

– Attachment A - COAA WORKFACE PLANNING RULES

Rule #1: Appoint dedicated planner(s) to plan the work necessary for Field Installation Work Packages (FIWP). Don't rely on Construction Field Supervision to plan the work.

What this means:

- Dedicated planners are assigned specifically to do the FIWP planning, plan the work and pull together the FIWP. Construction Field Supervision execute the FIWP, review and approve the plan and FIWP.
- Roles and responsibilities of the dedicated planners are documented for the project and are understood by all including an inventory of skills and/or experience required by a dedicated planner.
- Dedicated planners who are experienced enough to execute the work themselves are brought onto the project to develop detailed plans. FIWPs are developed to a quality level that requires, at most, minor revisions when Construction Supervision reviews them.

Does not mean:

- Leave the planning of FIWP to Construction Field Supervision that will be supervising the installation of the FIWP in the field. Note: This may work at the beginning of the project, but supervision quickly gets burdened with other responsibilities as the project ramps-up and no longer has enough time to do appropriate planning.
- Field Supervision does not follow the plan and go back to the traditional way of doing things.

Rule #2: Constructor or Construction Management review and agree to the Engineering Work Package (EWP) identification and release plan developed by engineering.

What this means:

- Engineering firms develop an EWP identification and release plan that will support the path of construction and the development of Construction Work Packages (CWP) by the contractor.
- Timelines meet the requirements of Rule # 5.

Does not mean:

- Constructors tell engineering how to engineer a project. The contractor needs to ensure the EWP scope will support the construction of the CWPs.

Rule #3: Constructor or Construction Management identify Construction Work Packages (CWP) and an associated release plan that is reviewed and agreed to by Engineering.

What this means:

- It is critical that the scope of the CWP is structured correctly so that the dedicated planners can separate the package into FIWPs efficiently and effectively.
- It is critical that the CWP are issued on time and in the correct sequence that suits the path of construction so the dedicated planner has the information required to assemble the FIWP and enough time to develop a good plan.
- Experienced construction personnel work with engineering to determine CWP issue dates (preferably the construction superintendents that will execute construction).
- Experienced construction personnel monitor and expedite the CWP plan.
- Timelines meet the requirements of Rule # 5.

Does not mean:

- Construction decides on the scope and sequence of the CWP with the schedulers only and no input from Engineering.
- CWP is issued incomplete just to meet schedule.

Rule#4: Constructor develops a Field Installation Work Package (FIWP) identification and release plan that is reviewed and agreed to by engineering.

What this means:

- The approximate number, size, and type of FIWP are identified based on the CWP identification and release plan.
- Timelines meet the requirements of Rule # 5.

Does not mean:

- Issued for Construction (IFC) CWP are required to develop an FIWP release plan.

Rule #5: Issue EWPs (IFC) at least 4 weeks prior to issuing associated CWPs (IFC). Issue CWPs at least 4 to 8 weeks (depending on complexity) prior to issuing associated FIWPs (IFC). Issue FIWPs at least 4 weeks prior to the start of Construction or Shop Fabrication.

What this means:

- Time is given to personnel that are developing the CWPs to do it properly.
- Time is given to the dedicated planners to develop the FIWPs from the CWPs. If the FIWP is simple (e.g. piling) then schedule 4 weeks to develop the FIWP. If the FIWP is complex (e.g. piping) then schedule at least 8 weeks to develop the FIWP.
- FIWP can be added to 3 week look ahead and all stakeholders will know that this work will be ready to proceed.
- FIWP scope can be completed and FIWP can be closed within 4 weeks by the crew.

Does not mean:

- Hand to mouth, engineering to construction.
- Releasing FIWP too early (i.e. releasing FIWP before it has been signed off as ready per Rule #9)

Rule #6: Setup work processes to ensure dedicated planners have access to the latest project information required for preparation of FIWP and the intent of the information is understood by the dedicated planners.

What this means:

- Dedicated planners are given distribution list of all deliverables early in the project for review and comment.
- Dedicated planners are provided the latest revisions of documents.
- If documents need to be revised after they have been issued for construction, Engineering provides the dedicated planners with a heads up.
- Project procedures describe the content level of the FIWPs, including a template
- Meetings are scheduled between Engineering and dedicated planners to discuss intent of CWP and any other relevant information.

Does not mean:

- Engineering “throw packages over the fence” to dedicated planners with no explanation of what the designer had in mind when it was designed.

Rule #7: Assign responsibility for integration planning to resolve anticipated conflicts proactively between FIWP.

What this means:

- Construction Management is responsible and accountable for the overall plan; however responsibility for ensuring that all FIWPs are coordinated and integrated is assigned to a designated person.
- A General Superintendent (or Area Superintendent), Integration Planner or WorkFace Planner assigned responsibility for integration planning is onboard at first receipt of CWP and directs best packaging and timing of FIWP release to prevent contractors from stepping on each others toes (e.g. interference from x-ray, availability or interference from cranes or equipment, congestion issues). Integrated planner understands each FIWP well enough to understand where conflicts may arise or where opportunities exist for better cooperation. Note: If using a General Superintendent to do the integration planning, ensure this responsibility is documented and understood.
- Construction supervision may need to resolve unanticipated conflicts and review and approve overall integrated plan.

Does not mean:

- The FIWPs as produced are carried out without Construction Management performing a final feasibility check of the implementation time and constructability.

Rule #8: Assign responsibility for Material, Construction Equipment, Scaffold and Specialty Tool Coordination to dedicated Coordinator(s).

What this means:

- Accountability for ensuring materials, equipment and specialty tools are available and scaffolding to do the FIWP has been built before FIWP is released to the foreman is assigned to a dedicated coordinator. Note: For a mega project assign Material Coordinators, Equipment Coordinators, Scaffolding Coordinators and Tool Coordinators that are accountable for this.
- General purpose tools are coordinated by the Foreman.

Does not mean:

- Construction Field Supervision spends time chasing materials, equipment and/or tools.
- Construction Field Supervision are the dedicated coordinators.

Rule #9: Dedicated Planner completes FIWP and signs off as ready before FIWP is released to crew.

What this means:

- Everything required for construction crew to start and complete construction of a FIWP is in place before construction starts.

Does not mean:

- A FIWP is released with extensive workarounds and/or missing material, equipment or tools.

Rule #10: Track progress of each FIWP and provide targets to crew to drive performance.

What this means:

- Communicate progress to crew.
- Decide ahead of preparing the FIWPs the level of tracking desired and adapt the Project Controls tools to accommodate that level of tracking. i.e. Quantity based production reports at a crew level are produced at a minimum. Include this requirement in the Project and/or Construction Execution Plan.
- Provide a coordination process that facilitates the planners, coordinators, construction supervisors and senior construction management to develop / integrate FIWP, graphically display the schedule for updates to progress and make timely decisions to resolve conflicts (e.g. a “war room” that houses all information required for completion of FIWPs and a wall chart that tracks sign offs required for each FIWP e.g. ready for hydro, hydro sign off, etc. Also consider a system that has the capability to show progress via a 3-D CAD measurement system over time e.g. 4-D.
- Targets are a challenge but achievable.
- Targets are visible and actual performance is also visible.

Does not mean:

- Targets are unachievable.

Rule #11: Dedicated planners to develop a backlog of FIWPs that can be issued to the crew by construction supervision if the crew can not complete the first issued FIWP due to unforeseen circumstances.

What this means:

- Plan B for surprises (e.g. weather, Quality issue discovered, etc.)

Does not mean:

- First FIWP can be poorly planned, because there is a Plan B.

Rule #12: Write the requirement for WorkFace Planning into all engineering and construction contracts including roles and responsibilities of Contractors and Owners. Owners must declare their commitment to WorkFace Planning and the required resourcing and develop a WorkFace Planning Execution Strategy for the project.

What this means:

- Owner needs to include WorkFace Planning as an expectation in contracts with any contractor involved in managing construction or any contract between the Owner and the construction contractor. Construction Managers need to include WorkFace Planning as an expectation in any construction contracts between the Construction Manager and the construction contractor.
- The Owner re-emphasizes the importance of WorkFace Planning and the Owners expectations for WorkFace Planning across all construction organizations on the project.
- The Owner must fully support additional indirect costs as a result of staffing the project with dedicated planners (approximately 1 for every 50 craft), in order to reap the benefit of an estimated 25% productivity improvement.
- The Owner's Execution Strategy covers risks and barriers to implementation and the strategy for mitigating or eliminating the risks complete with responsibilities and timing for implementation, and it covers how WorkFace Planning will become the way projects are executed (i.e. incorporate into procedures). The Execution Strategy will vary depending on the organizational structure, the contracting strategy, the systems and tools and the culture for each project.
- WorkFace Planning requires a team approach. The Owner, Engineering and Procurement Contractor, Construction Manager and Constructor all need to understand their roles in the successful implementation of WorkFace Planning.

Does not mean:

- It is written into the contracts and then forgotten about.
- The Owner throws the responsibility for WorkFace Planning over the fence to the Constructor with no instructions other than to "follow the COAA Model".

Rule #13: Appoint WorkFace Planning Executive Sponsors and Champions.

What this means:

- The Owner, Engineering and Procurement Contractor, Construction Manager and Constructor all need to appoint Executive Sponsors and Champions.
- Executive Sponsors breakdown the barriers to implementation and support resourcing requirements.
- Champions ensure that everything is in place for implementing WorkFace Planning in their organizations and ask the Executive Sponsor for support when required.

Does not mean:

- WorkFace Planning Champion responsibilities are assigned to already full to capacity individuals.

Rule #14: Initiate and coordinate a management audit to ensure that the above rules are being followed.

What this means:

- What gets measured gets done.
- Can combine audit with other stage-gating reviews.
- Use the WorkFace Planning scorecard to audit.
- Develop procedures to incorporate WorkFace Planning into the way projects are executed in the organization.

Does not mean:

- WorkFace Planning runs itself.