هيئة كفاءة الإنفاق والمشروعات الحكومية
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Project Weekly Quantities Report Procedure

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1.0 PURPOSE

To ensure uniform formatting and periodic reporting of Weekly Quantities Report using the samples in this document covering the Architectural / Engineer (A/E) Firms and Construction Contractors during Design and Construction phases respectively.

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

2.0 SCOPE

This document essentially covers the contents and formats of the Weekly Quantities Report to be used during the implementation of projects. Contractors will prepare the Weekly Quantities Reports and submit to Project by utilizing Engineering Tracker and Quantity Tracker.

3.0 DEFINITIONS

Definitions	Description
A/E (Architect/Engineer)	Architect & Engineer organization that undertakes studies and/or design of projects.
Contractor	One that agrees to furnish materials or perform services at a specified price, especially for construction work.
Deliverables	Normally refers to engineering drawings or specifications (i.e. Engineering Deliverables)
Engineering Tracker	Tool managed by the engineering team to collect and status all engineering deliverables. It is part of the suite of Level 5 Schedules and provides key input for the statusing of the Level 3 Control Schedule.
Entity	A Saudi Government organization which is responsible for the delivery of government funded infrastructure construction projects.
IFA (Issued for Approval)	Control point that signifies the deliverable was submitted for reviewer's approval.
IFC (Issued for Construction)	Engineering document that is ready to be constructed
IFR (Issued for Review)	Control point that signifies the deliverable was submitted for review.
IFP (Issued for Purchase)	Control point that signifies the deliverable can be used for purchasing purpose.
Project Management Consultant (PMC)	The project management organization of an Entity.
Quantity Reporting	The identification, quantification, and weekly status updating of all equipment/materials included in the project scope.
QTS (Quantity Tracking System)	Refers to the set of tracking applications as a whole that track the quantities during design, procurement and installation progress of specific commodities.
Unit Rate (UR)	The hours to achieve a unit of work (e.g. concrete installation UR = 25mh/m3).
Unit of Measure (UoM)	The unit used to measure a particular commodity (e.g. linear meters (m) for cable, or cubic meter (m3) for concrete).

4.0 REFERENCES

1. EPM-KPP-PR-000001 - Project Planning and Scheduling Definitions and Concepts Procedure
2. EPM-KPP-PR-000002 - Project Schedule Development Procedure
3. EPM-KPP-PR-000003 - Project Schedule Curves Procedure
4. EPM-KPP-PR-000005 - Project Contractor Requirements for Planning & Scheduling Procedure
5. EPM-KPP-PR-000006 - Project Schedule Standards and Quality Procedure
6. EPM-KPC-PR-000005 - Project Engineering Tracking Procedure
7. EPM-KPC-PR-000001 - Project Cost Coding Structures Procedure
8. EPM-KPC-PR-000006 - Project Quantity Tracking Procedure
9. EPM-EQ0-PR-000001 - Project Stage Gate Procedure

5.0 RESPONSIBILITIES

The responsibilities outlined below are pertinent tasks for Project Management Company.

5.1 Project Engineering Manager

The PEM is responsible for:

- Validating the correctness of the Engineering Tracker to be submitted to Project Controls department.
- Follow-up with A/E's the timely submission of the Weekly Engineering Tracker.
- Ensuring that the Discipline Leads have validated the quantities (number of deliverables including the actual dates) in the Engineering Tracker.
- Ensuring that the reported quantities (number of deliverables) depending on the Control points are in line with Document Control records (e.g., IFR, IFA, IFC, etc.)

5.2 Project Controls Manager

The PCM is responsible for:

- Overall coordination of quantities, interface with other departments regarding reporting quantity information.
- Providing direction to the Project Controls personnel involved in quantity reporting.
- Issuing quantity reporting documents in accordance with project requirements.
- Ensures that Weekly Quantities are properly assigned with the Code of Accounts.

5.3 Project Manager

The Project Manager is responsible for:

- Validating the correctness of the Quantity Tracker (during Construction Phase) with the Project Controls department.
- Timely submission of the Weekly Quantity Tracker.
- Ensures that Site Management have validated the installed quantities in the Quantity Tracker.
- Submits the status of the delivery of materials and equipment to Project Controls department.

5.4 Project Planner

The Project Planner is responsible for:

- Verifying proper quantity reporting from Architectural / Engineering (A/E) Firms during Design phase.
- Verifying proper quantity reporting from Contractors during Construction phase.
- Analyzing the Weekly Quantities.

6.0 PROCESS

6.1 Data Gathering and Report Preparation

The Contractors are responsible for the submission of the Weekly Quantities to the Projects on regular basis. The reported quantities are to be provided with analysis whether the progress is ahead, within the plan or behind.

The Project Engineering Manager has to provide the information from the A/E during Design phase and the Project Manager has to provide the information from the Contractor during Construction phase. Both submits the weekly quantities to Project Controls. The Project Controls Manager then reviews with Project Management.

The Project Engineering Manager has to ensure that the Project Engineering Tracking Procedure (Document No. EPM-KPC-PR-000005) is being implemented by A/Es during Design phase.

The Project Manager has to ensure that the Project Quantity Tracking Procedure (Document No. EPM-KPC-PR-000006) is being implemented by Contractors during Construction phase.

The following quantity reports are required to be reported by A/E firms and Contractors:

Quantity Reports	Responsibility	Project Phase
1. Engineering Tracker with deliverables count	A/E firms	Design
2. Quantity Tracker (Material Take-off)	A/E firms	Design
3. Engineering Staffing	A/E firms	Design
4. Procurement Delivery	Contractors	Construction
5. Quantity Tracker (Installed Quantities)	Contractors	Construction
6. Construction Manpower	Contractors	Construction

Refer to Attachment 1 - Weekly Quantity Reporting Flow Chart.

6.2 Report Cut-off Period

A/E's and Contractor's Weekly Quantities Report cut-off will be every Thursday of the week and report submission to Project is every Sunday.

6.3 Quantity Reports

6.3.1 Engineering Tracker

A/E firms are required to submit to Project the full set of Engineering Tracker under Project Engineering Tracking Procedure (Document No. EPM-KPC-PR-000005).

The reports should always contain Actuals completed against Plan numbers. A/E firms should create a spreadsheet that can show the report output with sub-items for Discipline, Areas, Location, Facility or System as required. Control points deliverables count should be also manageable in the spreadsheet.

6.3.2 Quantity Tracker

Quantity Tracking System (QTS) shall be implemented in Project Stage Gate 4 – Design which will be carried out by A/E and Stage Gate 6 – Construction which will be carried out by Contractor as outlined in Project Stage Gate Procedure (Document No. EPM-EQ0-PR-000001).

Quantities drive both cost and schedule. During the Design phase, a good quantity tracking program allows the project functions to proactively evaluate impacts and deviations from the Initial plan (Concept). It is during the Design phase that the project can affect the greatest benefit. Engineering and Estimating (under A/E's function) need to work together to proactively look for ways to improve the design and optimize the quantities. The earlier in the project's life that impacts to cost and schedule are recognized and mitigated, the greater the benefit that can be achieved.

6.3.2.1 Design Phase Quantities

As described in Project Quantity Tracking Procedure (Document No. EPM-KPC-PR-000006) during the Design phase, the project team must proactively work together to optimize the design, mitigate cost and schedule impacts, and minimize quantities as much as reasonably possible. The earlier this is implemented on the project, the greater the benefit that will be realized by the project.

The level of detail available for each commodity increases as the design evolves. During the design of the project, there are distinct phases of quantity development and tracking – 1st initial planning (conceptual) and 2nd detailed design. The level of detail and techniques for identifying and quantifying commodities varies with each stage of design.

The objective of defining designed quantities (initial and detailed) is to provide more definition of project scope. This level of commodity quantification is associated with design drawings and specifications, and it facilitates identification by the appropriate engineering coding system. These quantities can then be associated with specifications or material requisitions, engineering and construction intermediate schedules, engineering systems, and cost codes.

As the detailed design process for each commodity progresses, identification of quantities should include the lowest level of detail for that commodity, which should be compatible with the needs of the project team and the requirements of the QTS.

A/E firms are required to create and maintain a quantity tracker database with details of different commodities that are being derived from Design phase deliverables like drawings and lists where take-off process can be performed.

Typical information required is detailed in Project Quantity Tracking Procedure - Document No. EPM-KPC-PR-000006.

Refer also to Attachment-2 EPM-KPC-TP-000038 for Typical Design Quantity Tracker.

6.3.2.2 Construction Quantities

Quantity Reporting for Contractor's scope during Construction phase is outlined in the Project Quantity Tracking Procedure (Document No. EPM-KPC-PR-000006) Section 6.4 Construction Phase. Guidance on Primary Commodity Take-off and Reporting are detailed in the procedure including the rules of credit, units, take-off and method of measurement.

Upon receipt of equipment and material at the site, quantity tracking by status updating is initiated in the field. Each of the field status levels (received, installed, released) may have additional levels of status required by Construction. For example, a pump may be statused as set-in-place, aligned, grouted, and tested. The Quantity Tracking should be flexible enough in format to accommodate the construction status requirements.

Quantity Tracker summary has to be obtained from Contractors for use by the Project. Refer to Project Quantity Tracking Procedure - Document No. EPM-KPC-PR-000006.

6.3.3 Procurement

6.3.3.1 Purchased Quantities

All material items for which the detailed design is complete are cross-referenced by A/E to an Engineering specification. These items can then be summarized by specification to provide the total required purchase quantities.

Detailed quantities, drawings, codes, and other data should be identified in the Design Quantity Tracker. Using this system, Construction Contractor can continuously compare designed and procured quantities, and Contractor's Procurement team can monitor the status of purchased materials for the project. It is critical that the quantity tracking process will ensure quantities are designed, procured, and delivered in accordance with Construction's established installation schedule.

6.3.3.2 Delivered Quantities

Contractor is required to submit the Procurement Schedule updates showing list of Purchase Orders/Subcontract with name of the Suppliers, materials/equipment details and delivered quantities.

Refer to Project Quantity Tracking Procedure - Document No. EPM-KPC-PR-000006.

6.3.4 Resource Quantities

As part of Quantities Report, Contractors is required to submit the following to Projects:

- Engineering Staffing - A/E firms are required to report the actual staffing numbers comparing with the planned numbers. Additional staff can be determined by checking the Productivity of existing staff and the balance deliverables to produce.
- Construction Manpower - Contractors are required to report the actual manpower numbers comparing with the planned numbers. Additional manpower can be determined by checking the Productivity of the existing manpower and the remaining work to be done.

6.3.5 Quantity Curves

The following are typical Quantity Curves required for reporting:

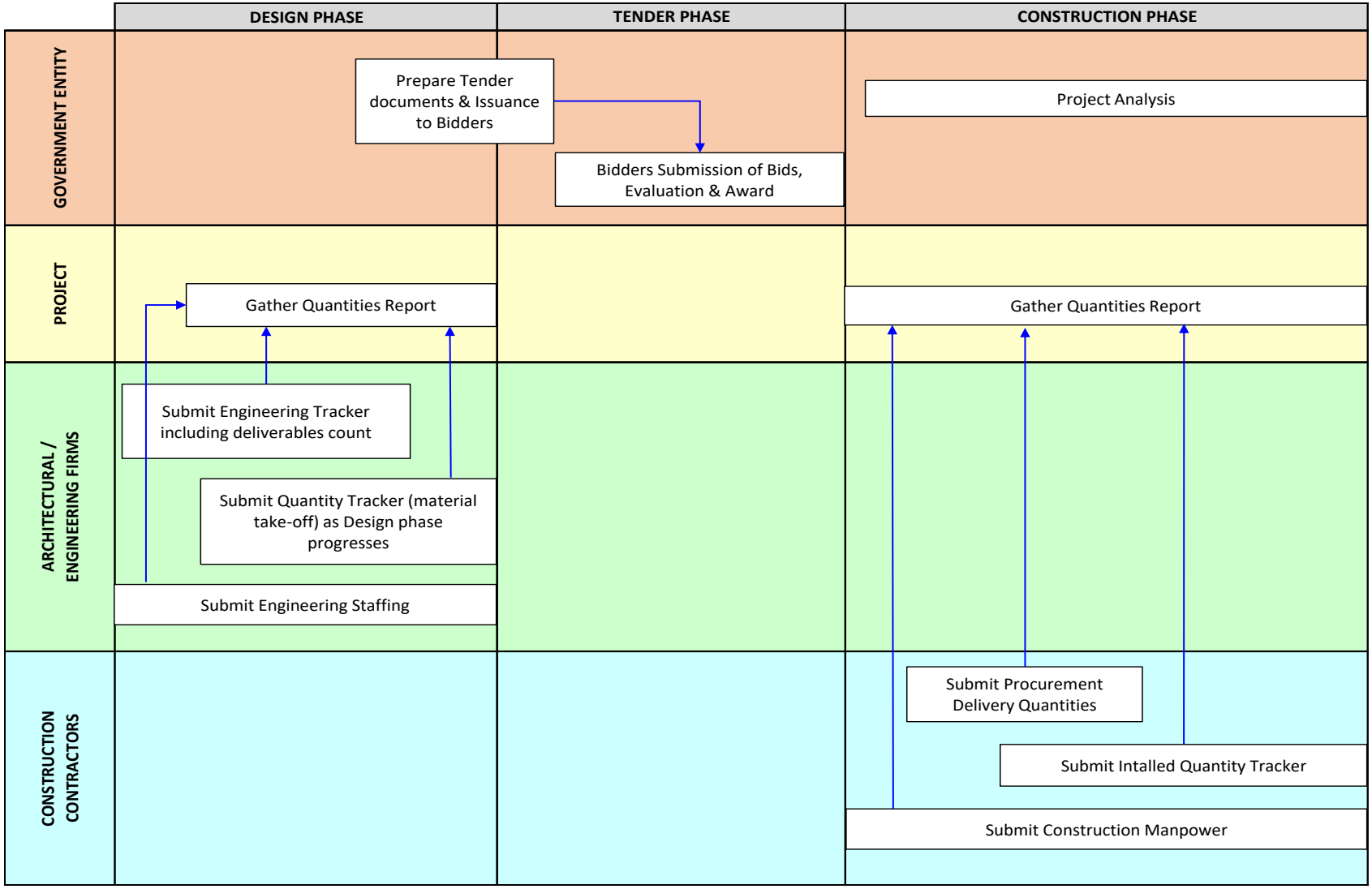
- Deliverables Count (A/E firms) - plan vs actual numbers are required for IFR, IFA & IFC/IFP. Family of Curves report is needed for this requirement.
- Engineering Resource Staffing (A/E firms) - plan vs actual numbers are required. This can be in histogram format.
- Procurement Delivery (Contractors) - plan vs actual numbers are required for manufacturing (if applicable) and delivery quantities. Family of Curves report is needed for this requirement.
- Quantity Tracker (Contractors) - plan vs actual numbers are required for major Commodity quantities installation. Family of Curves report is needed for this requirement.
- Construction Manpower (Contractors) - plan vs actual numbers are required. This can be in histogram format.

Refer to EPM-KPP-PR-000003 - Project Schedule Curves Procedure in generating Quantity Curves.

7.0 ATTACHMENTS

1. Weekly Quantity Reporting Flow Chart
2. EPM-KPC-TP-000038 - Typical Design Quantity Tracker Template

Attachment 1 - Weekly Quantity Reporting Flow Chart



Attachment 2 - EPM-KPC-TP-000038 - Typical Design Quantity Tracker Template

CONCRETE						
Drawing No.	Concrete Class	Quantity	Unit	Area	Facility	Account Code

EQUIPMENT										
Drawing No.	Description	Quantity	Unit	Weight	Storage Location	Storage Requirements	Area/ Location	Facility	System	Account Code

Attachment 2 - Continued

PIPING									
Isometric Drawing No.	Pipe Size, Class, Schedule	Fabricator Code and Drawing	Insulation Class/Thickness	Quantity	Unit	Area/ Location	Facility	System	Account Code

VALVES												
Isometric Drawing No.	Valve Size, Class, and Type	Valve Accessory Type/Number	Quantity	Unit	Pipe Line Class	Serial Number	Valve Mark Number	Pipe Line Service	Area/ Location	Facility	System	Account Code