Draft Environment and Social Compliance Audit

Project Number: 44951
July 2014

BAN: Bibiyana II Gas Power Project

Prepared by Bangladesh Centre for Advanced Studies and ENVIRON UK Limited for Summit Bibiyana II Power Company Limited

Preliminary Environmental and Social Audit (Construction Phase)

Summit Bibiyana II Power Company Limited Project

Parkul, Nabigonj, Habigonj, Bangladesh

Prepared for:
Summit Bibiyana II Power Company Limited

Date and Version:
July 2014
2nd Draft, Version 1

Author:
Bangladesh Centre for Advanced Studies (BCAS)
House 10, Road 16A, Gulshan-1, Dhaka-1212, Bangladesh
Tel: (880-2) 8818124-27, 8852904, 8851237, Fax: (880-2) 8851417
E-mail: info@bcas.net Website: www.bcas.net

Contributor:
ENVIRON UK Limited
8 The Wharf, Bridge Street, Birmingham, UK
Tel: +44 (0)121 616 2180

Version Control

The Preliminary Environmental and Social Audit report has been subject to the following revisions:

First Draft

Title: Preliminary Environmental and Social Audit report
Date: July 2014
Author: Bangladesh Centre for Advanced Studies (BCAS)
Contributor: ENVIRON UK Ltd

Second Draft

Title: Preliminary Environmental and Social Audit report
Date: July 2014
Author: Bangladesh Centre for Advanced Studies (BCAS)
Contributor: ENVIRON UK Ltd

Table of Contents

List of Figures

List of Tables

Annexes

1. Introduction

1.1 Overview

In line with the requirements of the Asian Development Bank (ADB), the Summit Bibiyana Power Company Limited II (herein referred to as 'SBPCL II') commissioned a preliminary Environmental and Social Audit (ESA) for the on-going construction works in respect of the proposed development of a 341 MW Combined Cycle Gas Turbine ('CCGT') power plant on land in Bibiyana, Bangladesh (herein referred to as the 'Project Site' or 'the Proposed Development').

An Environmental and Social Impact Assessment (ESIA) has been produced on behalf of SPBCL II which reports on the potential environmental and social impacts and likely effects of the Proposed Development (Sixth draft of ESIA, July 2014). A separate Resettlement Action Plan (RAP) has been produced for the Proposed Development (fifth draft of RAP, July 2014). The ESIA report includes an Environmental and Social Monitoring and Management Plan (ESMMP) which includes mitigation requirements applicable to the construction phase works.

Development funding for the Proposed Development is being sought from financial institutions, including the International Finance Corporation (IFC); the Asian Development Bank (ADB); the Islamic Development Bank (IDB) and other possible financial institutions. This ESA has been prepared to provide an initial evaluation of the compliance of ongoing construction activities with National Legislation and international lending requirements, in particular the requirements of the ADB (hereafter referred to as the 'Project Requirements'). The ESA also provides an overview of any recommendations made to comply with Project Requirements.

The structure of the ESA is set out below:

- Chapter 1: Introduction which provides background to the project and the objectives of the ESA;
- Chapter 2: Project Description including Associated Facilities which provides an overview of the Proposed Development;
- Chapter 3: Audit Approach and Findings which sets out the approach adopted in preparing this ESA as well as its findings;
- Chapter 4: Impact Summary and Mitigation which provides an overview of the impacts identified as well as any recommended mitigation;
- Chapter 5: Land Acquisition History, Implementation Status of the RAP and Outstanding Issues which provides an overview of the land acquisition associated with the Proposed Development and an overview of how the RAP has been implemented to date; and
- Chapter 6: Conclusions, which sets out the conclusions of the ESA and provides recommendations, where necessary, to ensure compliance with Project Requirements.

1.2 Objectives and Scope of the Report

This ESA has been prepared to provide an evaluation of the compliance of existing construction activities with National Legislation and international lending requirements. It has been prepared to comply with the ADB Safeguards Policy Statement (SPS) 2009 which sets out policy principles and outlines the delivery process for ADB's safeguarded policy in relation to environmental and social safeguards. ADB requires the borrower/client to conduct an environmental and/or social compliance audit to determine their safeguard compliance policy. Therefore, this ESA report has been prepared for the Proposed Development and comprises a preliminary audit of the environmental and social risk associated with the ongoing construction activities at the Project Site.

In additional to national legislative requirements and the ADB Safeguard Requirements, other international guidelines and lending standards have been references throughout the ESA as appropriate and include:

- International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability;
- IFC General and Sector Specific EHS Guidelines; and
- Adopted International Conventions and Guidelines.

Further detail on the requirements of the ADB SPS are set out in more detail below.

1.3 National Laws and Regulations and International Lender Requirements

1.3.1 National Laws and Regulations

Regulatory requirements in relation to the protection and conservation of the environment and various environmental resources, as well as the protection of the social environment from adverse impacts associated with project activities have been set out by the Government of Bangladesh (GoB) as well as ADB and IFC.

Key national legislation is listed below, with further details provided in the ESIA prepared for the Proposed Development:

- Bangladesh National Environmental Policy, approved in May 1992: sets out the basic framework for environmental action together with a set of broad sectoral action guidelines;
- National Environmental Management Action Plan (NEMAP), approved 1995, is a wide-ranging and multi-faceted plan, which builds on and extends the statements set out in the National Environmental Policy;
- The Environment Conservation Act, 1995 (subsequent amendments in 2000 and 2002), which authorises the Director General (DG) of Department of Environment to

undertake any activity he deems fit and necessary to conserve and enhance the quality of environment and to control, prevent and mitigate pollution;

- The Environment Conservation Rules, 1997, which are the first set of rules promulgated under the Environment Conservation Act, 1995 and set out Environmental Conservation Rules which allow for the categorisation of projects/activities into four categories (Green, Orange A, Orange B and Red) depending upon location, size and severity of pollution activities; and
- The EIA Guidelines for Industry, 1997, which set out procedures for preparing an EIA and for reviewing an EIA for the benefit of the development partners. This also sets out the process for EIA approval and obtaining an Environmental Clearance Certificate (ECC) from the DoE.

1.3.2 International Lender Requirements

Key international lender requirements and guidance documents are listed below, with further details provided in the ESIA prepared for the Proposed Development;

- The ADB SPS, 2009, sets out the requirements for ADB's operations to undertake an environmental assessment for projects funded by the bank. The goal of the SPS is to promote the sustainability of project outcomes through protecting the environment and people from potential adverse impacts;
- The International Finance Corporation (IFC) has set out eight Performance Standards, as listed below, in respect of various parameters pertaining to a proposed project.
    - Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
    - Performance Standard 2: Labor and Working Conditions;
    - Performance Standard 3: Resource Efficiency and Pollution Prevention;
    - Performance Standard 4: Community Health, Safety, and Security;
    - Performance Standard 5: Land Acquisition and Involuntary Resettlement;
    - Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
    - Performance Standard 7: Indigenous Peoples; and
    - Performance Standard 8: Cultural Heritage.
- IFC General Environmental, Health and Safety (EHS) Guidelines which comprise technical reference documents with general industry-specific examples of Good International Industry Practice;
- IFC Access to Information Policy seeks to provide accurate and timely information regarding its activities to clients, partners and stakeholders including the Affected Communities and other interested parties;
- Safeguard Requirements of Equator Principle Financial Institutions which comprise ten requirements under the following headings:
    - Principle 1 (Review and Categorization);
    - Principle 2 (Environmental and Social Assessment);
    - Principle 3 (Applicable Environmental and Social Standards);
    - Principle 4 (Environmental and Social Management System and Equator Principles Action Plan);

- Principle 5 (Stakeholder Engagement);
- Principle 6 (Grievance Mechanism);
- Principle 7 (Independent Review);
- Principle 8 (Covenants);
- Principle 9 (Independent Monitoring and Reporting); and
- Principle 10 (Reporting and Transparency).

In addition to the requirements and guidelines set out above, quite a significant number of international conventions have relevance to activities related to power plant projects and associated facilities. Bangladesh is a party to almost all of such conventions. Such conventions include those on biological diversities, endangered species, desertification, climate change, hazardous wastes, persistent organic pollutants, wetlands, ozone layer depleting substances, nuclear test ban, etc.

Among the above, the following have a greater degree of relevance to SBPCL II, and include policies that have been acknowledged as well as accepted throughout the world as applicable to projects including those related to power generation of the types similar to the Proposed Development:

- Basel Convention: Signed and ratified by 170 Parties, the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal is the most comprehensive global environmental agreement on hazardous and other wastes.
- Although policies and rules are yet to be adopted, in Bangladesh the Department of Environment pursues the spirit of Basel Convention and undertakes, more than often, actions toward indiscriminate use and disposal of such wastes and substances throughout the country.
- Kyoto Protocol: Defined by the United Nations Environment Programme, the Kyoto Protocol treaty is a legally binding agreement providing for industrialized countries to reduce their collective emissions of greenhouse gases by 5.2% compared to the year 1990 (but note that, compared to the emissions levels that would be expected by 2010 without the Protocol, this target represents a 29% cut).
- National targets range from 8% reductions for the European Union and some others to 7% for the US, 6% for Japan, 0% for Russia, and permitted increases of 8% for Australia and 10% for Iceland (Kyoto Protocol website, 2014). Although the protocol is not binding on developing countries, such countries have to ensure that they act responsibly and avoid greenhouse gas emissions at levels that have been found to be undesirable. The Proposed Development forms part of an overall development of power stations, transmission lines, natural gas fields and related infrastructure.
- Stockholm Convention on Persistent Organic Pollutants: The Governing Council of the United Nations Environment Programme (UNEP), in 1995, had made a call for global action on the Persistent Organic Pollutants (POPs), which it defined as "chemical substances that persist in the environment, bio-accumulate through the food web, and pose a risk of causing adverse effects to human health and the environment".

The following legal framework is also of relevance to the land acquisition relating to the Proposed Development:

- Acquisition and Requisition of Immovable Property Ordinance, 1982, which provides the Deputy Commissioner (DC) with the power to initiate the acquisition of any property in any locality within his district that is likely to be needed for a public purpose or in the public interest. Among the matters to be considered in determining compensation are the following:
    - The damage that may be sustained by the person interested, by reason of the taking of standing crops or trees which may be on the property at the time of taking possession thereof by the Deputy Commissioner,
    - The damage that may be sustained by reason of the acquisition injuriously affecting his other properties, movable or immovable, in any other matter, or his earnings; and
    - If in consequence of the acquisition of the property, the person interested is likely to be compelled to change his residence or place of business, the reasonable expenses, if any, incidental to such change.

The Ordinance or 1982 also sets out the timeframes for payment of compensation as well as for legal procedure and appeal.

In addition to the provisions in the law, the land acquisition process is regulated by certain administrative instructions and procedural requirements. The administrative set up for land acquisition has two tiers under the Ministry of Land Administration. At the Division level, there is an Additional Commissioner dealing with land administration under the Commissioner. At the district level, there is an Additional Deputy Commissioner in charge of land administration. Under him, there is at least one Land Acquisition Officer and several Assistant Land Acquisition Officers.

The framework for managing and leasing Government-owned (khas) land is also of relevance to the Proposed Development. This is framed in two notifications in the Bangladesh Gazette: (1) Notification: Bhumo/Sha-8/Kha-jo-bo/46/84/261, Bangladesh Gazette Extra Edition, May 12, 1997, pp 1527-1536; and (2) Notification: Shuno/Sha-4/Kri-kha-jo--bo-1/98-264, Bangladesh Gazette, September 15, 1998. Under these regulations, the Government leases cultivable agricultural land in the rural areas to landless farming households. The regulations provide for a three-tiered structure, with Committees for the Management and Leasing of Khas Land at the National, District, and Thana levels (police station and subdistrict level adminstration which covers Upazila/subdistrict levels).

1.4 ADB SPS Requirements

The ADB SPS 2009 sets out the requirements for ADB's operations to undertake an environmental assessment for projects funded by the bank. The goal of the SPS is to promote the sustainability of project outcomes through protecting the environment and people from potential adverse impacts. The overall objectives of the SPS are to:

- avoid adverse impacts of projects on the environment and affected people, where possible;
- minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is impossible; and
- help borrowers/clients strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

The SPS sets out the ADB policy objectives, scope and triggers, and principles for following three key safeguard areas:

- Environmental Safeguards;
- Involuntary Resettlement Safeguards along with those vis-à-vis Land Acquisition; and
- Indigenous Peoples Safeguards.

ADB implements the SPS through the safeguard review procedures as outlined in Section F1/OP of its Operation Manual (OM) and the documents cited therein. However, the third area of the above three areas is not considered relevant to the Proposed Development as the project area does not involve any indigenous peoples (as determined within the ESIA).

According to ADB Operation Manual activated since 2010, a proposed project is assigned to one of the following categories depending on the significance of the potential environmental impacts and risks:

- Category A – a proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP).
- Category B – a proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required.
- Category C – a proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.
- Category FI – a proposed project is classified as category FI if it involves the investment of ADB funds to, or through, a financial intermediary (refer to paragraphs53–58, Safeguard Review Procedures, Operational Procedures, ADB Operations Manual).

A project's environment category is determined by the category of its most environmentally sensitive component, including direct, indirect, induced, and cumulative impacts. Each proposed project is scrutinized as to its type, location, scale, sensitivity and the magnitude of

its potential environmental impacts. The level of detail and comprehensiveness of the EIA or IEE are commensurate with the significance of the potential impacts and risks.

ADB requires public consultation in the environmental assessment process. For Category A projects, the borrower needs to consult with groups affected by the proposed project. The consultation needs to be carried out as early as possible in the project cycle so that views of affected groups are taken into account in the design of the project and its environment mitigation measures. For category A projects, ADB ensures that the borrower or private sector sponsor carries out public consultation at least twice, during the development of the EIA and then to present the conclusions of the report.

Loan agreements include specific environmental covenants that describe environmental requirements, including the EMP required (*with respect to the project, this document comprises the ESMMP*). The provisions for the EMP must also be fully reflected in the project administration memorandums. To ensure proper and timely implementation of the EMP and adherence to the agreed environmental covenants, ADB requires borrowers or executing agencies to submit semi-annual reports on implementation of EMP, and that this requirement be reflected in the loan agreements.

With regards socio-economic impacts, ADB screens all projects to determine whether or not they involve Involuntary Resettlement or have potential impacts on Indigenous Peoples. A project's involuntary resettlement category is determined by the category of its most sensitive component in terms of involuntary resettlement impacts. The Involuntary Resettlement Impacts of an ADB-supported project are considered significant if "...200 or more persons experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating)." The level of detail and comprehensiveness of the Resettlement Action Plan (RAP) are commensurate with the significance of the potential impacts and risks. A proposed project is assigned to one of the following categories depending on the significance of the probable involuntary resettlement impacts:

- Category A – a proposed project is classified as category A if it is likely to have significant involuntary resettlement impacts. A resettlement plan, including assessment of social impacts, is required.
- Category B – a proposed project is classified as category B if it includes involuntary resettlement impacts that are not deemed significant. A resettlement plan, including assessment of social impacts, is required.
- Category C – a proposed project is classified as category C if it has no involuntary resettlement impacts. No further action is required.
- Category FI – a proposed project is classified as category FI if it involves the investment of ADB funds to, or through, a financial intermediary.

With regards the Land Acquisition process, Safeguard Requirement 2 of the SPS does not apply to negotiated settlements, unless expropriation results upon the negotiation failure. Negotiated settlements help avoid expropriation and eliminate the need to use government

authority to remove people forcibly. The borrower is, hence, encouraged to acquire land and other assets through a negotiated settlement wherever possible, based on meaningful consultation with Project Affected Persons (PAPs), including those without legal title to assets. A negotiated settlement will offer an adequate and fair price for land and/or other assets. The borrower will ensure that any negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. For this purpose, the borrower will engage an independent external party to document the negotiation and resettlement processes. The borrower will agree with ADB on consultation processes, policies, and laws that are applicable to such transactions; third-party validation; mechanisms for calculating the replacement costs of land and other assets affected; and record-keeping requirements.

1.5 EIA Preparation and Clearance

In order to initiate the EIA preparation the sources of financing of the project was ascertained. In case of SBPCL II the initial sources of funding were identified as IFC and ADB. This necessitated compliance with the Performance Standards and SPS for complying with IFC and ADB requirements respectively. Additionally, compliance with the requirement as per the Environmental Conservation Act 1995 and Environmental Conservation Rules 1997 subsequently updated in 2001 was mandatory.

The scope of work identified in April, 2011 was to carry out all environmental studies for SBPCL II. The first requirement of proceeding with the preparation of the detail ESIA is to obtain a Site Clearance Certificate from the Department of environment (DoE) under the Ministry of environment and Forest (MoEF). For obtaining the Site Clearance an Initial Environment Examination (IEE) had to be prepared based on the proposed site conditions. The IEE was prepared and submitted to the DOE. A presentation of the IEE was made in the presence of the Clearance Committee of the DoE in April 2011. On clarifications required by the DoE by the Consultants and SBPCL II the site clearance was issued in May 2011. SPBCL II submitted an Initial Environmental Examination (IEE) report to the DOE in 2011. The copy of Site Clearance lastly issued in Bengali version (along with the English translation), which is valid till May 2015, is attached in Annex 1.

After issuance of the Site Clearance the ESIA process was initiated in May 2011. The following baseline data were collected on the environmental and social aspects:

- The Project Site;
- Physical Environment: Climate;
- Physical Environment: Air Quality;
- Physical Environment: Hydrology, Hydrogeology and Drainage;
- Physical Environment: Noise;
- Physical Environment: Geology and Seismicity;
- Biological Environment: Vegetation and Floral biodiversity;
- Biological Environment: Faunal Diversity;

- Socio-Economic environment: Land Use Survey;
- Socio-Economic environment: Infrastructure and Industry; and
- Social Analysis.

On completion of the above Baseline Study the Impact Assessment and determination of Mitigation Measures was undertaken for the SBPCL II Power Plant and its associated facilities which are the switchyard, gas pipeline and the access road. In addition Risk Assessment and Emergency Response, Environmental and Social Management and Monitoring Plan (ESMMP) was undertaken and included in the ESIA document.

The first draft was completed in June 2011. On receiving the initial comments from IFC and ADB a second draft was submitted in September 2011. A third draft by incorporating further comments from IFC and ADB was submitted on February 2012.

Because of various reasons the project activities were suspended and kept on a hold till 2013. The restoration of activities had a different configuration. The initially planned development of 2011 was to build two power plants each having a generation capacity of 340 MW. In 2013 a new configuration was decided upon by SBPCL II which was to build one 341 MW power plant instead of two, however, the associated facilities remained the same. It was the requirement of the leaders (IFC and ADB) that the 3rd ESIA draft had to validated for SBPCL II only. This was undertaken in September 2013 and completed in January 2014 and submitted as the Fourth draft. After comments received from the lenders, IFC and ADB, a fifth and sixth draft has been submitted in July 2014.

According to the Environmental Conservation Rules 1997 of the DoE an ESIA has to be submitted for issuance of the Environmental Clearance Certificate (ECC) by the DoE. The combination of reasons of the project being kept in abeyance from end of 2011 up to 2013 meant that SBPCL II did not submit the ESIA to the DoE for the obtaining the ECC. It is to be noted that the current ESIA is under preparation and is draft stage. On satisfactory responses of all comments the ESIA will be finalized and submitted to the DoE for obtaining the ECC. It may be mentioned that the site clearance issued in 2011 has been renewed every year by SBPCL II. Also it is important to note that the ECC is required prior to the operational phase of the SBPCL II Power Plant.

2. Project Description including Associated Facilities

2.1 Introduction

The Project Site is located adjacent to the southern bank of the Kushiyara River, at 91°39′37″ E longitude and 24°38′18″ N latitude. The Project Site is located approximately 3 km to the west of the Sherpur Bridge, approximately 45 km south-west of Sylhet (the district headquarters) and approximately 180 km north-east of Dhaka. Administratively, the Project Site is located in the village of Parkul in Aushkandi Union under Nabiganj Upazila of Habiganj district (refer to Figure 2.1 below).

The SBPCL II Power Plant will be served by natural gas from the Bibiyana gas field, which is located approximately 6.5 km to the west of the Project Site at Karimganj. The location and layout of the major project components as well as an aerial photograph of the Project Site is shown in Figures 2.2, 2.3 and 2.3 respectively.

The SBPCL II Power Plant and associated facilities (hereafter referred to as the 'Proposed Development') consists of the following primary components and associated facilities:

- Primary Components of SBPCL II Power Plant:
    - Development of the main power generating plant for the SBPCL II Power Plant; and
    - Development of a Construction laydown area;
- Associated Facilities (not being constructed by SBPCL II):
    - Development of a switch yard for the installation of the electricity sub-station;
    - Development of a 2 km long access road to connect the Proposed Development as well a potential future power plants (Bibiyana I Power Plant and Bibiyana III Power Plant) to the Dhaka-Sylhet (N2) highway;
    - Development of a 8.8 km gas pipeline from the Proposed Development, as well a potential future power plants (Bibiyana I Power Plant and Bibiyana III Power Plant), to the Bibiyana Gas Field at the Karimpur distribution point;
    - Development of 70 m transmission lines from the switchyard to the nearest tower of the national grid.

The Project Site occupies an area of approximately 25 acres, which includes a an approximate 14 acre construction 'lay-down' area in the northern section of the Project Site. The proposed switch yard, which is to be developed and built by PGCB under the GoB's own financing and not by SBPCL II, occupies an area of approximately 26 acres (approximately 105,000 m^2). The access road and gas pipeline alignment, which are also to be developed by a third party, occupy an area of approximately 4.20 acres (approximately 17,000 m^2) and 16.58acres (approximately 67096.879m^2) respectively.

Figure 2.1: Location of the Project Site

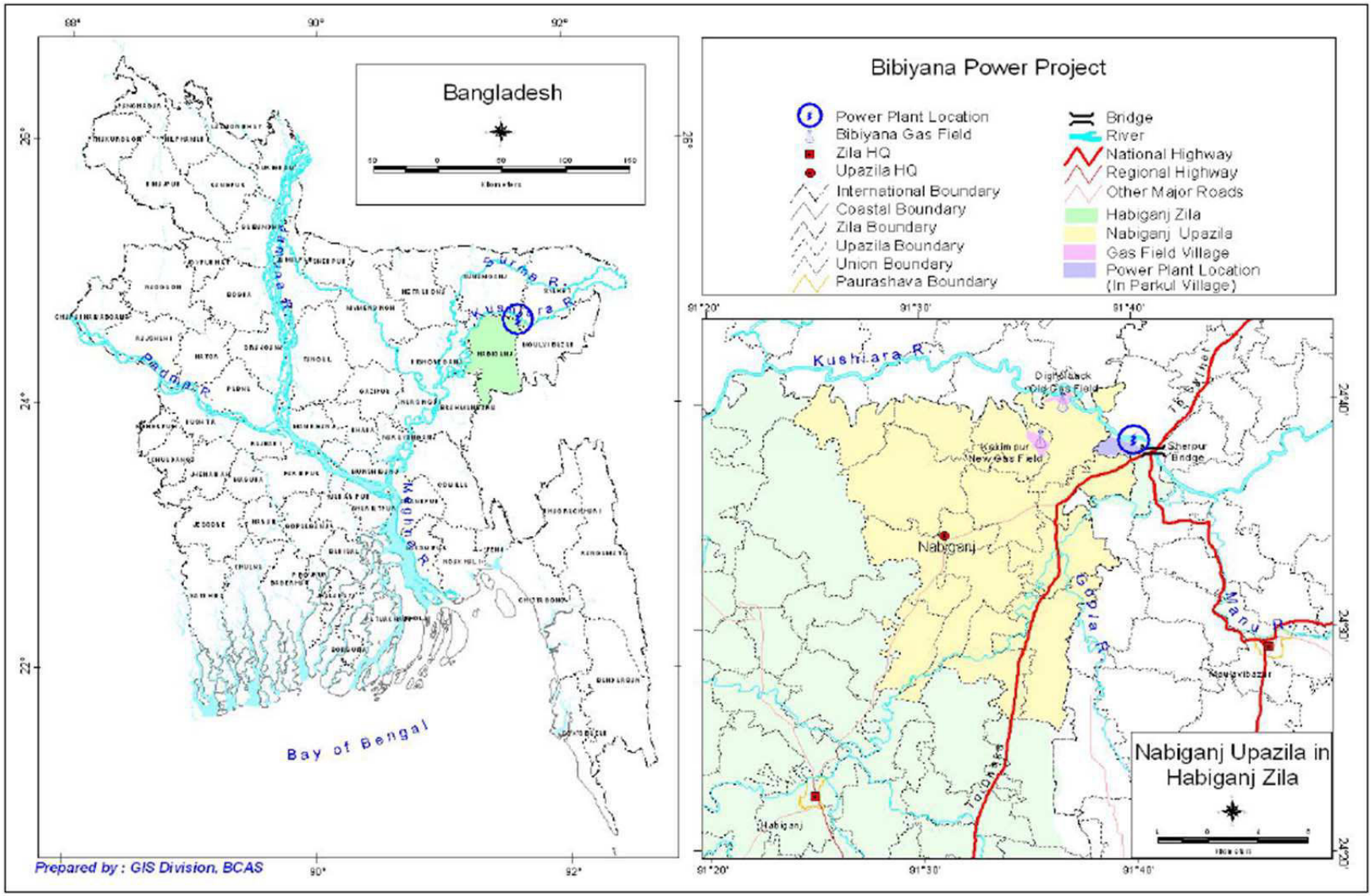


Figure 2.2: Location of the Major Project Components

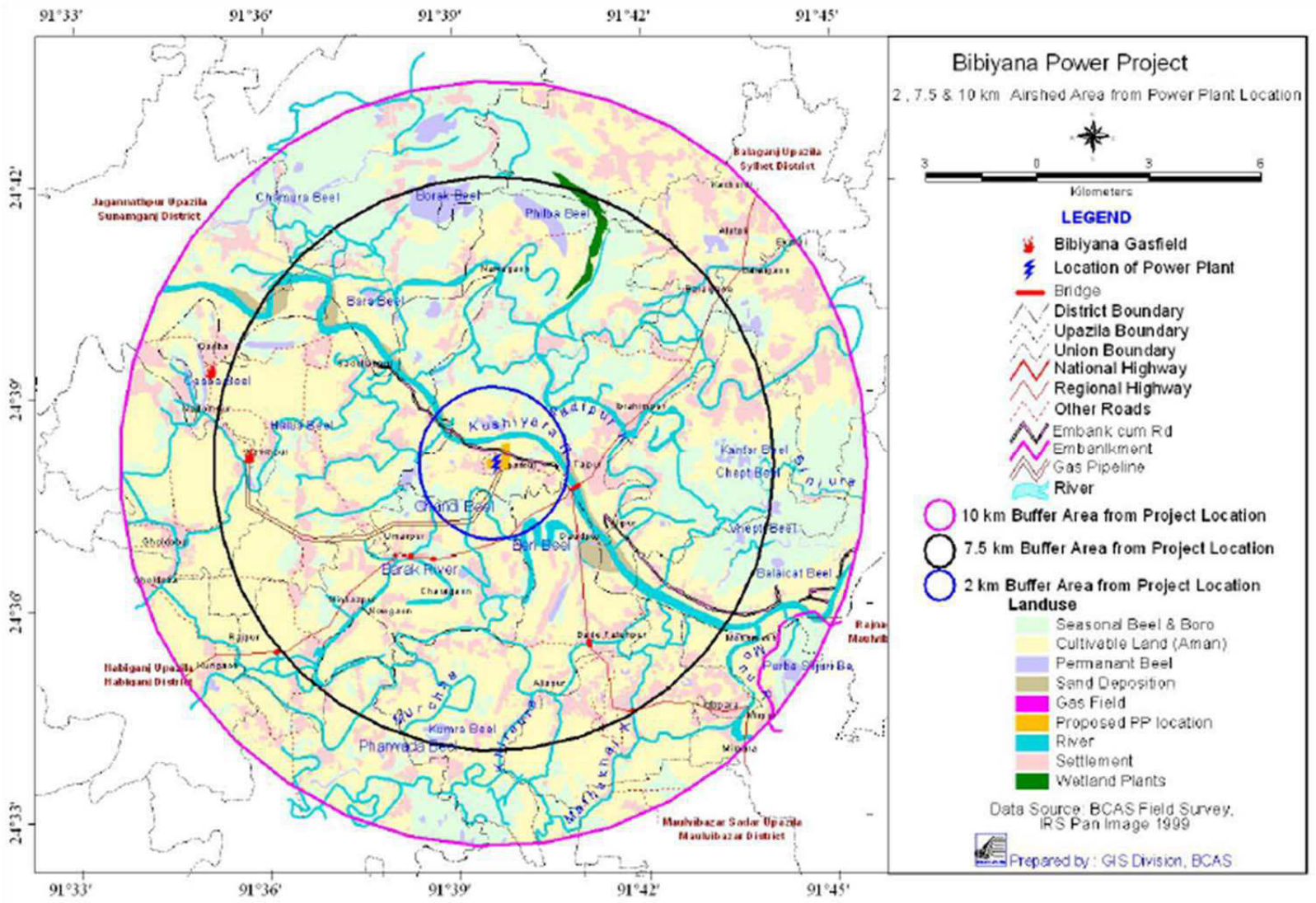


Figure 2.3: Plant Layout for SBPCL II Power Plant

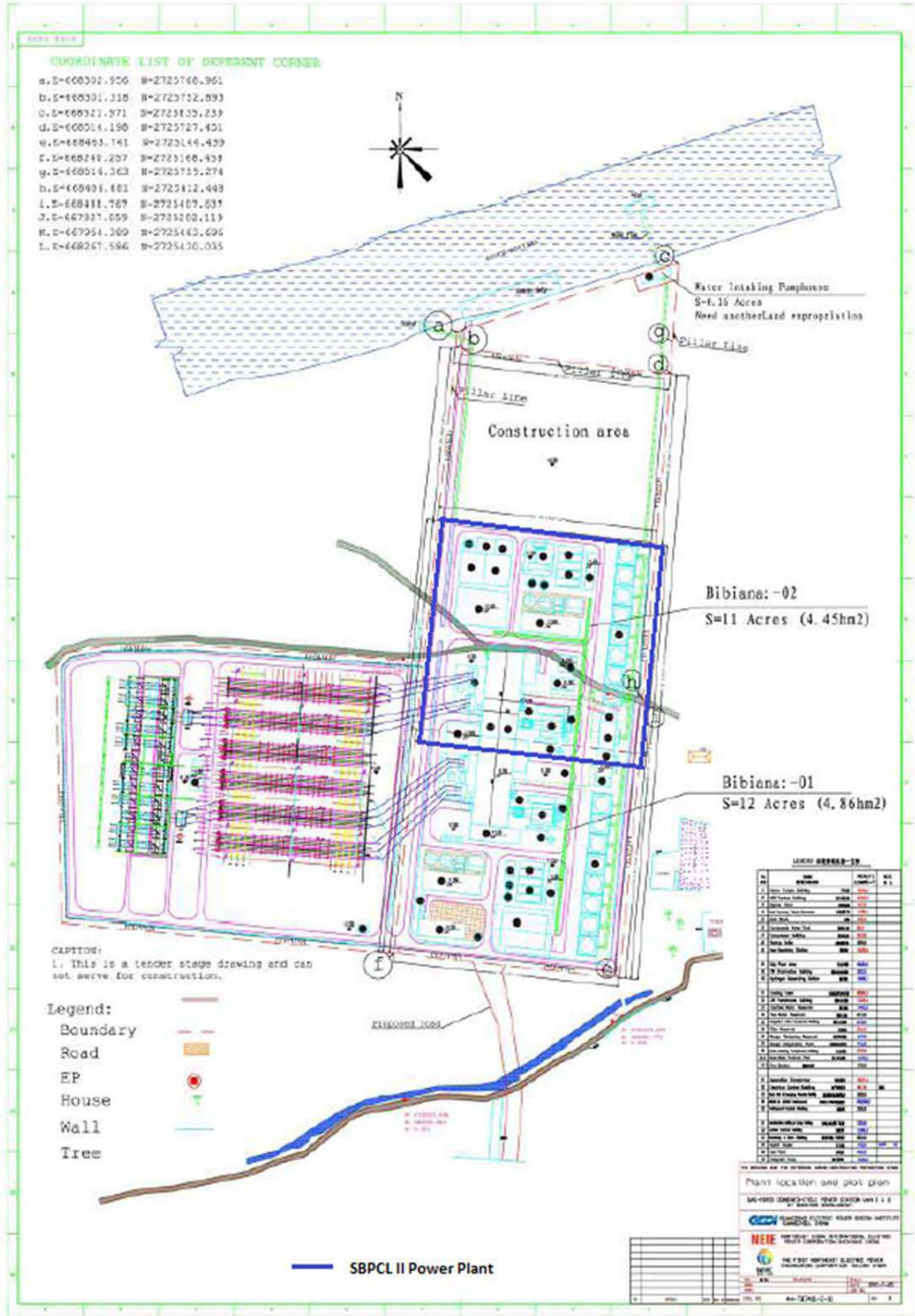


Figure 2.4: Aerial Photograph of the Project Site, Switchyard and potential, future Bibiyana I Power Plant

2.1 The Power Plant

The SBPCL II Power Plant will employ multi-shaft combined cycle technology based on two gas turbine generator units and one steam turbine generator unit, each having a separate power connection to the grid.

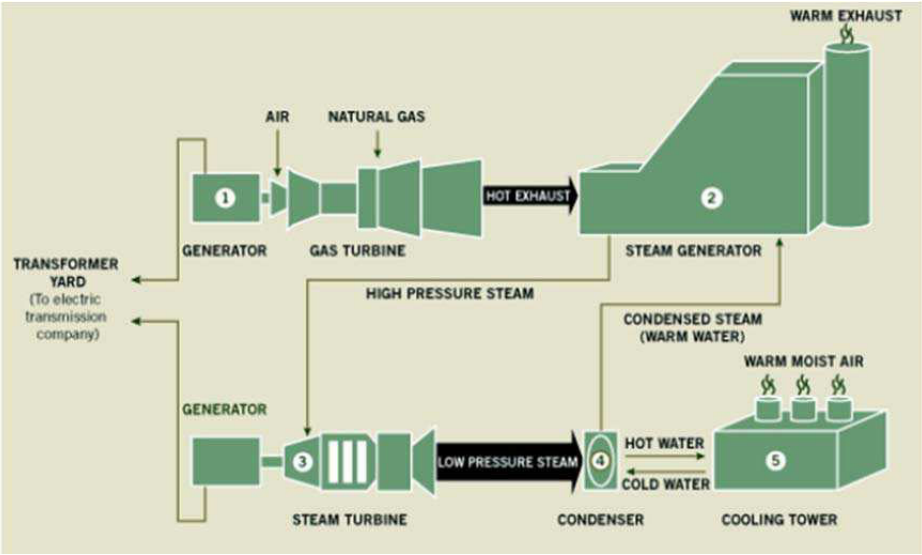
A combined-cycle facility could consist of four main components: control, auxiliary components, gas turbine, and generator. The plant can work both in open and in locked configuration. A gas turbine could function in simple cycle, in combined cycle or in both cycles. In simple cycle, high-temperature exhaust gases are released directly into the atmosphere, while in combined cycle exhaust gases enter the recovery boiler for production of steam. The steam then enters the steam turbine for production of electric energy and/or for co-generation.

The CCGT process is recognized as being the most environmentally benign system of power generation from fossil fuels. Such a system utilizes the following process.

Step 1: Air is drawn into a compressor and, thereafter, is fed to a gas turbine.
Step 2: The compressed air is mixed with natural gas (fossil fuel) in the combustion chamber and subjected to ignition.
Step 3: The hot gas produced is passed through a gas turbine and, as it expands, causes the turbine to rotate at high speed.
Step 4: The rotating turbine is coupled to an electrical Generator, which as it spins produces electricity.
Step 5: The hot gases from the gas turbine are directed to a heat recovery steam generator (HRSG) where high pressure steam is produced.
Step 6: The high pressure steam is passed through a steam turbine and as it expands causes the turbine to rotate at high speed.
Step 7: The rotating turbine is again coupled to an electrical generator which, as it spins, produces electricity.
Step 8: The spent steam is condensed to water in a condenser at the end of the turbine and recycled to the HRSG.
Step 9: The waste gases from the HRSG are discharged through a chimney in to the air.
Step 10: The electricity generated is fed to an electrical transformers where the voltage is adjusted to allow the transmission to the national grid.

A generic process flow diagram of the proposed SBPCL II Power Plant process is provided in Figure 2.5

Figure 2.5: Indicative Process Flow Diagram for the Proposed SBPCL II Power Plant

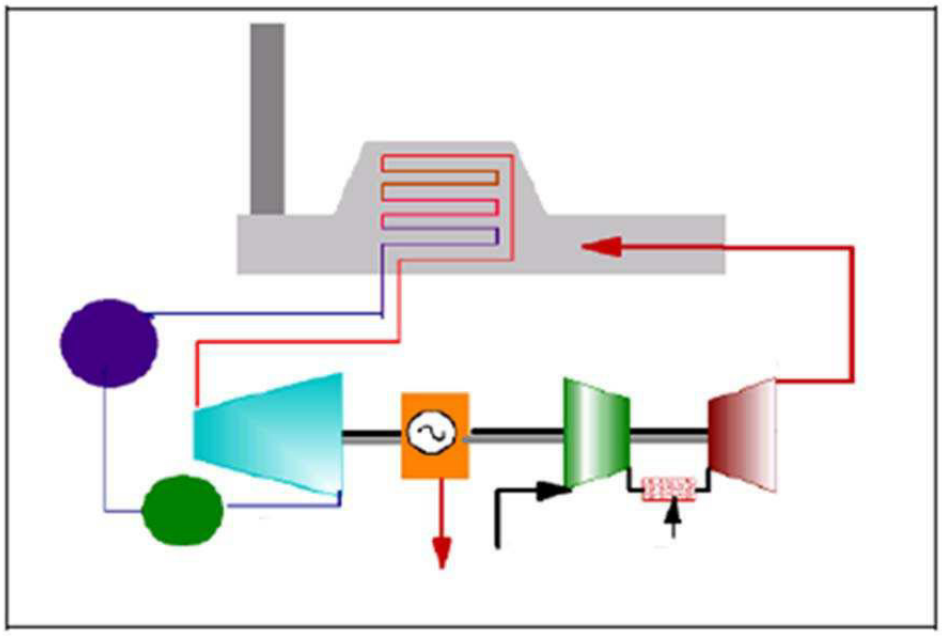


2.1.1 Combined Cycle Gas Turbine (CCGT) Technology

The proposed SBPCL II Power Plant will consist of CCGT plant with a gross capacity of 341MW power generation. The gas turbines will have a capacity of about 222 MW while the capacity of the steam turbines will be 119 MW. The plant will run on natural gas from the Bibiyana gas field situated approximately 6.5 km to the west the Project Site at Karimganj (refer to Section 2.4 for details regarding the gas pipeline).

The GE 'PG 935 IFA' Gas turbine with hydrogen cooled generators will be installed. It will have Dry Low NOX (DLN) combustors with 18 stage axial compressors, 3 stage axial turbines and a common rotor. A simplified schematic of a typical CCGT unit is shown in Figure 2.6.

Figure 2.6: Simplified schematic of a typical CCGT unit



Several configuration options are available to achieve an output of 341 MW. The option preferred by SBPCL II is:

- Stack Height: ..... 60 meters
- Effective Stack Height: ..... 60 meters
- Stack diameter ..... 3 meters
- Exit gas velocity: .....not less than 15 m/sec.
- Fuel consumption per unit power production ..... 4021 BTU/kWh
- Mass of pollutant emission per unit power production: ..... 0.697 g/kWh
- Mass of pollutant emission per unit time: ..... 87 g/sec NOx
- Emission control system used if any: ..... Low NOx burners (<25 ppm)

2.1.2 Heat Recovery Steam Generator

The unfired heat recovery steam generator (HRSG) will be either horizontal or vertical design, with natural circulation, and will be operated at sliding pressure rather than constant pressure. The HRSG will be capable for the operation on continuous partial and base load.

The HRSG construction may be of "outdoor or semi-outdoor" installation type. The key components and equipment, and main gateways and stairs around the HRSG will be protected from any adverse weather conditions, including freezing and rain.

2.1.3 Combined-Cycle Power Plant Cooling Water System

The SBPCL II Power Plant will operate a closed-loop cooling water system. A volume of 17,500 m^3 will be pumped from the river once during start-up for use in the cooling system unit. During operation there will be a need, due to evaporation losses, for replenishment of cooling water ('make-up' water) as well as other operational uses which will be abstracted from the Kushiyara River a rate not exceeding 10,000 m^3/day. Blow down water from the cooling tower will be sent to a basin to cool down further before discharging into the River Kushiyara at its average ambient temperature.

2.1.4 Water Supply System

The total water requirement of the SBPCLII Power Plant will be met from the nearby Kushiyara River. Water will be used in two phases, initially during Construction Phase and then during Operation phase.

During the construction phase two major water uses will include use of water for the civil construction of the SBPCL II Power Plant and water use by construction workers ('Potable water'). In addition, wastewater streams will be generated by contractor's and construction workers. The total anticipated water use during the construction phase is 80 m^3/day. Water will be pumped from the Kushiyara River and a deep tube well may be installed in the area and then treated to potable standards. During the ESIA it was found that there were no significant adverse impacts due to groundwater except for the water flow decreasing during the dry period when the water table goes down. This is a general phenomena in Bangladesh as a whole and rectifies itself as the recharge resumes in the wet season. The sanitary wastewater will be drained into temporarily built septic tanks and then retained in sumps for later uses such as spraying over the construction area and other vacant areas of the project area to suppress dust, without discharging effluent to the outside.

During the operational phase, the SBPCL II Power Plant will operate a closed-loop cooling water system. A volume of approximately 10,000 m^3/day will be pumped from the Kushiyara River once during start-up for use in the cooling system unit. During combined cycle operation there will be a need, due to evaporation losses, for replenishment of cooling water ('make-up' water) which will be abstracted from the river a rate not exceeding 1,200 m^3/hr. During operation there is requirement of steam water closed loop cycle of demineralised water which will be produced from demineralised water system stored in a separate demineralised tank of size 2 × 1000 m^3 in each unit.

Additional operational water use can be summarised as follows:

- General cooling water (make-up water) and demineralised water for HRSG, ventilation, and air conditioning system.
- Potable water for the staff for drinking and kitchen use purpose, for shower, basin and sink use including other use by staff.
- Service water for battery limit cleaning, washing filters for ventilation system and other equipment. This service water may be hot in nature.

2.1.5 Water Treatment

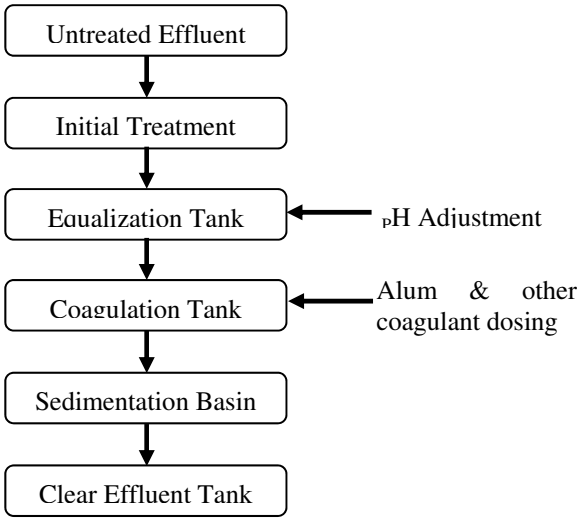
Different water treatment procedures will be adopted, according to the end-use/purpose, and water will be stored in different tanks. The system will have a separate network with a separate monitoring system.

Water for use in the HRSG will be treated in the on-site water treatment plant to achieve a high purity. The water treatment process will consist of activated carbon filter, cation, anion and mixed bed ion exchanger including a degasser tower in between cation and anion exchangers. Total clarified water volume will be 10,000 m^3/day.

The SBPCL II Power Plant will operate a single effluent treatment plant where effluent from the following sources will be treated (as shown in Figure 2.7):

- Effluent contaminated with chemicals from chemical storage area and laboratory;
- Regeneration waste from the demineralisation Plant;
- Cleaning wastewater containing grease and oil from the power house, transformer area, and workshop and maintenance house;
- Sanitary wastewater from the office building; and
- HRSG Blow down.

Figure 2.7: Diagram of wastewater treatment plant



An on-site effluent disposal system will be installed to effectively treat and dispose of project effluents. Ultimately all effluents like wastewater treatment system (WTS) effluent, HRSG blow down, treated sewerage, oily drains, and chemical spillage will be discharged after treatment in the wastewater treatment plant.

2.1.6 Hazardous Waste Management

During construction phase different type of paints, thinners can potentially be hazardous if not handled properly. There will be insignificant generation of hazardous waste during the construction phase. A steel fuel storage tank having a capacity of 1,000-litres has been built within the Project Site for storing diesel to operate the temporary diesel generator which is required during the construction phase.

During operational phase the fuel itself can be hazardous if gas pipe lines are not maintained properly. Transportation of different chemicals should be made in appropriate anti-corrosion materials in accordance with the chemical properties of the solutions. Proper loading and unloading facilities shall be built for handling and storage of chemicals. Measures such as vacuum extraction pump transfer or gravity flow transfer shall be used for loading and unloading of concentrated acid and caustic solution. During the operational phase there will be generation of oily water which will be removed in the ETP by emulsifying the liquid waste. The separated oil will be collected by a dedicated contractor.

2.2 Sand Mining

The majority of the Project Site, which occupies an area of approximately 25 acres, is situated at an elevation of 7.8 m asl. The elevation of the highest recorded flood is 10.15 m asl and, consequently, the Project Site has been designed to be 11.2 m asl (i.e. 1 m above the highest recorded flood). In order to raise Project Site levels by 3.4 m, approximately 300,000 m^3 of sand was required. During the validation survey carried in September/October 2013 it was found that the land raising has already been completed at the Project Site in 2012. Sand mining had been undertaken at six of the nine sites identified as preferred sand mining locations within the ESIA (see Figure 2.8 within the ESIA), with a total excavation of

approximately 300,000 m^3. The sand mining contractors were prohibited to carry out sand mining in certain locations due to the presence of fish sanctuaries (as shown on Figure 2.8 within the ESIA).

The sand mining sites are detailed in Table 2.1 below.

Table 2.1: Excavation of Sand

Reference	River	Nearest Settlement	Estimated Vol. of Sand Excavated (m^3)	Distance from the Project Site (in KM)
Site 1	Kushiyara	East of Monumukh	40,000	8.8
Site 3	Monu	South of Monumukh	60,000	8.3
Site 5	Kushiyara	Kamarkhada	50,000	2.0
Site 6	Kushiyara	Mathurapur	60,000	3.0
Site 7	Kushiyara	Galimpur	60,000	4.0
Site 9	Kushiyara	Chatrafut	30,000	9.0
Total			**300,000**	

Sand was mined by suction dredging, this is because an agitating device is not necessary to draw material from the bottom surface and therefore this method creates fewer disturbances to the river bed. In addition, in order to avoid heavy plant causing river bank erosion, dredging was undertaken from a river barge. The sand was then transported to the river bank at the Project Site by sand carrier, before being pumped to the dedicated field.

2.3 The Switchyard

The proposed switch yard, which is to be developed and built by PGCB under the GoB's own financing and not by SBPCL II, occupies an area of approximately 26 acres (approximately 105,000 m^2).

The location of the switchyard is shown within Figure 2.4. At the time of writing the switchyard is under construction.

2.4 The Gas Pipeline

As per the gas supply agreements, natural gas for the SBPCL II Power Plant will be supplied from the nearby Bibiyana gas field at Karimganj, which is operated by Jalabad Gas Field Company Ltd. (JGFC). The gas will be transmitted through a 20 inch high-pressure pipeline, approximately 8.8 km in length. The Right of Way (ROW) for the pipeline was determined by JGFC and is shown in Figure 2.9.

The proposed pipeline stretches from the gas-field at Karimganj up to the connecting point of the proposed SBPCL II Power Plant. The pipeline will predominantly pass through agricultural land. It will also pass through seasonal beels where boro rice cultivation is practiced. Acquisition of required land, as well as procurement of land, on a temporary

requisition basis, has been in progress for the proposed pipeline laying. Further discussion is provided in Section 5 of this ESA, as well as in the separate standalone RAP.

The pipeline will be constructed on a strip of land of 8 m width (i.e. 4 m either side of the pipeline) and the land will be identified and marked as required by the National Gas Safety Rules, 1991, as amended up to 2003. In addition to the 8 m width, an additional 15 m width (i.e. 7.5 m either side of the pipeline) will be provided for construction and laydown.

The design of the pipeline shall be as per ANSI B 31.8: Gas Transmission & Distribution Systems. As per the gas supply agreements, responsibility for the supply of natural gas from the south pad of the Bibiyana gas field to the Project Site lies with JGFC. This includes the excavation and operation of new gas wells (if required) to supply the SBPCL II Power Plant.

2.5 Transmission Line

The electricity produced from the SBPCL II Power Plant will be transmitted by the PGCB through a high tension transmission line (hereafter referred to as 'T-line'), which will ultimately connect with the national grid. PGCB is responsible for construction and operation of the T-line.

At present, the detailed route of the T-line has not been confirmed; however it is understood that approximately 70 m of T-line will link the switchyard to the national grid. The indicative route of the T-line is described out below:

- The T-line route extends east from the substation and connects with the National Grid via an existing substation at Fenchuganj;
- The T-line route extends south from the substation and connects with the National Grid via an existing substation at Comilla North; and
- The T-line route extends south-west from the substation and connects with the National Grid via an existing substation at Kaliakair.

2.6 The Access Road

Vehicular access to the Project Site will be provided by the development of a 2 km long access road to connect the Proposed Development to the Dhaka-Sylhet (N2) highway.

The route of the access road (illustrated in Map Figure 2.10) will be from the south-eastern boundary of the Proposed Development and head southwards, passing through agricultural land and a seasonal beel, and connecting with the N2 highway, approximately 1.7 km to the south of the southern Proposed Development boundary.

Drainage for the access road shall be installed to protect the road from erosion. The drainage shall comprise:

- Crossfall: crossfall for the road surface shall be 3% (including the shoulders of the access road) to provide adequate drainage whilst not being so great as to make steering hazardous;
- Road Culverts: five road culverts consisting of precast concrete pipes of 0.9 municipalities diameter will be installed to let surface water flow away from the road; and

- Drainage Ditches: drainage ditches will be provided on the slopes of both sides of the access road at a 30 m interval. The ditches will have a minimum cross section of 0.3 m x 0.3 m, and shall be constructed by mortar stone pitching.

Figure 2.8: Preferred Sand Mining Locations

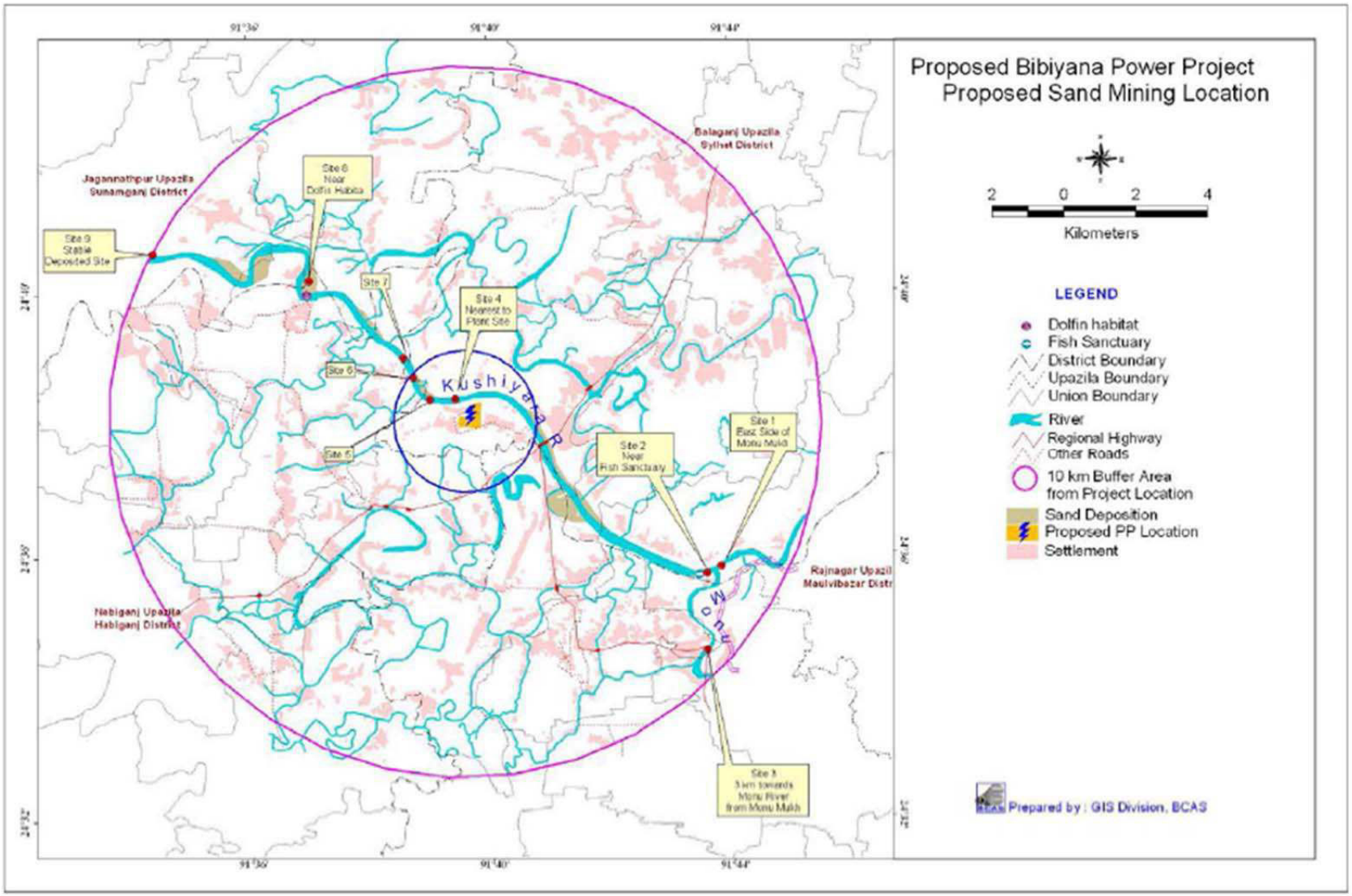


Figure 2.9: Proposed Gas Pipeline Route

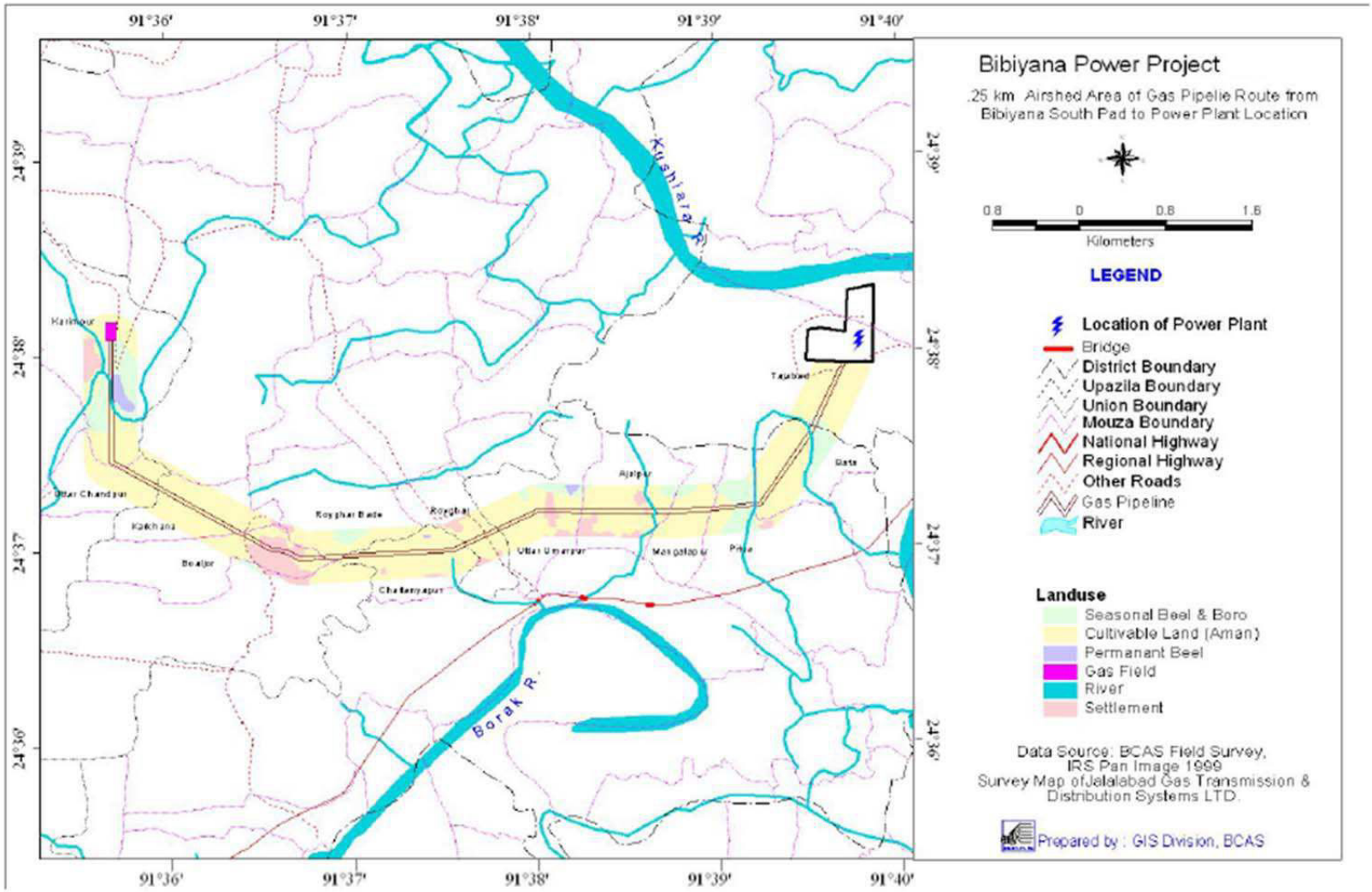
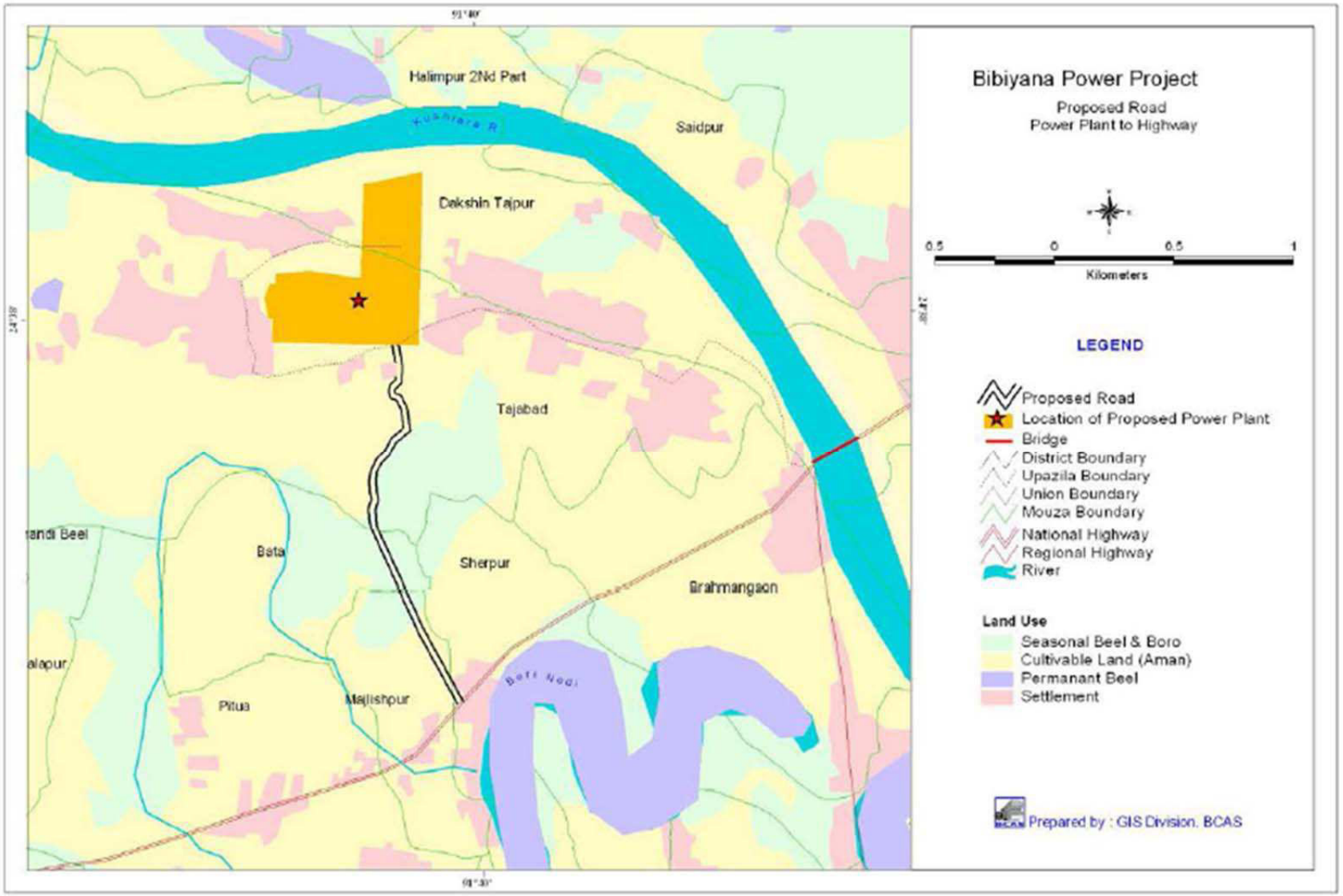


Figure 2.10: Proposed Alignment of the Access Road



2.7 Labour Accommodation

During the construction phase, no labour accommodation has been provided by SBPCL II, instead local construction workers live in nearby localities to the Project Site. Employees of the EPC Contractor do have labour accommodation on-site. Due to the nature of the construction industry, construction and demolition related employment is relatively mobile, as such it is considered reasonable to assume that once construction is complete, local construction workers would vacate nearby localities.

During the operation phase, no local labor accommodation is likely to be provided within the Project Site, and as such it is anticipated that operation workers would live in nearby localities (i.e. within the Districts, Upazilas and Unions, and Mouzas in the Project AoI, detailed within the ESIA).

2.8 Ongoing Construction Activities

A number of construction activities are on-going within the Project Site. Activities comprise earth works and above-ground construction. At the time of writing no operational facilities (other than construction related facilities are present at the Project Site.

As part of the construction works, a pontoon jetty has been built solely for the construction phase of SBPDCL II Power Plant, with a length of 40 m and a width of 20 m. The jetty is located to the north-west of the Project Site. Following completion of the construction phase the jetty will be dismantled.

All activities are being undertaken activities in according with Bangladesh legislation and as per EPC Contract signed with Summit Bibiyanall Power Company Limited (confirmation attached as Annex 2). The EPC Contract includes reference to ADB SPS and IFC Performance Standards as well requirements to comply with Bangladesh lesgilation.

.

3. Audit Approach and Findings

3.1 Overview

The objective of this ESA is to audit the environmental and social risk associated with the ongoing construction activities of the Proposed Development, this includes determining the effectiveness of current environmental and social management measures in place, as well as the compliance status with regards to Project Requirements.

Specifically, the audit focuses on:

- Characterising the on-going construction activities associated with the Proposed Development; and
- Identifying any areas of non-compliance with regulatory or lender requirements, including the ADB Safeguard Policies.

The audit was informed by a review of available monitoring reports, existing environmental management process, technical information related to the future operational management of the Proposed Development, as well as by reference to the ESIA and RAP prepared for the Proposed Development.

SPBCL II and the EPC Contractors were also contacted during the preparation of this ESA. Any recommended areas for improvement are set out in Section 4 of this ESA.

In addition, this preliminary audit is based upon site visits undertaken by BCAS between September and November 2013. Furthermore a site visit was undertaken by BCAS and ENVIRON in April 2014.

3.2 Applicable National Regulatory Compliance and ADB SPS Requirements

The Proposed Development has been designed to comply, where possible, with the country's environmental laws and regulations (as set out in Section 1.3 above), especially on air emissions, ambient air quality, wastewater effluent, and noise.

As set out in Section 1.5 above, a Site Clearance Certificate was obtained from the Department of environment (DoE). The copy of Site Clearance lastly issued in Bengali version (along with the English translation), which is valid till May 2015, is attached in Appendix 1.

Furthermore, the project management has taken steps to ensure that the plant meets the IFC's, ADB's and IDB's environmental standards. SBPCL II will implement an EMS, including an environmental policy that states the principles and intentions of the enterprise in relation to its overall environmental performance. Such principles and intentions will be communicated to each employee as well as the nature of their individual environmental responsibilities.

Compliance with ADB's SPS Requirements is discussed in more detailed in the sections below.

3.2.1 ADB SPS Requirements

3.2.1.1 Environmental Impact Assessment and Environmental Management

The Proposed Development falls under Category A according to ADB environmental categorization of projects, as the potential exists for significant adverse environmental impacts. An environmental impact assessment (EIA) and subsequently an ESIA has therefore been prepared in respect of the Proposed Development. The ESIA concludes that though there is potential for adverse environmental and social impacts associated with the SBPCL II Power Plant, these are manageable provided recommendations are appropriately followed.

Requirements of ADB set out that the EIA must include an Environmental Management Plan (EMP, within the project ESIA this document is called an ESMMP) that outlines specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements.

In response to the ADB Requirements and in order to manage the potential adverse environmental impacts, especially in the operational phase of the Proposed Development, recommendations have been provided in an Environmental and Social Management and Monitoring Plan (ESMMP). As part of the ESMMP objectives, several management and monitoring plans, procedures, and programs have been developed to guide every stage of project construction, operation, and decommissioning so that the environmental performance of the SPBCL II Power Plant is optimized.

The ESMMP objectives will also be modified over the life of the SBPCL II Power Plant, as appropriate, to reflect changing environmental laws, regulations, standards, and technologies. On the basis of the above, it is considered that the Proposed Development is in compliance with the requirements of the ADB to prepare an EIA and associated EMP (for this project called the ESMMP).

3.2.1.2 Public Consultation

ADB requires public consultation in the environmental assessment process. Public consultation has been carried out during different activities in the project cycle, using different techniques such as large consultation/public meeting, small group meeting, informal meeting as per environmental social and procedures of BCAS. This consultation was conducted in the pre project situation in 2008, during the ESIA and RAP Study stage in 2011 and after completion of draft ESIA & RAP study as well as disclosure of these Reports in 2013 and 2014. A series of public discussion activities were undertaken by BCAS as part of designing a compensation package. These programmes included rapid appraisal and discussion with the PAPs and community leaders.

In total there were five informal group meetings, 17 focus group discussions (2008 and 2011) and four stakeholders' and Public consultation meetings held up to September 2011. A further five consultation meetings were held throughout September in 2013. The consultation

focused on key issues relating to the environmental and social impact of the Proposed Development, as well as resettlement and compensation. The latter allowed all proposed measures to be developed with sufficient input from the affected stakeholders, using the mechanism of participatory, inclusive and informed consultation. In addition to those consultation events already held, it expected that SBPCL II will carry out consultations during the rest of the construction period. On this basis, it is it considered that the Proposed Development is in compliance with the requirements of the ADB to consult with the public during the environmental assessment process.

In line with ADB's Public Communications Policy, relevant information (whether positive or negative) about social and environmental safeguard issues has been, and will continue to be made available in a timely manner, in an accessible place, and in a form and language(s) understandable to affected people and to other stakeholders, including the general public, so they can provide meaningful inputs into project design and implementation.

3.2.1.3 Involuntary Resettlement

With regards socio-economic impacts, ADB screens all projects to determine whether or not they involve Involuntary Resettlement or have potential impacts on Indigenous Peoples. The SBPCL II Power Plant Project is classified Category A meaning it is likely to have significant involuntary resettlement impact.

In response to ADB Requirements and IFC Performance Standard 5[1], a RAP, commensurate with the extent and degree of the impacts, has been prepared. The degree of impacts was determined by the scope of physical and economic displacement, and the vulnerability of the affected persons.

A Project Affect Persons (PAP) survey was undertaken in respect of the Proposed Development and determined the total extent of displacement and types of livelihood for all of PAP types. The most impacted group was identified to be the people displaced by the Project Site and switchyard site. The PAPs impacted as a result of the gas pipeline were found to be the least impacted group. Despite the amount of land acquisitioned and requisitioned being proportionately high for the latter category, the impacts on individual land owners will not be significant because the quantities of land acquisitioned and requisitioned per farmer will be small and this land can be re-used for cultivation after construction of the pipeline is completed.

The compensation amount for land was established based on the market analysis of previous land sales and also discussions held with community leaders and neighbouring communities unaffected by the project, as well as PAPs. The compensation amount for land was then communicated to, and agreed with, the PAPs. Replacement values for trees/crops, houses and

[1] 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.
Performance Standard 5 states that involuntary resettlement should be avoided or at least minimized as it has the potential to result in long-term hardship and impoverishment for affected persons and communities, as well as environmental damage and social stress in areas to which they have been displaced. Performance Standard 5 acknowledges that project related land acquisition and/or restrictions on land use may result in the physical displacement of people as well as their economic displacement.

other immovable structures were established as a result of discussions with the neighbouring communities, local community leaders and merchants selling construction materials and seedlings. Compensation amounts for land, houses and immovable structures include a 50% premium.

In addition, training and skill development activities and small enterprise development among the PAPs is planned. Finally, a resettlement financing plan has been prepared with a budget of approximately Tk. 228 million. Considering the scale and type of physical and economic displacement, this amount is considered commensurate with the expected impacts on PAP livelihoods.

A grievance mechanism through a Joint Committee for Community Relations (JCCR) is proposed for the Proposed Development to address the grievances related to the resettlement and compensation. The Joint Committee will include members from the District Administration, local Government officials and village elected representatives.

On this basis of the above, it is considered that the Proposed Development is in compliance with the requirements of the ADB and IFC Performance Standard 5 in respect of involuntary resettlement.

3.3 Audit Findings and Areas of Concerns

Project Environmental, Health and Safety Plan

The EPC contractor has prepared an EHS Plan, which is included as Annex 11 of the ESIA (ref: SP322 – S-PL-11-0001, Revision A). The EHS Plan applies to all employees and visitors to the Project Site and includes EHS commitments as part of the policy sections. This EHS Plan includes details of the EHS structure for the EPC Contractor and outlines the requirements for EHS training / orientation and a description of required EHS Audits. The EHS Plan includes details for specific EHS site procedures, including management of sub-contractors.

An example of a weekly EHS site inspection undertaken by the EPC Contractor is attached as Annex 3.

Ecology

There are no critical habitats within the project Area of Influence. The Project Site has been subject to land raising and as such at the time of the construction phase there is no ecological habitat of significant value.

At present it is understood that the location of the T-line associated with the Proposed Development is unknown, however approximately 70m of T-line is required to facilitate the Proposed Development (the Project Site as well as the future, potential Bibiyana I and III

Power Plants). As stated in the ESMMP a migratory bird survey is proposed prior to construction of the T-line.

Water Resources and Water Quality

As part of the validation of the ESIA, water samples were obtained from the Kushiyara River in February 2014 (Table 4.3) and sent to a certified laboratory in Dhaka for analysis (analytical certificates provided in Annex 6).
Samples were taken from five locations within the Kushiyara River, sample locations are shown in Map 4.6 and comprised:

- adjacent to the northern boundary of the Project Site;
- 1 km upstream of the Project Site;
- 3 km upstream of the Project Site;
- 2 km downstream of the Project Site; and
- 4 km downstream of the Project Site.

The results of the surface water analysis (average concentrations of the five locations) are presented in Table 3.1 and compared with Bangladesh water quality standards.

Table 3.1: Kushiyara River Water Quality

Parameter	**Units**	**Concentration** February 2014	**Bangladesh standards**
COD	mg/L	14.1	200
Dissolved Oxygen	mg/L	3.5	4.5-8
Ammonia Nitrogen	mg/L	< 0.97	50
Nitrites	mg/L	< 0.08	-
Nitrites	mg/L	3.2	10
Mercury	mg/L	< 0.03	0.01
Manganese	mg/L	< 0.07	5
Phosphate	mg/L	0.06	-
Phosphorus	mg/L	0.6	1
Iron	mg/L	0.90	2
Chlorine	mg/L	ND	0.2*
Calcium	mg/L	12.0	75
Arsenic	mg/L	<0.02	0.05
Total acidity as $CaCO^3$	mg/L	49.0	-
Alkalinity as $CaCO^3$	mg/L	73.0	200-500
Total Hardness as $CaCO^3$	mg/L	69.0	-
Lead	mg/L	<0.02	0.05
Potassium	mg/L	2.5	12
Sodium	mg/L	10.02	200
pH at 24.5°C	-	6.72	6-9
TSS	mg/L	12.4	10
TDS	mg/L	143	1000
Sulphate	mg/L	5.77	400

Parameter	Units	Concentration February 2014	Bangladesh standards
Turbidity	NTU	19	10
Conductivity	µS/cm	145	-

Source: Bangladesh Council of Scientific and Industrial Research (BCSIR)

Although the area is characterized by fresh water anecdotal evidence suggests that the river water upstream of the Project Site is polluted from a fertilizer plant (Fenchuganj Fertilizer Factory). The Fenchuganj Factory is located around 35 km upstream of the Project Site and reportedly discharges ammonia and 'other chemicals' into the Kushiyara River. It is noted that although the Fenchugani Factory is still in operation, a modernised fertilizer facility is now under construction at the site and it is expected that once this goes into operation the existing facility will be closed down. It is noted that the baseline water quality analysis shows that the ammonia nitrogen concentration in all samples are below the DoE standards.

According to the analytical results presented in Table 3.1, there is no indication that chemicals from the fertilizer factory are impacting water quality in the vicinity of the Project Site. The primary impact on water quality is during the monsoon season when silt is washed into the river and the Total Suspended Solids (TSS) and Turbidity of the river water increases significantly, relative to pre-monsoon concentrations. No other exceedances of Bangladeshi Standards were identified in the analysis.

In accordance with the ESMMP, it is proposed to undertake daily visual inspection and 3 monthly analysis of the Kushiyara River.

Three groundwater samples were obtained, in February 2014, from groundwater wells located in the vicinity of the Project Site as well as to the north and south of the Kushiyara River (refer to Map 4.6 within the ESIA). Samples 1 and 3 were obtained from deep tube wells, whilst Sample 2 was obtained from a shallow tube well. All groundwater samples were analyzed by certified laboratory in Dhaka and the analytical results are presented in Table 3.2.

Table 3.2: Groundwater Quality

Parameter	Units	Sample 1 The Project Site	Sample 2 South of the River	Sample 3 North of the River	Bangladesh Groundwater Quality Standards
Mercury	mg/l	< 0.005	< 0.005	< 0.005	0.01
Phosphorous	mg/l	5.66	4.03	6.98	6
Calcium	mg/l	6.33	40.05	6.33	75
Total acidity as $CaCO_3$	mg/l	18.2	42.88	15.01	No Standard (NS)
Alkalinity as $CaCO_3$	mg/l	280	361	281	200-500
Total hardness as $CaCO_3$	mg/l	25.99	193	32	NS
Lead	mg/l	0.012	< 0.01	< 0.01	0.05
Potassium	mg/l	1.40	7.06	2.06	12
Sodium	mg/l	101	45.01	106	200
Dissolved Oxygen	mg/l	1.45	1.62	1.21	4.5-8
Temperature	°C	25	25	26	20-30

Parameter	Units	Sample 1 The Project Site	Sample 2 South of the River	Sample 3 North of the River	Bangladesh Groundwater Quality Standards
TSS	mg/l	69.06	57.6	5.01	10
TDS	mg/l	289	288	293	1000
Cadmium	mg/l	< 0.001	< 0.001	< 0.001	0.005
Chromium	mg/l	< 0.01	< 0.01	< 0.01	NS
Copper	mg/l	< 0.01	< 0.01	< 0.01	1
Zinc	mg/l	0.04	0.03	0.03	5
Nickel	mg/l	< 0.01	< 0.01	< 0.01	0.1
Boron	mg/l	0.51	1.55	0.17	1
Ammonium Nitrogen	mg/l	10.01	65.03	9.02	50
COD	mg/l	19.4	59.04	12.07	NS
BOD	mg/l	13.0	12.3	6.5	NS
Oil & Grease	mg/l	11.5	2.10	5.92	0.01
Manganese	mg/l	0.042	0.105	0.033	5
Phosphate	mg/l	20.06	11.18	21.20	NS
Iron	mg/l	1.79	4.45	1.83	2
Arsenic	mg/l	0.057	0.187	0.050	0.05
Chloride	mg/l	1.05	10.03	0.95	150-600

Source: Bangladesh Council of Scientific and Industrial Research (BCSIR)

According to a WHO web resource, elevated arsenic concentrations (above the WHO guideline value of 0.01 mg/l[2]) in groundwater are common throughout Bangladesh and are largely naturally occurring due to the underlying arsenic-rich strata[3]. The analytical results presented in Table 3.2 confirm that arsenic concentrations in groundwater in the vicinity of the Project Site are above the WHO guideline value of 0.01 mg/l. In addition, the results indicate that arsenic concentration are particularly high (i.e. above the Bangladesh Standard of 0.05 mg/l) in the shallow tube well.

Concentrations of Phosphorous and Iron were found to exceed Bangladeshi Standards at one of the three sample sites (Sample 3 and Sample 2 respectively). Furthermore, concentrations of oil and grease were found to exceed Bangladeshi Standards. No other exceedances of Bangladeshi Standards were identified in the analysis.

The EPC Contractor has confirmed that an on-site groundwater abstraction well is being used for potable purposes and the water from this well is subject to pre-treatment and regular analysis is undertaken.

In accordance with the ESMMP it is proposed to undertake analysis of groundwater every 3 months.

Air Emissions

As part of the validation of the ESIA, surveys of the ambient air quality were undertaken at ten locations situated to the north, south, east and west of the Project Site (7 days in each location) in November, December 2013 and in January, February 2014 (Table 4.2b). These

[2] World Health Organisation (WHO), 2008, Guidelines for drinking-water quality, third edition.

[3] http://www.who.int/water_sanitation_health/dwq/arsenic/en/, accessed 15/03/2011

events were during construction phase works. The sampling locations are illustrated in Map 4.6 within the ESIA.

The analytical results of the air quality sampling are presented in Table 3.3.

The results of the validation surveys broadly correlate with previous air quality data (from 2011), indicating that baseline concentrations of PM_{10}, $PM_{2.5}$ and SPM in the vicinity of the Project Site are high throughout the year, regularly exceeding National Ambient Air Quality Standards (Bangladesh) and IFC EHS Guidelines / WHO Guidelines. Concentrations were found to be particularly high during the Dry and Pre-Monsoon seasons.

Table 3.3: Test Results of Existing State of Ambient Air Quality in the Project Area

Date of sample Collection	Location	Ambient Air Pollutants Concentration in µg/m^3 (annual)					
		PM_{10}	$PM_{2.5}$	SPM	SO_2	NO_2	CO
November 2013	1000 meter south-east from the SBPCL II Power Plant	95.13	44.51	124.28	4.01	8.74	6.79
		94.14	42.52	139.22	3.28	9.65	7.52
		96.37	43.53	127.42	3.69	8.54	7.43
		94.24	42.5	129.21	4.36	7.95	6.96
		92.51	37.73	126.45	3.18	5.08	4.66
		91.29	36.61	126.5	480	6.24	5.59
		95.74	46.93	126.32	3.43	9.47	8.78
November 2013	100 meter east from the SBPCL II Power Plant	100.15	49.41	134.22	4.05	9.84	8.65
		99.16	46.72	146.27	4.25	8.45	8.72
		99.38	55.54	137.52	3.66	10.14	9.53
		100.24	52.5	149.21	4.33	8.85	8.86
		100.51	47.53	146.45	3.14	6.05	6.67
		97.26	55.51	136.50	3.80	5.24	6.54
		99.64	43.93	126.22	3.63	6.45	8.79
November 2013	200 meter south from the SBPCL II Power Plant	99.14	45.41	144.25	4.03	7.44	7.75
		84.16	46.72	149.23	3.24	8.55	8.53
		95.34	44.55	147.43	2.65	7.53	7.45
		84.25	52.50	133.11	3.34	7.85	6.83
		82.41	35.83	136.44	3.19	6.07	5.65
		93.20	38.51	129.42	4.10	7.25	5.54
		100.14	45.63	136.42	3.43	8.45	7.74
November 2013	Project Site	120.15	65.41	154.22	5.45	10.84	6.35
		112.16	56.62	156.27	5.35	9.42	9.32
		114.33	65.54	157.52	4.66	10.14	6.53
		120.24	62.5	169.21	4.33	9.85	6.16
		123.21	53.52	132.41	4.14	7.05	7.63
		120.22	52.41	156.60	3.80	6.24	5.53
		117.44	44.73	166.22	3.73	7.43	6.75
December 2013	Southern boundary of the SBPCL II Power Plant	130.23	58.11	164.28	3.04	6. 43	6.70
		121.12	52.52	169.23	3.27	7.61	6.32
		132.27	44.53	157.12	2.42	6.11	5.93
		125.24	46.5	136.25	3.34	7.05	6.86
		122.51	34.33	146.35	3.14	6.09	4.36
		121.20	36.41	146.52	3.60	6.23	4.57
		129.24	47.83	136.12	2.63	7.44	6.77
December 2013	320meter south from the SBPCL	150.21	68.15	154.26	3.14	6. 53	6.60
		141.15	65.73	149.23	3.24	6.65	6.32
		142.25	54.33	156.16	3.52	6.17	5.83

Date of sample Collection	Location	Ambient Air Pollutants Concentration in µg/m^3 (annual)					
		PM_{10}	**$PM_{2.5}$**	**SPM**	**SO_2**	**NO_2**	**CO**
	II Power Plant	136.24	56.5	166.26	3.44	6.25	5.66
		144.51	54.33	166.33	3.11	6.02	4.33
		151.30	56.45	156.54	3.50	6.22	5.11
		139.24	54.83	166.12	4.63	7.44	6.75
December 2013	150meter south-west from the SBPCL II Power Plant	139.13	57.31	144.22	3.02	5.75	5.33
		141.14	52.55	143.25	3.24	6.55	6.54
		144.35	55.53	157.22	3.65	6.57	6.22
		133.21	44.50	159.41	4.32	6.35	6.46
		123.11	57.74	156.43	3.48	5.48	5.64
		133.22	66.41	156.5	3.70	6.25	5.56
		149.75	66.23	156.34	3.53	8.67	6.74
December 2013	250 meter west from the SBPCL II Power Plant	160.13	58.53	154.24	3.51	8.24	5.73
		144.13	64.52	159.24	2.24	8.23	6.44
		152.36	66.53	157.12	3.64	8.24	5.45
		155.23	52.57	159.21	2.34	6.55	6.10
		139.53	54.72	156.45	2.16	5.22	5.74
		154.29	56.61	146.5	2.50	6.26	5.53
		139.34	56.95	156.34	2.33	6.41	6.18
January 2014	Clinic point road side adjacent to eastern boundary of Project Site	142.13	61.51	154.28	5.01	9.54	6.79
		144.14	62.52	159.22	4.28	10.65	6.52
		146.37	63.53	167.42	5.69	10.64	6.43
		154.24	62.5	169.21	5.36	9.65	6.96
		148.51	67.73	166.45	5.18	7.38	6.66
		139.29	66.61	166.5	5.80	8.44	6.59
		152.74	66.93	156.32	4.43	13.47	6.78
January 2014	1000 meter west from the SBPCL II Power Plant	122.13	51.51	124.28	4.03	7.54	6.33
		124.14	52.54	129.22	3.22	11.64	6.32
		116.37	53.54	127.42	4.62	11.63	6.23
		124.24	52.65	139.21	4.36	8.62	6.46
		128.51	57.43	146.45	4.13	7.34	6.56
		119.29	56.41	146.5	4.83	7.43	6.49
		112.74	46.43	136.32	3.43	11.42	6.48
National Ambient Air Quality Standards (Bangladesh)		15 (24hr) 50(annual)	65 (24hr) 15 (annual)	200[3] (8hr)	365(24hr) 80(annual)	100 (annual)	10,000 (8hr) 40,000 (1hr)
IFC EHS Guidelines / WHO Guidelines		150 (24hr) 70 (annual)	75 (24hr) 35 (annual)	150-230 (24hr) 60-90 (annual)	500 (10 min) 125 (24hr)	200 (24hr) 40 (annual)	10,000 (8hr)
Method of Analysis		**Gravimetric**	**Gravimetric**	**Gravimetric**	**West-Geake**	**Jacob& Hochheiser**	**CO Meter**

Source: Adroit International Laboratory and ECL baseline survey, November 2013 – Janurary 2014.

Notes:

PM_{10} - Respirable Dust Content <10µm
SPM - Suspended Particulate Matter
NO_2 - Nitrogen Dioxide
SO_2 - Sulphur Di-oxide
CO - Carbon Monoxide
ND - Non-Detect (i.e. below the instruments limit of detection)

Date of sample Collection	Location	Ambient Air Pollutants Concentration in µg/m^3 (annual)					
		PM_{10}	$PM_{2.5}$	SPM	SO_2	NO_2	CO

[1] - 94th percentile
[2] - 96th percentile
[3] - the standard for 'residential and rural' areas.

In accordance with the ESMMP dust mitigation measures are required, which includes use of a sprinkler where necessary. In addition the ESMMP outlines a requirement for quarterly PM_{10} and $PM_{2.5}$ monitoring. Information provided by the EPC contractor (included in Annex 4), and as noted during a site visit, the requirement for use of a sprinkler is maintained and documented. Also in accordance with the ESMMP continual observations of dust emissions are assessed and documented (refer to Annex 4).

Noise

During the construction phase there is the potential to generate significant noise. Construction phase noise assessed as part of the validation of the ESIA indicated that noise levels were generally found to be higher than the original 2011 results, which may be attributed to the temporary generator used during construction activities and a sizable number of workers in the Project AoI.

In accordance with the ESMMP there is a requirement to address noise complaints as part of a Grievance Mechanism. Following a site visit the EPC Contractor reported that a complaint had been received in terms of piling works causing noise beyond 6pm (as illustrated in the Complaints log included as Annex 6). Following which the EPC Contractor confirmed that piling operations were only undertaken between 8am and 6pm.

Traffic and Transportation

During the initial phases of construction, prior to construction of the Access Road, all construction traffic was noted to be via a narrow road to the east of the Project Site. This road was noted to be in a poor condition, however upgrade works commissioned by SBPCL II were observed to have been undertaken to this road during April 2014.

Traffic related impacts will be lessened once the Access Road is completed. At the time of writing it is understood that the Access Road is nearly completed.

In accordance with the ESMMP a traffic management plan is to be prepared by the EPC Contractor which includes regular inspections. The EPC Contractor has confirmed that regular inspections are undertaken (as illustrated in Annex 7), however further details regarding the traffic management plan are required.

Waste Management

During a site visit appropriate segregation of wastes was noted on-site including the EPC Contractor reporting that an appropriate external waste contractor has been appointed. In

accordance with ESMMP, the external waste contractor should be audited to ensure that suitable final disposal / treatment methods are being adopted.

Health and Safety

During a site visit, use of personal protective equipment and presence of a first aid station was observed to be accordance with the EPC Contractor's EHS Plan. Reportedly the EPC Contractor undertakes EHS incident reporting in accordance with the EHS Plan. As of April 2014 the EPC Contractor reported that no significant EHS incidents had occurred on-site.

During the visits it was noted that applicable legislations including the Bangladesh Factory Act 1965, Factories Rules 1979 and Environmental Conservation Act 1995 were being being complied with by the EPC Contractor.

Labour Force Protection

The EPC Contractor confirmed that the construction workforce includes Chinese nationals as well as local construction workers. The EPC Contractor confirmed the entire workforce is eighteen and over. It is recommended that the EPC Contractor's recruitment policy for the project (if doesn't already) should include reference to Bangladesh Labour Act 2006 and ILO Conventions. In particular the policy should stipulate no child labour and compliance with ILO conventions.

Grievance Redress Mechanism

There is evidence of addressing isolated complaints, such as the example of the noise complaint outlined above. However, it is considered that further works are required to further develop a formalised Grievance Mechanism. In accordance with the ESMMP there are requirements on the EPC Contractor and SBPCL II to progress development of a formal Grievance Redress Mechanism. The Grievance Redress Mechanism should follow procedures outlined in the ESIA.

4. Impact Summary and Mitigation

The Table below outlines potential impacts where further mitigation or potential further consideration of mitigation is recommended when assessed against Project Requirements, based on the findings from Section 3.2

Table 4.1: Summary of Impacts and Mitigation

Aspect / Impact	***Existing Mitigation Measures / Uncertainty of Mitigation Measures***	***Recommended Mitigation Measures or Clarification required / Corrective Action***	***Responsibility***	***Timescale***
EHS Plan	Review site records to identify findings from EHS Audits undertaken by the EPC Contractor and ensure corrective actions are identified and reviewed.	As part of a proposed Environmental and Social Audit, review EHS Audits as prepared by the EPC Contractor	Independent Auditor to be appointed by SBPCL II	Within 2 months
Ecology / Migratory Birds	Liaise with PCGB to gain an update in terms of the proposed location of the 70 m of T-line associated with the Proposed Development	Once clarity of the proposed T-line is determined, re-evaluate the requirement for a migratory bird survey and clarify responsibility for the survey and addressing mitigation requirements.	PCGB and / or SBPCL II as required	3 months
Impact on Kushiyara River	Absence of quarterly river water quality data to assess compliance against Project Requirements	As part of a proposed Environmental and Social Audit, review river water quality data as obtained by the EPC Contractor.	Independent Auditor to be appointed by SBPCL II / EPC Contractor	Within 2 months
Impact on underlying groundwater	Need to gain up to date groundwater quality data.	As part of a proposed Environmental and Social Audit, review groundwater quality data as obtained by the EPC Contractor.	Independent Auditor to be appointed by SBPCL II / EPC Contractor	Within 2 months
Dust Emissions	At present absence of quarterly PM_{10} and $PM_{2.5}$ monitoring	As part of a proposed Environmental and Social Audit, review air quality data as obtained by the EPC Contractor.	Independent Auditor to be appointed by SBPCL II / EPC Contractor	Within 2 months
Traffic and Transport	Lack of clarity on Transport Plan prepared for the construction phase works and any incidents which have occurred.	As part of a proposed Environmental and Social Audit, review of Traffic Management Plan as prepared by the EPC Contractor.	Independent Auditor to be appointed by SBPCL II / EPC Contractor	Within 2 months
Waste Management	Audit to verify competence and resources of appointed waste management contractor.	Undertake audit to ensure suitable disposal / treatment methods are being adopted.	EPC Contractor	Within 1 month

Health and Safety	Review site records to identify findings from incident reporting undertaken by the EPC Contractor and ensure corrective actions are identified and reviewed.	As part of a proposed Environmental and Social Audit, review EHS Audits as prepared by the EPC Contractor.	Independent Auditor to be appointed by SBPCL II	Within 2 months
Protection of Labour Force	No evidence of child labour was identified on-site. However, the EPC Contractor's policies should be strengthened regarding protection of the labour force.	The EPC Contractor's labour policy should be reviewed and if doesn't already should include reference to Bangladesh Labour Act 2006 and ILO Conventions.	EPC Contractor	Within 2 months
Grievance Redress Mechanism	Further development of the Grievance Redress Mechanism is required.	As part of a proposed Environmental and Social Audit, the Grievance Mechanisms should be further assessed.	Independent Auditor to be appointed by SBPCL II / EPC Contractor	Within 2 months

5. Land Acquisition History, Implementation Status of RAP and Outstanding Issues

Further details regarding resettlement are outlined in more detail within the Resettlement Action Plan (ref: 5th draft, July 2014). An update regarding resettlement is outlined below.

The SBPCL II Power Plant project has four main components, these are i) Main plant (including construction yard), ii) Access Road iii) switch yard & iv) Gas Pipeline. Re-settlers have been resettled in the same type of land adjacent to the western boundary of the Proposed Development. 15 families (14 HHs that do not have a legal title) have received 'permanent' land from the GoB on the condition of long-term leasehold (99 years).

In terms of compensation for housing structures, trees and moving allowance it was determined that a lump sum amount of TK 60,000 was paid to 15 re-settlers towards compensation for housing structures and trees. In addition, each settler received Tk. 7,500.

Regarding compensation for land value, for the Project Site (25 acres, which includes the construction laydown area) and access road (4.2 acres) land owners have received Tk 29,500 per decimal. For the additional 26 acres of land which has been acquired for the switch yard, of which 8.14 acres land is Khas land, the First and Second Notices were served and land prices were initially suggested by DC office at Tk. 11,000/decimal. Land owners have negotiated with the DC office and the price has been settled at Tk 51,000/decimal and BCAS understand that the landowners have received the negotiated compensation price.

A total 16.5873 acres of land was 'acquisitioned' for the gas pipeline and Project-Affected Households (PAHs) received Tk. 8,8 71,156.08 for the total area of this land. PAHs received compensation at a rate of Tk 5348.16./decimal. A total of 31.053 acres of land was requisition for temporary basis for construction of pipeline and total value of requisition is Tk. 1,802,610.23. PAHs received Tk. 606.30/decimal for the requisition of land for the pipeline.

As noted within the RAP (5th draft, July 2014), SBPCL II will engage an experienced entity to monitor and evaluate the RAP implementation.

6. Conclusions

The preliminary environmental and social audit has identified the following:

- The project currently operates in accordance with Bangladesh legislation;
- The EPC Contractor is generally working in accordance with their project EHS Plan, however it is recommended that this plan is subject to periodic independent audit;
- With regards to a number of environmental and social aspects it is evident that the construction phase of the project is progressing accordance with construction phase elements of the ESMMP. However, in certain instances further clarification or confirmation of implemented mitigation measures are required (these are listed in detail within Table 4.1);
- It appears that there are opportunities for improvement in terms of recruitment policies, although no fundamental issues regarding labour force protection have identified to date;
- Resettlement associated with the project has been completed. Further works are required to monitor the implementation of the RAP;
- Further works are required in order to develop plans necessary as part of the operational phase of the project (as outlined in the ESMMP). It is recommended that these plans are started to be developed whilst the project is in the construction phase; and
- On the basis that the EPC Contractor fully implements requirements as stipulated within their EHS Plan and the ESMMP (as well as mitigation measures identified in Table 4.1) then the environmental and social impacts as a result of the construction phase of the project should be mitigated to a satisfactory level.

Annex 1

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
সিলেট বিভাগীয় কার্যালয়
বাড়ি নং-১৮, রোড নং-৩৭, ব্লক-সি
শাহজালাল উপশহর, সিলেট।
e-mail: sylhet@doe-bd.org.

নং-পঅ/সিবি/ছাড়পত্র/৪৭১৪/২০১১/ ৮৩৮

তারিখঃ ১১/০৬ /১৪২১ বঙ্গাব্দ
২৫/০৫ /২০১৪ খ্রিষ্টাব্দ

প্রধান নির্বাহী কর্মকর্তা
সামিট বিবিয়ানা পাওয়ার কোং লিঃ (২ নং প্রকল্প)
সামিট সেন্টার, ১৮, কারওয়ান বাজার বাণিজ্যিক এলাকা
ঢাকা-১২১৫।

বিষয়ঃ সামিট বিবিয়ানা পাওয়ার কোং লিঃ (২ নং প্রকল্প) এর অবস্থানগত ছাড়পত্র নবায়ন প্রসঙ্গে।
সূত্রঃ পঅ/সিবি/ছাড়পত্র/৪৭১৪/২০১১/৯৯০, তারিখঃ ২৯/০৫/২০১১খ্রিঃ।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে দাখিলকৃত কাগজপত্র যাচাই-বাছাই পূর্বক গ্রামঃ পারকুল, ইউনিয়নঃ আউশকান্দি, উপজেলাঃ নবীগঞ্জ, জেলাঃ হবিগঞ্জ এলাকায় প্রস্তাবিত সামিট বিবিয়ানা পাওয়ার কোং লিঃ (২ নং প্রকল্প) নামক প্রতিষ্ঠানের বিরুদ্ধে অবস্থানগত ছাড়পত্রের শর্ত ভঙ্গ করার কোন অভিযোগ না পাওয়ায় সামিট বিবিয়ানা পাওয়ার কোং লিঃ (২ নং প্রকল্প) এর অনুকূলে প্রদত্ত অবস্থানগত ছাড়পত্রের সকল শর্ত যথাযথভাবে পালনসহ নিম্নে বর্ণিত নতুন শর্তে অবস্থানগত ছাড়পত্র নবায়ন করা হলো।

(০১) এ ছাড়পত্র কোন অবস্থায় হস্তান্তর যোগ্য নয়।
(০২) এ ছাড়পত্রের মেয়াদ ২৮/০৫/২০১৫ খ্রিঃ তারিখ পর্যন্ত বহাল থাকবে এবং মেয়াদ শেষ হওয়ার অন্ততঃ ৩০(ত্রিশ) দিন পূর্বে ছাড়পত্র নবায়নের জন্য (নবায়ন ফি ও প্রয়োজনীয় কাগজপত্রসহ) এ কার্যালয়ে আবেদন করতে হবে।
(০৩) বার্ষিক ভিত্তিতে নবায়ন না করা হলে ছাড়পত্র বাতিল বলে গণ্য হবে।

০২। উল্লেখিত ০১ নং হতে ০৩ নং শর্তের কোনটি ভঙ্গ করলে কিংবা প্রদত্ত ছাড়পত্রের কোথাও কোন ঘষা-মাজা, ওভার রাইটিং করলে ছাড়পত্র স্বয়ংক্রিয়ভাবে বাতিল বলে গণ্য হবে এবং আপনার প্রতিষ্ঠানের বিরুদ্ধে বাংলাদেশ পরিবেশ সংরক্ষণ আইন, ১৯৯৫(সংশোধিত-২০১০) ও পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭(সংশোধিত-২০১০) অনুসারে আইনগত ব্যবস্থা গ্রহণ করা হবে।

25/05/2014

(মোঃ ছালাহ্ উদ্দীন চৌধুরী)
পরিচালক
ফোনঃ ০৮২১-৭১১১৪০।

অনুলিপিঃ জ্ঞাতার্থে ও কার্যার্থে-
১। মহাপরিচালক, পরিবেশ অধিদপ্তর, সদর দপ্তর, ঢাকা।

Government of the People's Republic of Bangladesh
Department of Environment
Sylhet Divisional Office
House No. -18, Road No. - 37, Block-C
Shahjalal Suburb, Sylhet
E-mail: sylhet@doe-bd.org

No. PaA/CB/Charpatra/4714/2011/838 Date: 11/03/1421 B.S
25/06/2014 AD

The Chief Executive Officer
Summit Bibiyana II Power Company Limited (2nd Project)
Summit Centre, 18, Karwan Bazar C/A,
Dhaka-1215

Subject: About the renewal of the environmental clearance certificate of Summit Bibiyana Power Company Limited (2nd Project)

Reference: PaA/Charpatra/4714/2011/990, date: 29/05/2011 AD

Upon examining and scrutinizing all submitted documents as per the above mentioned subject and reference, the environmental clearance certificate in favor of Summit Bibiyana Power Company Limited (2nd Project) is renewed with following new conditions to be maintained carefully as no such violation of conditions of environmental clearance certificate was found against the proposed Summit Bibiyana Power Company Limited (2nd Project) at Village: Parkul, Union: Aushkandi, Upazilla: Nobiganj, District: Hobiganj.

(01) This clearance certificate is not subjected to handover under any circumstances

(02) The validity of this clearance certificate will last till 28/05/2015 and application for renewal of certificate is to be submitted (with renewal fee and necessary documents) to this office at least 30 (thirty) days prior to the expiry of the validity.

(03) This clearance certificate will be void if not renewed annually.

02. On breach any of the conditions mentioned in article 1 to 3 or if any portion of it is erased, overwritten then this certificate will be null and void automatically as well as necessary legal action will be taken against your company as per Bangladesh Environment Reservation Act 1995 (revised 2010) and Environment Reservation Regulations 1997 (revised 2010).

Sd./Illegible
25/05/2014 AD
(Md Salah Uddin Chowdhury)
Director
Phone: 0821-711140

Copy: Forwarding for kind information and to take necessary action
1. Director General, Department of Environment, Head Office, Dhaka

Annex 2

To

Noor Uddin

Chief Executive Officer

Summit BibiyanaII Power Plant.

Date: 2014.07.23

Subject: Confirmation of working progress

Dear Sir,

We, NEPC, hereby confirmed that, we are undertaking all activities in according with Bangladesh legislation and as per EPC Contract signed with Summit BibiyanaII Power Company Limited.

This is for your kind information and record.

Best regards

Sam Guan

Assistant of Project Manager

NEPC Site Management

Summit BibiyanaII Power Plant.

Annex 3

1.3 Attachment 6 – Weekly Inspection Checklist

附件 6-每周检测检查表

WEEKLY SITE INSPECTION CHECKLIST

每周现场检测检验表

		INSPECTION BY	
		检验人:	CHECK 检查
CUSTOMER	业主	SITE REPRESENTATIVE	现场代表
SITE ADDRESS	现场地址	SERVICE SUPERVISOR	服务主管
		OPERATIONS MANAGER	运行经理
		SERVICE MANAGER	服务经理
SITE SAFETY REP	现场安全代表	OTHER - (Specify)	其他（详细说明）
DESCRIPTION OF JOB	工作描述	DISTRICT	区域
INSPECTOR SIGNATURE	检测员签字	FSR NO.	FSR 编号
DATE INSPECTED	检测日期	WORK CODE	工作编码
REVIEWED BY	审核人	JOB START DATE	开始日期 2014.6.30
DATE REVIEWED	审核日期	SCHEDULED END DATE	计划结束日期

Status Codes: Y - Yes, N - No, N/A - Not Applicable

状态编码：是、否、不可用

	COMMUNICATION 交流	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	Jobsite Safety Planning Guide or equivalent used on this job? 工作现场是否有安全计划指南或等效的程序？	y		
2.	Corrective Action Items on previous safety inspection(s) corrected by responsible parties? 相关负责方是否对之前检测中要求的修正行动项做修正？	y		
3.	Results of this inspection reviewed with NEPC employees at site? NEPC 现场员工是否对检测结果审核？	y		
4.	Corrective Action Items on this report assigned to a responsible party for resolution? 此报告的修正行动项是否分配给相关负责方去解决？	y		
5.	EHS (or other required) regulatory poster displayed so it can be easily recognized? EHS 规程是否已经张贴以方便识别？	y		
6.	Fire department, ambulance, hospital, and physician phone numbers posted? 消防，救护车，医院和医生的电话号是否张贴？	y		

	PERSONAL SERVICES 个人服务	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	Person(s) trained in first aid on site?			

	现场人员是否接受了急救培训?	y		
2.	First aid kit(s) available and inspected weekly? 急救箱是否可用并每周做检测?	y		
3.	Potable water available, with fountain or disposable cups? 是否有引用水，或小喷泉式饮水点活一次性杯子?	y		
4.	Proper sanitation facilities available, kept clean, and adequately supplied? 是否有适当的卫生设施，是否保持清洁，并且由充足的供应?	y		

	GENERAL 综合	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	Hard hats worn where there is danger of head injury? 有危险的地区佩戴安全帽?	y		
2.	Safety glasses worn by all NEPC employees when required? 所有 NEPC 员工是否按要求佩戴护目镜?	y		
3.	Hearing protection available and used when needed? 是否准备并在需要时使用了听力保护措施?	y		
4.	Other personal protective equipment, such as respirators, used when required by job conditions (such as working with asbestos)? 在工作现场是否使用其他个人防护装备如呼吸器（有石棉的地方）?	y		
5.	Safety tags used by NEPC to indicate "DANGER - DO NOT OPERATE" situations? "危险-不要启动"的安全标志是否使用?	y		
6.	Potentially hazardous toxic substances used, handled, and disposed of properly to prevent employee exposure or environmental contamination in excess of limits? 使用的有潜在危险毒性的物质，是否适当的搬运，处理以保证环境与员工的安全。?	y		

	FIRE PROTECTION 消防措施	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	Access to fire plugs, standpipes, etc., clear and equipment in good condition? 到消防栓，立管，等通道是否畅通并且设备是否良好。	y		
2.	All fire extinguisher stations plainly marked and clear for quick access? 清楚、明确地标明所有的灭火器存放点，以便快速取得?	y		
3.	All fire extinguishers properly mounted, and marked for type of fire to be used on? 所有灭火器正确安装并标明使用类型?	y		
4.	Fire extinguishers periodically inspected, maintained, and tagged? 灭火器是否定期检测、维护并做好标签?	y		
5.	Travel distance to nearest fire extinguisher does not exceed 100 feet/18m? 距离最近的灭火器不超过 100 英尺/18 米?	y		
6.	One fire extinguisher per 3,000 square feet of protected building area? 受保护建筑区域每 3000 平方尺（278.8 平方米）内有一个灭火器?	y		
7.	Fire escapes and exits clear and plainly marked? 火灾逃生和应急通道清楚明确的标志?	y		
	Approved metal safety containers, marked as to contents, used for more	n		

	经核准的金属安全容器，标出所盛物质，作为超过 1 加仑可燃或易燃液体的容器？	N/A		
9.	All flammable liquid supplies are kept in sealed containers away from work area? 是否所有的可燃液体都用容器密封在远离工作区域存放？	y		
10.	Bulk flammable liquid containers (drums, tanks, etc.) are electrically bonded together and grounded? 大体积可燃液体容器（桶，罐，等）是否用电线连接并接地？	y		
11.	Containers are bonded when transferring flammable liquids? 运输可燃性液体时是否将容器连接在一起？	y		
12.	All loose oily rags and waste removed from area or stored in proper covered containers? 散油或废油是否移出工作场地或是否存放在适当容器中并覆盖？	y		
13.	All trash and combustible material removed from premises as necessary? 是否所有的垃圾和易燃材料都按需要被移走？	y		
14.	Welding/cutting operations conducted in safe manner, with portable fire extinguisher immediately available? 进行焊接/切割操作的时候是否按照周围有立刻可以使用的灭火器的方式？	y		
15.	Smoking areas designated? 是否有指定的吸烟区？	y		
16.	Temporary heating devices properly installed and used? 是否安装并使用了适当的临时加热装置？	y		
17.	Solid fuel salamanders prohibited in building and on scaffolds? 固体燃料禁止使用在建筑或脚手架上？	N/A		
18.	Temporary buildings, when located within another building or structure, are either of noncombustible construction or of combustible construction have a fire rating of not less than one hour? 位于建筑物内的临时建筑需使用防火材料或能达到不少于 1 小时耐火的材料？	y		

	ELECTRICAL HAZARDS 电气危险	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	115V ac 15- and 20-ampere receptacle outlets are of the grounding type with grounds connected? 115V AC 15 和 20 安培插座输出是否已接地？	y		
2.	All temporary 120V single phase 15- and 20-ampere receptacle outlets, including extension cords, provided with ground fault protection, such as ground-fault circuit interrupters? 所有临时的 120V 单相 15 和 20 安培插座输出、包括延长线是否提供了接地故障防护，例如接地故障断路器？	y		
3.	Covers installed on all outlets, switches, junction boxes, pullboxes, panel boards, etc., that are in service? 是否所有工作中的输出端、开关、接线盒、拨线盒、配电板等都配备保护盖？	y		
4.	All circuits identified at panel board? 是否所有电路都在面板上有标识？	y		

5.	Extension cords used are all three-wire type (including any used with double insulated tools)? 是否所有延长线都使用了三线式（任何使用两线绝缘工具的也算）？	y		
6.	Extension cords and drop lights in good condition (not frayed, broken)? 是否所有延长线与吊灯都处于良好状态（无磨损，无破损）？	y		
7.	Extension cords and other temporary wiring protected from damage and arranged so as not to create tripping hazards? 延长线和其他种类的临时线路是否做好了防止损坏的保护，以防止人员被绊倒？	y		
8.	Temporary lights equipped with guards to prevent accidental contact with the bulb? 临时照明是否有灯泡保护？	y		
	ELECTRICAL HAZARDS CONTINUED **电气危险-续**	**STATUS** **状态**		**DATE CORRECTED / COMMENTS** **修正日期/解释、评论**
9.	Portable electric lighting used in moist and/or other hazardous locations (e.g., drums, tanks and vessels) is operated at a maximum of 12 volts? 在潮湿和/或其他危险的地方（桶、储罐和容器）使用的便携式照明的最大电压为 12V？	y		
10.	All metallic structures, and the non-current-carrying metal parts of fixed, portable, and/or plug connected electrical equipment (other than double insulated) are grounded? 所有的金属结构，以及非带电金属部件的固件，便携，和/或插头连接的电气设备（除双重绝缘）是否接地？	y		
11.	Metal ladders not used around electrical equipment? 金属梯子不能在电气设备周围使用？	y		
12.	All work on electrical equipment done in accordance with electrical safety procedures required by the NEPC EHS Manuals? 所有电动工具的使用是否都按照 NEPC EHS 手册的电气安全程序要求执行？	y		
13.	Tagging and lockout procedures used in accordance with NEPC policies and procedures? 标签和上锁程序是否都按照 NEPC 政策及程序使用？	y		
14.	Warning signs posted where any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or matching into physical or electrical contact with it? 当一个地方有任何带电线路，暴漏或者隐蔽，是否张贴了警示标语提示可能产生人员，工具进入引发的身体接触或连电？	y		
15.	Temporary barricades used in accordance with procedures? 是否根据程序使用临时围栏？			
	HAND AND POWER TOOLS **手动和电动工具**	**STATUS** **状态**		**DATE CORRECTED / COMMENTS** **修正日期/解释、评论**
	All tools (Company and personal) in safe condition? [redacted]	y		

	LADDERS 梯子	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
(If ladders are not used on the job, mark "N/A" and omit remaining ladder items) *（如果没有在工作中使用到梯子，请填写 "N/A" 并忽略以下梯子项）*				
1.	Ladders provided for safe access to elevations where there are no temporary stairs, or suitable ramps or runways? 是否为没有临时楼梯，或合适的缓坡或通道的位置提供了梯子作为安全入口？	Y		
2.	Areas around top and bottom of ladders kept clear? 是否保证了梯子的顶部与底部的清洁？	Y		
3.	Ladder side rails extend at least 36 inches above the landing? 梯子的两侧至少要高于最后一个梯子蹬 36 寸。	Y		
4.	Portable ladders equipped with safety feet? 便携式梯子是否装备了安全腿？	Y		
5.	Portable ladders tied, blocked, or otherwise secured while in use? 在使用时是否保证便携式帖子，绑紧，卡主，或以其他方式保证安全。	Y		
6.	All ladders in safe condition? 所有梯子都在安全状态。	Y		
7.	Defective ladders destroyed, or tagged as defective to prevent further use? 有缺陷的梯子是否销毁或标记上有缺陷以防止被使用？	Y		
8.	Makeshift ladders not used? 禁止使用将就凑合用的梯子。	Y		
9.	Metal ladders not used around electrical circuits? 电路周围不使用金属梯子。	Y		

	SCAFFOLDING 脚手架	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
(If scaffolding is not used on the job, mark "N/A" and omit remaining scaffolding items) *（如果没有在工作中使用到脚手架，请填写 "N/A" 并忽略以下脚手架项）*				
1.	Footings or anchorages for scaffolding sound, rigid, and capable of carrying maximum intended load without settling or displacement? 使用脚部固定或锚固使得脚手架牢固，坚固，并可以不移动的情况下满足所需要的负载要求。	N/A		已和200号确认 2014.6.30.
2.	Access ladder or equivalent safe access provided for all scaffolding or work platforms? 是否为所有的脚手架或工作平台提供了梯子入口或升降安全入口？	Y		
3.	Open sides and ends of platforms more than 10 feet above the ground or floor have guardrails (or equivalent) and toe boards? 平台开口端或末端离地超过 10 尺需要安装护栏（或等效方法）与踢脚板。	Y		
4.	Overhead protection provided and used when personnel on scaffolds are exposed to overhead hazards? 当在脚手架上工作的人员受到来自头顶的高空危险时，提供并使用保护措施。	Y		
5.	Scaffolds constructed and used in accordance with NEPC policies and procedures? 脚手架的建造与使用是否遵守 NEPC 正常与程序？	N/A		已和200号确认 2014.6.30

2.	Guards used on all power tools designed for use with guards? 设计上需要保护的电动工具是否在使用时都装了保护?	y		
3.	Moving parts, such as belt or chain drives, and gears, pulleys, shafts, couplings, etc., including temporary set-ups, guarded? 运动部件，如皮带或链条传动，齿轮，滑轮，轴，联轴器等，包括临时设置，是否都有保护装置?	y		
4.	All portable electric power tools either grounded or double insulated? 所有便携电动工具是否都接地或者是双绝缘的?	y		
5.	Unguarded wheels on portable grinders limited to two-inch diameter, or less? 无保护装置车轮的上的便携式磨床限于两英寸的直径，或更少?	y		
6.	Goggles provided and used when grinding or chipping? 研磨或破碎时是否提供并使用护目镜?	y		
7.	Other personal protective equipment provided and used as necessary to protect from other tool-generated hazards? 是否使用了防护由其他人使用的工具而对自己造成伤害的个人防护用品?	y		
8.	Safety clips or retainers used with pneumatic impact tools? 是否为气动工具装备了安全夹具或固定件?	y		
9.	Compressed air used for cleaning purposes is reduced to less than 30 psi (at discharge)? 用于清洗目的的压缩空气压力减少至小于 30 psi?	y		
10.	Fan guard openings no larger than 1/2 inch when fan periphery is less than 7 feet from the floor? 当风扇边缘距地面小于 7 英尺时，风扇罩的开口不大于 1/2 英寸?	y		

	WALKING WORKING SURFACES 在作业面行走	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
1.	Housekeeping well maintained? 是否良好的保持了整理工作?	y		
2.	Lumber and debris kept clear of work areas? 木材和杂物的清除，以保证施工表面的畅通?	N/		2014.6.30 已经处理
3.	Work areas kept free of slipping and tripping hazards, such as oil, grease, rags, pieces of pipe and lumber, etc.? 施工表面不得出现如油、油脂、破布、管件和木材等，以避免滑倒和绊倒的危险?	y		
4.	Openings, including temporary openings, effectively protected by covers or guardrails and toe boards? 开口，包括临时开口，配备有效的保护盖、护栏和踢脚板?	y		
5.	Guardrails provided for open-sided floors or platforms six feet above adjacent floors or surfaces? 为相邻的地板或施工表面以上 6 英尺位置安装护栏?	y		
6.	Guardrails provided for runways four feet above floor or ground level? 是否为离地 4 尺的人行通道提供了护栏?	y		
7.	Stairs (including temporary stairs, such as stairs provided for trailers) having four or more risers provided with required stair railing(s) or hand rail(s)? 楼梯（包括临时楼梯，如车辆的梯子）踏板有 4 个或更多立管和扶手	y		

	WELDING 焊接	STATUS 状态	DATE CORRECTED / COMMENTS 修正日期/解释、评论
	(If there is no welding on the job, mark "N/A" and omit remaining welding items) *（如果没有在工作中使用焊接，请填写 "N/A" 并忽略以下焊接项）*		
1.	Fire extinguishing equipment immediately available at all welding locations? 焊接位置是否有可以立即使用的灭火器？	y	
2.	Persons exposed to welding flame or arc provided with and use eye protection? 是否为可能受到焊接火花或火星伤害的人员提供了眼睛保护用品，是否使用了保护用品。	y	
3.	Goggles used when chipping slag? 粉碎残渣的时候是否使用了护目镜？	y	
4.	Welding or burning areas well ventilated? 焊接或燃烧区域是否通风良好？	y	
5.	Special precautions used when welding or cutting in confined spaces? 是否在封闭空间焊接或切割的时候使用了特殊的防护措施？	y	
6.	Special precautions used when welding or cutting metals of toxic significance (e.g. beryllium, cadmium, lead, zinc, mercury, or chromium)? 在焊接或切割有明显毒性的金属时是否使用了特殊防护措施？金属（包括锡，铅，锌，水银，或铬）	y	
7.	Special precautions used when welding with inert gas/metal-arc process? 当有充入气体/金属弧过程时是否使用了特殊保护措施？	y	
8.	Compressed gas cylinders: 压缩气体罐：		
a.	Stored upright in ventilated area at least 20 feet from combustibles? 是否通风区域竖立存放并远离火源至少 20 尺？	y	
b.	Oxygen and fuel gas cylinders (empty and full) stored at least 20 feet apart or separated by non-combustible barrier at least 5 feet high? 氧气和燃气瓶存放相隔最少 20 尺，或中间用不可燃围栏间隔最少 5 尺高。	y	
c.	Secured against falling? 防止坠落	N/	2014.6.30 [illegible]

	WELDING CONTINUED 焊接（续）	STATUS 状态	DATE CORRECTED / COMMENTS 修正日期/解释、评论
[illegible]	Caps on unused cylinders? 未用[illegible]安装瓶盖	y	
[illegible]	Contents plainly marked? [illegible]清楚标明	y	
[illegible]	[illegible] of all arc welding machines grounded (except engine driven)? [illegible]是否接地？（除发动机外）	y	
[illegible]	[illegible] lead terminals protected from accidental electrical contact by [illegible] or by metal objects? [illegible]护。以防止人员与金属的意外接触。	y	
[illegible]	[illegible] screens used whenever practicable to [illegible]	y	

	SLINGS AND RIGGING 绳索与锁具	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
(If slings are not used on the job, mark "N/A" and omit remaining sling items) *（如果绳索没有在工作中使用，妙计 "N/A" 并护士一下绳索项）*				
1.	Rigging equipment inspected prior to use on each shift, and as necessary during use? 在每个班次使用之前，并且在使用过程中，如果觉得需要，对锁具设备做检测	y		
2.	Eyes in wire rope bridles, slings, or bull wires are not formed by wire rope clips or knots? 在绳索中有孔，或收放缆没有用钢丝绳夹或打结固定。	y		
3.	Only slings in good condition are in use? 只使用状态良好的钢丝绳。	y		
	Note: Slings having any of the following conditions are NOT ACCEPTABLE. Such slings must be immediately removed from service, and either tagged as defective or destroyed to prevent inadvertent reuse. 注意：钢丝绳如果有以下问题视为不可使用。这样的钢丝绳必须立刻停止使用，并打上有缺陷标签或销毁以防止不小心点再次使用。			
a.	Total number of visible broken wires in any length of eight diameters exceeds 10 percent of the total number of wires? 直径 8 的任何长度钢丝绳可见钢丝破损占总数的百分之 10.	~		
b.	Fraying, kinking, crushing, bird-caging, or other damage resulting in distortion of the wire rope structure? 磨损，打结，压倒，有孔，或其他损伤导致钢丝绳的结构变形。	~		
c.	Evidence of heat damage from any cause? 任何受热导致的损伤	~		
d.	End attachments that are cracked, deformed, or worn? 末端连接开裂，变形，或磨损	~		
e.	Corrosion of the rope or end attachments? 钢丝绳和连接腐蚀			
f.	Hooks that have been opened more than 15% of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook? 钩已经被拉开超过正常百分之 15，或角度变形超过 10 度。	~		
4	All sling hooks, shackles, and other attachments in good condition and used in accordance with manufacturer's recommendations? 所有绳子钩，卡扣，和其他连接处于良好状态，并且遵照制造商的要求。	y		
	Note: Job- or shop-made hooks, links, or makeshift fasteners formed from bolts, rods, steel plate, etc., or other such attachments are NOT ACCEPTABLE. 注意：工作或商店制造的钩，连接，或将就凑合的紧固方式，如使用螺栓，杆，钢板，等等。或其他连接方式都是不合格，不可同的。			

	CRANES AND DERRICKS 吊车与起重机	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
(If cranes and derricks are not used on the job, mark "N/A" and omit remaining crane and derrick items). *(如果吊车与起重机没有在工作中使用，那么标记 "N/A。" 并且忽视下面的吊车与起重机项)。*				
1.	Equipment inspected by competent person before each use? 设备每次使用之前由主管人员做检查	y		
2.	Rear of portable crane barricaded to prevent injury to persons while crane is in use?			

	可移动式吊车在使用的时候要在后方安放围栏以保护人员	y		
3.	Only wire rope in good condition is in use? 只使用状态良好的钢丝绳	y		2014.6.7
	Note: Wire rope having any of the following conditions is NOT ACCEPTABLE. Such rope must be immediately removed from service, and either tagged as defective or destroyed to prevent inadvertent reuse. 注意：如果钢丝绳有以下问题，钢丝绳不可使用。这样的钢丝绳必须立刻停止使用，并且要打上缺陷标签或销毁以防止不小心再次使用。			
a.	Wear or scraping of one-third the original diameter of outside individual wires. 钢丝绳外直径 3 分 1 已磨损。	~		
b.	Crushing, bird-caging, or other damage resulting in distortion of the rope structure. 挤压，拱起，或其他损伤而导致的绳索结构受损	~		
c.	Evidence of heat damage from any cause. 任何受热导致的损伤	~		
d.	Running rope: Six broken wires in one lay, or three broken wires in one strand in one lay. 纵向的钢丝绳。每股中有 6 根破损，或者 1 股中 1 柳中有 3 根。	~		
e.	Standing rope: Two broken wires in one lay beyond end connections, or one broken wire at an end connection. 竖立的钢丝绳：每股中有 2 根，无人和连接的情况下，或在末端连接上有 1 跟破损。	~		
4.	Tag lines used to control loads? 在负重控制中使用标签	y		2014.6.30
5.	No one allowed under load? 任何人都不允许在重物下	y		
6.	No one allowed to ride load? 任何人都不允许在重物下	y		
7.	Adequate clearance maintained from any part of the crane or load to power lines (Minimum 10 feet from 50kV and below)? 吊车或重物与电线之间保持足够的距离 （距离 50kv 或以下的电线最少保持 10 尺）	y		

Excavations and Trenching 挖掘与沟渠	STATUS 状态		DATE CORRECTED / COMMENTS 修正日期/解释、评论
(If there is no excavating or trenching on the job, mark "N/A" and omit remaining excavations, trenching and shoring items) *（如果工作中没有涉及挖掘与沟渠，那么标记 "N/A" 并且忽视以下挖掘，沟渠与支架项）*			
1. All walkways, runways, and sidewalks on site clear of excavated material or other obstructions? 所有现场的道路，车道，人行道都要消除挖掘材料或其他干扰物	y		
2. Excavations, trenching, and shoring inspected daily? 每天对挖掘，沟渠，支撑做检查	y		
Material used for sheeting and sheet piling, bracing, shoring, and underpinning is in good, serviceable condition? [illegible]。护板桩，支柱，支架，和地下基础加固件，都应当在良好状	y		2014.6.27

	如果没有适用支撑，沟渠的侧面或筑堤应当使用斜坡做保护。	Y		
5.	Excavated materials stored and retained at least 2 feet/600mm from the edge of the excavation? 开挖出的材料最少要存放到开挖区边缘的 2 尺/600mm 以外。	Y		
6.	All spoil banks of excavated materials more than five feet high shored, laid back to a stable slope, or some other equivalent means of protection provided to prevent worker exposure to moving ground or cave-ins? 所有超过 5 吃的开挖出材料堆成小堆都应做支撑，并使斜坡稳定，或使用同等有效的方法来保证周围工作人员的安全。	Y		
7.	Adequate means of exit, such as a ladder or steps, provided within 25 feet of persons working in trenches four or more feet deep? 在 4 尺一下挖掘或沟渠中的工作人员 25 尺之内提供安全的出口方式，如梯子或台阶。	Y		

COMMENTS:

] Attachment 1: Safety Corrective Action Request

附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表：朱广建	Date 日期 2014.6.30
Site Location 现场位置： 锅炉钢架、锅炉	Company 公司：~~[illegible]工地~~ 锅炉工地
Discrepancy 问题	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写）
1.有不使用防坠器、攀爬自锁器现象。	已整改完成
2.锅炉南侧，钢爬梯没攀爬自锁绳.	未有人施工施工时间短.
3..钢结构吊装钢丝绳与棱角处未加防护锅炉。	已整改.
4.汽机房钢结构吊装东西---南北两侧大梁加设安全水平扶绳锅炉。	已设未完成
	Safety Director 主任 [illegible]
Person Performing Corrective Action 修正行动执行人	Safety officer 安全员 [illegible] 2014.7.1

This copy to be returned to
此副本返回到

Safety and Security department
安保部

No later than
不晚于 2 天

Calendar days after incident

] **Attachment 1: Safety Corrective Action Request**

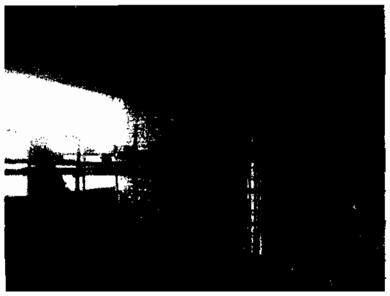
附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表：于殿光	Date 日期 2014.6.30
Site Location 现场位置：　化学水二楼	Company 公司：建筑工地
Discrepancy 问题	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写）





砌筑脚手架跳板没绑扎	
	没用的跳板下架
	使用的跳板以用
	铁丝绑扎
	Safety Director 主任　王波
Person Performing Corrective Action 修正行动执行人	Safety officer 安全员

...y to be returned to　　Safety and Security department

...返回到　　安保部

...r than　　Calendar days after incident

...于　2 天

] **Attachment 1: Safety Corrective Action Request**

附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表：朱广建	Date 日期 2014.6.30
Site Location 现场位置： 燃机	Company 公司：汽机工地
Discrepancy 问题	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写）
1.燃机发电机西侧下脚手架部北侧临边加设栏杆或跳板。	已整改完、并验收合格。施工方法：用铁板，木方加固并绑扎牢固。
	Safety Director 主任 王小斌
Person Performing Corrective Action 修正行动执行人 潘玉亮	Safety officer 安全员 杨光伟

This copy to be returned to Safety and Security department

此副本返回到 安保部

No later than Calendar days after incident

不晚于 2 天

] Attachment 1: Safety Corrective Action Request

附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表 朱宁建	Date 日期 2014、6、27
Site Location 现场位置：汽机厂房区域	Company 公司：锅炉工地
Discrepancy 问题 钢结构吊装楞角无防护.	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写）
钢丝绳与钢结构接触楞角处无安全防护措施	楞角处应加垫管皮或其它防护用品
	Safety Director 主任 史以律
Person Performing Corrective Action 修正行动执行人	Safety officer 安全员 史以振强 2014、6、27

This copy to be returned to 此副本返回到 Safety and Security department 安保部 朱宁建

No later than 不晚于 Calendar days after incident 2014、6、27 17:30

Attachment 1: Safety Corrective Action Request

附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表 张像	Date 日期 2014.06.23
Site Location 现场位置：机械化门口	Company 公司：机械化
Discrepancy 问题 外加剂包摘要及时处理清走。	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写） 现已摆放整齐，待相关部门协调后清运。
	Safety Director 主任 王福强
Person Performing Corrective Action 修正行动执行人 詹天宇	Safety officer 安全员 詹天宇

This copy to be returned to
此副本返回到

Safety and Security department
安保部

No later than
不晚于

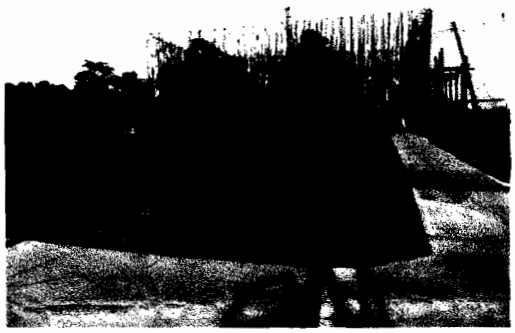
Calendar days after incident

Attachment 1: Safety Corrective Action Request

附件 1：安全修正行动要求

SAFETY CORRECTIVE ACTION REQUEST

安全修正行动要求

Safety Representative 安全代表	Date 日期 2014.06.27
Site Location 现场位置：清水池	Company 公司：建筑工地
Discrepancy 问题	Action Taken (please initial after each discrepancy) 行动措施（行动措施与问题对应填写）
	
做好安全防护，防止人员坠落池中。	
	Safety Director 主任
Person Performing Corrective Action 修正行动执行人	Safety officer 安全员

2014.6.28

This copy to be returned to
此副本返回到

Safety and Security department
安保部

No later than Calendar days after incident
整改期限 3 天。

安健环检查签到单

时间：6.30

单位	签名	单位	签名
安保	朱建		
物业部	[illegible]		
安保部	姚[illegible]		
安保部	于敬光		
建筑	郝[illegible]		
汽机	杨光伟		
锅炉	赵振强		
综合	宋[illegible]		
物资部	[illegible]		
电气	高利[illegible]		
机械化	唐天宇		
		[illegible]	

Annex 4

Water Sprinkling Record

撒水记录

Maintained from Date: November, 2013

Water Sprinkling Record

撒水记录

No. 序号	Date 日期	Time 时间	In Charge Name 负责人	Signature 签字	Remarks 备注
1	2013.11.1-10	每天4次	YUDIANGUANG	于殿光	
2	2013.11.11-20	每天4次	YUDIANGUANG	于殿光	
3	2013.11.21-30	每天4次	YUDIANGUANG	于殿光	
4	2013.12.1-10	每天4次	YUDIANGUANG	于殿光	
5	2013.12.11-20	每天4次	YUDIANGUANG	于殿光	
6	2013.12.21-31	每天4次	YUDIANGUANG	于殿光	
7	2014.1.1-10	每天4次	YUDIANGUANG	于殿光	
8	2014.1.11-20	每天4次	YUDIANGUANG	于殿光	
9	2014.1.21-31	每天4次	YUDIANGUANG	于殿光	
10	2014.2.1-10	每天4次	YUDIANGUANG	于殿光	
11	2014.2.11-20	每天4次	YUDIANGUANG	于殿光	
12	2014.2.21-28	每天4次	YUDIANGUANG	于殿光	
13	2014.3.1-10	每天4次	YUDIANGUANG	于殿光	
14	2014.3.11-20	每天4次	YUDIANGUANG	于殿光	
15	2014.3.21-31	每天4次	YUDIANGUANG	于殿光	
16	2014.4.1-10	每天4次	YUDIANGUANG	于殿光	

Water Sprinkling Record

撒水记录

No. 序号	Date 日期	Time 时间	In Charge Name 负责人	Signature 签字	Remarks 备注
17	2014.4.11-20	每天4次	YUDIANGUANG	于殿光	渐入雨季

Annex 5

Air Emission Observation

气体排放观察报告

Maintained from Date: January, 2014

Air Emission Observation

气体排放观察报告

No. 编号	Date 日期	Equipment 设备	Emission level 排放等级	Sustainable/ Unsustainable 持续排放/ 不持续排放	Signature 签字	Remarks 备注
	2014.1	打桩机		不持续排放	王永泉	
	2014.1	发电机		不持续排放	王永泉	
	2014.1	汽车机动车		不持续排放	王永泉	
	2014.2	打桩机		同上	王永泉	
	2014.2	发电机		〃	王永泉	
	2014.2	机动车		〃	王永泉	
	2014.3	打桩机		同上	王永泉	
	2014.3	发电机		〃	王永泉	
	2014.3	机动车		〃	王永泉	
	2014.4	打桩机		同上	王永泉	
	2014.4	发电机		〃	王永泉	
	2014.4	机动车		〃	王永泉	
	2014.5	打桩机		同上	王永泉	
	2014.5	发电机		〃	王永泉	
	2014.5	机动车		〃	王永泉	
	2014.6	打桩机		同上	王永泉	
	2014.6	发电机		〃	王永泉	
	2014.6	机动车		〃	王永泉	
	2014.7	打桩机		同上	王永泉	
	2014.7	发电机		〃	王永泉	
	2014.7	机动车		〃	王永泉	

Annex 6

意见收集记录

Complaint Box

NEPC

时间	发生地点	名字	事件	处理结果	电话
Time	Event Place	Name	Event description	Result	Mobile
2013.8	场外西侧靠外		场外西侧住户抱怨NEPC排水冲坏村路	NEPC方二日内修复并致歉	01710 921127
			For the rain and blockage the drain the water was overflew and road damaged	vEPC apologize for the incident and repair the road in 2 days	
	~~East of~~ West of the plant				
2014.1	门东侧		门东侧住户抱怨桩机噪音	NEPC更改作业时间并致歉	01911 776860
	~~the~~ East side of main gate		Pile mechine is noisy at the east side.	NEPC apologize and the working time of ~~pile~~ pile mechine is changed and applicable at day time only	

Annex 7

Monthly Road Inspection for Traffic and Transportation

月交通运输检察报告

Maintained from Date: February, 2014

Monthly Road Inspection for Traffic and Transportation

月交通运输检察报告

No. 序号	Date 日期	Place & Description 地点，说明	Steps (if problem exists) 措施（如有问题）	Inspected by 检察人	Signature 签字	Remarks 备注
1	2014 1.28	现场		DAI Q I CHAO	戴启超	
2	2014 2.27	现场		DAI Q I CHAO	戴启超	
3	2014 3.30	现场		DAI Q I CHAO	戴启超	
4	2014 4.28	现场		DAI Q I CHAO	戴启超	
5	2014 5.30	现场		DAI Q I CHAO	戴启超	
6	2014 6.30	现场		WANG YONG QUAN	王永泉	