

# **RULES OF CREDIT FOR EWP'S**

## **WHY GO THERE???**

**Presenter**

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**Co-Chair COAA WFP Committee**

# AGENDA

1. Why is progressing EWP important in AWP / WFP Strategy?
2. What is happening now – and why?
3. Example of present scenario
4. Typical EWP Forecast Completion Scenario
5. Example – Piping EWP Rules of Credit
6. Anticipated Results of Introducing Rules of Credit
7. Path Forward
8. Q & A



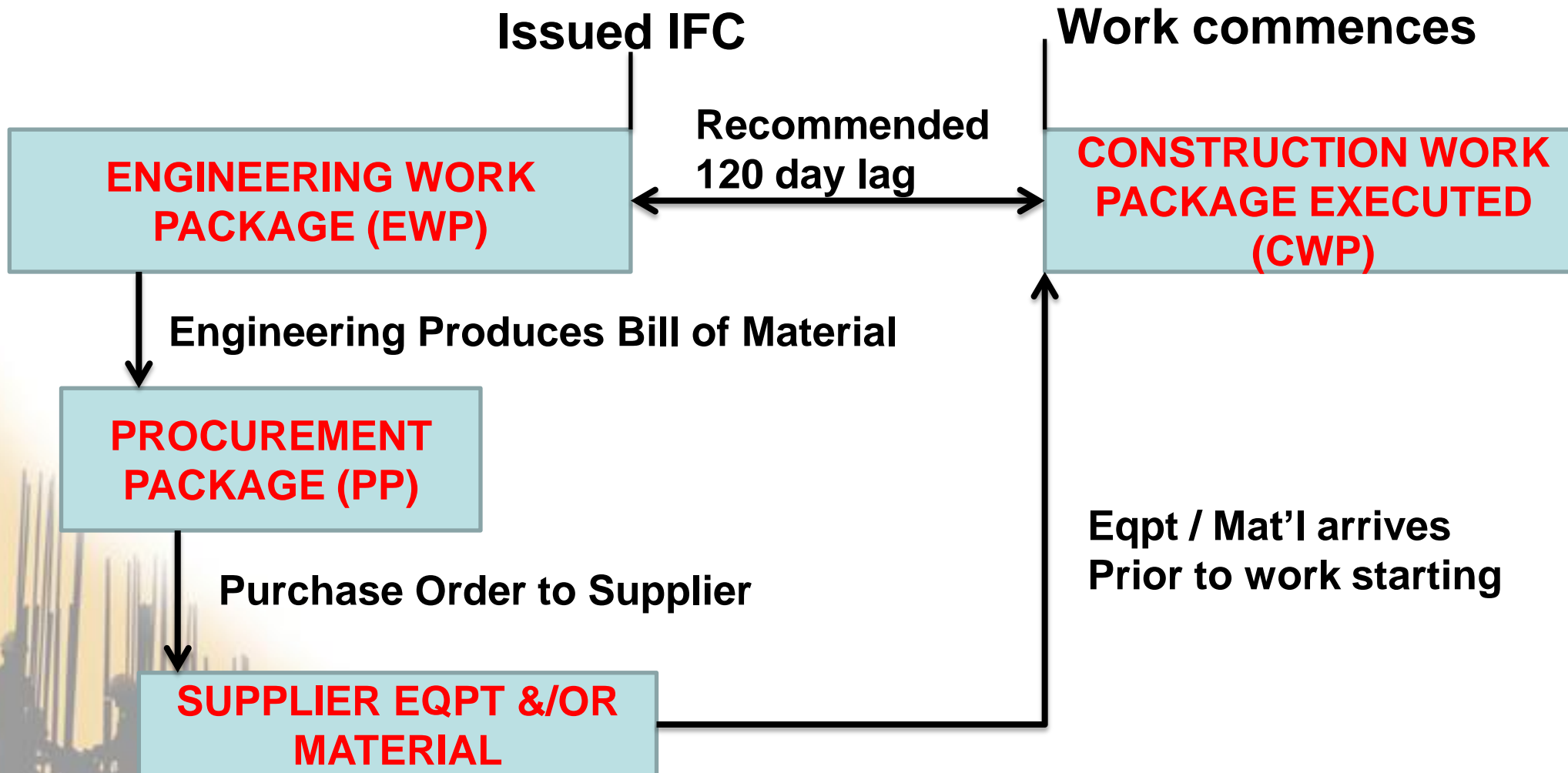
# **Why is progressing EWP important in AWP / WFP Strategy?**

The entire strategy is dependent on Engineering and Procurement providing their deliverables to meet Path of Construction.

Contractor mobilizes based on Engineering forecast of IFC EWPs.



# PLANNED PATH OF CONSTRUCTION PROCESS



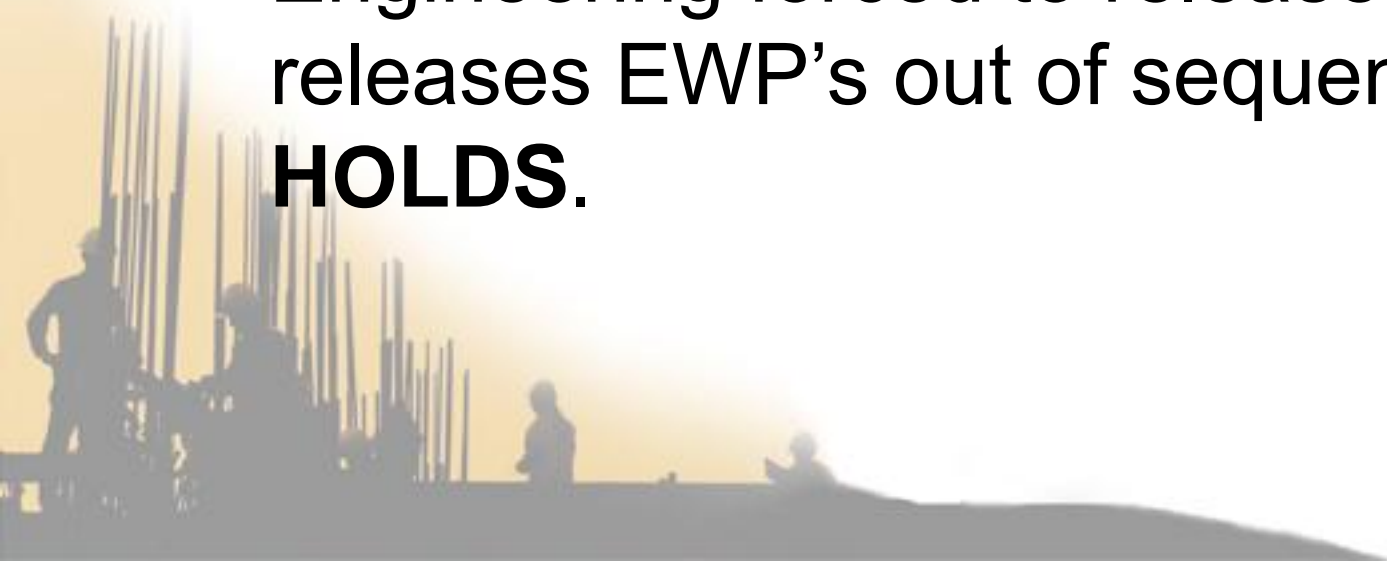


## What is actually happening?

Construction mobilizes resources based on forecast completions of EWP IFC

EWP's releases continue to slip but construction is now mobilized.

Engineering forced to release partial EWP's or releases EWP's out of sequence or EWP's with **HOLDS.**



## Why is it happening?

EWP process has many steps to get to IFC

The rules of credit (if exists) are either not known or not utilized.

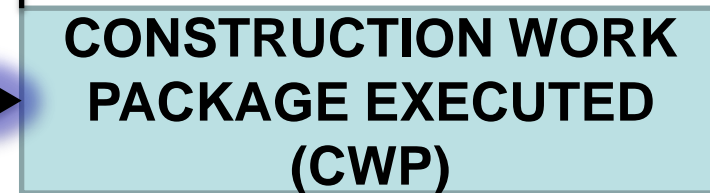
EWP development held back by outside influence (eg Vendor Data or Owner Decision)



# CONSTRAINED PATH OF CONSTRUCTION

Issued IFC

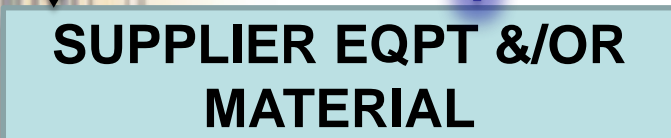
Work commences



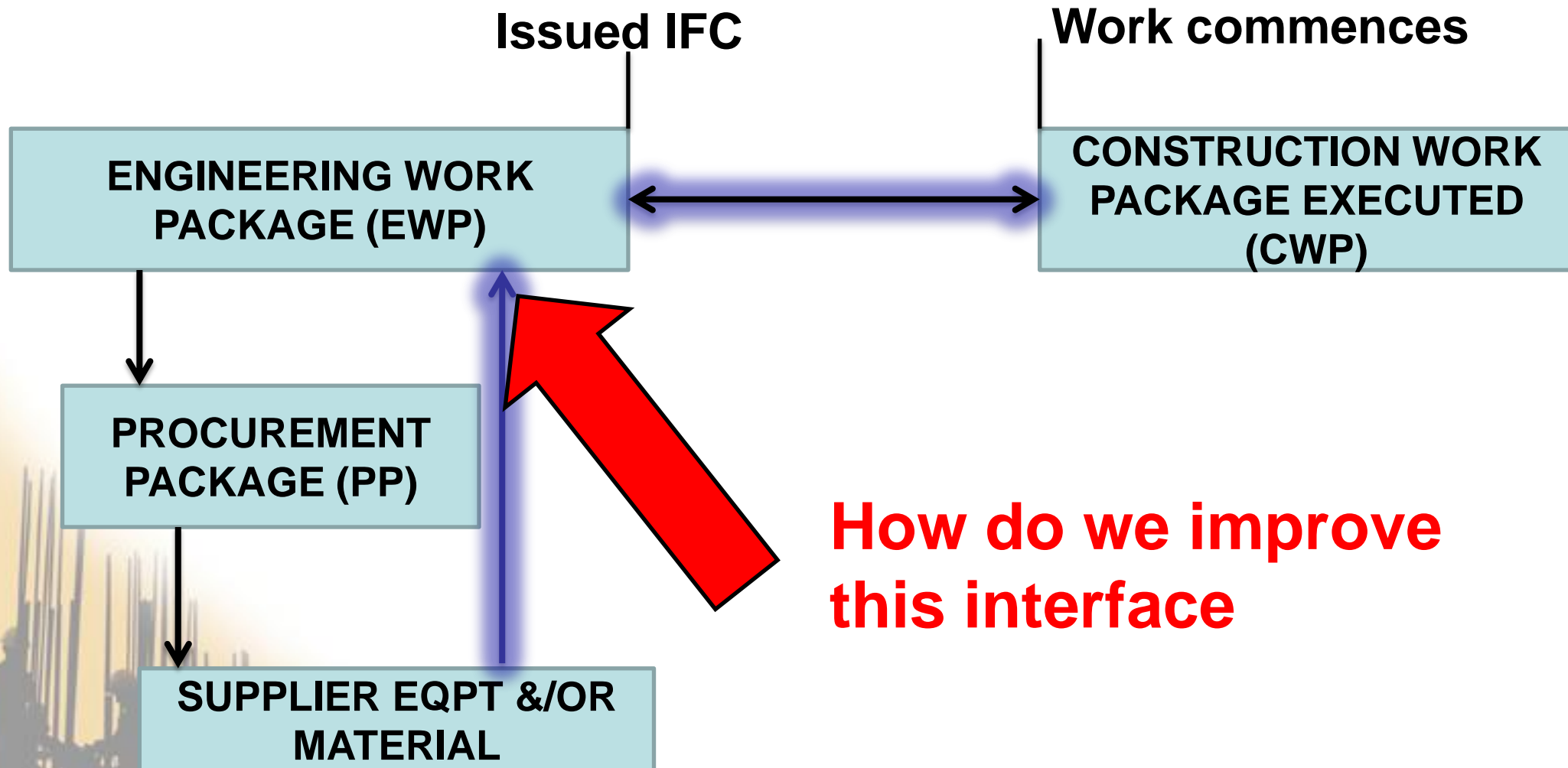
This lag gets squeezed and usually CWP starts late



Vendor Data needed to complete EWP delivered late or incomplete



## CONSTRAINED PATH OF CONSTRUCTION

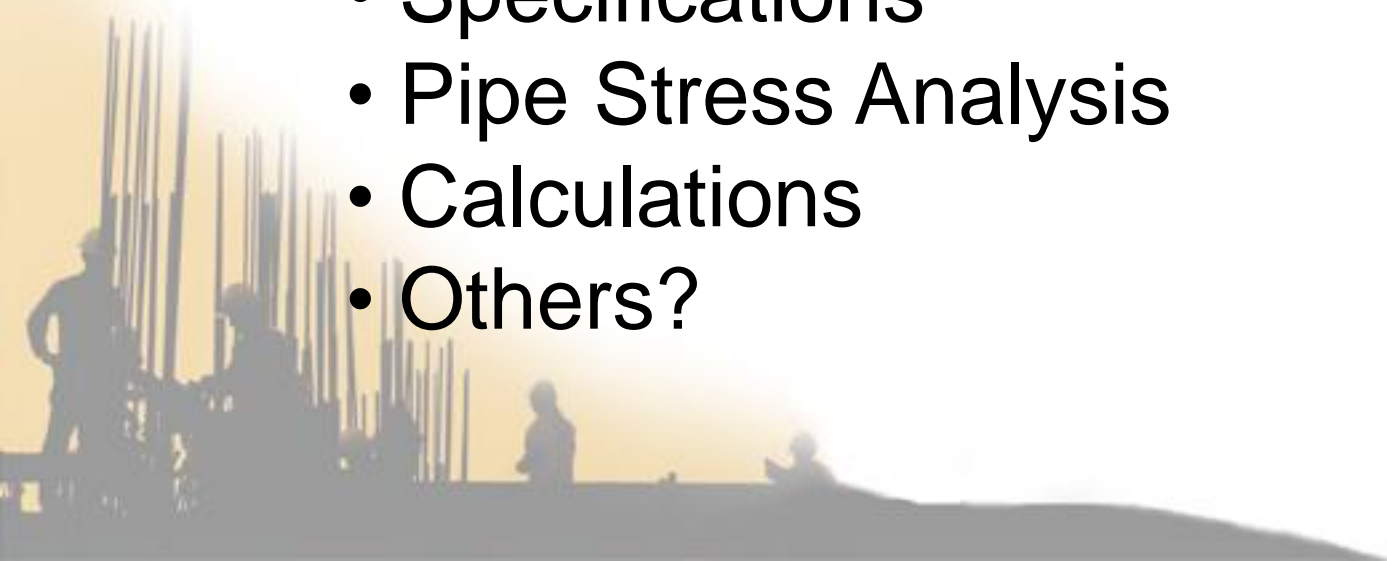




# What is individually progressed now?

## Example – Piping EWP

- Development of 3D Model
- Drawings
- P & IDs
- Requisitions
- Specifications
- Pipe Stress Analysis
- Calculations
- Others?



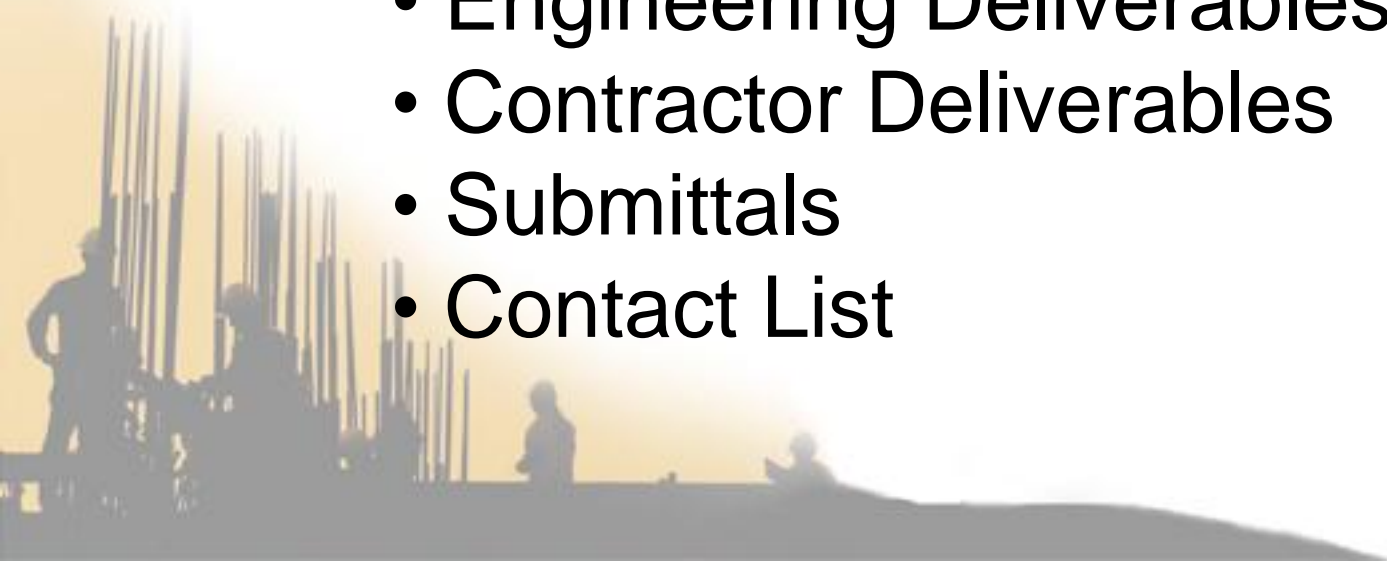
# What is individually progressed now?

## Typical Drawing Rules of Credit

- Initial setup from 3D Model \_\_\_\_\_ 25%
- Checking complete \_\_\_\_\_ 60%
- Issue for Internal Review \_\_\_\_\_ 75%
- Issue for Client Review \_\_\_\_\_ 85%
- IFC \_\_\_\_\_ 100%

## TOC of EWP (from IR 272)

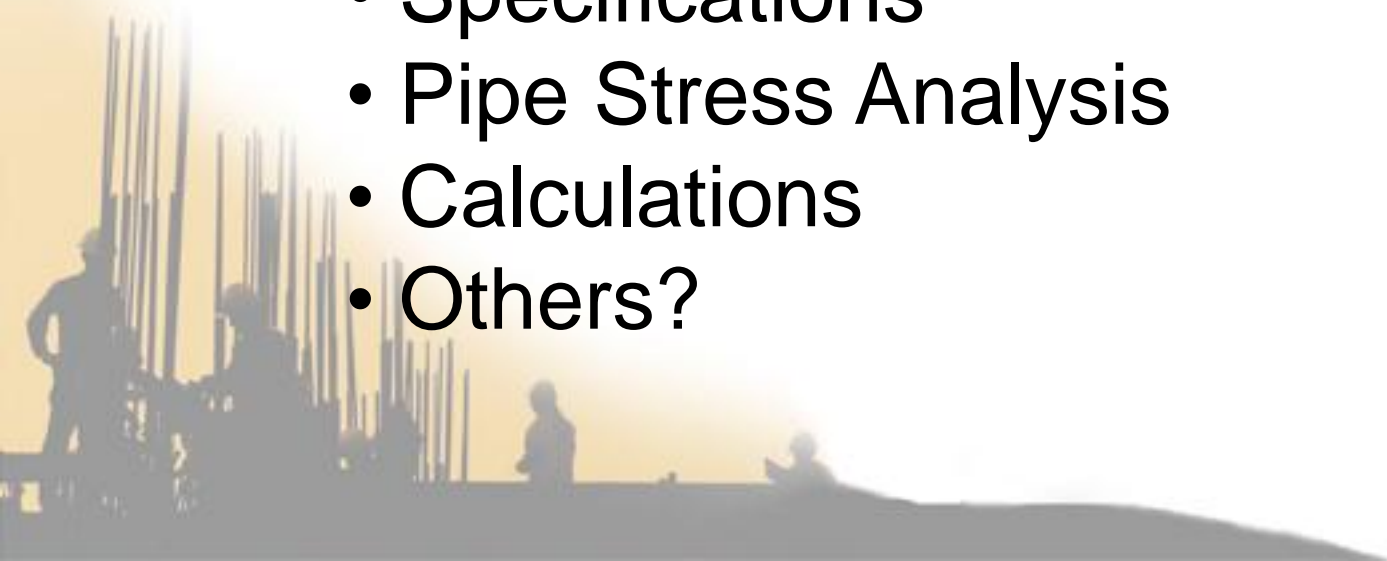
- Scope of Work
- Relationship with other EWPs and CWP
- Dependencies with other EWPs
- Procurement Dependencies
- Interface Points
- Design Criteria
- Engineering Deliverables
- Contractor Deliverables
- Submittals
- Contact List



# Engineering Deliverables?

How do these relate to overall EWP Progress?

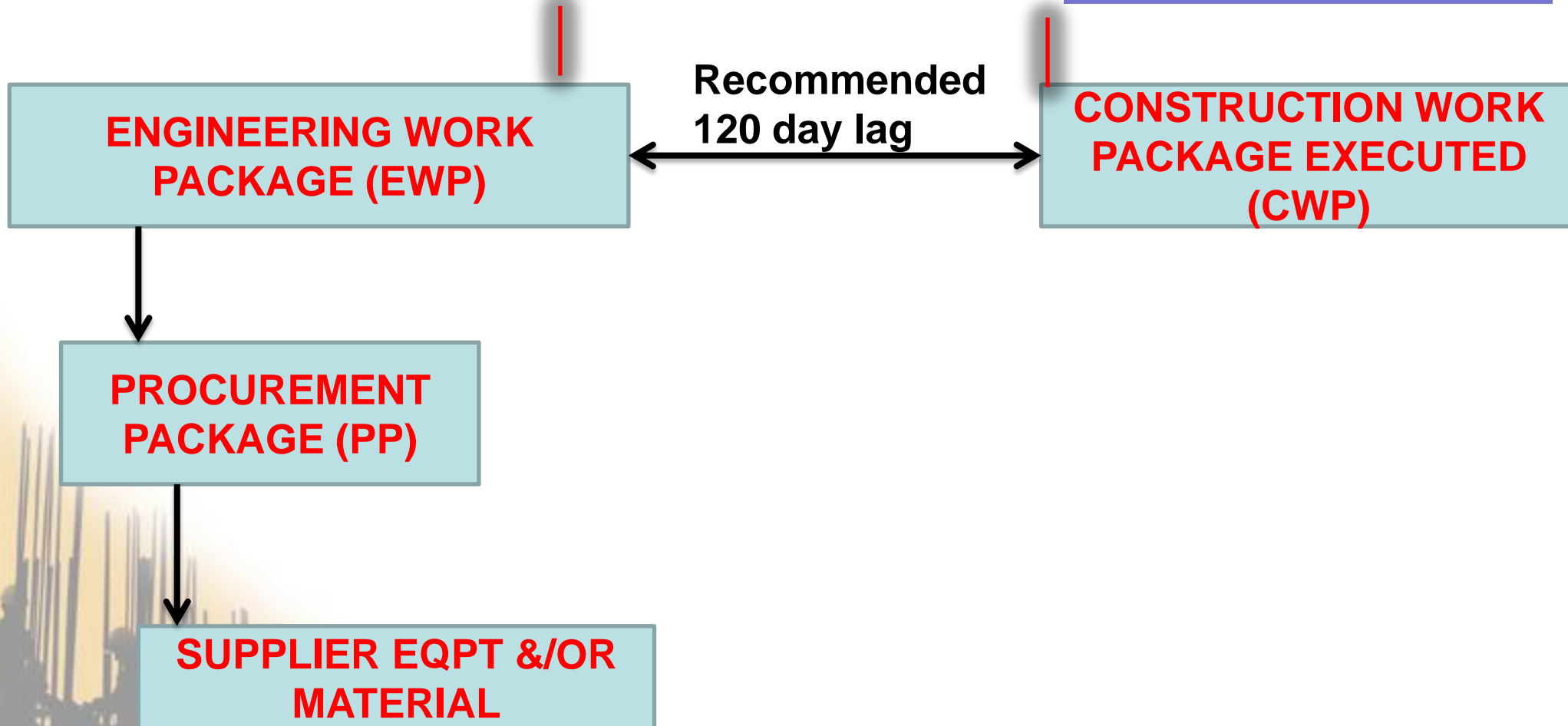
- Development of 3D Model
- Drawings
- P & IDs
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- Specifications
- Pipe Stress Analysis
- Calculations
- Others?



## Example of Problem on existing projects:

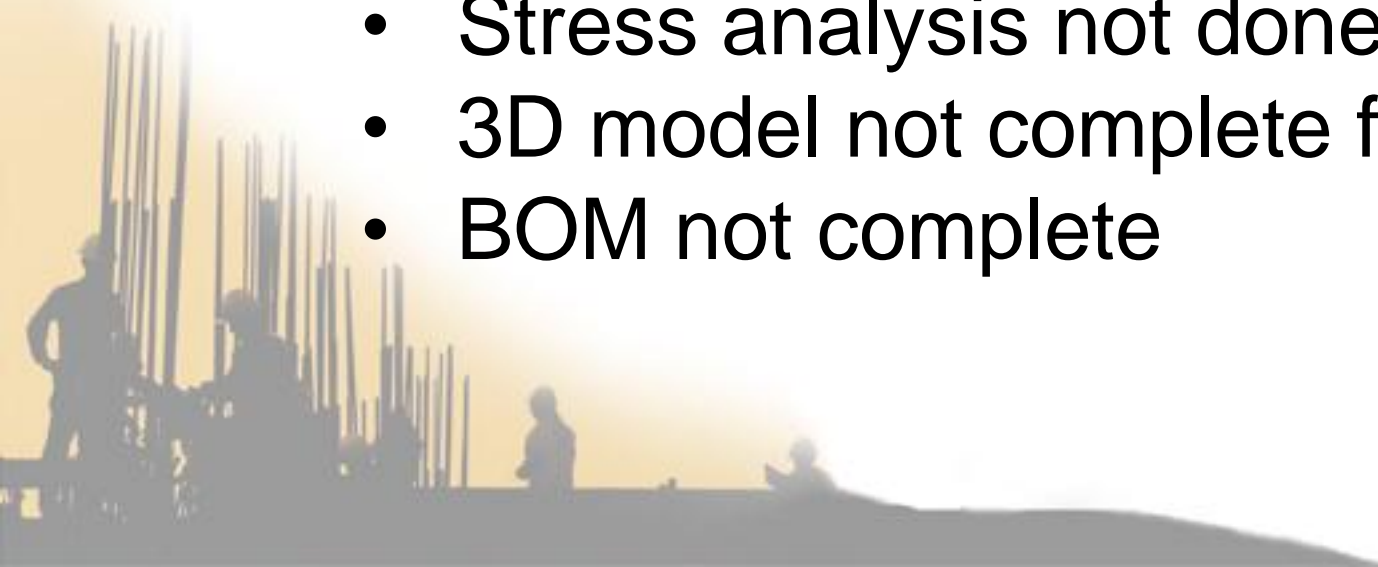
Engineer Claims 95% Complete

Contractor  
Resources Mobilized



## Why does Engineering state EWP progress 90% - 95% when:

- Final Vendor Data not received
- Line routing not complete
- P&ID not IFC
- Line Designation Table not IFC
- Isometrics not complete
- Stress analysis not done
- 3D model not complete for EWP scope
- BOM not complete



## Typical Forecasting Scenario

EWP is 95% at month-end review

EWP forecast to be “complete” next month

Contractor plans resource mobilization

Next month-end forecast

EWP still 95%

EWP forecast to be “complete” next month

Contractor tries to mitigate loss of one month

Next month – another repeat of above:

Except now Contractor is probably behind schedule to commence CWP.



# Potential Rules of Credit for Piping EWP

EWP ID'd and mapped to CWP	5%
Initial scope identified – line numbers	20%
Preliminary equipment data received	25%
Initial routing of lines established	45%
Initial bulk material (BOM) to supply chain	55%
Piping studies rec'd for critical lines	60%
<b>Final vendor data received</b>	<b>70%</b>
Final routings completed	75%
P&ID's and LDT issued IFC	80%
<b>Stress analysis for large bore completed</b>	<b>85%</b>
Line List issued IFC	90%
<b>EWP c/w all drawings/specs issued IFC</b>	<b>95%</b>
<b>EWP accepted by Construction</b>	<b>100%</b>





# Potential Rules of Credit for Piping EWP

**Final vendor data received \_\_\_\_\_ 70%**

**Stress analysis for large bore completed \_\_\_\_\_ 85%**

**EWP c/w all drawings/specs issued IFC \_\_\_\_\_ 95%**

**EWP accepted by Construction \_\_\_\_\_ 100%**



## Anticipated Results:

More emphasis on aligning vendor data to schedule

Engineering better able to:

- Complete EWP's on schedule

- More accurately forecast progress

Contractor better able to forecast resources with:

- Better productivity
- More predictable results
- Path of Construction Plan executed as planned

# Path Forward

Create Rules of Credit for all discipline EWP's

Implement these onto your Projects

Follow the Rules of Credit on Projects



## Path Forward

Engineering monthly claims not to exceed percentage complete of consolidated progress of all EWP's. (Similar to the structure of many contracts with Construction Contractors paid by IWP's completed.)



## Q & A

Would this help to align Engineering / Procurement with the Baseline Schedule?

Would Construction have better ability to mobilize resources at right time?

Would this at all help get Owners aligned with the process?

