



## Basis of Schedule Template

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## Table of Contents

1.0	Purpose .....	5
2.0	Responsibilities .....	5
3.0	Acronyms and Definitions.....	5
4.0	Contractor's Scope of Work & Execution Plan.....	5
4.1	Milestones Table and Definition .....	5
4.2	Level 1 Schedule.....	5
4.3	Level 2 Schedule (Roll-Up) .....	5
4.4	Level 3 Work Schedule .....	6
4.5	WBS.....	6
4.6	Schedule Breakdown Structure (SBS) .....	6
4.7	Coding Structure .....	6
4.8	Resource Coding .....	6
4.9	Schedule Calendars.....	6
4.10	Schedule Completeness Check List .....	6
5.0	Assumptions.....	6
5.1	General.....	6
5.2	Key Reviews with Owner.....	7
5.3	Engineering .....	7
5.3.1	Process .....	7
5.3.2	Mechanical.....	7
5.3.3	Piping & Layout .....	7
5.3.4	Civil and Structural .....	7
5.3.5	Buildings & HVAC .....	7
5.3.6	3D Model.....	7
5.3.7	Electrical.....	7
5.3.8	Heat Tracing and Insulation .....	7
5.3.9	Instrumentation & Control.....	7
5.3.10	Main Automation Contractor (MAC) .....	7
5.4	Procurement .....	7
5.4.1	Long Lead and Critical Equipment .....	7
5.4.2	Non-Long Lead Equipment.....	7

Document Title:  
Basis of Schedule Template

5.4.3	Bulk Material .....	8
5.5	Off-site Fabrication and Module Assembly.....	8
5.6	Road Transportation .....	8
5.7	Construction (site only).....	8
5.7.1	Construction Contracting Strategy.....	8
5.7.2	Path of Construction (Sequencing and priorities).....	8
5.7.3	Work Face Planning.....	9
5.7.4	Productivity .....	9
6.0	Resource Loading .....	9
6.1	Engineering Progress Curves and Manpower Histograms.....	9
6.1.1	Engineering Manhours.....	9
6.1.2	Progress Curves and Manpower Histograms.....	9
6.2	Off-Site Fabrication and Module Assembly .....	9
6.2.1	Progress Curves and Manpower Histograms.....	9
6.3	Construction (site only).....	10
6.3.1	Direct Field Labor and Quantities .....	10
6.3.2	Construction progress and commodity curves .....	10
6.3.3	Labor Density Analysis .....	11
6.4	Manpower histograms.....	11
6.4.1	Direct Field Labor (DFL).....	11
6.4.2	Indirect Field Labor .....	11
7.0	Other Curves .....	11
7.1	Activity Hard Constraints .....	11
7.2	Resource Constraints .....	11
8.0	Critical AND NEAR-CRITICAL Path .....	11
9.0	Rules of Credit.....	12
10.0	Schedule Risk Analysis (SRA).....	12
11.0	Risk, Concerns and Opportunities.....	12
11.1	Risks and Proposed Mitigations.....	12
11.2	Opportunities .....	12
11.3	Other Issues & Concerns.....	12
12.0	Tools.....	12



Document Type: Procedure	Document Number: CKPC0-GEN-0000-PC-PRO-00006	Revision: 1
-----------------------------	---	----------------

Document Title:  
Basis of Schedule Template

13.0	Exclusions.....	12
14.0	Appendices.....	12

## 1.0 PURPOSE

This template specifies the inputs, process, outputs and responsibilities for preparation and publication of the controlled schedules including the basis, methodology and supporting documents.

All Contractors shall use and complete all sections of this template (where applicable) and submit their basis of schedule with all attachments as outlined in this document and in accordance with the requirements as outlined in CKPCO-GEN-0000-PC-PRO-00004 Schedule Development and Control Procedure.

**Contractor shall not delete, add or modify the sections in this template (including numbering and titles). Simply put “Not Applicable” if it is not applicable to your scope.**

## 2.0 RESPONSIBILITIES

Complete this section listing all internal and external stakeholders to your organization, including their roles and responsibilities.

## 3.0 ACRONYMS AND DEFINITIONS

Complete this section listing all acronyms and definitions used in this document that are not listed in Schedule A.

## 4.0 CONTRACTOR’S SCOPE OF WORK & EXECUTION PLAN

Complete this section describing briefly the key elements of execution strategy for the scope of work being undertaken by Contractor that supports the Level 3 Work Schedule.

### 4.1 Milestones Table and Definition

List all major milestones and schedule integration points (SIP’s) and provide a clear definition for each.

### 4.2 Level 1 Schedule

Complete this section as per Owner requirements outlined in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control Procedure.

Attach Level 1 Schedule to your document.

### 4.3 Level 2 Schedule (Roll-Up)

Complete this section as per Owner requirements outlined in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control Procedure.

Attach Level 2 Schedule to your document.

#### 4.4 Level 3 Work Schedule

Include the Level 3 Work Schedule prepared in accordance with the Owner requirements outlined in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control Procedure and GC 16.

Attach Level 3 Work Schedule to your document.

#### 4.5 WBS

Complete this section and include WBS pertaining to your scope of work. Please refer the CKPCO-GEN-0000-PC-LST-00001 CKPC Project Work Breakdown Structure.

#### 4.6 Schedule Breakdown Structure (SBS)

Complete this section as per Owner requirements outlined in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control Procedure.

#### 4.7 Coding Structure

List all specific activity coding used by Contractor in addition to Owner activity coding requirements as per the CKPCO-GEN-0000-PC-PRO-00007 Scheduling ID and Coding Dictionary.

#### 4.8 Resource Coding

List all specific activity coding used by Contractor in addition to resource coding requirements as per the CKPCO-GEN-0000-PC-PRO-00007 Scheduling ID and Coding Dictionary.

#### 4.9 Schedule Calendars

List all calendars that are used for development of schedule

#### 4.10 Schedule Completeness Check List

Contractor shall fill in the completeness check list provided in CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control Procedure and submit along with the basis of schedule document.

### 5.0 ASSUMPTIONS

#### 5.1 General

Complete this section with all general assumptions related to the project execution schedule including key durations, relationships, lags, etc.

## 5.2 Key Reviews with Owner

Complete this section with all key project reviews and schedule dates i.e. Hazop, SIL, LOPA, constructability reviews, 3D model reviews, cost estimate reviews, schedule reviews, construction gate mobilization reviews, etc.

## 5.3 Engineering

Complete this section with all specific engineering assumptions including key interdisciplinary relationships, logic and lags used in development of EPMC Schedule i.e. P&IDs development, Datasheet, RFIs, HAZOP, vendor information, 30%, 60% and 90% model reviews, MTOs, IFC drawings etc.

### 5.3.1 Process

### 5.3.2 Mechanical

### 5.3.3 Piping & Layout

### 5.3.4 Civil and Structural

### 5.3.5 Buildings & HVAC

### 5.3.6 3D Model

### 5.3.7 Electrical

### 5.3.8 Heat Tracing and Insulation

### 5.3.9 Instrumentation & Control

### 5.3.10 Main Automation Contractor (MAC)

## 5.4 Procurement

### 5.4.1 Long Lead and Critical Equipment

Complete this section explaining pre-award and post award procurement activities and duration for long lead and critical equipment including preparation of datasheets, Request for Inquiry, Request for Quote, Bid, Technical bid evaluation, Commercial Bid Analysis, Purchase Order and Vendor data review and approval cycles, Fabrication and delivery of all major packages.

### 5.4.2 Non-Long Lead Equipment

Complete this section explaining pre-award and post award procurement activities and duration for long lead and critical equipment including preparation of datasheets, Request for Inquiry, Request for Quote,

Bid, Technical bid evaluation, Commercial Bid Analysis, Purchase Order and Vendor data review and approval cycles, Fabrication and delivery of all major packages.

### 5.4.3 Bulk Material

Use this section to describe procurement logic and timing in relation to the release of engineering MTOs, placement of POs and the lead times for all bulk material as incorporated in the schedule

## 5.5 Off-site Fabrication and Module Assembly

Complete this section with all assumptions and strategy related to the off-site fabrication activities such as steel, piping spools, module fabrication and assembly including duration and logic from engineering EWP to fabrication and assembly and ETA dates for each module. The detailed fabrication schedule per module is listed but not limited to the following:

- Steel fabrication (including fireproofing if applicable)
- Spool fabrication
- Cable tray
- EHT
- Insulation
- Equipment delivery (where applicable)
- Module assembly
- Testing

## 5.6 Road Transportation

Complete this section for all modules and oversized equipment on-road transportation including ETA and ROS dates.

Attach all necessary histograms and curves from primavera as per resource loaded schedule.

## 5.7 Construction (site only)

### 5.7.1 Construction Contracting Strategy

Complete this section and reference key construction contracting and execution strategy.

### 5.7.2 Path of Construction (Sequencing and priorities)

Complete this section and attach all necessary documents, drawings and site plan to illustrate construction sequencing and priorities



### 5.7.3 Work Face Planning

Complete this section to illustrate the WFP efforts that is being implemented in the schedule i.e. EWP, CWP and FIWP lists and timing and backlogs.

### 5.7.4 Productivity

Complete this section to describe productivity incorporated in the schedule.

## 6.0 RESOURCE LOADING

### 6.1 Engineering Progress Curves and Manpower Histograms

#### 6.1.1 Engineering Manhours

Complete this section listing all engineering deliverable with estimated man-hours, count by discipline including basis of information as being used for resource loading.

#### 6.1.2 Progress Curves and Manpower Histograms

Attach all engineering progress s-curves generated from Level 3 Work Schedule showing early, late and mid curve plan as well as manpower histogram by discipline as per Owner requirement in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control procedure.

### 6.2 Off-Site Fabrication and Module Assembly

Provide with the list of modules (pipe rack modules, process modules, equipment modules, etc.)

#### 6.2.1 Progress Curves and Manpower Histograms

Attach all module assembly production curves, overall progress curve based on resource loaded schedule showing early, late and mid curve plan as well as module yard manpower histogram as per Owner requirement in the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control procedure.

- Module steel fabrication
- Module Spool fabrication
- Module Assembly
- Off-module steel fabrication
- Off-Module Spool fabrication

## 6.3 Construction (site only)

### 6.3.1 Direct Field Labor and Quantities

List all construction DFL man-hours by trade and quantities (table format) that are used for resource loading based on cost estimate.

### 6.3.2 Construction progress and commodity curves

Attach, as a minimum, all progress s-curves and commodity curves as listed below showing early, late and mid-curve from primavera as per the Schedule Development & Control procedure PC6.

- Earth works (excavation, backfilling, etc.) – CM
- Underground piping - LM
- Piling - EA
- Foundations & Concrete CM
- Structural Steel - MT
- Equipment Installation - EA
- Module Installation - EA
- Buildings - SM
- Piping Installation - LM
- Electrical (Cable trays / conduit) - LM
- Electrical (Cable runs) - LM
- Electrical (Electrical Heat Tracing) - LM
- Instrumentation & Controls - EA
- Protective Coatings - SM
- Scaffolding – MT
- Hydro-test package- EA
- Systems Pre-commissioning Skylines:
  - Motor run-ins
  - Cleaning (air blows, chem. Etc.)
  - Re-instatement
  - Walk-downs
  - Punch clearing (A's & B's)

Document Title:  
Basis of Schedule Template

- Loop checks
- EHT Energization
- System Commissioning (if applicable) – Skyline

### 6.3.3 Labor Density Analysis

Complete this section with labor density analysis (Peak Manpower ÷ Area).

## 6.4 Manpower histograms

Attach manpower histogram for direct labor (FTE) based on resource loaded schedule as per the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control procedure.

### 6.4.1 Direct Field Labor (DFL)

### 6.4.2 Indirect Field Labor

Attach manpower histogram for indirect labor (FTE).

## 7.0 OTHER CURVES

Complete this section and produce the following curves as per the CKPCO-GEN-0000-PC-PRO-00004 Schedule Development & Control procedure:

- P&IDs production
- Three-part curve for steel structure (IFC production vs. Fabrication vs. module and/or field erection vs. erection)
- Three-part curve for piping (ISOs IFC production vs. spool fabrication vs. module and/or field erection)
- Multiple curves showing RFI, RFQ, PO, Vendor data, ETA, Installation
- Three-part curve showing overall Engineering, Procurement and Construction S-curves

### 7.1 Activity Hard Constraints

Complete this section and list any hard constraints for Owner approval and explain the reason.

### 7.2 Resource Constraints

Complete this section for any resources with threshold and constrain (if any).

## 8.0 CRITICAL AND NEAR-CRITICAL PATH

Complete this section and illustrate critical path(s) using  $TF \leq 15$  days. Attach critical path report from P6.

Describe near-critical activities using  $15 < TF \leq 30$  days. Attach near critical path report from P6.

## 9.0 RULES OF CREDIT

Attach rules of credit for Engineering, Procurement, and Fabrication and Construction progress.

## 10.0 SCHEDULE RISK ANALYSIS (SRA)

Attach Schedule Risk Analysis (SRA) report.

## 11.0 RISK, CONCERNS AND OPPORTUNITIES

### 11.1 Risks and Proposed Mitigations

Identify all risk/opportunities that are associated with the execution and schedule and proposed mitigations.

### 11.2 Opportunities

Complete this section.

### 11.3 Other Issues & Concerns

Complete this section.

## 12.0 TOOLS

List all tools and systems that are being used during execution of project for progress measurement control of the schedule

## 13.0 EXCLUSIONS

List all exceptions and non-compliance with Owner.

## 14.0 APPENDICES