S safety was poor, with randomly kept gas cylinders, no use of safety harness while working at height, wielding units with proper earthing and frayed electricity cables extended to long distances.
- The house keeping was also observed to be poor with scrap and metal pieces scattered at multiple places. Bamboo scaffolding were being used which is considered as unsafe and not a good practice.
- No evidence of permit system was provided for the ongoing construction work at site. Some of the workers interacted with had no information about work-permit system.
- Incident /accident reporting (including unsafe act/near miss) is maintained in a personal register by the H&S officer. There is no reporting of the same. Action is taken at his own level by refusing workers without PPE to work, however the impact was not evident. Hence statistical data on OHS performance cannot be presented.
- H&S briefing is given to contract workers prior to all activities however no documents regarding the same were observed. Only training details of training shared by employees and workers was mock drill of fire hydrant post its installation.
- Hazard Identification Risk Assessment (HIRA) for construction phase has not been undertaken and therefore no risk mitigation has been considered.
- The fuel tanks area and Plant related facilities are provided with adequate containment and fire hydrant facility, however the testing of Engines, performance test etc. are being conducted with proper HIRA or job safety assessment.
- Adequate signages were observed for the commissioned part of the plant.
- The working conditions are observed as unsafe and prone to accidents.
- No OHS briefing is provided to visitors and other third parties accessing the premises.
- No Emergency Preparedness and Response Plan has been prepared for construction phase and as of now all activities are undertaken without adequate arrangements for emergency response.

3.2.8 Status of Compliance to PS-2

SPL does not have an HR Policy which covers the working conditions and requirements of the contractors and its workers. There is no verification process for wages being paid to the workers of contractors. Also, there is no defined process for verification of age. The labour camp provided is inadequate and provides poor living conditions. Health and Safety requirements neither documented nor applied with a purpose. The project is non-compliant to the requirements of PS-2.

3.2.9 Recommendations

- SBPL shall develop a comprehensive Construction Labour Management Plan comprising of robust procedures for:
    - Criteria for selection of vendors
    - Review of compliance of contractor to Bangladesh Labour Law (wages, age, overtime, work hour etc.)
    - Implementation of Health and Safety Plan for construction, with identified areas of risk and precautions required
    - EHS requirements and , which shall include :
        - Accident/ Incident reporting (including near miss)
        - Permit to work System
        - Periodic training (including induction, refresher, mock drill, task specific etc.)
    - Guideline on Workers accommodation and Campsite
    - Review of organizational structure of Contractors for adequacy of EHS staff
    - Verification of sub-contractors (if any)
- All remaining contracts till commissioning of project shall carry clause pertaining to requirement of Bangladesh Labour Law (wages, age, overtime, work hour etc.) and compliance to PS 2 requirements.
- The HR Policy shall be revised to include Overtime policy, retirement age and defined weekly work hour as per Bangladesh labour law
- The Company shall develop a mechanism to monitor the labour force engaged by contractor on the following aspects:
    - Payment of Minimum wages (review of salary details) and overtime wages
    - Child Labour (review of age proof)
    - Work Hours (review of attendance records)
    - Health and Safety Practices
    - Grievance Redressal
- The management shall, in line with the requirements of Bangladesh Labour Law, add requisite statements to the HR policy, indicating their willingness to collective bargaining or formation of trade unions.
- Grievance received from employees shall be documented and record shall be maintained for all follow - ups and action taken. The mechanism will also be applicable to contract workers.

3.2.10 Material Liability

Some elements of the HR Policy and procedures need to be aligned with Bangladesh Labour Law, there is minimal monitoring of contractors workforce that can lead to fatal accidents and loss of life. This is a material liability.

3.3 Performance Standard (PS) 3: Resource Efficiency and Pollution Prevention

The client should take into account the potential impact of their activities on ambient conditions (such as ambient air quality) and seek to avoid or minimize these impacts within the context of the nature and significance of pollutants emitted. For small- and medium-sized projects with limited potential emissions, this may be achieved through compliance with emissions and effluent standards and the application of other pollution prevention and control approaches. Large projects with potentially significant emissions and/or high impacts, however, may require monitoring of impacts on the surrounding environment (i.e., changes in ambient levels), in addition to the implementation of control measures.

3.3.1 Resource Efficiency

Requirement 20

The client will implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water. Where benchmarking data are available, the client will make a comparison to establish the relative level of efficiency.

Observation 20

The plant has put in place heat recovery boilers wherein the heat recovered will be used for keeping the HFO warm and attain the required viscosity. It is expected that, there will be conservation of fuel in recovery of heat from cooling water.

The consumption of water for operations is limited to make-up water for boilers, as the engines are provided with radiators for cooling, therefore cooling water is a closed loop. The water requirement for the plant will be limited to 20m^3/day during operations. Both ground water and surface water (from Kirtankhola river) options are kept open which will minimise stress on ground water. Water for construction was sourced from ground water and river water, however records were not being maintained for construction phase.

3.3.2 Greenhouse Gases

Requirement 21

In addition to the resource, efficiency measures described above, the client will consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project. These options may include, but are not limited to, alternative project locations, adoption of renewable or low carbon energy sources, sustainable agricultural, forestry and livestock management practices, the reduction of fugitive emissions and the reduction of gas flaring.

Observation 21

The ESIA report has not quantified GHG emissions from the plant, there are no other documents that provide an estimate of GHG from operations.

3.3.3 Pollution Prevention

Requirement 22

The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air, water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. The client should monitor emissions to ensure that the requirements of Performance Standard 3 are being met. The frequency with which pollutant emissions are monitored should be appropriate to the nature, scale and variability of potential impacts.

Observation 22

Ambient Air Quality

Ambient air quality monitoring was undertaken at four locations as part of the ESIA study. The analysis of the ambient air was done by Q Tex Laboratory, Dhaka. The observations are as given the table below.

Table 3-2: Air Quality

S. No.	Parameter	Range µg/m^3	NAAQS (WB guideline)
1.	Total Suspended Particulate Matter (SPM)	112-152	Annual standard 200 µg/m^3
2.	Particulate Matter of 10 micron (PM10)	127-137	24 Hourly150 µg/m^3 (150 Interim target-1)
3.	Sulphur Di- Oxide (SO2)	7.33 -9.88	200 µg/m^3 annually (125 Interim target-1)
4.	Oxides of Nitrogen (NOx)	11.33-13.2	100 µg/m^3 Annually 40 (guideline)
5.	Carbon Monoxide (CO)	Nil*	10mg/ m^3 8hourly

* BDL levels are not provided

Although the standards are not comparable to monitored value due to difference in monitoring period, however the values suggest that the ambient air quality is good.

Noise Quality

Ambient noise level was monitored for 12 hours during day time 5 locations in the project site, while 12 hours monitoring was undertaken during night for 5 hours:

- Day time average noise values were observed in the range of 40-59 dBA
- Night time average values were observed in the range of 46-48 dBA

The values provide are within the within the range of Bangladesh Environmental Quality Standard as well as WB General EHS Guidelines 2007 for residential zone. However, the calculation of average is not correct and the values are same as Leq values considering the hourly values given.

Water Quality

The surface water samples from Kirtonkhola River were sampled and the results are presented in **Table 3-3.** The BOD levels are observed to be above the DOE standards, while other parameters are within the limits.

Table 3-3: Surface Water Quality

Parameters	Units	Location 1 (100m Upstream of the power plant)	Location 2 (100m Downstream of the power plant)	Bangladesh Standard
pH at 24.5°C	mg/L	7.90	6.90	6.5-8.5
TDS	ppm	450	430	1000
EC	µ S/cm	410	420	1200
Temperature	^{o}C	27.1	25.1	-
DO	ppm	3.69	3.84	4.8-8
BOD_5	mg/L	54	57	50
Arsenic	mg/L	< 0.01	< 0.005	0.05
COD	mg/L	108.0	120.0	200
Manganese	mg/L	< 0.05	0.098	5
Phosphate	mg/L	0.52	1.39	-
Phosphorus	mg/L	0.55	0.45	1

Parameters	Units	Location 1 (100m Upstream of the power plant)	Location 2 (100m Downstream of the power plant)	Bangladesh Standard
Conductivity	µS/cm	160	64.3	-

As part of ESIA study water sample was collected from the tube-well existing in the company and analyzed for different parameters. The results shows that all the parameters remain within the allowable limit of drinking water value as per as Environmental Quality Standards for Bangladesh.

Table 3-4: Ground Water Quality

Parameter	Units	Value	Bangladesh Standard For Inland Surface Water
pH at 26.9°C	mg/L	7.1	6.0 - 9.0
TDS	ppm	90.0	1000
Iron	mg/L	0.8	(0.3 – 1.0)
Alkalinity	mg/L	78.0	-
Hardness	mg/L	68.0	(200 – 500)
Chloride	mg/L	16.4	(150 – 600)
TSS	mg/L	4.8	10
COD	mg/L	11.7	NS
BOD	mg/L	5.5	NS
Arsenic	mg/L	0.050	0.05
Conductivity	µS/cm	696	NS

Monitoring during construction

There are no monitoring results for construction period; therefore, the status of air quality and noise levels during the construction in the adjoining area was not available. It is reported that septic tank is provided for labour camp but any arrangement for management of runoff from site during construction site was not evident. A most of the construction was over during the site visit, dust generation was limited.

Operations

The plant is expected to be compliant to emission requirements for operational phase of the project as provisions of Low Nox burners are provided for the engines. The Sulphur content in HFO is proposed to be 3.5% and emission levels from similar engine of other plants of Summit are observed to be with the limits. An air dispersion modelling with AERMOD software was undertaken as part of the ESIA study, for predicting maximum ground level concentration of NOx, SO_2 and PM_{10} over an annual averaging period. The modelling output indicates concentrations to be within the prescribed DOE and IFC-WB standards.

The plant is setting up an ETP for Oil water separation and suitable arrangements for storage of sludge and oily water, hence issues pertaining to effluent disposal is addressed. Also storm water facilities considering once in five year return period is being developed.

3.3.4 Hazardous Materials Management

Requirement 23

The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials. In this context, the production, transportation, handling, storage, and use of hazardous materials for project activities should be assessed. The client will consider less hazardous substitutes where hazardous materials are intended to

be used in manufacturing processes or other operations. The client will avoid the manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer.

Observation 23

The project handles and stores HFO and LFO for its operations. About 7000 m^3 of HFO is stored at the site. It is reported that the API guidelines have been followed in construction of the tanks. The tank farm area is paved and provided with a containment wall of 2.5 m height, the containment area has been designed to hold the cumulative volume of all tanks in case of any structural failure. The containment area is linked to an Oil water seperator, and prevents any contamination to ground or waterbody.

Another tank farm area with buffer and day storage is located at about 18-20 m from the HFO storage area. LFO is also stored in this tank farm. The tank farm area is paved and provided with a containment wall of 1.5 m height, the containment area has been designed to hold the cumulative volume of all tanks in case of any structural failure.

Other chemicals required includes chemicals for water treatment, corrosion control etc., the MSDS of these chemicals were available at site with adequate storage provisions.

The plant requires about 100 m^3 of lube oil is stored at site in tank, while drums of lube oil are place all around the site. The lube oil is stored on paved surfaces randomly at the site, thus there is a potential for run offs from this area reaching unpaved surfaces or stormwater drains or the river.

The facility will generate of oily sludge, for which an ETP for oil water separation is put in place for operation phase and a sludge tank of 500m^3 and oily water tank of 75m^3.

However, there are no records of hazardous waste collected and disposed during the construction phase, which include waste oil, cotton rags, used gloves etc. No storage facility was observed at site for waste oil from machinery at site.

3.3.5 Status of Compliance to PS-3

The compliance is partial as the requirements for operation phase is well covered and was observed to be adequate but monitoring and adherence to commitments of ESIA –ESMP is not observed during the construction phase.

3.3.6 Recommendations

- The plant shall quantify its GHG emissions and put in place measures for continual improvement.
- Monitoring of ambient air quality shall follow the monitoring periods as prescribed by Bangladesh norms or WB-IFC guidelines particularly for NOx, hourly monitoring data shall also be recorded.
- Noise monitoring shall be undertaken as L_{eq} for day and night, which represents a time-weighted average noise level. Noise monitoring shall be undertaken for a continuous period of 24 hours and then averaged for day and night periods to get a meaningful assessment.
- Lube oil storage area shall be in designated places only, which shall be provided with secondary containment or drains leading to ETP.
- Records of waste generation shall be formally maintained and reported for the remaining part of the construction period.
- Hazardous Materials and Waste Management Plan to be developed for operation phase of the project.
- All commitments made under the ESIA/ESMP to be followed during the operation phase of the project.
- The project must monitor noise, stack emission immediately after the commissioning, and take remedial measures, if required.

- The size of storm water drainage shall be revisited for its adequacy after a flood risk assessment study

3.3.7 Material Liability

Construction phase monitoring needs to improve, however it cannot be termed as material liability.

3.4 Performance Standard (PS) 4: Community Health Safety and Security

3.4.1 Community Health and Safety

Requirement 24

The client will evaluate the risks and impacts to the health and safety of the Affected Communities during the project life-cycle and will establish preventive and control measures consistent with good international industry practice (GIIP),such as in the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) or other internationally recognized sources. The client will identify risks and impacts and propose mitigation measures that are commensurate with their nature and magnitude. These measures will favour the avoidance of risks and impacts over minimization.

Observations 24

The plant have about 7000m^3 of HFO storage facility within its boundary, however no risk assessment study has been conducted to understand tank fire and dyke fire scenario for the storage area. Based on previous experience on such studies it is observed that a zone of 250 m around the tank would be vulnerable to impact from incident radiation. The location is far from residential area however not beyond 250m, hence the potential for risk exist.

Transportation of construction material was mainly by river, and only limited use of road was made. The operation phase will not require much transportation by road. Since the access road passes through the residential area, signages and markings along the road was observed as inadequate.

The project undertakes pre-employment medical test (general health check-up) for workers directly engaged by SBPL/SPL, however no medical test is conducted for contractual workers prior to engagement, to identify any communicable diseases.

3.4.2 Security Personnel

Requirement 25

When the client retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by its security arrangements to those within and outside the project site. The client will make reasonable inquiries to ensure that those providing security are not implicated in past abuses; will train them adequately in the use of force (and where applicable, firearms), and appropriate conduct toward workers and Affected Communities; and require them to act within the applicable law. The client will not sanction any use of force except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.

Observation 25

The site security has been arranged through Marshall Security wherein 24 unarmed security persons are hired. Besides this, there are seven persons on the rolls of SBPL. Background verification of security personnel is reportedly conducted by SBPL for the direct security staff, however no records were available pertaining to same. The security comprises of people from the region and no cultural conflict is perceived. The security staff from

Marshall Security comprises of ex- defence persons and reportedly trained by the security providers on dealing with community.

There is however no formal management procedure security personnel for the construction and operation phases.

3.4.3 Status of Compliance to PS-4

The project is compliant to the requirements of PS-4, however risk from tank failure needs to be assessed prior to full scale operations.

3.4.4 Recommendations

- Quantitative Risk Assessment should be undertaken for fuel storage and identify the zone of risk
- An Emergency Response Plan should be developed accordingly and disseminated to the community
- Adequate signages and markings shall be made along the access road to ensure safety of the residents

3.4.5 Material Liability

Lack of information on risk from fire to storage area can lead to loss of life of workers and affect nearby community in case of such a disaster. Although the facility has made adequate fires safety arrangements, the lack of risk assessment is a material liability.

3.5 Performance Standard (PS) 5: Land Acquisition and Involuntary Resettlement

3.5.1 Land Acquisition

Requirement 26

Performance Standard 5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons that use this land. Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use.

Observation 26

The project has procured 9.0349 acre of private land for the project from 60 land owners (as reported in ESIA report). SBPL has procured the land from willing sellers at a mutually negotiated price. Based on the discussions with some of the past landowners, it is inferred that they were adequately compensated as per the market value. The procurement process started in October 2013.

Table 3-5: Land Details

District	Upazila	Mouza and JL No	Land type	Total Area (Existing)
Barisal	Barisal Sadar	56, Rupatali (j) and Nolchiti	Bilan	9 Acres
Daag No of Land	1901, 1902, 1903, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1921, 2132, 2135, 2136, 2137, 6002, 6003 and 6004			

The site was previously used for agriculture and growing vegetable, some parts of the land was barren land. The site had agricultural labourers, share croppers and squatters. It is reported that these people were either physically or

economically displaced for the project. It is also reported that adequate compensation in terms of money, land and job was provided to these people after due discussion.

The ESIA has not undertaken census survey of the project affected families. According to the details covered in the ESIA report and based on the discussions with the community it is understood that physical and economic displacement was limited to four (4) squatters, six (6) share croppers, five (5) agricultural labourer and six (6) dwellings at site. It is also understood that the land owner have willingly sold the land/property. However with respect to those with informal rights, it was a negotiated settlement as they had no option but to vacate the land and therefore PS-5 is triggered.

The project has compensated the persons with informal rights by providing alternate house, jobs to the squatters and share croppers, while the houses relocated were compensated by paying twice the land price. There was no cut off date identified for considering the entitlement, and no rationale for compensation in the ESIA report. Hence it could not be assessed whether the compensation was paid at replacement cost.

No Resettlement Action Plan has been prepared as part of the ESIA, it is therefore difficult to verify whether the resettlement assistance offered is sufficient to restore their standards of living as earlier. Also there is not independent verification of the process on its correctness and adequacy with respect to IFC Performance Standards.

3.5.2 Status of Compliance to PS-5

The project has not complied to requirements of PS-5, a Resettlement Action Plan was required to be prepared as part of the ESIA studies as there are people with informal rights for whom the process and calculation of compensation is not clear.

3.5.3 Recommendations

As the land procurement process has completed recently (less than 2 years), there is a need to assess the correctness of resettlement process. It is recommended to commission an external completion audit of the Resettlement undertaken to assess whether:

- All persons identified as part of ESIA report and later has been compensated
- The compensation was adequate and made to the appropriate person
- Resettlement assistance (including jobs) offered is sufficient to restore their standards of living
- There are any claims unaddressed

The completion audit will include, at a minimum, a review of the totality of compensatory measures implemented by the Client, a comparison of implementation outcomes against IFC requirements, and a conclusion as to whether the resettlement can be considered as concluded.

3.5.4 Material Liability

There may be need for additional compensation and new compensations. However it can be more than USD 250,000 to rectify, therefore material liability is being considered.

3.6 Performance Standard (PS) 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

3.6.1 Biodiversity Conservation

Requirement 27

Performance Standard 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development.

Observation 27

The historic images of the site shows that it was agricultural land with almost no tree cover. The site is located far away from any identified eco-sensitive location. An ecological assessment was carried out as part of ESIA. However the baseline ecology section of the report has no reference to site vegetation and hence no details on any vegetation / tree loss is provided. The study is based on secondary information only, no methodology or process is provided.

Further, information provided under ecology is incorrect at places. One of the species identified is *Gavialis gangeticus,* which is critically endangered as per IUCN. However the report states that the flora and fauna in the project area have been compared with IUCN Red List and none of the species are found to be extinct or threatened.

Though there will not be any thermal discharges into the river, due to adoption of closed loop cooling system, it is understood that waste water (such as treated effluent, DM plant rejects, etc.) will be discharged into the river. However, the presence of any aquatic species of significance in the Kirtonkhola River has not been established in the ESIA.

3.6.2 Recommendations

- Undertake ecological assessment of the site to understand presence of any aquatic species of significance or any specific habitat in proximity which would need protection,

3.6.3 Material Liability

There is no material liability pertaining to ecological impacts due to plant operations.

3.7 Performance Standard (PS) -7: Indigenous People

3.7.1 Avoidance of Adverse Impacts

Requirement 28

The client will identify, through an environmental and social risks and impacts assessment process, all communities of Indigenous Peoples within the project area of influence who may be affected by the project, as well as the nature and degree of the expected direct and indirect economic, social, cultural (including cultural heritage), and environmental impacts on them.

Observation 28

Based on the review of secondary literature, it is understood that the indigenous peoples of Bangladesh refer to native ethnic minorities in south-eastern, north-western, north-central and north-eastern regions of the country.

These regions include the Chittagong Hill Tracts, Sylhet Division, Rajshahi Division and Mymensingh District. The project area has not reported presence of any indigenous community. The ESIA has not identified presence of any tribes or indigenous communities in the project area or affected community.

3.7.2 Recommendations

No recommendations are made.

3.7.3 Material Liability

There is no material liability pertaining to impacts on Indigenous Community due to the project operations.

3.8 Performance Standard (PS) - 8: Cultural Heritage

3.8.1 Cultural Heritage

Requirement 29

In addition to complying with applicable law on the protection of cultural heritage, including national law implementing the host country's obligations under the Convention Concerning the Protection of the World Cultural and Natural Heritage, the client will identify and protect cultural heritage by ensuring that internationally recognized practices for the protection, field-based study, and documentation of cultural heritage are implemented.

Observation 29

There are no structures of cultural significance in or around the plant site. However five to six graves were located within the site, which were shifted to a new location. This was done after due consideration with the concerned community members. Adequate compensation was paid for relocation of the graves. No cultural issues were raised because of the same.

3.8.2 Recommendations

No recommendations are made.

3.8.3 Material Liability

There is no material liability pertaining to impacts on cultural heritage due to the project operations.

The present section delineates the list of actions required to be undertaken by the management to ensure closure of the gaps as identified in Section 3.0 of the report. The Corrective Action Plan is provided below with timelines, responsibilities and specific action items.

The gaps are categorised as red, orange and yellow flag issues based on the severity of impact on the EHS and Social aspect:

Flags		Remarks
	Red Flag Issues	These are observations which pose high impact on the environment, health, safety and social aspects and may have legal implications.
	Orange Flag Issues	These are observations which pose moderate impact on the environment, health, safety and social aspects.
	Yellow Flag Issues	These are observations which pose low or least impact on the environment, health, safety and social aspects.

Table 3-6: Summary of Findings and Recommendations

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
1.	PS-1	ESMS	• There is no management system for EH&S and Social aspects for construction phase of the project.		• Develop an ESMS at corporate level covering planning, construction, operation and decommissioning phases and ensure implementation at project level. • The Project shall develop EHS&S Management procedures for construction phase and transition phase, till the IMS procedures are fully implemented in the operation phase. The system shall cover: o Protocols and procedures for EHS&S management o Monitoring mechanism for any environmental parameter during the construction and transition phase o OH&S safety plans and procedures o Improvement targets and objectives for EHS aspects o Organisational structure with responsibilities o Grievance mechanism for community o Disclosure mechanism o Social Policy • All records such as observations, meetings, follow-up, reports etc. shall be documented and maintained • Construction phase management plan will identify and put in place applicable EHS&S requirements (including those from ESMP), for remaining construction period until implementation of IMS. The plan shall be accompanied with adequate monitoring process.	Preparation of corporate level ESMS along with site specific E&S Management Procedures for construction and operation phases (USD 20,000)	SPL Corporate Management KPI 1: ESMS Document along including site specific management measures for construction phase	Three Months
2.	PS-1	Identification of Risk	• The ESIA needs to be updated and corrected • The ESMP is not being complied with.		ESIA report to be updated as per following recommendations: • The project details shall be updated to current status • Update and corrected baseline information on ecology to ensure that there is no harm to ecology during operations • Noise values to corrected and included • The process of land procurement, Impact to displaced, shall be covered and plans pertaining to the same shall be discussed in the report • Flood Risk Assessment of the Site to understand need	Engage Third Party Consultant to Update the ESIA in accordance with the requirements of IFC Performance Standards (USD 60,000)	SBPL KPI 1: IFC PS compliant ESIA report	Three Months

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
					for additional bunding/ drainage or protection • Risk Assessment from tank failure • Oil Spill Contingency Plan with response Plan • Updated Management Plans • Monitoring Plans • Census survey of all project affected families			
3.	PS-1	Organisational Capacity and Competency	The EHS staff at site is inadequate and ESMP developed as part of the ESIA is not being followed at site.		• SBPL to hire an EHS person with adequate qualification for managing EHS issues at site and responsible for implementation of ESMP at site. • A community liaison officer should also be appointed at site to manage community related issues.	New hire: USD 300/ month	HR Manager KPI 1: Hire EHS person with adequate Qualification at site KPI 2: Hire a Liaison Officer	Two months
4.	PS-1, PS-4	Emergency Preparedness and Response	There is no site specific ERP for Construction Phase.		• An Emergency Response Plan shall be adopted for the interim period and adequate training shall be provided on the same. • Emergency numbers and evacuation plan shall be displayed at multiple locations within the plant. • An assembly area shall be marked and communicated	ERP to be formulated as part of ESMS development by third party consultant (budget as given in Sl. No. 1 above)	Safety team of SBPL KPI 1: Site specific ERP document	One Month
5.	PS-1	Stakeholder Consultation and Disclosure of Information	Engagement with community is passive post land procurement. There is no formal Grievance redressal mechanism		An appropriate mechanism for engaging with community shall be developed, along with mechanism for grievance redressal, which shall be disclosed to the community.	Revised Stakeholder Engagement approach to be devised as part of ESMS development (budget as given in Sl. No. 1 above)	Liaison Officer KPI 1: Stakeholder engagement plan KPI 2: Grievance redressal mechanism for community	Two month
6.	PS-2	HR Policy	• HR Policy does not cover contractors workers at site and the work orders do not carry any condition pertaining to same • Various aspects of Bangladesh Labour Law (age of retirement, overtime, workers union etc.) are not adequately addressed in the HR Policy		• The HR Policy of SPL should be updated to include following: ○ *Procedures to be followed in case of collective dismissals:* To ensure transparency for any unforeseen situations involving collective dismissals, retrenchment procedures in compliance with Section 12, 16, 17 & 18, Chapter II of the Bangladesh Labour Act, 2006 and IFC PS 2 requirement should be formulated by SPL and included in the HR Policy. ○ *Procedures for recognition and management of workers' unions*: SPL should develop a collective bargaining policy in compliance with Section 176, 177 and 178 & 195 of Bangladesh Labour Act, 2006 as part of its overall HR Policy. ○ Include Overtime policy, retirement age and defined weekly work hour as per Bangladesh Labour Act, 2006 ○ Relevant elements of the HR policy should be extended to contractors, vendors and operators engaged with the Company as well as the contract workers engaged during the construction phase through contractors.	Resource at the corporate level to be allocated for implementation of recommendations. No additional budget required.	HR Manager KPI 1: Updated HR Policy	One Month

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
7.	PS-2	Monitoring of Contractors	• There is no process to monitor the labour force of contractors for age, wages, work hour etc. • The contract with contractors does not include clauses pertaining to adherence of legal requirements.		• The Company shall develop a mechanism to monitor the labour force engaged by contractor on the following aspects: ○ Payment of Minimum wages (review of salary details) ○ Child Labour (review of age proof) ○ Work Hours (review of attendance records) ○ Health and Safety Practices ○ Grievance Redressal • All remaining contracts till commissioning of project shall carry clause pertaining to requirement of Bangladesh Labour Law (wages, age, overtime, work hour etc.)	Resource at the corporate level to be allocated for implementation of recommendations. No additional budget required.	HR Manager KPI 1: Amendment to contract conditions KPI 2: Procedure related to contract labour monitoring	One Month
8.	PS-2	Construction Labour-OH&S	There is not procedure for managing the Occupation Health and Safety of Contract workers		SPL shall develop a comprehensive Construction Labour Management Plan comprising of robust procedures for: • Criteria for selection of vendors • Review of compliance of contractor to Bangladesh Labour Law (wages, age, overtime, work hour etc.) • Implementation of Health and Safety Plan for construction, with identified areas of risk and precautions required • EHS requirements and , which shall include : ▪ Accident/ Incident reporting (including near miss) ▪ Permit to work System ▪ Periodic training (including induction, refresher, mock drill, task specific etc.) ○ Guideline on Workers accommodation and Campsite ○ Review of organizational structure of Contractors for adequacy of EHS staff ○ Verification of sub-contractors (if any)	Construction Labour Management Plan to be formulated as part of ESMS development by third party consultant (budget as given in Sl. No. 1 above)	HR Manager/ Safety Officer KPI 1: Construction Labour Management Plan	One Month
9.	PS-2	Grievance Redressal	No Formal recording of Grievances at site		Grievance received from employees shall be documented and record shall be maintained for all follow - ups and action taken.	Existing resources to be allocated for implementation of recommendations. No additional budget required.	HR Manager KPI 1: Documentation required from all employees and management	One Month
10.	PS-3	Pollution Prevention	• Air monitoring periods of various parameters shall be in accordance with the duration prescribed for existing norms or guidelines to be comparable. • Noise Monitoring shall be averaged as Leq • Construction phase ESMP requirements not being implemented at site. • Potential for flooding from rains and runoffs		• Quantify its GHG emissions and put in place measures for continual improvement • Monitoring of Ambient air quality shall following the monitoring periods as prescribed by Bangladesh norms or WB-IFC guidelines particularly for NOx, hourly monitoring data shall also be recorded. • Noise monitoring shall be undertaken as Leq for day and night, which represents a time-weighted average noise level. Noise monitoring shall be undertaken for a continuous period of 24 hours and then averaged for day and night periods to get a meaningful assessment. • All commitments made under the ESIA/ESMP to be followed during the operation phase of the project. • The project must monitor noise, stack emission immediately after the commissioning, and take remedial measures, if required. • The size of storm water drainage shall be revisited for	Updated monitoring plan to be developed as part of the ESIA updation (as per Sl. No. 2 above) Flood risk assessment study as part of the ESIA updation (as per Sl. No. 2 above)	EHS Officer of SBPL KPI 1: Changes to monitoring requirements and updated Monitoring Plan KPI 2: Records on the results of monitoring. KPI 3: Flood risk assessment study	Implement from first monitoring post commissioning

S. No.	Applicable Performance Standard	Issue Identified	Summary of Issues	Flag	Proposed Action Plan	Budget and Resource	KPI and Responsibility	Timeline (from date of finalization of this report)
					its adequacy after a flood risk assessment study			
11.	PS-3	Hazardous Material	• The lube oil is stored on paved surfaces, however no secondary containment or drain line to oil sump was observed around the storage area, thus there is a potential for run offs from this area reaching unpaved surfaces or storm water drains. • No records of waste generation are maintained at construction site.		• Lube Oil storage area shall be provided with secondary containment or drains leading to oil water treatment facility. • Records of waste generation shall be formally maintained and reported for the remaining part of the construction period • Hazardous Materials and Waste Management Plan to be developed for operation phase of the project.	Construction of drain line (USD 50,000)	Administration/Logistics SPL Management KPI 1: records of waste generation KPI 2: Hazardous Materials and Waste Management Plan	Two months
12.	PS-4	Community Health and Safety	• Exposure to community from tank failure may be limited to western boundary (if any), however potential exposure to community and workers at site will needs to be assessed. • No ERP in place • Access road lacks adequate marking and signage		• Quantitative Risk Assessment should be undertaken for fuel storage and identify the zone of risk • An Emergency Response Plan should be developed accordingly and disseminated to the community (to be covered under Sl. No. 4) • Adequate signages and markings shall be made along the access road to ensure safety of the residents	Engage third party for risk modelling as part of the ESIA updation (as per Sl. No. 2 above)	Safety officer KPI 1: Quantitative Risk Assessment Study	Two month
13.	PS-5	Land procurement and livelihood restoration	• Resettlement Action Plan not prepared as to be prepared as part of the ESIA studies • Calculation of compensation for people with informal rights not elaborated		• It is recommended to commission an external completion audit of the Resettlement undertaken to assess whether: o All persons identified as part of ESIA report and later has been compensated o The compensation was adequate and made to the appropriate person o Resettlement assistance (including jobs) offered is sufficient to restore their standards of living o There are any claims unaddressed	Engage Third Party Social expert, as part of the ESIA updation (USD 15,000)	SBPL Liaison officer KPI 1: IFC PS compliant RAP/ LRP	One Month
14.	PS-6	Protection of biodiversity	• Ecological assessment inadequate		Undertake ecological assessment of the site to understand presence of any aquatic species of significance or any specific habitat in proximity which would need protection	Conduct ecological assessment as part of ESIA updation (as per budget provided in Sl. No. 2 above)	SBPL EHS officer KPI 1: Ecological assessment report	Three Months

4.0 Consolidated Corrective Action Plan for HFO Based Power Plants – SPL

Following key action items have been identified that require attention of Summit Power Limited and its subsidiaries.

Note: The following action items should be read in conjunction with the observations, gaps and detailed recommendations provided and summary table presented in Section 3 of each of the above reports.

Sl. No.	Action Item	Budget and Resource	Responsibility and Timeline	Measurable Outcome
Common CAP to all sites				
1.	Develop ESMS with site specific EHS&S Management procedures for all phases of the project, including • Construction phase management plan • Construction Labour Management Plan • Emergency Response Plan (onsite and offsite) • Stakeholder Engagement Plan and grievance redressal mechanism • Procedure for labour compliance monitoring	Preparation of corporate level ESMS along with site specific E&S Management Procedures for all phases (USD 20,000)	SPL Corporate Management Three Months	ESMS Document along including site specific management measures for construction phase
2.	Update HR Policy on the clauses such as provident fund, sick leave, annual leave, grievance retrenchment in compliance with Bangladesh Labour Act, 2006 and in line with IFC Performance Standard.	HR Department to update the HR Policy and Procedure in compliance with applicable labour law. (Internal Process)	HR Department Two (2) Months	Updated HR Policy and Procedure.
3.	Quantitative Risk Assessment for fuel storage , Fire / explosion Risk Assessment and Hazard and Operability (HAZOP) study and develop procedure on Pre-startup Safety Review (PSSR) for the operational facility.	Engage third party for risk modelling as part of the ESIA updation ($20,000)	EHS Officer Two months	Implementation of recommendations provided as part of study
SNPL Unit – I, Modonganj, Narayanganj				
4.	Formulation of site specific Legal Register	Through existing resources, no additional budget required	EHS Officer Two Months	Legal Register and its updation on six monthly basis
5.	Development of Management Programs pertaining to HFO handling at jetty area, PPE Assessment and Occupational Noise.	A third party to be engaged for development of procedures and to be integrated with existing IMS Manual ($4000)	Plant –In-charge & EHS Officer Two Months	Management programs and its onsite implementation
6.	Cumulative Impact assessment	A third party consultant shall be engaged to undertake air dispersion modelling (considering Unit, II and cement plant) ($8000)	EHS Officer Two Months	Results of air dispersion modelling

Sl. No.	Action Item	Budget and Resource	Responsibility and Timeline	Measurable Outcome
7.	Updation of contract document to include avoidance of child labour, provision of same working conditions to migrant workers and updation Emergency Preparedness and response Plan	Through existing resources, no additional budget required	EHS Officer Two Moths	Updated contract document
8.	Additional Noise Monitoring and Monitoring of Occupational Health	Additional noise monitoring is required to be undertaken ($15000)	EHS Officer Two Months	Documented Results on monthly basis
9.	Groundwater Resource assessment study	Potential usage of river water in case of stress on ground water availability will require augmenting the existing capacities of current water treatment plant at operational facility, which in total may involve financial support exceeding USD 250,000.	EHS Officer Two Months	Study report and implementation of recommended actions
110 MW Power Plant Barisal				
10.	Updation of ESIA report to include details presented in Sl. No. 2 of Table 4.1 (including Updated monitoring plan, flood risk assessment study, ecological assessment)	Engage Third Party Consultant to Update the ESIA in accordance with the requirements of IFC Performance Standards (USD 60,000)	SBPL Three months	IFC PS compliant ESIA report, Changes to monitoring requirements and updated Monitoring Plan, Records on the results of monitoring
11.	Hiring of EHS Manager and Community Liaison officer for site	New hire: USD 300/ month	HR Manager Two months	Hire EHS person with adequate Qualification and Community Liaison officer
12.	Updation of monitoring plan and additional monitoring, as provided in point no. 10 of Table 4-1.	Through external laboratory ($ 5000)	Environment Officer Implement from next monitoring	Monitoring results
13.	Secondary containment or drains for lube oil storage area	Max. $ 50,000	Administration/ Logistics Department Two months	Construction of drain line
14.	External completion audit of the Resettlement undertaken for project	Engage Third Party Social expert, as part of the ESIA updation (USD 15,000)	SBPL Liaison officer One month	IFC PS compliant RAP/ LRP

Annexure A

Photo No. 1	**Date:** 18-03-2016
Location Photo Taken: From the Engine room towards the South- South West	
Description: The Picture shows the two tank farms at site. The larger Farm belongs to SOSCL while the closer one is in SBPL land.	

Photo No. 2	**Date:** 18-03-2016
Location Photo Taken: Towards the ETP Plant area	
Description: The picture shows construction workers at site without PPE, also evident is the pipe of scrap in the background.	

Photo No. 3	**Date:** 18-03-2016
Location Photo Taken: South of the Engine Room	
Description: The Photograph shows the Bamboo Scaffolding being used at site for construction.	

Photo No. 4	**Date:** 18-03-2016
Location Photo Taken: Towards the Jetty	
Description: The picture show random storage of construction material and poor disposal of used bags.	

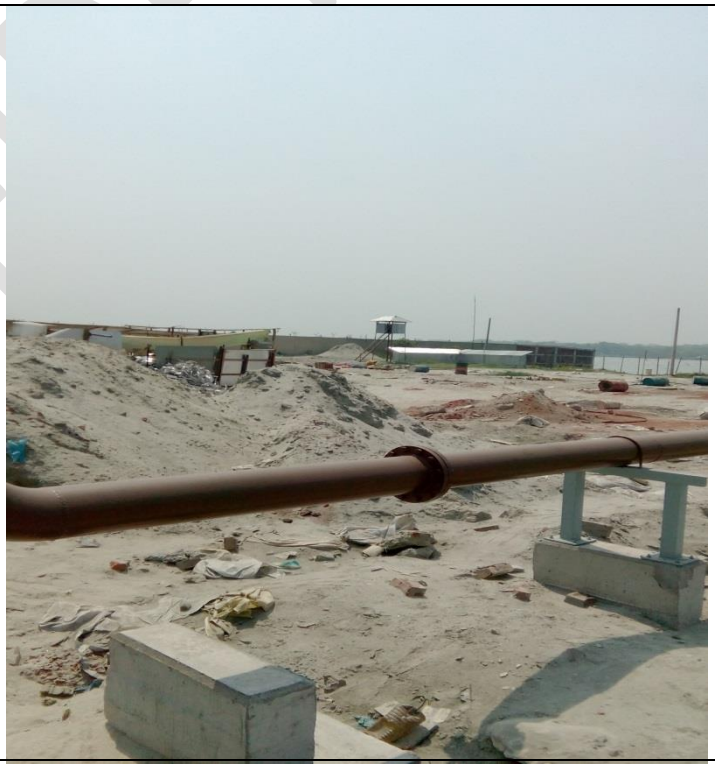


Photo No. 5	**Date:** 18-03-2016
Location Photo Taken: Near Jetty	
Description: Poor Housekeeping and unsafe work Area	

Photo No. 6	**Date:** 18-03-2016
Location Photo Taken: Jetty- Under Construction	
Description: Workers working without requisite PPE	

Photo No. 7	Date: 18-03-2016
Location Photo Taken: Construction area	
Description: Worker undertaking bar-bending without any gloves and safety shoes	

Photo No. 8	Date: 18-03-2016
Location Photo Taken: Near Fuel storage area	
Description: Lube oil storage without outside the containment area of fuel tank	

Photo No. **9**	**Date:** 18-03-2016
Location Photo Taken: Office Space	
Description: Consultation with Land losers and local community members	

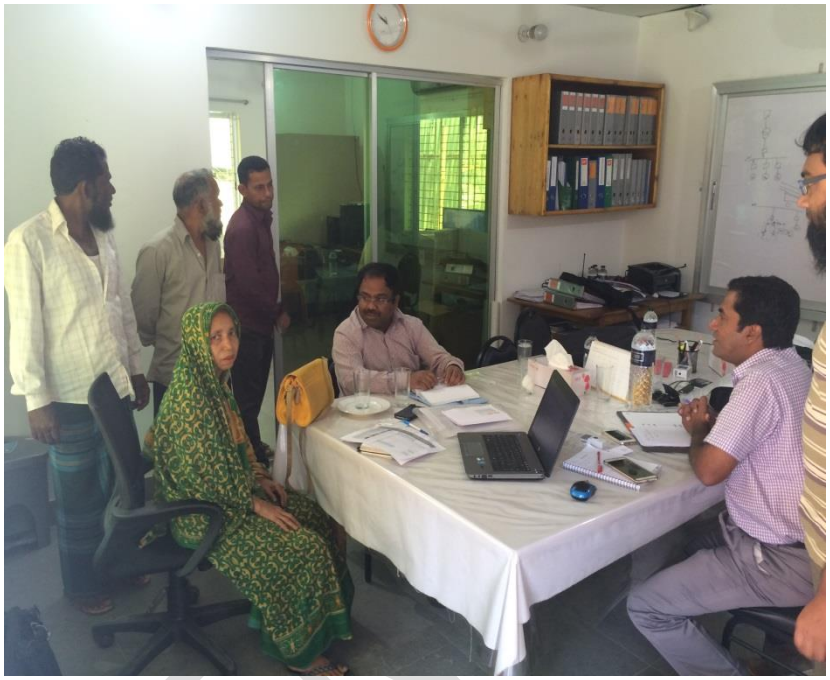


Photo No. **10**	**Date:** 16-03-2016
Location Photo Taken: Engine Room	
Description: Engines already installed at the Facility	

Photo No. 11	**Date:** 18-03-2016
Location Photo Taken: West of Engines room	
Description: Fuel Storage of SBPL with adequate containment	

Photo No. 12	**Date:** 18-03-2016
Location Photo Taken: Behind engine room	
Description: Bundled stack, installed at site.	

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