

Construction Readiness Assessment: Factor Descriptions

Assessment

1. Project Team

1.1 Have the project goals been defined?

1.2 Have the project drivers (cost/schedule) been agreed on by the team?

1.3 Have the goals and objectives been documented?

1.4 Has the team communicated project goals among themselves?

1.5 Has the (Responsible, Accountable, Consulted and Informed) RACI matrix been developed for the project?

1.6 Has an organizational chart been developed to assign roles and functions?

1.7 Has the organizational chart been distributed and communicated to all pertinent parties?

1.8 Are all key project team leadership positions filled?

1.9 Have proven leaders been assigned to the project?

1.10 Is a support system in place to allocate resources?

1.11 Is the frequency of project team meetings (daily, weekly, monthly, etc.) defined?

1.12 Are the required intervals of reports of the project team (daily, weekly, monthly, etc.) defined?

1.13 Was the project team formed in a timely manner?

1.14 Do the project team members have all required skills?

1.15 Do all project team members have the capacity (availability, experience, etc.) to take on the project?

1.16 Have the project team members received training regarding project-specific procedures?

1.17 Is there a system for managing cultural diversity (no social/political impediments among team members)?

1.18 Has a system of oversight and governance been established for the project?

1.19 Does the project team include representative(s) from the engineering team?

1.20 Does the project team include representative(s) from the procurement team?

1.21 Does the project team include representative(s) from the fabrication team?

1.22 Does the project team include representative(s) from the construction team?

1.23 Does the project team include representative(s) from the sub-contractor team?

1.24 Does the project team include representative(s) from the owner team?

2. Engineering

2.1 Have all engineering milestones been developed?

2.2 Have all engineering deliverables in construction packages been defined?

- 2.3 Are standards and specifications needed to support construction clearly published?**
- 2.4 Have (issued-for-construction) IFC drawings been issued to the point that supports construction activity?**
- 2.5 Is the schedule for design deliverables compatible with the sequence of construction?**
- 2.6 Have clash and interference checks been completed?**
- 2.7 Is there a procedure for the timely implementation of receiving vendor information?**
- 2.8 Have commissioning and startup requirements been incorporated in the design?**
- 2.9 Have discipline design interfaces been well coordinated?**
- 2.10 Have engineering responsibilities been clearly defined?**
- 2.11 Has operability been incorporated in design?**
- 2.12 Is there a defined process for responding to RFIs in a timely manner?**
- 2.13 Is the submittal process defined?**
- 2.14 Is the process for approval of shop drawings clear?**
- 2.15 Is the process for updating drawings defined?**
- 2.16 Is the process for reporting RFIs impacting schedule and cost clear?**
- 2.17 Is there a defined system of engineering support (incl. planned on-site availability)?**

3. Planning

3.1 Has the project budget been defined?

3.2 Is there a master schedule?

3.3 Does the master schedule include allowance for subcontractor schedules?

3.4 Does the master schedule include schedules for owner furnished items?

3.5 Is the master schedule set up to support transition to turnover by systems?

3.6 Are all tasks and activities accounted for in the master schedule?

3.7 Has the critical path been identified?

3.8 Has the near critical path been identified?

3.9 Has the master schedule been baselined?

3.10 Are schedule requirements for construction (including Total project duration and milestones) well defined?

3.11 Are planned activities durations in line with project conditions?

3.12 Are the labor productivity rates for major items in line with recent experiences?

3.13 Has a comprehensive Work Breakdown Structure (WBS) been developed?

3.14 Does the WBS support commissioning and system turnover?

3.15 Are the requirements of different stakeholders considered in the planning process?

3.16 Is there a planned resource loading for the project (in terms of buildup, peak, and rundown)?

- 3.17 Is the contractor able to support the requirements for the labor resource requirements of the project?**
- 3.18 Have all the hold points/handoffs been identified?**
- 3.19 Have all the hold points/handoffs been integrated in the schedule?**
- 3.20 Have density/congestion factors been incorporated in the schedule?**
- 3.21 Is there an adequate space available for each worker to minimize stacking of trades?**
- 3.22 Has the project logistics plan been incorporated in the schedule?**
- 3.23 Has the project testing plan been incorporated in the schedule?**
- 3.24 Has the temporary facilities plan been incorporated in the schedule?**
- 3.25 Is there a plan in place for resource leveling (especially manpower)?**
- 3.26 Is the craft-supervision ratio identified?**
- 3.27 Is the s-curve, in terms of cash flow and rate of expenditures defined?**

4. Health/Safety/Security

- 4.1 Have safety goals been set?**
- 4.2 Is there an emergency plan in place?**
- 4.3 Is there medical support defined for the project?**
- 4.4 Is there an environmental management plan in place?**
- 4.5 Is there a site-specific safety plan in place?**
- 4.6 Is the project team aligned on the site-specific safety plan?**
- 4.7 Have site hazard identification (walkthroughs) been completed?**

4.8 Are the site security control procedures in place?

4.9 Are the pre-employment checks on workers adequate (i.e. drug testing, background checks)?

4.10 Is there an integrated HSSE plan in place for simultaneous operations?

4.11 Is there a defined process for communicating changes to the safety plan?

4.12 Have all the environmental permits that are necessary for starting construction been obtained?

4.13 Is on-site safety communication (safety signage/safety board locations) in place?

4.14 Are there comprehensive blinding, clearing, lockout-tagout and unit entry plans in place?

4.15 Are all special safety-related training requirements included in the plan?

4.16 Is there a safety induction/orientation plan in place?

4.17 Does the subcontractor's safety plans meet the required standards?

4.18 Are there planned safety toolbox meetings?

4.19 Is there a defined work permit process in place?

4.20 Is there a defined safety supervision plan in place?

5. Execution

5.1 Are the relevant contracts signed to support construction schedule?

5.2 Is there a defined process for approving subcontractors and vendors?

5.3 Is the construction execution plan in place?

- 5.4 Is the construction Execution Plan aligned with the project Execution Plan?**
- 5.5 Has the construction execution plan been communicated to the project team?**
- 5.6 Are there summaries for the contractors' obligations?**
- 5.7 Have the summaries of contractors' obligations been communicated to the project team?**
- 5.8 Is there a mobilization plan in place?**
- 5.9 Are there adequate communication tools in place (including tablets, Wi-Fi, radios, phones, etc.)?**
- 5.10 Is there a plan in place to ensure coordination between owner, contractors, subcontractors, and vendors?**
- 5.11 Is there adequate vertical transportation (cranes, elevators, etc.)?**
- 5.12 Is there a plan for people movement to and from the site?**
- 5.13 Is there a plan for materials movement to and from the site?**
- 5.14 Is there a plan for large equipment movement to and from the site?**
- 5.15 Are all necessary utilities available on site (including electricity, water, drainage, etc.)?**
- 5.16 Is there a plan in place to minimize out-of-sequence work?**
- 5.17 Is the project compliant with all applicable permitting requirements and local regulations?**
- 5.18 Is there an adequate geotechnical investigation of the project site?**

5.19 Is there a plan for people movement within the site?

5.20 Is there a plan for materials movement within the site?

5.21 Is there a plan for large equipment movement within the site?

6. Tools & Equipment

6.1 Have necessary specialty tools/equipment been identified and secured?

6.2 Is there a contingency plan (backup, maintenance, etc.) in place for critical tools and equipment?

6.3 Is there a Tool and equipment management plan in place for Acquisition?

6.4 Are all pieces of equipment inspected and certified?

6.5 Are all equipment operators certified?

6.6 Are special equipment roads, access, assembly areas and foundations addressed for start of construction?

6.7 Are all special project tools and consumables identified and secured?

6.8 Is there a Tool and equipment management plan in place for Mobilization?

6.9 Is there a Tool and equipment management plan in place for Placement?

6.10 Is there a Tool and equipment management plan in place for Storage?

6.11 Is there a Tool and equipment management plan in place for Movement?

6.12 Is there a Tool and equipment management plan in place for Control?

6.13 Is there a Tool and equipment management plan in place for Maintenance?

7. Quality Management

7.1 Is there a quality assurance plan in place?

7.2 Have quality assurance practices been defined and communicated?

7.3 Is there a quality control plan in place for procured items, fabrication and construction?

7.4 Are there well defined acceptance criteria for major items?

7.5 Is the quality control plan communicated among the project team?

7.6 Are resources (people, tools, systems) in place to perform the quality control plan?

7.7 Is there a clear definition of process for quality inspection?

7.8 Are roles and responsibilities defined for quality inspection?

7.9 Is there an inspection and testing plan in place?

7.10 Is there a defined process for third party inspection, including auditing?

7.11 Is there a defined process for third party vendor or tech support?

7.12 Is there a clear protocol for cases of non-compliance or corrective action?

8. Change Management

8.1 Is there a change management process in place?

8.2 Are the components of the change management process in place sufficient to start construction?

8.3 Is there a defined change identification process?

8.4 Is there a defined process for the evaluation and quantification of changes?

8.5 Is there an entity authorized to issue change orders?

8.6 Is there a procedure for the implementation of field change orders?

- 8.7 Is there a procedure for the update of all documents affected by changes?**
- 8.8 Is there a system in place for change order tracking?**
- 8.9 Are there identified payment parameters for changes?**
- 8.10 Is there a defined process to reconcile change orders to scope?**
- 8.11 Is there a defined chain of communication of change orders to stakeholders?**
- 8.12 Are the change management roles and responsibilities clearly defined (included in the RACI matrix)?**
- 8.13 Is there shared understanding of the change management process among the project team?**
- 8.14 Are there procedures in place for turnover of key personnel related to change management?**
- 8.15 Is there a process for documenting rework activities?**

9. Contract Management

- 9.1 Has the project team reviewed all the terms and conditions of the contracts to ensure common understanding?**
- 9.2 Have the notification requirements been communicated among the project team?**
- 9.3 Is the invoice submittal process clearly communicated and understood by the project team?**
- 9.4 Have the procedures that should be followed in case of changes been communicated among the project team?**

9.5 Are the implemented contractual incentives/liquidated damages clear?

9.6 Is the contractual flow between tiers (flow-down clauses) consistent?

9.7 Are the project completeness criteria well defined?

9.8 Is the scope in the prime contract well defined?

9.9 Are the legal/contracts team and other technical teams coordinating to draft subcontracts?

9.10 Is there an established process for claims management?

9.11 Is there an established system for dispute resolution?

9.12 Is the contract clear with the warranty period and the processing of interim payments?

9.13 Has information about the defined delegation/signing authority been communicated among the project team?

9.14 Are force majeure (excusable non-compensable) clauses communicated among the project team?

9.15 Is there a system in place to ensure that proof of insurance is provided?

10. Human Resource Management

10.1 Has the project team completed a review and analysis of the labor market, including competing projects in the area?

10.2 Is there plan in place for securing and retaining skilled labor?

10.3 Is there a plan in place to minimize craft absenteeism?

10.4 Are craft labor agreement requirements (including restrictive practices) understood by the project team?

10.5 Have billable labor rates been established?

10.6 Is there a craft evaluation/qualification program in place?

10.7 Is there a project-specific-training program in place?

10.8 Is there a plan in place for securing and retaining the required project staff?

10.9 Are the procedures for owner approval of hiring and rotating key personnel agreed upon by the project team?

10.10 Are there on-boarding procedures in place to on-board new hires?

10.11 Are there procedures in place for the demobilization of workers?

10.12 Is there an established system to record the attendance of employees to the site?

10.13 Is there a program in place for Short Service Employees (SSE)?

10.14 Are there expectations for active employees in place to on-board new hires?

10.15 Are there progressive discipline procedures in place to on-board new hires?

10.16 Are there termination procedures in place to on-board new hires?

10.17 Are there promotion procedures in place to on-board new hires?

11. Stakeholders Management

11.1 Are stakeholders clearly defined?

11.2 Is there a plan in place to involve stakeholders?

11.3 Is the plan for communication with stakeholders (frequency, content, etc.) defined?

11.4 Is there a public relations and outreach program in place?

11.5 Is there a specified spokesperson for the project?

12. Risk Assessment & Management

12.1 Has the project team assessed the risks impacting the construction phase of the project?

12.2 Is there clear risk identification and evaluation process?

12.3 Is there a defined risk analysis and investigation process?

12.4 Is there a defined risk monitoring and response (including Mitigation, avoidance, etc.) framework for: cost?

12.5 Is there a defined risk monitoring and response (including Mitigation, avoidance, etc.) framework for: schedule?

13. Procurement & Material Management

13.1 Is there a plan in place for managing vendor documents required for construction, commissioning, and startup?

13.2 Is there a defined plan for storage, staging, and preservation?

13.3 Is there clear procurement process and supporting systems in place for ordering?

13.4 Is there a material control system (in terms of security and tracking) in place?

13.5 Are all bulks (pipe, valves, cable, hardware, etc.) needed for start of construction purchased & on site?

13.6 Is there a system in place to pre-package material according to individual work packages?

13.7 Is there a procedure in place to report over, short and damaged (O,S and D) incidents?

13.8 Is there a field procurement capability on site?

13.9 Is there clear procurement process and supporting systems in place for tracking?

13.10 Is there clear procurement process and supporting systems in place for delivery?

13.11 Is there clear procurement process and supporting systems in place for storage?

13.12 Is there clear procurement process and supporting systems in place for transportation?

13.13 Is there clear procurement process and supporting systems in place for installation?

13.14 Is there clear procurement process and supporting systems in place for surplus?

14. Commissioning

14.1 Are procedures for turnover (from construction to commissioning) well defined?

14.2 Is there a system in place to align construction with commissioning and operations?

14.3 Is there a defined system for the transition from area-based to system-based?

14.4 Is the commissioning and startup plan integrated with the EPC schedule?

14.5 Is there an engagement timeline of the commissioning group?

14.6 Has a dedicated commissioning leader been identified & communicated?

14.7 Is there a defined HSSE transition plan from construction to operations?

14.8 Is there a comprehensive commissioning manual (including all procedures and preservation requirements)?

14.9 Are the provisions for QA/QC turnover documentation understood by the project team?

14.10 Is there a mechanical completion checklist in place?

14.11 Is there a punchlist process in place?

14.12 Is the as-built documentation procedure understood by the project team?

14.13 Is the strategy to manage equipment closure communicated and understood?

14.14 Are pre-start-up safety review requirements communicated and understood?

15. Project Control

15.1 Is there a progress tracking plan and systems in place?

15.2 Are the resources to support project tracking deployed?

15.3 Is there a process in place for responding to delay?

15.4 Is there a process in place to collect, compile and report costs?

15.5 Is there a process in place to monitor and control productivity?

15.6 Is there an adequate protocol for updating the schedule?

15.7 Is there a defined document control system in place?

15.8 Is there a control budget (at the work package level) in place?

15.9 Is there a cost contingency management plan in place?