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15 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

15.1 Introduction

15.1.1 The findings and recommendations of the EIA report will constitute a formal commitment by the Project Proponent to achieve the levels of environmental protection. It also states the Project Proponent's environmental performance criteria. In order to ensure the performance commitments are incorporated throughout various implementation phases (e.g. detailed design, tendering, construction and operation of the project), a number of contractual, managerial and administrative mechanisms will be implemented, including:

- Setting up of a project organization and hierarchy;
- Development of Environmental Monitoring and Audit (EM&A) programme;
- Outline of Environmental Mitigation Implementation Schedule;
- Formulation of Environmental Management Plan which includes Waste Management Plan;
- Approval of Contractor's Work Method Statement; and
- Provision of community liaison office.

15.2 Project Organisation

15.2.1 A project organisation consisting of the Independent Environmental Checker (IEC), Contractor's Environmental Team (ET), Engineer's Representative (ER), and Contractor shall be formed to take the responsibilities of the environmental protection for this project.

15.2.2 The IEC will be appointed by the Project Proponent to conduct independent auditing on the overall EM&A programme including the implementation of all environmental mitigation, submissions relating to EM&A, and any other submission required under the Environmental Permit (EP). The organisation, responsibilities of respective parties and lines of communication with respect to environmental protection works are given in the EM&A Manual.

15.3 EM&A Manual & Implementation Schedule

15.3.1 EM&A is an important aspect in the EIA process that specifies the time frame and responsibilities for the implementation of the environmental mitigation measures identified. Requirements on environmental monitoring (including baseline and impact monitoring) will be given.

15.3.2 A project specific EM&A Manual has been prepared based on the latest design information available and EPD's generic EM&A Manual. The project specific EM&A Manual specifies the following:

- Organisation, hierarchy and responsibilities of the Contractor, the Engineer or ER, ET, and IEC with respect to the EM&A requirements during construction;
- Information on project organisation and programming of construction activities for the project;

- Requirements with respect to the construction schedule and the necessary EM&A programme to track the varying environmental impact;
 - Full details of the methodologies to be adopted, including all field, laboratory and analytical procedures, and details on quality assurance;
 - Procedure for undertaking on-site environmental audits;
 - Definition of Action and Limit levels;
 - Establishment of event and action plans;
 - Requirements of reviewing pollution sources and working procedures required in the event of non-compliance of the environmental criteria and complaints;
 - Requirements for review of EIA predictions, implementation of mitigation measures, and the effectiveness of the environmental protect and pollution control measures adopted; and
 - Presentation requirements for EM&A data and appropriate reporting procedures.
- 15.3.3 An Environmental Mitigation Implementation Schedule (EMIS) has been prepared to summarise all the required mitigation measures that need to be implemented during the design, construction and operation of the proposed project. The implementation responsibilities are also identified. This EMIS is appended in the EM&A Manual.

15.4 Amendments to EM&A Manual

- 15.4.1 The Contractor shall be requested to review the mitigation measures and EMIS with respect to the design developments and construction methodology. In case when the Contractor needs to update the mitigation measures and the EMIS, an updated EM&A Manual shall be submitted to the EPD for approval. The Contractor shall seek EPD's prior approval on these amendments before construction commences.

15.5 EM&A programme

- 15.5.1 The Contractor will be requested to implement and operate a monitoring programme throughout the entire construction period of the Project. This mechanism will include a system to report the monitoring results on the Project Proponent's website within a period of time, to be agreed by EPD, after the relevant monitoring data are collected. In cases where exceedance are found, the Contractor and ET should take immediate actions to implement remediation measures following the procedures specified in the EM&A Manual.
- 15.5.2 Detailed requirements of the EM&A programme are described in the EM&A Manual. Measurements and activities that shall be conducted in accordance with the requirements in the EM&A Manual are summarised in the following:
- Baseline monitoring (on noise, air quality, water, ecology etc);
 - Impact monitoring (on noise, air quality, water, ecology etc);
 - Remedial actions in accordance with the Event and Action Plan within the time frame in cases where specified criteria in the EM&A Manual are exceeded;
 - Logging and keeping records of the details of monitoring results; and

- Preparing and submitting monthly EM&A Reports.

15.6 Environmental Management Plan

- 15.6.1 A systematic Environmental Management Plan (EMP) shall be set up by the Contractor to ensure effective implementation of the mitigation measures, monitoring and remedial requirements presented in the EIA, EM&A and EMIS. The Project Proponent and IEC will audit the implementation status against the EMP and advise the necessary remedial actions required. These remedial actions shall be enforced by the Engineer's Representative through contractual means.
- 15.6.2 The EMP will require the Contractor (together with its sub-contractors) to define in details how to implement the recommended mitigation measures in order to achieve the environmental performance defined in the Hong Kong environmental legislation and the EIA documentation. The EMP would also need to include a Waste Management Plan to demonstrate the Contractor's proposal to minimise the waste generation and maximise the re-use of spoil as far as practicable.
- 15.6.3 The review of on-site environmental performance shall be undertaken by The Project Proponent and IEC through a systematic checklist and audit once the project commences. The environmental performance review programme comprises a regular assessment on the effectiveness of the EMP.

15.7 Method Statements

- 15.7.1 The environmental aspects of working methods will be controlled through the checking of the Contractor's method statements which will be submitted and approved by the ER prior to the works being carried out. The Project Proponent will specify an arrangement whereby method statements will be scrutinised and signed off by ER before being approved. This will ensure that the environment is consistently and routinely considered in all works processes.