

# Application of Project Control Fundamentals in a WFP Environment

**J. Dees**  
**N. Chavan**

- **OVERVIEW – Jimmy Dees**
  - Organization structure and accountabilities
  - Brief history of the set-up of foundational principles and processes
  - Where we are today and the what we are trying to accomplish with planning effort
  - Set-up learning's
- **PRACTICAL APPLICATION OF SYSTEM FOR MANAGEMENT (SFM) – Niteen Chavan**
  - Syncrude's process of applying WFP principles

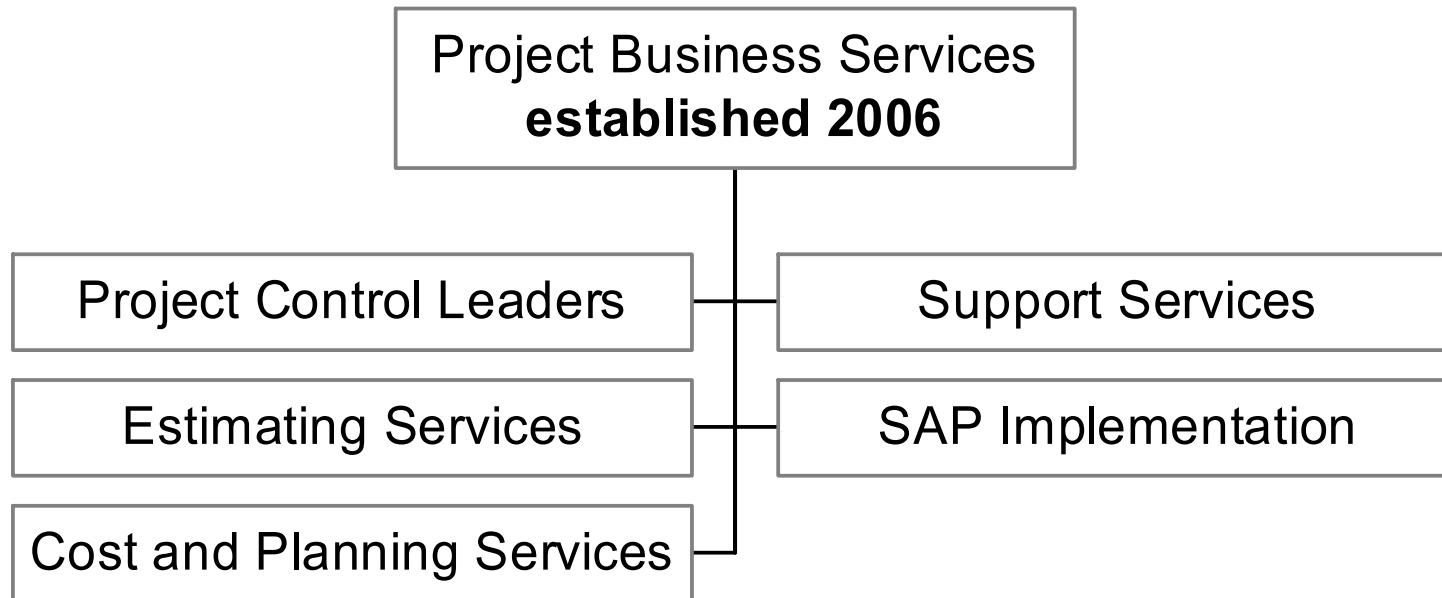
**OVERVIEW**  
**Jimmy Dees**

# Project Control Fundamentals

## **PROJECT CONTROLS BASICS 101**

- Know What has to be done... a detailed budget and tracking profiles which provide schedule and cost control baselines
- Know what has been done...reports providing actual performance data consistent with agreed upon baselines... and in a timely fashion
- Know how actual performance compares with performance norms... analysis of performance to date
- Know what remains to be done ... forecast the potential result
- Identify and recommend corrective actions to bring performance in line with expectations ... control
- Check results of corrective action ... verify

## Organization Structure



# What we do

## Goals

Cost  
Predictability  
(portfolio)

## Why?

- Supports long range portfolio planning (how large is the wave?)
- Assures predictable ROI
- No “surprises”

## How?

- Effective Schedule estimate & Cost estimate development process
- Early execution planning...(do-ability)

Cost  
Effectiveness  
(project)

- **Effective management of engineers/suppliers/contractors**

- **Effective cost and schedule work processes and standards**
- **SFM initiatives (planning)**
- **Meaningful stewardship (weather forecaster vs. reporter)**
- **Effective contracting strategy**

Cost Utilization  
(annual)

- Predictable 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, & 4<sup>th</sup> QTR forecasts (provide movement & flexibility of annual monies)

- Effective project controls
- Reliable financial information

## **QUICK HISTORY LESSON**

Question?

## How did we get here?

- Painful learning's... back to the future
- Had to re-establish some basic processes and tools
- Implement over the portfolio of projects
- Build confidence in the greater organization

## Assessment Findings (April 2006)

### PAINFUL LEARNING'S

- Identification and Tracking of projects thru the stages is a problem. (Name, TWR#, AFE#, W/O#, Job#, etc)
- Responsibilities of BA's and PC's varies by Strategy Center
- In most cases, costs are being captured by P-code but budgets are **not** being recorded by P-code
- Some PC staff are involved with preparation/coding of CWA's, Workorders, etc. Many are not.
- With the exception of hours, no tracking of quantities is being done by Project Controls
- Reporting by Contractors is non-existent, verbal, or inconsistent
- Progress and earned-value reporting is inconsistent in both methods used to gather progress data and how it is reported
- There is limited information readily available for management decisions based on schedules and costs for Capital projects.
- Not a good handle of costs for projects "cradle to grave" (including reasons for escalation)



## Establish “List of Projects”

### **OBJECTIVE**

- To locate, consolidate and document ALL the lists that currently exist
- Establish some rules around naming and numbering of projects
- Establish rules around adding and deleting projects from the list

## Building Estimating Competency

### **OBJECTIVE**

- Establish estimating as a Core Syncrude Competency
- Establish a Professional Estimator Career Path with Documented Expectations for All Levels
- Establish Estimating Training Strategies and Plans
- Build Internal Estimating Competency to Manage, Direct and Review Estimating Workload
- Supplement with External Resources as Required:
  - Other Owners
  - Contracting agency
  - JV's

## Building Estimating Competency

### **COMPLETED**

- Estimates prepared using standard project code of accounts (P-Codes)
- Estimates prepared reporting key unit quantities by major account
- Estimates prepared using standard Estimate Basis Memorandum and Estimate Confidence Packages
- Syncrude Estimate Tracking System (SETS) used to monitor all estimates prepared

## Standard Estimate Preparation And Reconciliation

### **HARD OBJECTIVES**

- All estimates summarized to ALEX format
  - [WHAT] Construction summarized by Major Code of Account (w/summary of key quantities and direct field hours). Hours tend to remain “static” while costs are “fluid”.
  - [WHY] It Supports “HARD” reconciliation between gates
  - [WHY] Allows for hi-level validation
  - [WHY] Begin to establish “Benchmarks”

### **Concerns**

- Need earlier involvement during the Business Planning cycle
- Educate estimators as to “Why” this information is required

## Standard Estimate Preparation And Reconciliation

### **SOFT OBJECTIVES**

- Establish credibility with owners
  - We are able to communicate scope in way everyone understands
  - Helps identify execution risks earlier in the project life cycle
- Inspire confidence early on with the execution team
  - Team “feels” they have more control
  - Ability to make key execution decisions earlier in project life cycle
  - Puts us in a “planning” versus “reactionary” role

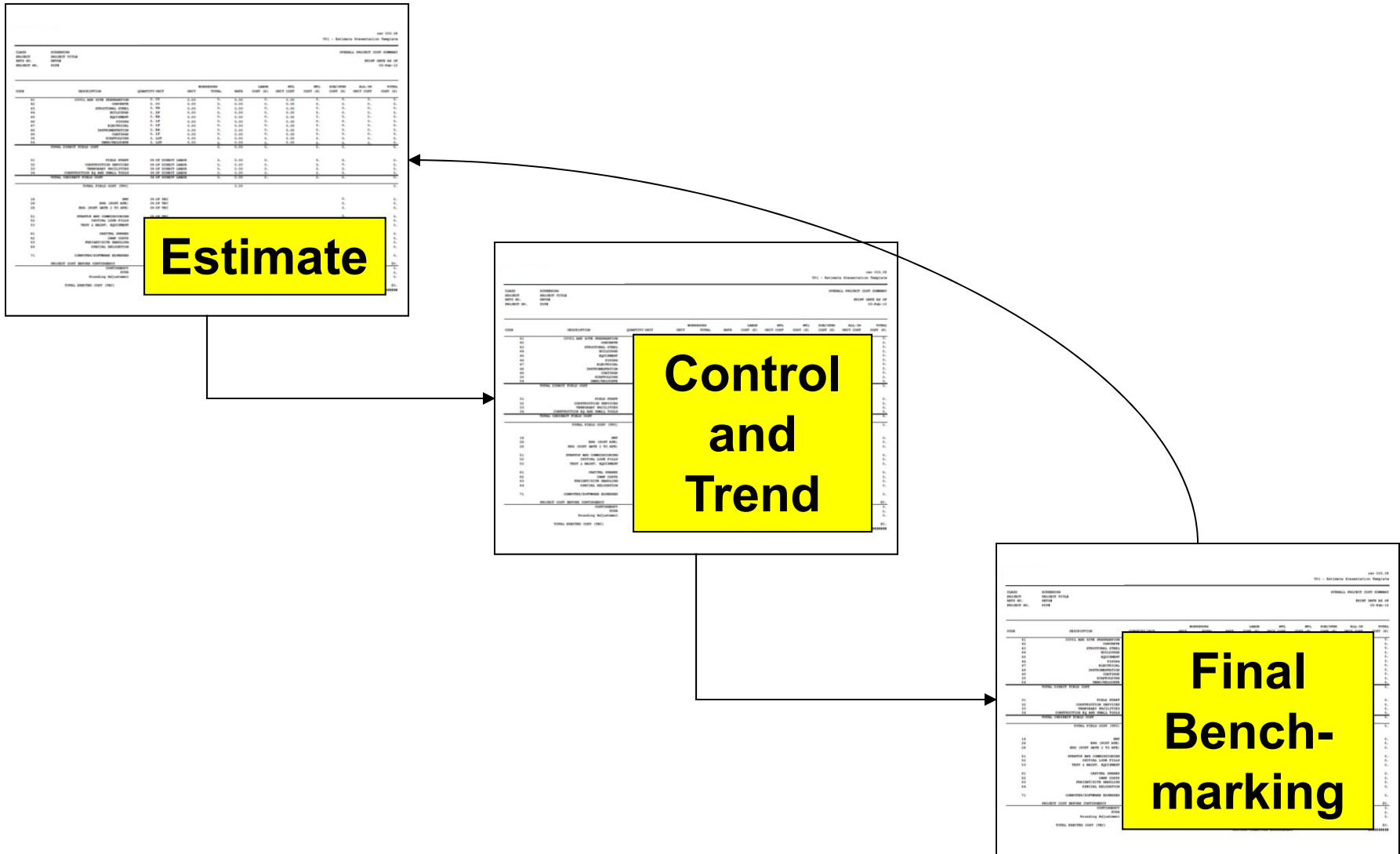
# Estimate Presentation – ALEX Format (T01)

## WHY QUANTITIES?

- Engineer Quantities
- Purchase Quantities
- Construct Quantities
- “Force discipline within the Engineering house to design to the estimated quantities”

| rev 003.08<br>T01 - Estimate Presentation Template |                                 |                                |      |           |       |      |          |           |          |          |           |          |
|--|---------------------------------|--------------------------------|------|-----------|-------|------|----------|-----------|----------|----------|-----------|----------|
| CLASS SCREENING                                    |                                 | OVERALL PROJECT COST SUMMARY   |      |           |       |      |          |           |          |          |           |          |
| PROJECT  | PROJECT TITLE                   | PRINT DATE AS OF               |      |           |       |      |          |           |          |          |           |          |
| SETS NO.   | SETS#                           | 05-Feb-10                      |      |           |       |      |          |           |          |          |           |          |
| PROJECT NO.  | PIP#                            |                                |      |           |       |      |          |           |          |          |           |          |
| CODE   | DESCRIPTION                     | QUANTITY                       | UNIT | WORKHOURS | TOTAL | RATE | LABOR    | MTL       | MTL      | SUB/OTHR | ALL-IN    | TOTAL    |
|  |                                 |                                |      |           |       |      | COST (K) | UNIT COST | COST (K) | COST (K) | UNIT COST | COST (K) |
| 41   | CIVIL AND SITE PREPARATION      | 0.00                           | CY   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 42   | CONCRETE                        | 0.00                           | CY   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 43   | STRUCTURAL STEEL                | 0.00                           | TN   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 44   | BUILDINGS                       | 0.00                           | SF   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 45   | EQUIPMENT                       | 0.00                           | EA   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 46   | PIPING                          | 0.00                           | LF   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 47   | ELECTRICAL                      | 0.00                           | LF   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 48   | INSTRUMENTATION                 | 0.00                           | EA   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 49   | COATINGS                        | 0.00                           | LF   | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 53   | SCAFFOLDING                     | 0.00                           | LOT  | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 54   | DEMO/RELOCATE                   | 0.00                           | LOT  | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| TOTAL DIRECT FIELD COST                            |                                 |                                |      |           | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 31   | FIELD STAFF                     | 0% OF DIRECT LABOR             |      | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 32   | CONSTRUCTION SERVICES           | 0% OF DIRECT LABOR             |      | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 33   | TEMPORARY FACILITIES            | 0% OF DIRECT LABOR             |      | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| 34   | CONSTRUCTION EQ AND SMALL TOOLS | 0% OF DIRECT LABOR             |      | 0.00      | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| TOTAL INDIRECT FIELD COST                          |                                 |                                |      |           | 0.00  | 0.00 | 0.00     | 0.00      | 0.00     | 0.00     | 0.00      | 0.00     |
| TOTAL FIELD COST (TFC)                             |                                 |                                |      |           | 0.00  | 0.00 |          |           |          |          |           | 0.00     |
| 1X   | ENR                             | 0% OF TEC                      |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 2X   | ENG (POST AFE)                  | 0% OF TEC                      |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 2X   | ENG (POST GATE 2 TO AFE)        | 0% OF TEC                      |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 51   | STARTUP AND COMMISSIONING       | 0% OF TEC                      |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 52   | INITIAL LINE FILLS              |                                |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 53   | TEST & MAINT. EQUIPMENT         |                                |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 61   | CAPITAL SPARES                  | 0% OF MAJOR EQUIPMENT MATERIAL |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 62   | CAMP COSTS                      | 0.00 PER DIRECT HOUR           |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 63   | FREIGHT/SITE HANDLING           | 0% OF TOTAL MATERIAL COST      |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 64   | SPECIAL RELOCATION              |                                |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| 71   | COMPUTER/SOFTWARE EXPENSES      |                                |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| PROJECT COST BEFORE CONTINGENCY \$0.               |                                 |                                |      |           |       |      |          |           |          |          |           |          |
|  | CONTINGENCY                     | 0.0%                           |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
|  | SCSA                            | 0.0%                           |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
|  | Rounding Adjustment             |                                |      |           |       |      |          |           |          | 0.00     |           | 0.00     |
| TOTAL ESTIMATED COST (TEC)                         |                                 |                                |      |           |       |      |          |           |          |          |           | \$0.     |
| PRICING COMMITTEE ENDORSEMENT *****                |                                 |                                |      |           |       |      |          |           |          |          |           |          |

# Project Control, Trending, Benchmarking Process



**NEXT STEP – CONTRACTOR PERFORMANCE INITIATIVE  
(SFM)**



**2007-08 Status**  
**(re: tools to effectively manage)**

**STATUS**

- Limited metrics are historical, not forward looking
- Current metrics do not drive discussion or continuous improvement
  - Reporting is focused on accounting numbers rather than contractor performance (ie. Wage rate, productivity against agreed target, progress against plan, field in-directs against plan, etc.)
- Limited understanding of performance drivers
- Limited understanding of performance norms

## Case for Change (understanding performance norms and drivers)

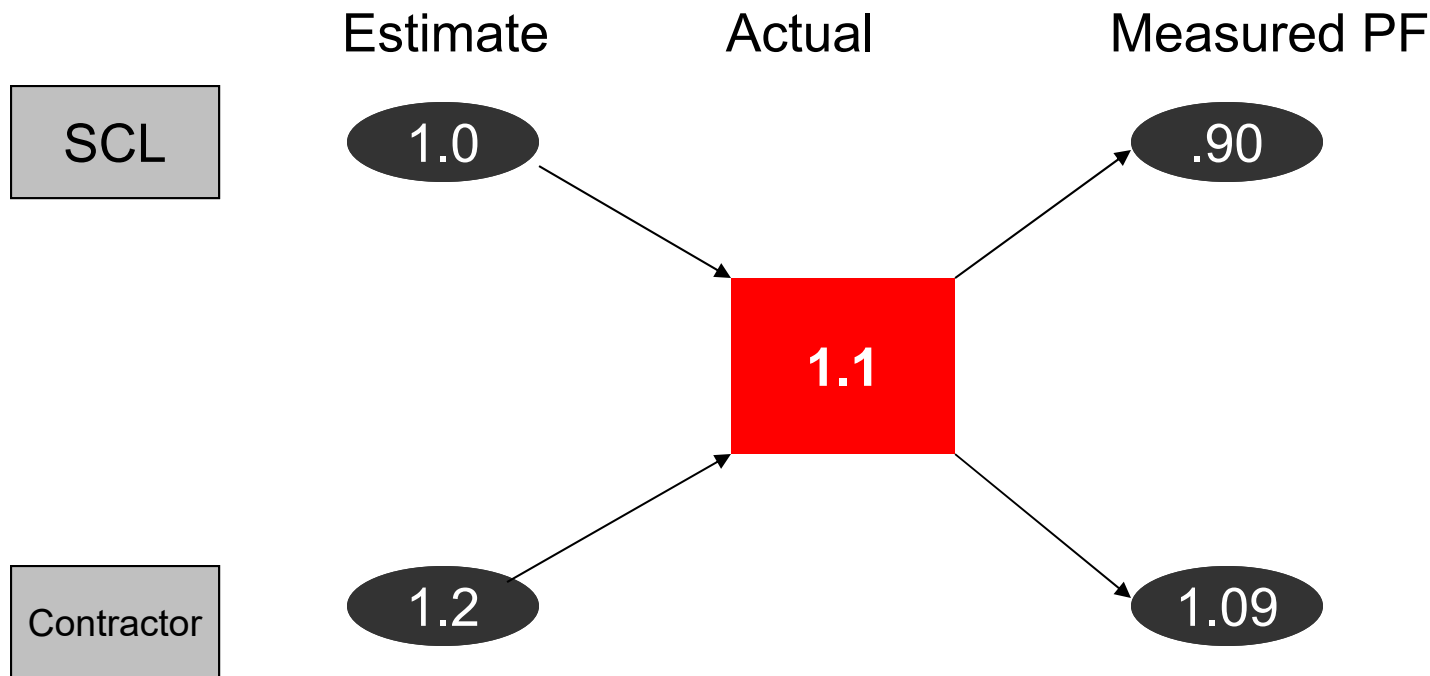
### **CHANGE NEEDED**

- Stewardship reporting is informational rather than changing behaviors and outcomes. Does not address Owner or contractor performance and barrier removal
- Lack of integrated planning / scheduling details (daily / weekly / monthly)
- Contractor planning and execution not validated (quality)
- Limited follow-up on planning and execution
- Unclear roles, responsibilities and accountabilities
- No systematic barrier resolution / continuous improvement process

### **LEARNINGS**

- Had to overcome heavy investment in current processes
  - “this is the way we’ve always done it”
- Need improved teamwork and collaboration between SCL management and contractors
- Roles and responsibilities should be better defined
- Recommended metrics need to be better understood
- Cultures and capabilities varied greatly between contractors
  - Insufficient technical and management skills
  - Need to reward innovation versus compliance

## Measuring Performance



Must measure performance to properly forecast cost and schedule at completion. Formulates achievable target (based on benchmarks) at AFE... health and wellness of project in relation to target

## Stewardship and The SFM

### REPORTING

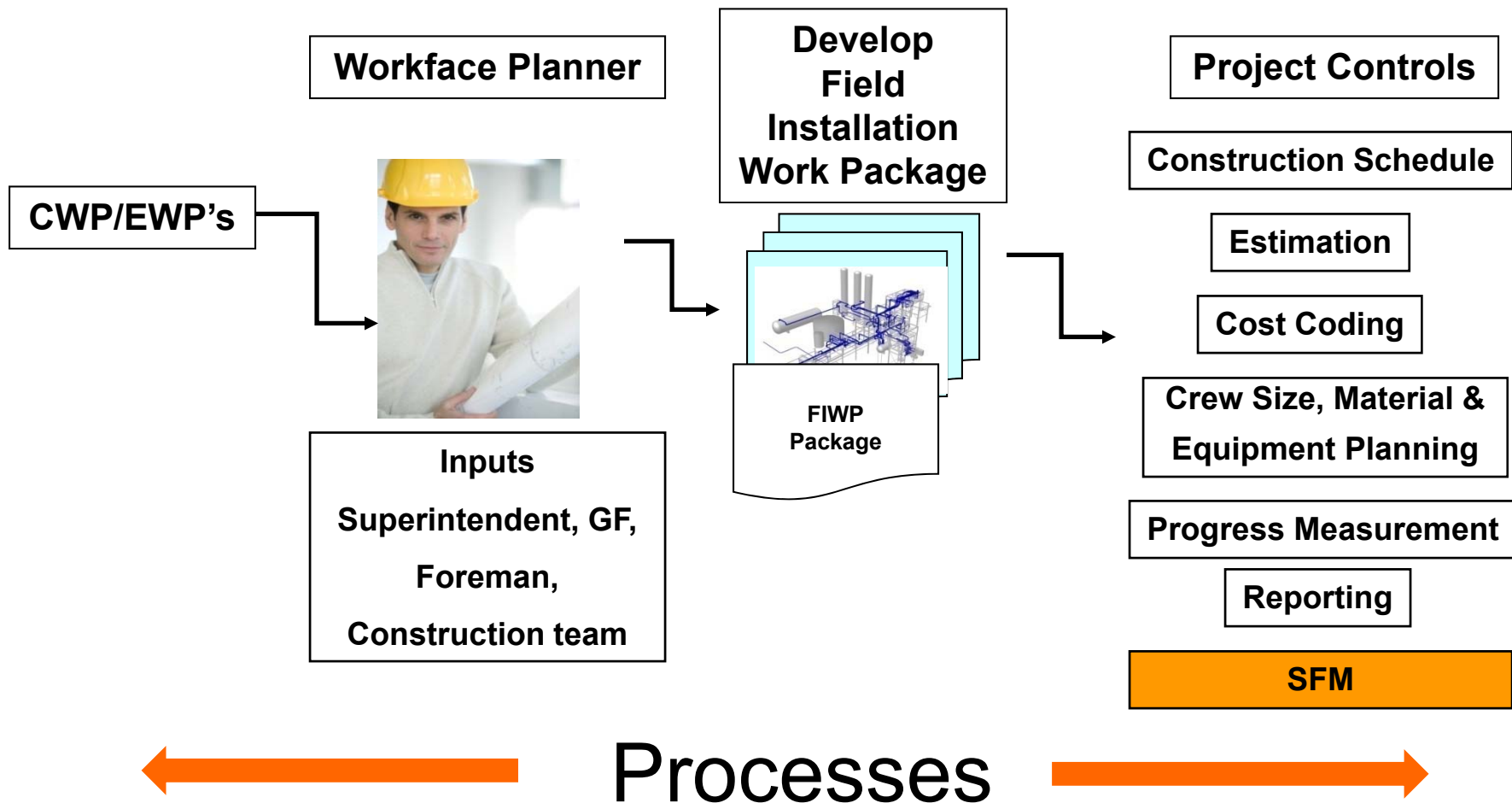
- Project reporting: Weekly and Monthly
  - Dashboard reporting implemented on all projects utilizing SFM (minimum)
  - Metrics tracked:
    - PF over time
    - Field Indirects over time
    - Progress and schedule attainment over time
    - *Plus other financial metrics*
- Portfolio reporting: Frequency aligned with quarterly scorecard calendar
  - Same metrics as Project reporting

### ACTIONS

- Set benchmark (time on tools)
- Revisited stewardships to align with new focus & direction
  - Move from accounting focus to contractor performance focus
  - Align on metrics (daily, weekly, monthly)
  - All levels (Project, Department, Business Unit)
- Put in place “core” implementation group
  - Retained “key” pilot members to lead effort
  - Empowered them...
  - Finalized tools (use of existing systems +)
  - Prepared training package for contractor, rolled-out, etc.
- Continue to monitor, measure and maintain

**PRACTICAL APPLICATION System for Management (SFM)**  
**Niteen Chavan**

# Workforce Planning and Project Control Process

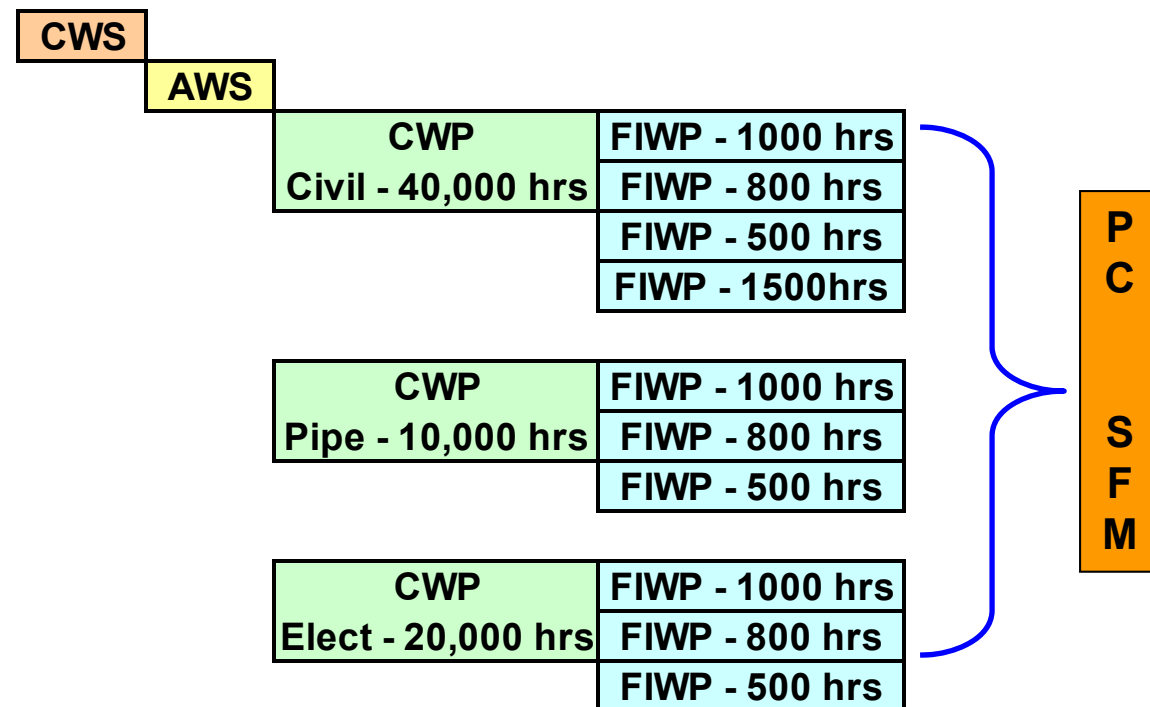




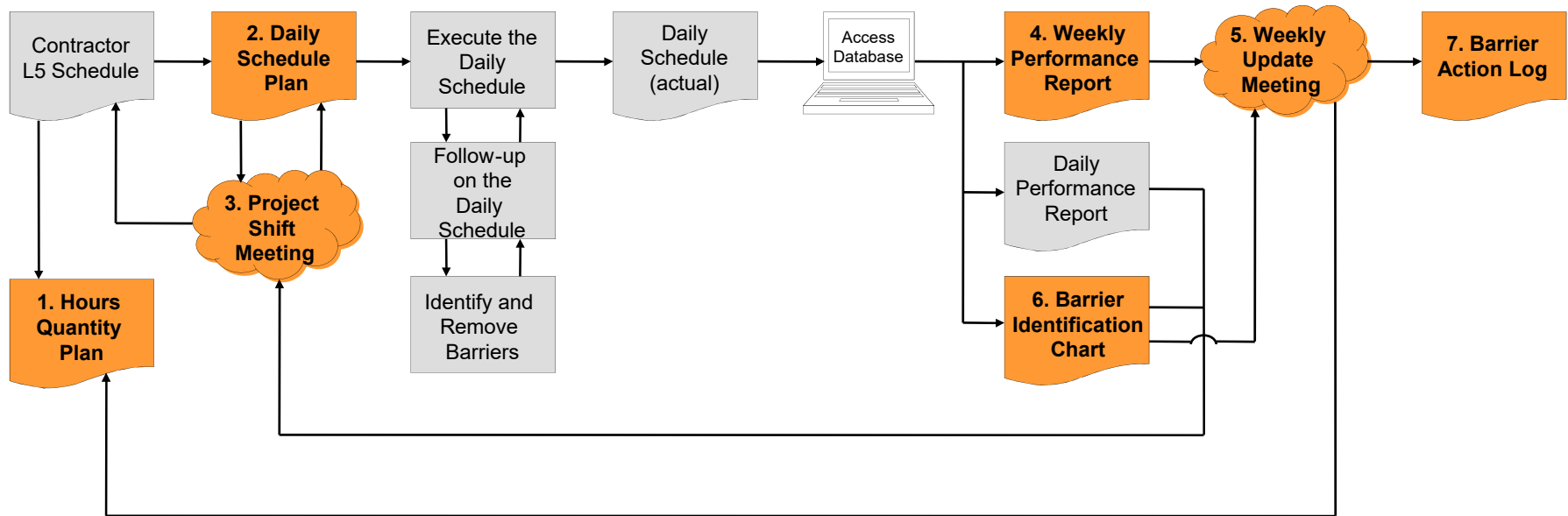
## Work Breakdown Structure

### CWS – AWS – CWP/EWP – FIWP

- CWS – Contractors Work Scope
- AWS – Area Work Scope (Physical area OR plant, OR a specific system/sub-system OR combination of Plant/Area/System)
- CWP/EWP – Construction Work Package / Engineering Work Package



## SFM – System for Managing : PROCESS



Use System for Managing tools to manage the daily work, remove barriers and improve performance

# Our daily Behaviors of detail daily planning makes the difference



Use System for Managing tools to manage the daily work, remove barriers and improve performance

## **7 Key Tools make up the System for Managing**

1. Hours Quantity Plan (HQP)
2. Daily Schedule Control
3. Project Shift Meeting
4. Weekly Performance Report
5. Weekly Update Meeting
6. Barrier Identification Chart
7. Barrier Action Log

## HQP – Hours, Quantity Planning

| P CODE   | DESCRIPTION                 | UOM | Current Month Dec'09 |        |        |        |             |        |        |        |       |
|--|-----------------------------|-----|----------------------|--------|--------|--------|-------------|--------|--------|--------|-------|
|  |                             |     | 1st Wk               |        | 2nd Wk |        | Total Month |        | Jan'10 | Feb'10 | Total |
|  |                             |     | Plan                 | Actual | Plan   | Actual | Plan        | Actual | Plan   | Plan   | Plan  |
| <b>Labour Hours</b>                                |                             |     |                      |        |        |        |             |        |        |        |       |
| P41  | CIVIL AND SITE PREPARATION  | HRS |                      |        |        |        |             |        |        |        | 0     |
| P42  | CONCRETE                    | HRS |                      |        |        |        |             |        |        |        | 0     |
| P43  | STRUCTURAL STEEL            | HRS |                      |        |        |        |             |        |        |        | 0     |
| P44  | BUILDINGS                   | HRS |                      |        |        |        |             |        |        |        | 0     |
| P45  | EQUIPMENT                   | HRS |                      |        |        |        |             |        |        |        | 0     |
| P46  | PIPING                      | HRS |                      |        |        |        |             |        |        |        | 0     |
| P47  | ELECTRICAL                  | HRS |                      |        |        |        |             |        |        |        | 0     |
| <b>Total Direct Field Hours (Labour)</b>           |                             |     | 0                    | 0      | 0      | 0      |             |        | 0      | 0      | 0     |
| P31  | SUPERINTENDENT              | HRS |                      |        |        |        |             |        |        |        | 0     |
| P31  | GEN. FOREMAN                | HRS |                      |        |        |        |             |        |        |        | 0     |
| P31  | SAFETY                      | HRS |                      |        |        |        |             |        |        |        | 0     |
| P31  | QA/INSPECTION/SURVEYOR      | HRS |                      |        |        |        |             |        |        |        | 0     |
| P31  | SITE / FIELD ENGINEER       | HRS |                      |        |        |        |             |        |        |        | 0     |
| <b>Total Indirect Field Staff Hours (Labour)</b>   |                             |     | 0                    | 0      | 0      | 0      |             |        | 0      | 0      | 0     |
| <b>Total Dir + Ind Field Hrs (Labour)</b>          |                             |     | 0                    | 0      | 0      | 0      |             |        | 0      | 0      | 0     |
| P34  | CONST EQUIP AND SMALL TOOLS | HRS |                      |        |        |        |             |        |        |        | 0     |
| P34  | CRANES                      | HRS |                      |        |        |        |             |        |        |        | 0     |
| P34  | LIGHTING PANELS             | HRS |                      |        |        |        |             |        |        |        | 0     |
| P34  | GEN SETS / COMPRESSOR       | HRS |                      |        |        |        |             |        |        |        | 0     |
| P34  | PICK UPS / RENTAL TRUCKS    | HRS |                      |        |        |        |             |        |        |        | 0     |
| <b>Total (only P34) Indirect Hours (Equipment)</b> |                             |     | 0                    | 0      | 0      | 0      |             |        | 0      | 0      | 0     |
| <b>Quantity Progress &amp; Measurement</b>         |                             |     | Plan                 | Actual | Plan   | Actual |             |        | Plan   | Plan   | Plan  |
| P410   | CIVIL EXCAVATION            | CY  |                      |        |        |        |             |        |        |        | 0     |
| P410   | EXCAVATE TRENCH             | CY  |                      |        |        |        |             |        |        |        | 0     |
| P420   | STRUCTURAL SLAB             | CY  |                      |        |        |        |             |        |        |        | 0     |
| P430   | PIPE RACK                   | TN  |                      |        |        |        |             |        |        |        | 0     |
| P490   | COATING                     | SF  |                      |        |        |        |             |        |        |        | 0     |

**Planning / Scheduling - Assumption / Schedule Basis Memorandum:**

# Daily Schedule Control - Plan

## Daily Schedule Control

**Craft:**                      **Date:**                      **Shift:**                      **G.F / Foreman:**                      **Project:**

| Activity / CWP       | Schedule Location | Workforce Count |        | Workforce Hours |        | Unit Of Work |        | Equipment Hours |                          | % Complete |        |     |     | OT Hours | Barrier Hours | Barrier Code | Comments |     |     |
|----------------------|-------------------|-----------------|--------|-----------------|--------|--------------|--------|-----------------|--------------------------|------------|--------|-----|-----|----------|---------------|--------------|----------|-----|-----|
|                      |                   | Plan            | Actual | Plan            | Actual | Plan         | Actual | Plan            | Actual                   | Plan       | Actual | 1st | 2nd |          |               |              |          | 3rd | 4th |
|                      |                   |                 |        |                 |        |              |        |                 |                          |            |        |     |     |          |               |              |          |     |     |
|                      |                   |                 |        |                 |        |              |        |                 |                          |            |        |     |     |          |               |              |          |     |     |
| Foreman:             |                   |                 |        |                 |        |              |        |                 |                          |            |        |     |     |          |               |              |          |     |     |
| <b>Shift Summary</b> |                   |                 |        |                 |        |              |        |                 |                          |            |        |     |     |          |               |              |          |     |     |
| Notes:               |                   |                 |        |                 |        |              |        |                 | Shift Turnover Comments: |            |        |     |     |          |               |              |          |     |     |

## **Project Shift Meeting: Analysis, Agreement & Action**

Objective of the Daily Project Shift Meeting is to:

- Review performance variance from last shifts plan
- Prioritize resources on daily schedule control.
- Set clear and specific expectations.
- Identify immediate barriers.
- Review & remove barriers as required.
- Inform Construction Specialist of barriers requiring his/her help

## Weekly Performance Report

|                              | Mon  |        | Tue  |        | Fri  |        | Weekly Total |        |
|------------------------------|------|--------|------|--------|------|--------|--------------|--------|
|                              | Plan | Actual | Plan | Actual | Plan | Actual | Plan         | Actual |
| Headcount (Dir+Ind Labour)   | 10   | 7      | 10   | 15     | 10   | 20     |              |        |
| Direct Field Hours           | 100  | 75     | 200  | 150    | 100  | 70     |              |        |
| Indirect Field Hours         | 50   | 75     | 50   | 75     | 50   | 75     |              |        |
| Total Equipment Hours        | 50   | 50     | 50   | 50     | 50   | 50     |              |        |
| Total Lost Time Hours        |      | 10     |      | 50     |      | 60     |              |        |
| Quantity (UOM)               |      |        |      |        |      |        |              |        |
| Number of Tasks / Activities | 10   | 20     | 10   | 10     | 10   | 10     |              |        |
| Overtime Direct Hours        | 20   | 30     | 20   | 30     | 20   | 20     |              |        |



# Weekly Performance Report – KPI's

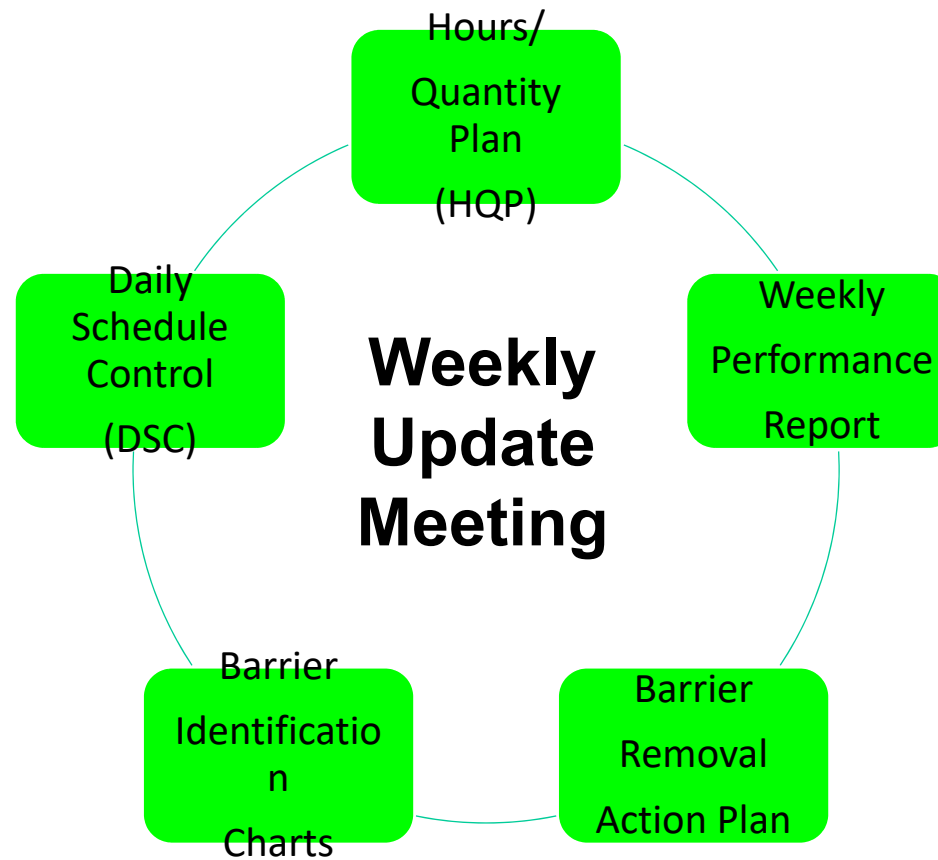
## Key Performance Indicators (KPI) Weekly:

|   |                                   | Tasks  |   |                      |    |                                 |   |                      |
|---|-----------------------------------|--|---|----------------------|----|---------------------------------|---|----------------------|
| 1 | <b>Schedule Attainment (SA)</b>   | = $\frac{\text{Actual tasks/qty completed}}{\text{Planned tasks/qty}}$   | = | <input type="text"/> | 7  | <b>Labour Prod. Factor (PF)</b> | = $\frac{\text{Total Hours Earned}}{\text{Total Hours Actual}}$       | <input type="text"/> |
| 2 | <b>Workforce Utilization (WU)</b> | = $\frac{\text{Actual (Dir + Ind) Hrs}}{\text{Planned (Dir + Ind) Hrs}}$ | = | <input type="text"/> | 8  | <b>Constr. Prod. Unit Rate</b>  | = $\frac{\text{Actual Direct Work Hrs}}{\text{Actual Installed Qty}}$ | <input type="text"/> |
| 3 | <b>Overtime Workhours (OT)</b>    | = $\frac{\text{Actual OT Craft Hrs}}{\text{Total Direct Field Hrs}}$     | = | <input type="text"/> | 9  | <b>Prod. Est. Performance</b>   | = $\frac{\text{Actual Prod Unit Rate}}{\text{Est. Prod. Unit Rate}}$  | <input type="text"/> |
| 4 | <b>Equipment Utilization (EU)</b> | = $\frac{\text{Actual Equip. Hrs}}{\text{Planned Equip. Hrs}}$           | = | <input type="text"/> | 10 | <b>Wage Rate</b>                |   | <input type="text"/> |
| 5 | <b>Headcount Utilization (HU)</b> | = $\frac{\text{Actual Headcount}}{\text{Planned headcount}}$             | = | <input type="text"/> | 11 | <b>Indirect to Direct Ratio</b> |   | <input type="text"/> |
| 6 | <b>Lost Time Hours (LTH)</b>      | = $\frac{\text{Actual Lost Time Hrs}}{\text{Planned Lost Time Hrs}}$     | = | <input type="text"/> |    |                                 |   |                      |

KPI's generated  
through data base

Standard Project  
KPI's generated  
through ALEX

## Weekly Update Meeting



The SFM elements all come together in this meeting

## **Weekly Update Meeting**

The purpose of the Weekly Update Meeting is to review and discuss the status of the project, discuss and address barriers and take a two week look ahead

### **Weekly Performance**

- Analysis of Weekly Performance Report: Schedule Attainment, Headcount Utilization, Workforce & Equipment Hours
- Analysis of Hours, Quantity Plan: Overtime, Workforce Utilization

### **Barriers**

- Analysis of Barrier Identification Chart
- Review and develop Barrier Removal Action Plans

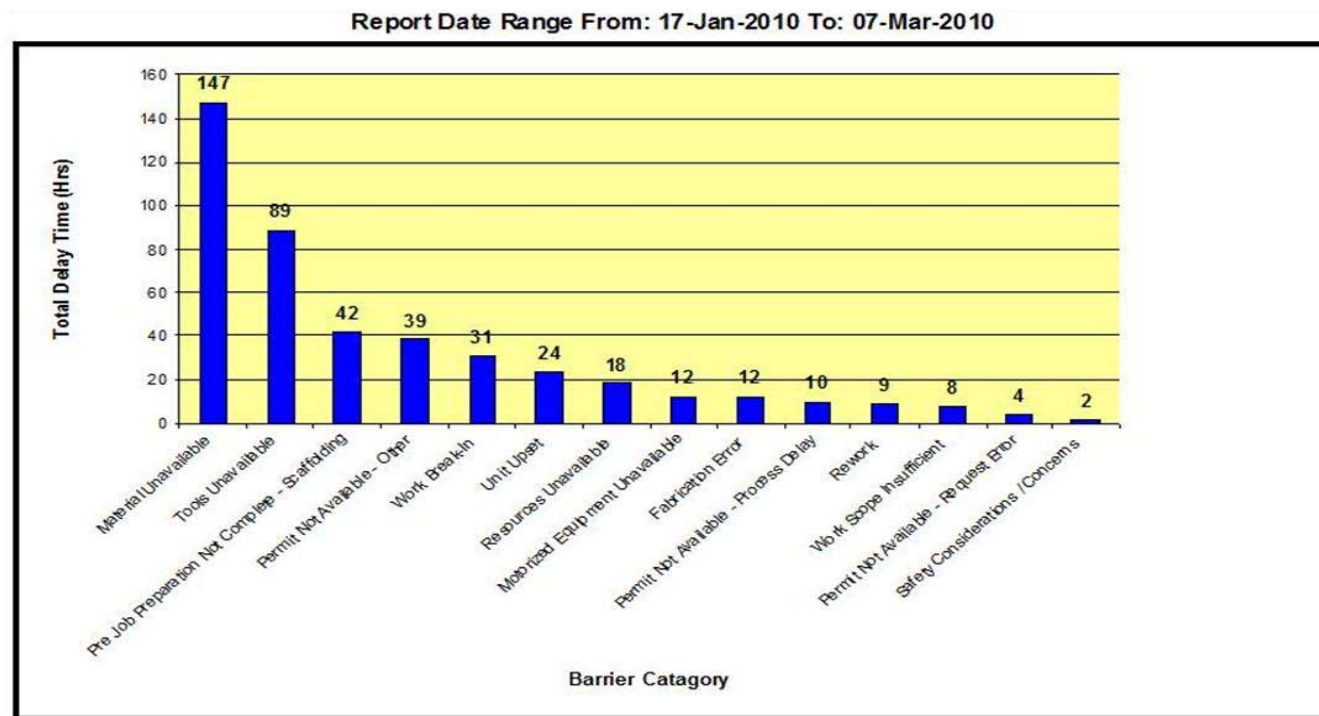
### **Two Week “look ahead”**

- Review of Contractor Schedule

## Barriers

- **Barrier:**
  - Anything which takes time away from the completion of a planned work activity in that shift.
- **Not a Barrier:**
  - Normally scheduled non-work items such as toolbox talks or weekly safety meetings unless their duration is longer than the defined amount of time.
- **Expectation:**
  - 90% of all barriers are solved at the work site by the Foreman/GF/CS

# Barrier Identification Chart - Weekly



INCLUDED BARRIER CODES: ALL BARRIER CODES

Wednesday, March 03, 2010

Chart Total Barrier Hours: 447

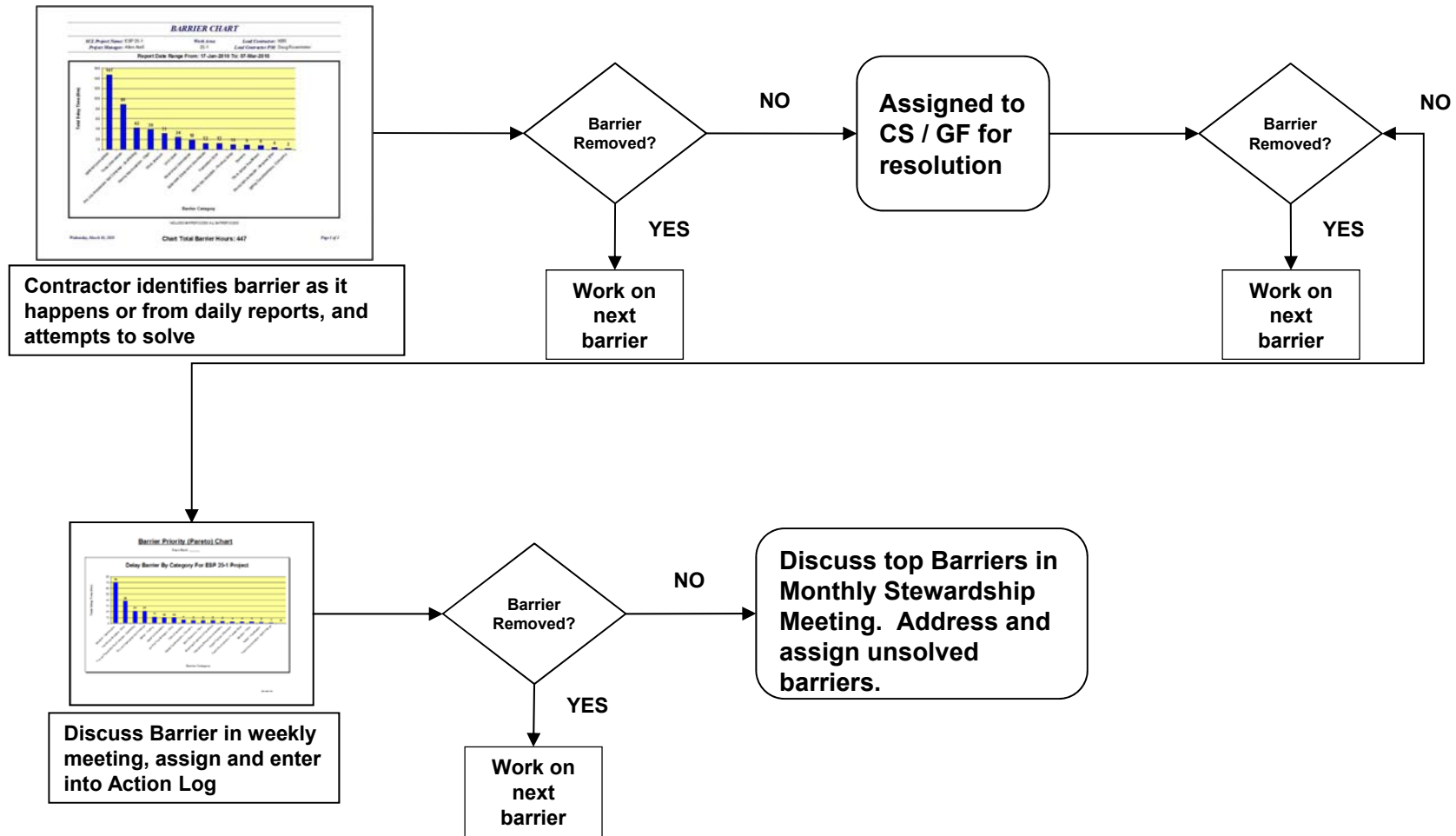
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# Barrier Action Log

| CAPX_ Project Barrier Removal - Issue & Action Log |              |  |  |                                       |                                 |           |           | Meeting :     | Barrier Removal                    |
|--|--------------|--|--|---------------------------------------|---------------------------------|-----------|-----------|---------------|------------------------------------|
|  |              |  |  |                                       |                                 |           |           | Meeting Date: | 13-Jan-10                          |
|  |              |  |  |                                       |                                 |           |           | Today's Date: | 03-Feb-10                          |
| Attendees :  |              |  |  |                                       |                                 |           |           |               |                                    |
| Distribution : Attendees +                         |              |  |  |                                       |                                 |           |           |               |                                    |
| #  | Meeting Date | Issue  | Action   | Comments                              | Responsibility                  | Due Date  | Status    | Days Past Due |                                    |
| 1  | 25-Nov-09    | MATERIAL   | WORK IN PROGRESS - SANFORD   | COSYN                                 | SANFORD/<br>Niel Wilson         | JAN 21/10 | OPEN      |               |                                    |
| 2  | 25-Nov-09    | O'BRIANS WAY   | USE BRLTING  | SPARE                                 | DAVE CLARKE                     | DEC 1/09  | COMPLETED |               |                                    |
| 3  | 02-Dec-09    | Pipe weld Cracking/ weld material                    | IRA-Ring is to small for the pipe<br>Capitil is currently working to reslove | Capital Group<br>Will impact Schedule | Eng - IRA CORE<br>(Trevor Duke) | ASAP      | COMPLETED |               |                                    |
| 4  | 09-Dec-09    | Neptune stuck in road                                | Dig up road in Jan   | Schedule Delay                        | Greg Day                        | 12-Jan-10 | COMPLETED |               | Train one outage on Dec 11/09      |
| 5  | 09-Dec-09    | IRA-Core heaters                                     | Switch to blanket  | 3 Day Dilevery                        | Greg Day                        | 16-Dec-09 | COMPLETED |               | Blankets have arrived              |
| 6  | 09-Dec-09    | Delay in welding start Cost 32 WELDS as per schedule | Look at Modified shift or more machines                                      | To pull back schedule                 | Dave Clarke<br>Neil Wilson      | 6-Jan-10  | COMPLETED |               | Working day/night Back on Schedule |
| 7  | 16-Dec-09    | Demolition of Fiber & PW                             | AEPR FHR to repair   | Fiber failure waiting on outage       | Dave Clarke<br>John Allen       | 30-Mar-10 | OPEN      |               |                                    |
| 8  | 16-Dec-09    | Cold snap for a week                                 | Lost scheduled hours due to cold snap - Syncrude sent contractors home       | Schedule Delay                        | Dave Clarke<br>Neil Wilson      |           | COMPLETED |               |                                    |
| 9  | 06-Jan-10    | Neptune drill bit worn                               | Push through sand area and replace head                                      | Schedule Delay                        | Dave Clarke<br>Doug Geres       | 13-Jan-10 | COMPLETED |               | Willbros to complete               |
| 10   | 13-Jan-10    | Weld Cracks  | Aceran to compete test   | Schedule Delay                        | Trevor Duke                     | 20-Jan-10 | OPEN      |               |                                    |
| 11   | 13-Jan-10    | Turnover Packages                                    | Why is it taking so long - Greg to talk to John                              | Turnover delay for operations         | Trevor Duke<br>Greg Day         | 20-Jan-10 | OPEN      |               |                                    |
| 12   |              |  |  |                                       |                                 |           |           |               |                                    |
| 13   |              |  |  |                                       |                                 |           |           |               |                                    |
| 14   |              |  |  |                                       |                                 |           |           |               |                                    |
| 15   |              |  |  |                                       |                                 |           |           |               |                                    |
| 16   |              |  |  |                                       |                                 |           |           |               |                                    |

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# Barrier Removal Process



**Wrap-up**

Questions?