AWP - An Owner’s Perspective

ExxonMobil – Jacobs

NAGrowth BOP Interconnects Project
Project Overview

- Location: Baytown, TX
- Project Type: Revamp Project
- Contracting Strategy: Reimbursable Cost
- Size: 2M Work Hours
- Tie ins: 164 including 17 hot taps
- Scheduled Outages: 6
Reasons For Using AWP:

• Front line supervision planning limitations
• Dealing with increased project complexity
• Addressing project completion delays
• Ensuring material availability and allocation
AWP is a system to:

Align E & P to support the C sequence:

- Construction Work Areas (CWA)
- Construction Work Packages (CWP)
- Engineering Work Packages (EWP)
- Procurement Work Packages (PWP)
- Installation Work Packages (IWP)
AWP is a system to:

• Break construction into best execution sequence
• Package the work in a way that is readily understood by supervision, workers and materials management
• Give better probability of meeting cost and schedule targets – No guarantee
AWP Is Not:

• A guarantee of success
• An alternative to forward thinking and effort
• An “Easy Button”
Keys to Success:

• Partnership between owner and contractors

• Owner and Contractor PMs and CMs need to:
  • Be the AWP sponsors
  • Drive AWP from start to finish
  • Ensure that their people are trained and aligned
  • Do regular follow-up checks
  • Hold their people accountable to embrace and use
Keys to Success (cont.):

- Understand business drivers for owner and contractor
  - Process system completion sequence and dates
  - Contractual drivers (Payment milestones, LD’s, etc)
- AWP should be implemented during Front End Engineering Design (FEED)
- EWP and PWP sequence driven by construction
Keys To Success (cont.):

• Experienced construction people in engineering
• Associate key work package completions with contractor milestone payments (LS contracts)
• Disciplined use of system and sequencing
Keys To Success (cont.):

• Planner and craft superintendent alignment in defining IWP boundaries
• IWP development > 90 days before installation
• Do not start until materials support the work
• IWP stays on 3WLA schedule until QC signs off
Keys To Success (cont.):

• Manual take offs (MTO) required to account for items not listed on drawings; shims, plates and rebar chairs, etc

• Tools need to be in place to address drawing revisions and associated material revisions

• Verify accuracy between engineering model, purchase orders and material database

• Integrated test plans (ITP) included in IWP > punch list
What We Would Do Differently:

- Did not understand the significance of defining EWPs and PWPs based on construction before developing the engineering schedule.

- Progress engineering by EWP completions, not ISO issues.

- Progress procurement by PWP completions.
Things To Be Aware Of:

• Just because a contractor has used AWP successfully on one project doesn’t mean they can implement it across the board. Requires the right leadership, people and team – Use due diligence

• Have owner’s team go to AWP training before interviewing contractors

• Glossyware

• Believing AWP will improve productivity by 25%
Results:

• TRIR – 0.11

• Productivity 10% better than plan

• Intentionally delayed pipe installation by 3 months – Recognized material delays via IWPs
  • Avoided costs due to premature mobilization
  • Recovered schedule in 4 months due to productivity gains

• Supervision and craftsmen easily visualized work via model shots in IWPs
Results (Cont.):

• Final costs significantly below appropriation value due to 4 key factors:
  • Rigorous use of AWP by project team
  • Contractor team very cost conscious throughout project
  • Use of dance floor scaffolds vs multiple individual scaffolds
  • Delay in start of pipe due to material delays saved significant money

• Project completed on schedule