

## ANNEXURE I

### SCOPE OF WORK

The Employer has developed certain project management processes and systems which are aimed at ensuring fulfilment of project objectives within schedule and cost while adhering to quality and safety standards at the same time. These processes have interface with and require inputs from various stakeholders, including the existing associates and Other Contractors and/or consultants of the Employer. The Consultant shall adhere to these processes and systems as laid down in this Annexure.

The following major functions shall be covered under scope of subject project management services, but not limited to:

- A. Sourcing Management
- B. Engineering Management
- C. Quality Management
- D. Post Order Monitoring and Execution Management
- E. Safety and Health Management
- F. Other Services Management
- G. Post Construction Monitoring
- H. Handing over to Employer

The Consultant shall be responsible for performing the Scope of Work under guidance of the Employer:

#### **1. SOURCING MANAGEMENT SERVICES:**

##### **1.1 Selection of mode of procurement**

The Consultant shall be responsible for selecting the mode of procurement which is to be initiated through either one or more than one process mentioned below after sending request for quotation (“RFQ”) for getting offers from prospective suppliers:

- (a) Competitive lowest price basis;
- (b) Annual rate contract;
- (c) Repeat order basis;
- (d) Requisition item being of proprietary category;
- (e) Indigenisation or Development category; and/or
- (f) Emergency purchase.

##### **1.2 Selection of prospective suppliers**

1.2.1 Prospective suppliers shall be identified by the Consultant for issuing RFQs. The Consultant may select the prospective supplier on the basis of the: available internal supplier list, external sources, information available, data bank or through references. The credentials of prospective suppliers shall be verified by the Consultant before selection. Prospective supplier may be supplier for goods and contractor for the services or goods and services, both.

1.2.2 Criteria for selection of prospective suppliers:

- (a) Original Equipment Manufacturer (“**OEM**”)/ Original Equipment Supplier (“**OES**”);
- (b) Recommended by OEM/OES;
- (c) Authorised agent/dealers of OEM/OES/brand;
- (d) Alternate manufacturer/suppliers of repute for standard products; or
- (e) Indigenisation of products by developing suppliers through reverse engineering by analysing the samples/installed items.

1.2.3 The prospective suppliers shall be shortlisted/selected by the Consultant on the basis of the following:

- (a) References/feedback from other customers for whom parts have been developed;
- (b) By visiting their manufacturing facilities to assess their capabilities; and
- (c) By assessing their engineering capabilities, research and development facilities and financial strength.

### **1.3 Preparing and floating RFQ**

1.3.1 The RFQ shall be prepared by the Consultant which shall be sent to the prospective suppliers. It shall comprise of detailed scope of work to be performed by the supplier, last date of offer submission, offer validity period, along with conditions of contract such as:

- (a) Instructions to bidders (wherever applicable);
- (b) General terms and conditions;
- (c) Special terms and conditions (“**STC**”);
- (d) Formats of various securities/ guarantees, undertaking, etc. (wherever applicable);
- (e) Technical Specifications and drawings including quality requirements (wherever applicable);
- (f) Safety requirements i.e. EHS/IMS/OHSAS document (wherever applicable); and
- (g) HR & IR Requirements (wherever applicable).

1.3.2 The Consultant shall prepare and review the STC on the basis on the item category/package/need basis. Pre-bid meetings shall be held with prospective suppliers, if required, before submission of the bid/quotation/offer proposal by the suppliers.

#### **1.4 Internal cost estimation**

The Consultant shall prepare an internal cost estimation, wherever applicable, based on estimate methods/ prevailing market rates/ last purchase price reference for the goods or services required, in order to mitigate the risk of procuring the goods or availing the services at a higher price.

#### **1.5 Bid evaluation**

The basic criteria considered for bid evaluation (in-line with the requirement of package) prior to commercial negotiations shall include general comparison of the bids, financials of the bidders, similar work experience, concurrent commitments, payment terms, completion period offered, etc.

#### **1.6 Techno-Commercial meeting**

1.6.1 The Consultant shall send its comments and/or clarifications on the technical and commercial bids to the prospective suppliers for their replies and/or confirmations.

1.6.2 The techno-commercial meetings shall be arranged by the Consultant for detailed techno-commercial discussions with the prospective suppliers for all the declared, undeclared deviations and other technical and/or commercial points etc. Upon receipt of the clarifications (both technical and/or commercial) from the suppliers, the technical team of the Consultant shall prepare a revised technical comparison which would bring the bids of all the suppliers at par with respect to Specifications, scope of work, exclusions, terminal points, guaranteed performance parameters, etc.

1.6.3 In case, any further technical/ commercial clarifications are required, the same shall also be obtained from the suppliers. Upon completion of techno-commercial discussion, final technical bid evaluation report (“**TBER**”) as applicable shall be prepared by the technical team of Consultant for package finalization. The commercial team of the Consultant shall discuss and finalise the commercial terms with the prospective suppliers.

#### **1.7 Negotiation**

The Consultant may opt for normal negotiation process or an e-auction process. The price bids shall be evaluated by tabulating the quoted prices of all the suppliers and adjusting the various components considered for evaluation like taxes and duties, price loading for items not quoted, guaranteed performance parameters etc. The internal estimate or budget (wherever applicable) shall be used as an input for commercial negotiation.

#### **1.8 Bidder selection**

Based on the internal estimate or budget, discussions/negotiations shall be held with all the shortlisted suppliers. Decision regarding consideration of suppliers for commercial discussions or negotiations shall be taken by the Consultant on behalf of the Employer. During discussions or negotiations, an attempt shall be made to bring all suppliers on parity, mainly on delivery schedule, payment terms, liquidated damages, applicability of Taxes etc. Further to this, negotiations shall be carried out with all the suppliers with reference to the internal estimate or budget and the price comparative statement detailing the rates submitted by all the suppliers. Suppliers shall submit their final prices after negotiations/ discussions, which to be considered for recommendation regarding award of work.

## **1.9 Approval of Award Recommendations**

Based on the final price, mutually agreed terms and conditions, credentials and capability of the shortlisted suppliers, selection of successful supplier shall be done by the Consultant. The quotations, TBER, price comparative statement shall be attached along with note for approval (“NFA”), which shall be approved as per delegation of authority (“DOA”) of the Employer.

## **1.10 Formation and release of PO/SO**

1.10.1 On approval of NFA from the competent authority as per DOA, necessary purchase order (“PO”)/ service order (“SO”) shall be released to the selected supplier by the Consultant on behalf of the Employer. The requirements for environmental and safety, HR & IR, etc. shall be communicated by the Consultant to the selected supplier along with the PO/SO, as applicable.

1.10.2 The Consultant is further required to obtain duly signed and stamped PO/SO copy or email confirmation from the selected supplier as a token of acceptance of the terms and conditions of the PO/SO.

## **1.11 Follow-up for commercial compliance**

Upon receipt of the acknowledgement/unconditional acceptance of PO/SO by the selected supplier, the following steps shall be ensured by the Consultant:

- (a) Submission of advance bank guarantees by the supplier and release of advance, if applicable as per terms and conditions of PO/SO.
- (b) Submission of “contract performance bank guarantee” by the supplier, if applicable as per terms and conditions of PO/SO.
- (c) The Consultant shall provide assurance of payments to suppliers in coordination with the Employer’s finance department, as per the terms and conditions of PO/SO.
- (d) The Consultant shall also follow up for commercial compliances (including dispatch documents) as well as logistics/custom clearance terms as applicable with the selected supplier.

## **1.12 Closure of PO/SO**

1.12.1 On completion of the relevant supplier’s scope of work and based on the confirmation from the Employer’s project team, the Consultant shall get the PO closed formally with the respective supplier. The Consultant shall also ensure submission of required documents as agreed under the PO, i.e. performance bank guarantee etc.

1.12.2 In case of SO, following major documents are required to be obtained by the Consultant for the closure of the SO:

- (a) Work completion certificate;
- (b) No claim certificate from the contractor;
- (c) Certificate for release of final payment from the contractor;
- (d) Free issue material reconciliation statement; and

- (e) Performance bank guarantee for defect liability period as agreed under the SO, if applicable.

## **2. ENGINEERING MANAGEMENT**

**2.1** The Consultant shall provide “engineering management services” i.e. review of basic and detailed engineering for all required engineering disciplines (mechanical, electrical, instrument and control, civil structural, HSE, etc.), to the Employer right from the concept to completion, which shall include:

- (a) Finalisation of the Specifications;
- (b) Review of design basis document provided by licensor, if any;
- (c) Basic engineering review;
- (d) Detailed engineering review;
- (e) Review of project flow diagram, piping and instrument diagram, heat and mass balance, process data sheets for equipment and packages, hazardous area classification, instrument list and instrument process datasheets, electrical single line diagram, basic layout, pipeline list etc.;
- (f) Equipment engineering and equipment list review;
- (g) Civil/structural/architectural engineering review;
- (h) Piping engineering, instrument engineering review;
- (i) Review of insulation and painting specifications;
- (j) Plot plan finalization review and inputs;
- (k) Ensuring all detailed engineering deliverables comply with Codes and Standards;
- (l) Value addition for optimization of cost and schedule;
- (m) Advise on change management of basic engineering or detailed engineering, if any need arises;
- (n) Constructability study; and
- (o) Support to construction management.

**2.2** The key activities to be performed by the engineering team of the Consultant are described hereunder:

**2.2.1** Planning and schedule for engineering activities related to a project shall be undertaken as per the requirement of various projects being handled at a particular time and the scheduling of the engineering activities is to be done in a manner so as to match with the time schedule of the project.

**2.2.2** A schedule of following major project related milestones shall be decided considering the overall project completion schedule provided to the Consultant:

- (a) Appointment of the Employer's engineering consultant;
- (b) Pre feasibility report ("PFR") / Detailed project report ("DPR") finalization;
- (c) Site enabling facilities engineering;
- (d) Preparation of design basis reports of major packages;
- (e) Technical specifications preparation;
- (f) Master document/drawing list;
- (g) Supplier's offer evaluation and TBER preparation; and
- (h) Soil investigation report and other project related studies.

2.2.3 Once the planning and scheduling of work is done, execution shall be undertaken by the Consultant towards completing the various deliverables in the form of reports, studies, document reviews and approvals, resolution of site issues, etc. The planning, scheduling and maintaining control as far as engineering functions are concerned shall be done considering the following:

- (a) The engineering function is to be performed by the Employer's engineering consultants (EC). Coordination with the EC shall be done by the Consultant.
- (b) The responsibility of preparing PFR/DPR is with the Consultant. This may be prepared with the help of other consultant/s. Based on the inputs received from various departments, the Consultant may compile the Draft PFR/DPR and send the same to the concerned departments and thereafter, it is to be finalised by the Consultant.
- (c) Engineering activities pertaining to infrastructural development /enabling facilities (Site studies, development of infrastructure, Site establishment, etc.) shall be supervised for the project by the Consultant. These works shall be planned in line with the Schedule or zero date network prepared by the Consultant and the EC shall provide the list of Site enabling packages to the Consultant.
- (d) The Consultant shall arrange the technical Specification for all packages with the help of the EC as required. Technical Specification shall be prepared by the EC and vetted and finalised by the Consultant.
- (e) The quality assurance and inspection requirements for inclusion in technical Specifications shall be given by the Consultant. This includes salient aspects of shop and site tests on vital areas, which is also required to be included in technical Specifications. QA aspects such as sub-contractor approval, items for which quality plans are required, QA document approval, inspection procedure, items requiring certificate of conformity, etc. shall also to be included.
- (f) The technical Specifications shall include the guaranteed parameters for performance. The codes and practices for performance testing, its requirement and criteria for acceptance shall also be covered.
- (g) The technical Specifications shall include a typical list of mandatory spares.

### **3. QUALITY MANAGEMENT:**

**3.1** The Consultant shall adopt suitable Quality Assurance (“QA”) programme to ensure that the goods and/or services under the scope of PO/SO, whether manufactured or performed within the supplier’s works or at its sub-contractor’s premises or at the Site or at any other place of work, shall be in accordance with the Specification. Such programme shall be outlined by the selected supplier and shall be finally accepted by the Consultant after discussion. The quality assurance programme shall be generally in line with ISO-9001-2008.

#### **3.2 General Requirement**

**3.2.1** All materials, components and equipment to be procured, manufactured, erected, commissioned, and tested at all stages, as per a comprehensive quality assurance programme. The Consultant shall be responsible to draw up and implement such programme. The detailed standard quality plans (“SQP”) for manufacturing and standard field quality plans (“SFQP”) for field activities which are part of the technical Specification shall be followed by the Consultant.

**3.2.2** SQP details out all the components and equipment, various tests or inspections, to be carried out as per the requirements of this plan, standards mentioned therein and quality practices and procedures to be followed by the supplier and their sub-contractor’s quality control organization, the relevant reference documents and standards, acceptance norms etc. during all stages of manufacturing including raw material procurement, in-process manufacturing, assembly, and final testing/performance testing.

**3.2.3** SFQP details out for all the equipment’s required, the quality practices and procedures etc. to be followed by the Consultant’s “site quality control team”, during various stages of site activities starting from receipt of goods/equipment at the Site.

**3.2.4** The Consultant shall ensure compliance to the defined procedure for storage and preservation procedure of all raw materials, equipment, sub-assembly and assembly, welding consumables and spares.

**3.2.5** The goods shall be dispatched from the manufacturer’s works only after the same is accepted, subsequent to pre-dispatch and final inspection including verification of records of all previous tests/inspection by the Consultant and is authorized for dispatch by issuance of material dispatch clearance certificate (MDCC) or without waiver of inspection.

**3.2.6** All raw materials used for equipment manufacture including casting, forging and bought out items etc. shall be of tested quality as per relevant codes/standards and shall be procured from sub-contractor’s which shall be approved by the Consultant. Details of results of the test conducted to determine the mechanical properties, chemical properties, details of heat treatment procedure recommended and actually followed (H T Chart), results of non-destructive testing conducted has to be recorded on the test certificate. All tests to be carried out as per applicable material specification, code requirement and as specified in the Specification.

**3.2.7** All welding and brazing shall be carried out as per procedure drawn and qualified in accordance with requirement of ASME Section IX or any other equivalent International Standard. All welding and brazing procedures shall be submitted to the Consultant or it’s authorized third party inspection agency for approval by suppliers or its representative (as the case may be) prior to carrying out the welding/brazing.

- 3.2.8 All welders, brazers, and welding operators employed by the supplier shall be qualified as per ASME Section IX or any other equivalent International Standards acceptable to the Consultant. Welding procedure qualification, welders qualification, brazing procedure qualification and brazers qualification test results to be approved by the Consultant of any authorized inspection agency. However, where required by the Employer, tests shall be conducted in presence of Employer's representative.
- 3.2.9 All the heat treatment results shall be recorded on time temperature chart and verified with recommended regimes. The least count of time-temp chart shall not be more than 100 degrees celsius.
- 3.2.10 All bar stock/forging of diameter equal to or greater than 50 mm shall be ultrasonically tested. In general, all plates of thickness 40 mm and above used for non-pressure application and plates of thickness 25 mm and above used for pressure parts shall be ultrasonically tested.
- 3.2.11 The Consultant shall have their own QA and Inspection organization for carrying out inspection at manufacturer's works and at Site as per approved SQP.
- 3.2.12 The Consultant shall carry out an inspection and testing of components and equipment during manufacturing of the supplier's works, sub-contractor's work, Other Contractor's and manufacturing at Project Site to ensure the compliance with the drawing, SQPs, conformance to functional and performance requirements of the parts and equipment.
- 3.2.13 The Consultant shall ensure to carry out all tests/inspection required to establish that the items/equipment procured from the supplier conform to the requirements of the Specifications and relevant codes/standards specified in the Specification, in addition to carrying out tests as per the approved SQPs.
- 3.2.14 For all spares and replacement items, Consultant shall ensure the quality requirements as agreed for the supply of main equipment from selected supplier shall be applicable.

#### **4. POST ORDER MONITORING AND EXECUTION MANAGEMENT:**

##### **4.1 Post Order Monitoring**

- 4.1.1 After placement of orders, the "contract management services" shall be performed by the Consultant during the post-award stage which would include the following, but not limited to:
- (a) Organize and conduct kick off meeting ("**KOM**") with the supplier, wherever applicable. For certain small packages, KOM may not be required, and necessary interactions are held through telephonic conference, emails, and video conferences. KOM shall be held within fifteen (15) days from the date of order acceptance. The agenda points shall be compiled based on inputs from various groups. However, invariably the agenda points shall cover the following:
- (i) Review/finalization of L2 Schedule;
  - (ii) Master Document List ("**MDL**") with submission schedule;
  - (iii) List of SQPs and SFQPs with submission schedule;
  - (iv) Bank guarantee(s) and submission schedule; and

(v) Submission of monthly progress report by the supplier.

- 4.1.2 Monitoring engineering documents or drawings submission or approval process and intervening/seeking support from higher management for expediting the processes, if necessary.
- 4.1.3 Monitoring quality documents (SQPs, SFQPs, etc.) and ensuring submission and completion of the approval process in a timely manner and intervening or seeking support from higher management for expediting the processes, if necessary.
- 4.1.4 Monitoring commercial documents (viz. billing breakup Unit (“**BBU**”), bill of lading, etc.) and ensuring submission and completion of the approval process in a timely manner and intervening or seeking support from higher management for expediting the processes, if necessary.
- 4.1.5 Obtaining progress reports from suppliers, circulating them to concerned departments, reviewing the reports, interacting with concerned departments for resolution of areas of concerns, generating exception reports and circulating them all concerned departments.
- 4.1.6 Based on review of supplier’s progress reports and interactions with various departments, communicate feedback and ensure appropriate action from the supplier’s end.
- 4.1.7 Monitoring the progress of manufacturing, inspection, and dispatch of items as per scope of work of various suppliers and taking actions to ensure timely delivery of the goods at Site.
- 4.1.8 Conducting progress review meetings for major packages with the supplier.
- 4.1.9 Review meetings shall be held regarding the supplier’s or sub-contractor’s works after engineering approval progress has reached advanced stage and manufacturing activities can commence.

**4.2 Execution management services at Site:**

The Consultant shall provide the following Site management services, which shall not be limited to:

- (a) Receipt of goods at Site;
- (b) Issue of goods to the service providers;
- (c) Checking and certifying the reconciliation of the statements for free issue material;
- (d) Issue of drawings and other required inputs to the suppliers working at the Site;
- (e) Inspection of the works/facilities being created by the suppliers at Site;
- (f) Providing role of interface between supply and service providers;
- (g) Providing contingency management services to the Employer;
- (h) Proving support at Site for execution of packages and resolution of critical issues and interface problems;

- (i) Maintain package-wise order execution records for analysis of claims, requests for time extension and order closure activities;
- (j) Examining need for time extension in orders and taking necessary actions;
- (k) Assistance during pre-commissioning, commissioning and performance testing of the works/facilities; and
- (l) Organise various meetings related to Site progress and performance.

#### **4.3 Insurance Management:**

- 4.3.1 The Consultant shall provide required insurance management services to the Employer during the tenure of the orders for the goods and services provided and/or facilities being created at Site including all other insurance coverage as per the requirement of the Employer.
- 4.3.2 The Consultant shall arrange for required insurance coverage from the insurers on behalf of the Employer.
- 4.3.3 The Consultant shall arrange for insurance company's surveyor visit and process claims on behalf of Employer.

#### **4.4 Project Scheduling:**

The Consultant shall submit a detailed project schedule for the execution of the Project and shall cover as under:

- (a) L-2 Schedule:
  - (i) The Consultant shall prepare detailed L-2 schedule in prescribed format and submit the schedule at least one (1) week prior to kick-off meeting for the purposes of review by the Employer.
  - (ii) The Consultant shall approve the L-2 schedule based on satisfactory incorporation of Employer's comments or suggestions by the Consultant, mutually agreed deviations (if any) and submission of schedule in the prescribed format provided by the Employer.
- (b) L-3 Schedule:
  - (i) The Consultant shall prepare a detailed L-3 schedule and get the same approved by the Employer within fifteen (15) days from approval of L-2 schedule.
  - (ii) The Consultant shall submit the updated L-3 schedule till the Commissioning of works/facilities. The updated L-3 schedule shall include the comparison between the planned and actual work progress, critical path and catch-up plan to ensure completion of milestones as per L-2 schedule.

### **5. SAFETY AND HEALTH MANAGEMENT**

The Employer shall achieve its goal of 'zero' - zero fatality, zero injuries and zero excuses. In order to achieve this goal, the Consultant shall be responsible and accountable to ensure zero

tolerance to any violation with respect to the safety protocols of the Employer. In the process of undertaking the scope of work, the Consultant shall ensure strict compliance with applicable safety standard requirements and all business specific standards or procedures as may be provided by the Employer. In the event of any inconsistency between the provisions stipulated herein and the requirements specified in any other documents provided by the Employer (other than the orders), the provisions stipulated herein shall prevail, to the extent of such inconsistency. Critical safety requirements which are required to be complied by the Consultant are as follows:

- (a) The Consultant shall be familiar with permit requirements and shall be responsible for ensuring compliance with such permit requirements. No work shall be carried out without work permits authorized by the Consultant unless exempted at the Site. There is an integrated work permit for all non-routine activities, which shall take care of all related safety standards. The work permit shall be issued with a validity of only one shift which can be renewed shift-wise. However, the Consultant shall have the right to issue the work permit for a longer duration, based on the nature of the work. Except in the cases of routine jobs, where an integrated work permit is provided, no work permit shall be issued unless the Consultant has a written job safety analysis (“JSA”) approved by the Employer, preferably in the local language prevalent at the Site. All the non-routine work performed after 10pm shall require a separate ‘night work permit’ to be issued by the Consultant and the same has to be acknowledged by the Employer. For avoidance of doubt, it is clarified that whenever night work is required, a period of ‘overlap’ shall be scheduled such that the day and night engineers can discuss the work and align themselves on the Work to be performed under such night work permit. For Sunday and holidays, separate work permit shall be required which shall be authorized by the Consultant’s concerned line manager and/or safety officer.
- (b) The Consultant shall work from pre-bid meeting to ensure that safety is of the utmost priority for the contractor. During the pre-qualification, supplier(s) are shortlisted based on their previous safety records. In the kick-off meeting of the SO’s, execution methodology is to be discussed by the Consultant with safety provisions and ensures deployment of safety personnel at Site as per requirement.
- (c) During the construction process, the Consultant shall ensure that the required number of safety personnel are deployed and shall monitor safety records of the suppliers.
- (d) The Consultant shall be responsible for constituting a site level safety committee involving management and workmen under chairmanship of the Consultant’s site in-charge and shall review safety performance including leading (training, severity index, reported UA/UC/NM cases) and lagging indicators (FAC, MTC, RWC, ‘Lost Time Injuries’, ‘High Potential Incidences’ etc.) on a weekly basis. The committee shall be responsible for submitting safety related MIS to the concerned site in-charge.
- (e) The Consultant’s supervisors shall be responsible for ensuring that regular inspections shall be made for work areas / activities. Project safety managers or their designates shall regularly audit project facilities and report deviations to the Consultant. This audit shall also involve the ‘Safety Risk Field Audit’ (“SRFA”) based on the severity index.

- (f) Copies of the 'Weekly SRFA' and inspection reports shall be forwarded to the respective project manager and to the Consultant's site management for corrective actions. The respective Consultant must take immediate corrective actions as may be required.
- (g) The Consultant and Site supervisors shall conduct routine periodic safety inspections and monitoring. Inspections shall make note of; hazardous material, unsafe acts/conditions observations and corrections, equipment, rigging, electrical, scaffolding, ladder inspections, etc.
- (h) The Consultant shall conduct periodic assessments of compliance with Site safety practices and procedures to ensure that such Site safety practices and procedures are effective and are being followed.
- (i) Fire prevention and mitigation training on fire emergency, segregated storage area for flammable and combustible material, safety in welding and burning operation, high risk welding operations, etc. shall be complied with by the Consultant.
- (j) The Consultant shall ensure correct hazard communication to working team on - hazardous chemicals and their safety data sheets, precautions while handling and storage of gas cylinder, performing hot job, entering and working in confined space, working in an excavated pit, identify and correct use of quality personal protective equipment, high noise and vibration. These communications shall be carried out through verbal, written, JSA, work permit, training, tool box talk, symbol display, practical display and mock demonstration.
- (k) The Consultant shall ensure availability and usage of suitable quality personal protective equipment to its personnel. Use of safety helmets, safety shoes, high visibility jackets and safety eye wear shall be mandatory. Based on the job requirement, other PPEs like gum-boot, electrically insulated hand gloves, electrical safety shoes, respiratory mask for dust nuisance or other chemical fumes protection, hand gloves or leather hand gloves, full body harness with lifeline support, retractable fall arrester, safety net, PVC suit, arc flash suit, cotton blue dress, flame retardant cloths, welder's masks with suitable screen numbered visor, gas cutter goggles, runner etc., shall be used as indicated in work permit and JSA.
- (l) All the PPEs used by the personnel shall, at all times, be in accordance with at least one of the following internationally recognized standards: (i) ANSI; (ii) ISO; (iii) BS; (iv) IS or (v) EU. The Consultant shall take prior approval of the Employer, for any deviation in the PPE standards proposed to be used for the performance of the scope of work.
- (m) The Consultant shall ensure that all incidents and environmental releases, regardless of severity, are reported immediately to the Employer's project manager and safety manager first by verbal and then by a written "preliminary" first incident report. Subsequently, a joint written investigation shall be conducted by incident investigation team, with an initial report issued in writing within twenty-four (24) hours, even where no injuries occur.
- (n) Where the actual or potential severity of the incident or behaviour is significant or occurs frequently, the Consultant's Project head shall appoint a committee to investigate, the accident(s)/incident(s), in order to verify the information and

complete a root cause analysis. All corrective actions shall be carried out and monitored by the project/construction HSE Department.

## **6. OTHER SERVICES MANAGEMENT**

### **6.1 Integrating:**

- 6.1.1 The Consultant shall obtain monthly progress reports from suppliers, circulate them to concerned departments, review the reports, interact with concerned departments for resolution of areas of concerns.
- 6.1.2 The Consultant shall provide support for execution of packages and resolution of critical issues and interface problems.
- 6.1.3 The Consultant shall ensure coordination with various departments for feedback on supplier performance evaluation and its rating as per the guidelines.

### **6.2 Escalation Matrix:**

The Consultant shall fix escalation matrix at the time of package execution start elaborating the sequence of escalation along with the issue resolution timelines with all suppliers.

### **6.3 Communication Procedure:**

The Consultant shall adhere to the communication procedure defined with the Employer throughout project schedule.

### **6.4 Progress Review Meeting:**

The Consultant shall ensure participation of key persons in the progress review meetings with the Employer for ensuring smooth tracking and execution of the Project.

### **6.5 Risk and Mitigation Plan:**

The Consultant shall take appropriate actions, throughout the Project lifecycle for identification of all possible risks and shall take adequate measures for its mitigation.

### **6.6 Lenders Management:**

- 6.6.1 The Consultant shall be responsible for submitting required inputs and documents from respective teams i.e. projects, engineering, business development, land, quality, and techno-commercial etc. for submission to lender(s) or lender consortium at the time of pre-financial closure documentation support on behalf of the Employer.
- 6.6.2 The Consultant shall provide appropriate responses to the lenders and their team with supporting documents in closing all open-ended technical or project-related concerns.
- 6.6.3 The Consultant shall provide undertaking to lender or lenders' advisory team for technical due diligence reports.
- 6.6.4 The Consultant shall ensure submission of construction monitoring reports by lenders engineer as required by lenders. They shall coordinate with the Employer's finance team for achieving financial closure and for further disbursements.

## **6.7 Documentation Control:**

- 6.7.1 The Consultant shall establish a documentation cell at the Site for proper documentation and upkeeping of Project records such as approved drawings, manuals, quality plans, protocols, statutory compliances etc.
- 6.7.2 The Consultant shall ensure MDL and document control index is prepared and agreed for detailed engineering deliverables.
- 6.7.3 The Consultant shall keep track of detailed engineering and ensuring the deliverables are delivered as per schedule and the Consultant shall also update the schedule on a regular basis.
- 6.7.4 The Consultant shall ensure that the comments on engineering deliverables are incorporated and approved as per agreed schedule.
- 6.7.5 The Consultant shall monitor and compare planned targets setup with the actual progress achieved as far as engineering, equipment delivery, cash flow, budget and schedule is concerned.

## **6.8 Transportation / Logistics Planning:**

- 6.8.1 The Consultant shall recommend renowned logistics service provider or freight forwarder for ensuring timely clearances and safe transportation of the onshore supplies inside as well as outside the plant premises.
- 6.8.2 The Consultant shall provide required logistics management services to the Employer during the tenure of the orders for the goods received at Site either by roads, rails, ships or air.
- 6.8.3 The major logistics services includes assistance in custom clearance, port management, payment of custom duties and port charges on behalf of the Employer, the Consultant shall arrange required statutory permits, arrange survey of roads for over dimensional consignments or heavy shipments, negotiate and award transportation orders on behalf of the Employer.

## **6.9 Billable and Non-billable Material:**

- 6.9.1 The Consultant shall review the bill of quantity (“**BOQ**”) submitted by all supplier(s) of the Employer and shall ensure that it includes 100% (one hundred percent) scope of work up to the smallest item required to complete the Project, like nuts, bolts, washers, individual steel structural members, free supplied items, commissioning spares, special tools and plants etc.
- 6.9.2 The Consultant shall also ensure parity between BOQ and BBU throughout the Project lifecycle. Any change in either of these documents during basic or detailed engineering shall be checked and suitably modified in order to ensure that contractor(s) maintain the supplies and billing on a common or comparable platform.

## **6.10 Deployment of Manpower:**

- 6.10.1 The Consultant shall establish a dedicated project management team at Head Office and Project Site for effective planning, execution and control of the Project. The project management team shall be led by chief project manager supported by adequate number of experienced discipline leads, managers, engineers, controllers, analyst etc. at the head office and the Site throughout the Project lifecycle.

- 6.10.2 The planning engineers or managers shall be well acquainted with the contemporary project management tools and techniques.
- 6.10.3 The deployment of manpower by the Consultant shall be treated as tentative or minimum deployment, whereas the Consultant shall ensure that no activity suffers due to non-availability of any staff or skilled manpower. The responsibility of timely deployment of required strength of manpower lies solely with the Consultant.
- 6.10.4 In case the Consultant fails to timely deploy the required manpower, the Employer may at its discretion arrange the same at the risk and at the cost of the Consultant.

#### **6.11 Statutory support Services**

The Consultant shall provide assistance to the Employer for getting all statutory clearances under the purview of Government of India or any State Government and also guide to the Employer in the all cases, but not limited to:

- (a) Pollution Control Laws;
- (b) Environmental Laws;
- (c) Aviation Laws;
- (d) The Factories Act, 1948;
- (e) The Explosives Act, 1884;
- (f) The Electricity Act, 2003;
- (g) Health and Safety Laws;
- (h) Labour Laws; and
- (i) Minimum Wages Act, 1948.

#### **6.12 MIS and Progress Reports Deliverables:**

The Consultant shall ensure timely submission of Management Information Systems (“MIS”)/ progress reports in the formats (PDFs and editable files) as mutually discussed and agreed upon with the Employer, the reports shall include but shall not be limited to the following:

- (a) Generation of three months (quarterly) rolling plan;
- (b) Generation of S-curves for Projects on quarterly basis;
- (c) Generation of monthly project progress reports;
- (d) Safety and EHS monthly report; and
- (e) Preparation of Project commissioning and close-out report.

#### **6.13 Cost Control:**

The Consultant shall:

- (a) Define works breakdown structure to cover Project scope in line with packaging philosophy.
- (b) Prepare baseline schedule by creating a logical sequence for a project-activities and determining resource required for timely completion of the Project.
- (c) Monitor and control baseline schedules, prepare functional schedules to ensure completion of Project within the scheduled commercial operation date (“COD”).
- (d) Leverage project control analytics to define critical paths and analyze delays and re-baseline or prepare catch-up schedules to meet the scheduled COD.
- (e) Define cost breakdown structure in line with packaging and contracting philosophy and establish a cost baseline perform cost control by capturing planned costs and actual costs, evaluate cost variance, prepare estimate at completion, and facilitate project change management by analyzing the reason for the change and its impact.
- (f) Provide adequate budget provision for funding change.

**6.14 Billing and Invoicing:**

The Consultant shall ensure invoices of all suppliers are processed (on behalf of Employer) on time and as per order terms and conditions to facilitate the timely completion of the project as per required schedule.

**6.15 Contract Closure:**

The Consultant shall maintain package-wise order execution records for analysis of claims, requests for time extension and order closure activities. After work completion, supplier performance evaluation shall be carried out by the Consultant, which would cover safety parameters also.

**7. POST CONSTRUCTION MONITORING**

The post construction monitoring plan shall be developed by Consultant in accordance with the requirement of the Employer.

- (a) Consultant shall ensure pre-commissioning, startup services, commissioning and performance guarantee test of various packages.
- (b) Witness checks and record all commissioning and performance tests with specific reference to detailed construction management activities.
- (c) Organize to obtain guarantees and warranties from relevant manufacturers/suppliers.
- (d) Analyze and evaluate test results obtained during testing, commissioning and performances guarantee and check it against relevant supplier requirements.
- (e) Establish a list of punch points, defects, deficiencies, shortages and deviations from the relevant package etc. prior to handing over of the plant and prepare in consultation with relevant supplier.

- (f) Preparation of final acceptance certificate once all deliverables are supplied and services by supplier are fully accomplished and all guaranteed values are in line with agreement.
- (g) Collate and verify all As-built drawings.
- (h) Collection and integration of various operation and maintenance manuals, commissioning and test certificates.

## **8. HANDING OVER TO EMPLOYER**

The instruction for handover to Employer indicates the beginning of the project handover process. During this process, the Consultant shall establish the instructions to guide the handover the Project to the Employer in relation to:

- (a) Preparation of Project completion report including lessons learnt;
- (b) Review and fill in Project handover checklist;
- (c) Brief the Employer on Project completion details;
- (d) Commencement of handover and transition;
- (e) Handing over of Project documents / files; and
- (f) Sign-off Project handover checklist.