Creating a Trained AWP Workforce

Featuring Dow Chemical Company and KBR
Speaker Introductions

Karan Cleland
E.S. Construction Manager, Dow Chemical Company

Bryan Parsons
Director – Business Development, Construction; KBR
Creating a Trained AWP Workforce Guidelines
Getting Started Can Be Overwhelming:

Change creates Questions

• How will this affect engineering's standard work practices? A whole new re-write?
• Software & Hardware: should I use new, or will my existing work, or will I use a combination of both?
• Do I have to hire a completely separate organization?
• Where do I start?
Sponsorships From Owners & EPC

Sponsor

AWP Champion

Team Makeup

Organization-Level Representative

Core Team

Discipline Leaders

• Project Manager
• Project Eng.
• IT Manager
• Construction Managers
  • PC
• Materials and Purchasing

• Purchasing
• Project Controls
• Scheduler
• Civil
• Structural
• Piping
• Mech
• PCE

• Instrumentation
• Electrical
• Safety
• Tool SME
• Etc.
What Should Your Education / Training Program Cover?

- Breathe – don’t panic!
- Compare what crosses over and what is new
- Work with Discipline Team Leads to identify changes
- Determine rollout/delivery method
- Software and Tools?
- Consider technical and process Consultants to help!
Establish Training Strategy:

Questions to ask Yourselves:

• Are you going to use:
  • "Train the Trainer" method, OR…
  • Have third party perform all training, OR…
  • Have a mixture of both?
  • Will it be by Class room, electronic (data base) or virtual classes.?
  • On The Job Training – Software / Tools

• Will you need Super Users / Subject Matter Experts for long term? If so, what type of profile would this person have?

• *This is when you Should get a Training Manager involved.*!
Who Needs What Type of Knowledge:
*High-level concepts and detailed specifics*

**Educate / Inform**
Upper management
  - On Concepts
  - The Benefits
  - Schedule of Implementation
  - Cost of Initial Change

**Specific Training**
Hands on Players
  - Requires Training on:
    - What will they be doing different
    - Tools/Software
    - Any Additional Roles responsibilities
<table>
<thead>
<tr>
<th>Task</th>
<th>Project Director</th>
<th>Project Manager</th>
<th>Engineering Manager</th>
<th>Procurement Manager</th>
<th>Discipline Engineer Leads</th>
<th>Project Engineer</th>
<th>Construction Manager</th>
<th>AWP Lead</th>
<th>Technical Manager</th>
<th>Craft Superintendent</th>
<th>Subcontracts Manager</th>
<th>Materials Manager</th>
<th>Controls Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project AWP Procedure</td>
<td>A</td>
<td>A</td>
<td>S/A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>R</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Develop Data interface / exchange procedure</td>
<td>A</td>
<td>A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
</tr>
<tr>
<td>Define Design Areas/WBS</td>
<td>A</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Define CWP’s</td>
<td>A</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Define EWP’s</td>
<td>A</td>
<td>A</td>
<td>R</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Define PWP’s</td>
<td>A</td>
<td>A</td>
<td>S</td>
<td>R</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
</tr>
<tr>
<td>Develop IWP’s</td>
<td>S</td>
<td></td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Document Control Process</td>
<td>A</td>
<td>A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Sequence EPC Schedule with CWP’s, EWP’s and PWP’s</td>
<td>A</td>
<td>A</td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
</tr>
<tr>
<td>AWP requirements in Subcontracts</td>
<td>S</td>
<td></td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
</tr>
<tr>
<td>Delivery Sequence/Date of all tagged items</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
</tr>
<tr>
<td>Delivery Sequence/Date of spools</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Delivery Sequence/date of structural steel orders</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Delivery date of all bulk orders</td>
<td>A</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Bag and Tag materials by IWP</td>
<td>S</td>
<td></td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>R</td>
</tr>
<tr>
<td>Systems Completions aligned with IWP</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>S</td>
<td>R/A</td>
<td>S</td>
<td>S/A</td>
<td>S/A</td>
<td>S/A</td>
</tr>
<tr>
<td>Detailed Short Range Plans</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S/A</td>
<td>S</td>
<td>R</td>
<td>S/A</td>
<td>S</td>
<td>S/A</td>
<td>S/A</td>
<td>R</td>
</tr>
</tbody>
</table>

**Note:**
- **A** = Approval Responsibility
- **S** = Shared Responsibility
Stakeholders

- Business Leaders
- Project Managers
- Technical Engineering Services Group (covers all within our EPCm)
- EPC
- Vendors/Suppliers of both Materials and Labor Services

- Owner (project team)
- Project Manager
- Engineering
- Procurement
- CONSTRUCTION
- Owners Operations
Identify Training Strategy

- Immediate Needs
- Short-Term Training
- Long-Term Training
Immediate Needs

- Rollout Communications to Owners, EPCs, Suppliers and Labor Constructors on Your AWP & WFP Expectations:
  - AWP & WFP Maturity Questionnaires.
  - Dow AWP Roadshow with Gulf Coast Labor Contractors

  - Introduction To AWP & WFP
  - Set expectations:
    - Demo Software
<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda</th>
<th>Time</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Welcome - Introduction to Dow AWP &amp; WFP Team</td>
<td>0:15:00</td>
<td>Karan Cleland</td>
</tr>
<tr>
<td>8:15 AM</td>
<td>Safety Moment</td>
<td>0:05:00</td>
<td>Sam G.</td>
</tr>
<tr>
<td>8:20 AM</td>
<td>Dow's Road to AWP Implementation</td>
<td>0:40:00</td>
<td>Karan &amp; Brian</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Break Time</td>
<td>0:15:00</td>
<td>All</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Demonstration of CSim</td>
<td>0:30:00</td>
<td>Kenny Kelly</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Dow's Expectations from Contractors</td>
<td>0:20:00</td>
<td>Karan</td>
</tr>
<tr>
<td>10:05 AM</td>
<td>Guest presentation – Goeff, Zack &amp; John</td>
<td>0:30:00</td>
<td>Guest</td>
</tr>
<tr>
<td>10:35 AM</td>
<td>Break Time</td>
<td>0:05:00</td>
<td></td>
</tr>
<tr>
<td>10:40 AM</td>
<td>Questions for Panel</td>
<td>0:20:00</td>
<td>All</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Wrap Up.</td>
<td>0:05:00</td>
<td>Karan Cleland</td>
</tr>
</tbody>
</table>

11:05 AM Adjourn
Immediate Project Team Training

• Team Members associated with Projects of early AWP implementation.

• Introduction to AWP / Best Practice Overview
Immediate Project Team Training

Engineering:

• New naming conventions to align with CWA and CWP layouts
• The importance of data integration requirements - Formats
• New standardized templates – for consistence configurations.
• Updated contract language to Vendors to include AWP requirements.
Immediate Project Team Training

Procurement Team Training:

• Create standardization requisitions templates aligned with new AWP practices

• Break large volume of materials with same on-site delivery date into several line items with different delivery dates to align with CWA / CWP sequencing.

• Set expectations with your suppliers on status update requirements needs
Immediate Project Team Training

Construction Management Team:

- Lead in establishing CWAs and CWPs
- Early Constructability meetings
- Roles and responsibilities of a WorkFace Planner
- Trained in using new software and hardware
Immediate Project Team Training

New Software and/or Tools Training

- Project Manager/Owner
- Construction Management
- Constructors’ Field Personnel
Short Term Plans -
*Communications across the organization*

- AWP & WFP Socialization
- Why Change is Necessary
- What is the Gain
- What’s new for “Me”
- Is this More Work?
Long-Term Plans

Become the Culture - Merge into your Companies:
• Existing Processes and Procedures
• Existing Training Program
• Continuous improvement metrics.

Repetitive Type Training:
• WFP Program – Craft Function
• Software & Tools Upgrades
• New Software & Tools Training Programs.
Sustainability of New Implementations

UNDERSTANDING REACTIONS TO CHANGE

**BLOCKERS**
- Will never change: 2.5%
- Will change when there is no other option: 15%

**CHAMPIONS**
- Wait to see what happens: 65%
- Get involved at the first opportunity: 15%
- Lead the change: 2.5%

ACTIVELY RESIST CHANGE — GO WITH THE FLOW — ACTIVELY WELCOME CHANGE
Anxiety

Denial

Emotion

Fear

Acceptance

Realisation

Energy

Growth

Can I cope with change?

It will all go away if I just ignore it

I am feeling a strong reaction to this

How will it affect me and mine?

I have come to terms with the change

I can see what I need to do

I am motivated and doing what I need to do

This is working and has helped me to...
Common Responses and Barriers

• “I’ve run projects my entire career and haven’t needed that”

• “That’s the work packing thing, I’ve done that”

• “That’s how I do projects already”
  
  *But is this done consistently? Is this process documented?*

• “Just because I don’t have a plug or one bolt is not going to stop me from hanging my pipe.”
  
  *But will cause double-handling which increases safety issues.*

• “That sounds like a lot of extra work”

• “That’s going to cost a lot more”
Sustainability

• How do you know if your training is effective?
  • Continuous Feedback
  • Audit Tools
  • Measurement Metrics
  • Improvement Reviews
  • Lessons Learned.
Lessons Learned
Questions?