Advanced Work Packaging & WorkFace Planning

Solutions for Project Delivery

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CII - Research Team member
RT310 - Improving Engineering and Procurement Alignment and Coordination with Construction
Rules of Engagement?
HOW does WorleyParsons apply Advanced Work Packaging (AWP) and WorkFace Planning (WFP)?
WHY ARE WE HERE?

WHAT?

WHY?

HOW?
“Safety outweighing every other consideration”
“The formal processes were too complicated”
“Uh-oh!”
“It will never happen again”
What is WFP?

WorkFace Planning (WFP)?
The detailed **PLAN** to ensure you have the right **PEOPLE** **TOOLS** **PLACE** **TIME** **SCOPE**
What is WFP?
Construction Work Package

What is WFP?
What is WFP?

Engineering Work Package
WHAT IS WFP?

Installation
Work
Package
Advanced WorkPackaging (AWP)?
THINKING WITH THE END IN MIND AT THE START
WHAT IS AWP/WFP?

Select
1 IDENTIFY » 2 EVALUATE

Deliver
3 DEFINE » 4 EXECUTE

Improve
5 OPERATE

Asset Definition
Conceptual Development
FEED
Detailed Engineering
Construct
Completions
Operate
Decommission/mothball

ADVANCED WORK PACKAGING

Interactive Planning
CWPs
EWPs

Project Setup

WORKFACE PLANNING

IWP$s

Front End Planning
Detailed Engineering

Construction
Commissioning
Start Up

CII – IR 272, Advanced Work Packaging:
Implementation Resource 272-2 version 3.0, Volume 2, Sect 1.1, Figure 1
What is AWP/WFP?

Operations

Owner

Maintenance

Engineering

Construction

Supply Network
WHAT IS AWP/WFP?

OWNER

ENGINEERING

CONSTRUCTION

ADVANCED WORK PACKAGING

SUPPLY NETWORK
Early **ALIGNMENT** on the project of **ENGINEERING, SUPPLY NETWORK and CONSTRUCTION** to successfully implement the WorkFace Plan
WHY do it?
VALUE
ALIGNMENT

ENGINEERING

CONSTRUCTION

SUPPLY NETWORK
WHY WE DO IT?

Select
1 IDENTIFY ➔ 2 EVALUATE

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5 OPERATE

- Asset Definition
- Conceptual Development
- FEED
- Detailed Engineering
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- Decommission / mothball

INFLUENCE CURVE

Opportunities for Savings

Max

Min

Concept

Completion

Ability to influence

Cost

Project Cumulative

0%

100%
Benefits

Productivity
Quality
Predictability
Schedule
Cost
Safety
25% INCREASE IN LABOR PRODUCTIVITY
10% PROJECT COST SAVINGS
HOW?

(WHAT HAS CHANGED?)
CHALLENGES

PEOPLE

CUSTOMER FOCUS

SYSTEMS, PROCESSES & TOOLS
MODEL MANAGER
What’s Different

ENGINEERING

CONSTRUCTION

SUPPLY NETWORK
CONSTRUCTION ADVISOR

What’s Different

ENGINEERING

CONSTRUCTION

SUPPLY NETWORK
PROCUREMENT MANAGER

What’s Different

ENGINEERING

CONSTRUCTION

SUPPLY NETWORK
PLANNER

What’s New

ENGINEERING

CONSTRUCTION

ADVANCED WORK PACKAGING

SUPPLY NETWORK
CHAMPIONS
What’s New

ENGINEERING

CONSTRUCTION

ADVANCED WORK PACKAGING

SUPPLY NETWORK
ALIGNMENT

ENGINEERING

CONSTRUCTION

ADVANCED WORK PACKAGING

SUPPLY NETWORK

RIGHT PERSON

RIGHT ROLE
CHALLENGES

PEOPLE

CUSTOMER FOCUS

SYSTEMS, PROCESSES & TOOLS
THINKING WITH THE END IN MIND AT THE START
Installation
Work
Package
**Systems, Processes & Tools**

**EWP**
- Engineering Deliverable
  - 1 EWP = 1 CWP (?)
  - Scope of Work
  - Drawings
  - Engineering specifications & standards
  - Procurement information
  - Vendor documents
  - Quality requirements
  - Risks/Hazards

**CWP**
- Engineering/Construction Deliverable
  - Area Scope ~ 40k – 200k hours
  - Construction Scope of Work
  - Engineering Information
  - Craft / Manpower
  - Direct Field Equip / Mat'l
  - Safety
  - Quality (QA / QC)
  - Special Permits / Regulatory
  - Subcontractors
  - Vendor support data
  - Rigging studies
  - Scaffold
  - Special equip / tools/ consum.
  - Waste management
  - Risk register
  - WFP
  - Project Controls
  - Turn-over documents
  - Contact List

**IWP**
- Construction Deliverable
  - Work Face Plan for ~ 500-1000 hours work (2 weeks)
  - Scope
  - Deliverable
  - Activities
  - Resources:
    - equipment, tools
    - materials, labour, work instructions, safety equipment, drawings, vendor data, …
  - Special Conditions
  - Quality Control
  - Interdependencies
  - Risk Planning
  - Error Proofing

**Procurement**
- Required on site dates
- Long lead items
- Transportation
- Materials Management
**Systems, Processes & Tools**

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**Select**

1. IDENTIFY
2. EVALUATE

---

**Deliver**

3. DEFINE
4. EXECUTE

---

**Improve**

5. OPERATE

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**Area or System**

- **Distinct**
- **Definable**
- **Tangible**

= **Contractual Pay item**

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**WBS**

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**EWP**

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**CWP**

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**CWP** = **EWP**

OR

**CWP** = **EWP**

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**CWP** = **IWP**
NOT JUST THE WHAT BUT ALSO THE HOW
KEY DOCUMENTS

Distinct
Definable
Tangible

SCOPE
SCHEDULE
PROJECT EXECUTION METHODOLOGY

OPERATING AND MAINTENANCE PHILOSOPHY

PATH-OF-CONSTRUCTION - EXAMPLE
WBS – DEFINED CWP/EWPs
PATH-OF-CONSTRUCTION (OUTLINED)
LONG LEAD ITEMS IDENTIFIED
CONTRACT STRATEGY
WBS – IDENTIFY IWPs
PATH-OF-CONSTRUCTION (FINALIZED)
INTEGRATED MATERIALS MANAGEMENT

PATH-OF-CONSTRUCTION - EXAMPLE
EWPs (COMPLETE)
CWPs (SUBSTANTIALLY COMPLETE) / IWPs (INITIATED)
FABRICATIONS/MATERIALS ON-SITE

ENGINEERING
CONSTRUCTION
SUPPLY CHAIN

PATH-OF-CONSTRUCTION - EXAMPLE
PATH-OF-CONSTRUCTION EXECUTION AREA IWPs (IMPLEMENTATION) FIELD ERECTION & ASSEMBLY
SELECT 1 IDENTIFY ➔ 2 EVALUATE

Deliver 3 DEFINE ➔ 4 EXECUTE

Improve 5 OPERATE

Asset Definition ➔ Conceptual Development ➔ FEED ➔ Detailed Engineering ➔ Construct ➔ Completions ➔ Operate ➔ Decommission/mothball

SYSTEM IWPS (IMPLEMENTATION) / COMMISSIONING

ENGINEERING

CONSTRUCTION

OWNER

PATH-OF-CONSTRUCTION - EXAMPLE
CUSTOMER FOCUS

CHALLENGES

PEOPLE

CUSTOMER FOCUS

SYSTEMS, PROCESSES & TOOLS
SAFE
BUILDABILITY
Change
Alignment
Scalable
Agile
Adaptable
Customer Focus
CHALLENGES

CUSTOMER FOCUS

PEOPLE

SYSTEMS, PROCESSES & TOOLS
GLOBALIZATION
TECHNOLOGY
CULTURE

CHANGE
CONTRACTS
QUALIFIED PERSONNEL
HOW does WorleyParsons apply Advanced Work Packaging (AWP) and WorkFace Planning (WFP)?
WHAT?

Improved SAFETY
Value
Efficiency
Being Leaders
Better Capital Efficiency
Good Business

WHY?

25% increased labor productivity
10% PROJECT COST SAVINGS

WFP Productivity Improvement

- Tool Time 33%
- Wait/Idle 33%
- Gained 11%
- Mat’l Mvmt & Planning 23%
RIGHT PEOPLE
RIGHT ROLE
CHALLENGES

PEOPLE

CUSTOMER FOCUS

SYSTEMS, PROCESSES & TOOLS
THINKING WITH THE END IN MIND AT THE START
NOT JUST THE WHAT BUT ALSO THE HOW
CUSTOMER FOCUS

CHALLENGES

PEOPLE

CUSTOMER FOCUS

SYSTEMS, PROCESSES & TOOLS
THINK SAFETY
ADAPTABILITY
SCALABILITY
CHALLENGES

CUSTOMER FOCUS

PEOPLE

SYSTEMS, PROCESSES & TOOLS
BUY-IN QUALIFIED PEOPLE CULTURE
Thank-you
Contact Me…

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