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Project Construction General Procedure



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Project Construction General Procedure

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Project Construction General Procedure

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Project Construction General Procedure

1.0 PURPOSE

This procedure provides a general introduction and guidance to the procedures and operating practices of the Site Construction Department in support of the construction phase for various types of projects.

This procedure applies to works performed under all Government construction contracts executed throughout the Kingdom of Saudi Arabia

For the purposes of the Construction Management Procedures the Project Management Company is the Entity Project Management Organization (EPMO) appointed by the Entity and references prefixed with "Site", such as Site Construction Department, Site Engineering Department, represent the Project Management Company at Project level, on construction sites.

2.0 SCOPE

This procedure:

- Establishes requirements for reviewing and approving the Construction Contractor organizational structure staffing plan at the project to ensure consistent and defined roles and responsibilities at all project locations.
- Identifies the responsible parties and minimum controls necessary to ensure the quality and documentation requirements for readiness to go to site (risk assessment planning process).
- Covers the construction phase of the normal Project sequence of events – feasibility, design, tender/award, construction, handover.

3.0 DEFINITIONS

Definitions	Description
Site Construction Department	Department within the Project Management Company that is responsible for Construction activities / operations
Site Engineering Department	Department within the Project Management Company that is responsible for Engineering or design activities / operations
Construction Contractor	The Main or Principal Contractor responsible for undertaking the Construction Works on the Project
Site Project Controls	Department within the Project Management Company that is responsible for Project Control activities / operations
Site Contracts Department	Department within the Project Management Company that is responsible for Contracts Administration activities / operations
Entity Project Management Organization (EPMO)	An Entity Project Management Organization, this is an integrated team that comprises the Entity and its PMC responsible for managing all the Entity's projects.
PEP	Project Execution Plan

4.0 REFERENCES

1. EPM-KCC-PR-000005 - Project Construction Constructability Procedure
2. EPM-KCE-PR-000006 - Project Construction Temporary Works Procedure
3. EPM-KCE-PR-000009 - Project Construction Civil Works Procedure
4. EPM-KCQ-PR-000005 - Project Construction Quality Management System Procedure
5. EPM-KCC-PR-000002 - Project Construction Field Works Activities Procedure
6. EPM-KCS-PR-000001 - Project Construction Progress Reports Procedure
7. EPM-KCC-PR-000003 - Project Construction Completions and Turnover Procedure
8. EPM-KE0-PR-000004 - Engineering Closeout Procedure



5.0 RESPONSIBILITIES

5.1 Construction Contractor

The Construction Contractor is responsible for establishing the site construction team, including subcontractors, who will undertake the construction works in accordance with the Project Execution Plan (PEP) and associated Safety Plans. The roles, requirements and responsibilities of the Construction Contractor team will vary from project to project and through each phase of the project.

The Construction Contractor is responsible for undertaking all construction related activities, from site set up, through the construction phase, commissioning, handover and closeout. The Construction Contractor will provide expertise in the timing and sequencing of construction activities and the methodologies required to build each Project. This resource requires experience of planning and scheduling construction sequences and an understand of managing a labor force and activity durations

5.2 Site Construction Department

The Site Construction Department shall ensure that there is sufficient site based personnel to be able to adequately support the Construction Contractor site organization team. The roles, requirements and responsibilities of the Site Construction Department team will vary from project to project and through each phase of the project.

The Site Construction Department is responsible for coordinating all site-based construction support, quality oversight and lead the management of all Construction Contractors.

The Site Construction Department may have to provide input to or lead the coordination of third party Stakeholders. This may include initial discussions to present the planned construction works, coordinating the mobilization and construction activities with adjacent activities or operations, or addressing complaints and objections. These activities are required to be undertaken with sensitivity to the stakeholder in question and an understanding of the requirements and need of the third party.

5.3 Site Engineering Department

The Site Engineering Department is responsible for ensuring that the required technical knowledge is provided to the Project. This includes guidance on the contract requirements and specifications, as well as standards and statutory regulations in relation to non-designed elements, for example temporary works. This resource requires a detailed knowledge of construction standards and local and national regulations.

5.4 Site Project Controls

The Site Project Controls is responsible for ensuring that reporting required from the Construction Contractor is submitted in the correct detail and on time

6.0 PROCESS

Refer to Attachment 3 which provides a simple step by step illustration of the construction process which will assist when reading through this section of the procedure

6.1 Pre-Construction Phase / Early Project Phase

6.1.1 Design Phase



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The Design Phase will usually have been completed prior to construction works commencing on site. The Design is undertaken by a qualified and registered Engineering Design Entity.

There are occasions however, where the design will continue into the construction phase, perhaps due to time constraints or a late change or addition to the design.

The Site Construction Department will be required to establish a team that can effectively manage the size of the planned Project. This requires the right level of resources for the size and complexity of Project.

6.1.2 Constructability

The Site Construction Department will be required, when mandated by the Client, to provide resources to review the design while it is being developed in accordance with EPM-KCC-PR-000005 Project Construction Constructability Procedure

6.2 Construction Phase

6.2.1 Site Organization

The Construction Contractor shall submit the proposed site organization plan to the Site Construction Department for approval prior to mobilization to site. The numbers and roles of the Construction Contractor team will vary depending on the size and complexity of the Project, but should reflect the intentions of the Construction Contractor as detailed in the tender return submission.

The Construction Contractor proposed site organization plan will also vary depending upon the type of Project arrangements that may have been made:

- Where the Construction Contractor employs direct hire labor force rather than using subcontracted labor.
- Where the Project is Design and Construct.
- Where the Project is Construct only.
- Where the Project is a Joint Venture with one or more other Construction Contractors.

The Construction Department shall provide a site team capable of managing and supporting the Construction Contractor site team.

6.2.2 Kick Off and Commencement

At the start of each Construction Contract it is a requirement that a kick-off meeting be held in accordance with the "Contracts Preconstruction Kick-Off Meeting Procedure". A detailed review of all deliverables is undertaken at this stage of the project. This sets the standard that will be adopted throughout the construction project. All the deliverables are contained in a document called the Construction Execution Plan.

The Construction Execution Plan is a plan which is developed by the Construction Contractor and submitted to the Site Construction Department for approval and provides a structure for the project team to organize the project planning. It describes the proposals of the Construction Contractor project team as to how, when, where, with what and by whom the project will be executed. The intent is to clearly identify the following on the project:

1. Objectives
2. Risks
3. Interfaces
4. Schedule
5. Procedures and Processes



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6. Work Breakdown Structure
7. Procurement
8. Manpower Histogram / Shifts required to meet Schedule
9. Safety and Quality

One of the most important documents that must be approved is the schedule which then identifies the sequence and durations of all the construction activities that have been agreed between the Site Construction Department and the Construction Contractor. This forms the basis for completion of the Works.

Attachment 2 - Construction Execution Plan Contents Guide provides examples of the content of the Construction Execution Plan.

6.2.3 Permits

Depending on the contract requirements the Site Construction Department or the Construction Contractor may be required to secure all construction permits. Whichever party does prepare and submit permits, the Construction Department shall not allow any works to commence until all relevant permits are in place. This will include all permits required as per the Kingdom of Saudi Arabia Law and Local Municipalities.

6.2.4 Readiness to Mobilize

The Construction Contractor is responsible for undertaking a thorough and timely review of all known risks associated with the planned mobilization to site. This review may require representatives from Safety, Environmental, Health, Procurement, Project Controls, Field Engineering, Construction, Startup and the Customer.

A Pre-mobilization list for guidance is provided as Attachment 1 - Project Construction Pre-Mobilization Guide, to illustrate some of the activities associated with the above review

The Site Construction Department shall ensure that the Construction Contractor has completed the review satisfactorily and has addressed all the issues. If there are any residual issues that the Construction Contractor cannot resolve, then the Site Construction Department shall resolve these issues and / or shall assist the Construction Contractor to resolve these issues.

6.2.5 Site Mobilization

- Pre-Mobilization

The Site Construction Department (or the Construction Contractor) may be required to put in place pre-mobilization works or enabling works prior to permanent works commencing at site. These are activities that are required to physically prepare the site and site personnel for construction mobilization and may include:

- Securing the Site (Security Guards, Fencing)
- Initial Site surveys and Environmental surveys
- Site Clearance
- Utility Diversions
- Temporary Facilities and Client Office / Accommodation Space

If any of the above works is required to be undertaken prior to the start of a main Construction Contract, the Site Construction Department would be required to coordinate with the Site Contracts Department and the Site Engineering Department where necessary, to procure contracts to undertake this work.



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- Mobilization (Project Site Setup)

Mobilization to Site will commence when all the activities and requirements discussed above have been completed:

- Identify scope of project
- Evaluate site conditions (Attachment 1 - Project Construction Pre-Mobilization Guide)
- Ensure all documentation is available
- Produce the Construction Execution Plan (Attachment 2 - Project Construction Execution Plan Contents Guide)

Once the above have been finished a mobilization Schedule can be produced to monitor the progress of all the activities necessary to complete the Site Setup. If the Project is large and of a complex nature, this schedule can be very extensive and involve all disciplines.

6.2.6 Construction Execution

No Works shall be undertaken at site until the Project Execution Plan has been submitted by the Construction Contractor and approved by the Site Construction Department

The Site Construction Department will hold regular meetings with the Construction Contractor to verify progress, identify issues and prepare mitigation plans. A standard project meeting calendar will include:

- Weekly Progress Meeting
- Weekly Look ahead Meeting (including one week lookback and four week look forward)
- Monthly Safety Leadership Meeting
- Monthly Quality Management Meeting

Meeting minutes will be prepared in accordance with standard good practices. Progress Reports shall be in accordance with EPM-KCS-PR-000001 Project Construction Progress Reports Procedure

The Site Construction Department will manage the works in accordance with EPM-KCC-PR-000002 Field Works Activities Procedure.

The Site Construction Department shall regularly verify the activities of the Construction Contractor and shall arrange for audits to be undertaken (either formally arranged or by ad hoc inspection / discussion) in accordance with EPM-KCQ-PR-000005 Project Construction Quality Management System Procedure.

6.2.7 Construction Site Closeout Plan

The Construction Site Closeout Plan defines the work process for the completion of the work, closeout and demobilization of the project site. The plan covers the completion all of the activities and documentation required to physically remove all material from the site after construction and the transfer of assigned personnel and completion of required documentation.

The Construction Contractor ensures a construction site closeout plan and checklist is developed. The checklist provides a listing of common activities and the responsible owner. The checklist can be extensive and involve all disciplines

The Construction Site Closeout Plan includes:

1. A copy of the project prime contract including related correspondence, meeting minutes and highlights of any special conditions
2. A list of licenses and permits that were required for the project
3. A listing of all subcontracts used on the project



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4. A listing of all purchase orders and rental agreements issued
5. A copy of the project estimate including schedule
6. The systems turnover punchlist
7. Project Deliverables listing. Listing of all the document retention and handover requirements, either as listed in the prime contract and/or as agreed with the Client during the project, including all Quality record documentation.

The Construction Contractor will accommodate all the requirements for closeout contained in the Engineering Closeout Procedure EPM-KE0-PR-000004.

As the project or construction contract approaches completion, the Site Construction Department will monitor the closeout of the Works with the Construction Contractor in accordance with EPM-KCC-PR-000003 Project Construction Completions and Turnover Procedure

7.0 ATTACHMENTS

1. Project Construction Pre-Mobilization Guide
2. Project Construction Execution Plan Contents Guide
3. Project Construction Execution Flow Chart Guide



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Attachment 1 - Project Construction Pre-Mobilization Guide

Pre-Mobilization Site Investigation Guide

Detailed evaluations of site conditions will involve site visits and should encompass the following tasks, as applicable to the project:

- a. Contact customer personnel and local governmental agencies, police, postal, and fire departments.
- b. Investigate site conditions, roads, fencing, obstructions, parking, railroads and transportation facilities, weather, soil, security, utilities, and environmental restrictions and conditions.
- c. Conceptualize material and equipment movement to site (site access).
- d. Conceptualize temporary construction facilities.
- e. Contact local facilitators for telephone, water, electricity, gas, medical services, waste disposal and sanitation facilities/services.
- f. Contact area and local safety personnel or the specific government agency charged with monitoring worker safety.
- g. Contact local government for codes, permits, approvals, restraints and environmental requirements, duties and imports, and construction personnel licenses/certificates.
- h. Determine local sources for materials (temporary and permanent), site offices, tools, suppliers, equipment, repair facilities, fuel, oil, consumables, subcontractors (including site services) and local fabricators.
- i. Investigate availability of living accommodations and costs.
- j. Understand fees and regulations regarding duties, customs, and material movement.
- k. Determine if there are any other major projects in area, what their labor requirements are and when peak period is.
- l. Determine from customer (and Community) if there is local resistance/objection to the project
- m. Take photographs, where permitted.
- n. Early discussion with area/Country sponsor.
- o. Identify if site has space/access for temporary facilities to use before final mobilization
- p. Determine local sources of possible disposal sites (excess excavated material, rock, etc.) as well as truck load weight limits and restrictions near the future site.



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Attachment 2 - Project Construction Execution Plan Contents Guide

The following items should be developed as a part of the Project Execution Plan:

- The prime contract – including scope, contract documents, related correspondence, meeting minutes and highlights of any special conditions
- A copy of the construction budget, estimate, and initial cost code structure
- The schedule for conceptual integrated engineering, procurement, construction and hand over project milestone schedule
- Health, Safety, Security and Environmental, (HSSE) Execution Plan including Medical and First Aid and emergency preparedness
- A preliminary field organization chart including the names of lead personnel and defined roles and responsibilities
- A conceptual craft resource loaded schedule and craft staffing plan including planned subcontract
- Major quantity commodity installation curve
- A layout and sizing of the temporary construction facilities for the site
- A temporary power layout plan
- A construction tool and equipment schedule
- A summary of special heavy haul and heavy lift rigging requirements
- A list of automation requirements
- A copy of the Pre-mobilization Site Investigation Report
- A copy of applicable governing permits, licenses, regulatory and environmental requirements
- Engineering Deliverables List to Construction
- Project Environmental Management Plan (PEMP)
- Lessons Learned reference data
- Traffic and Logistics Survey
- Material Assignment Schedule
- Listing of Construction Procedures to be implemented
- Description of the Construction Quality Plan



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Attachment 3 - Project Construction Execution Flow Chart Guide

Construction Execution

