JIP33 - Standardizing procurement specifications

Kuala Lumpur – November 2019
Welcome

Noor Ilias M Idris, VP of Group Project Delivery, Petronas
JIP33 – Background & the case for change

Richard Mortimer – VP Engineering BP, JIP33 Steering Committee Chair
Purpose of today

- Raise awareness, understanding, and engagement in JIP33
- To demonstrate the commitment and momentum it has in the industry
- To show the opportunities for the supply chain in using JIP33
- For Operators to understand views and needs of their key stakeholder; Engineering Contractors and Suppliers, to best make JIP33 a success
- To start a conversation, to encourage participation and collaboration

JIP33 is a opportunity for a step change in efficiency for the industry, but only through effective collaboration across the supply chain.
Anti Competition Reminder

• The meeting participants are reminded that the participants are competitors, and are subject to antitrust laws
• The parties are committed to compliance with all applicable antitrust laws and other applicable laws and regulations
• Discussions which might be misconstrued as price fixing, customer or market allocation, attempts to alter the competitive open bidding season, or boycott suppliers and customers are not allowed
• Discussions of other competitively sensitive subjects such as marketing strategies, supply and demand forecasts, open season bids, specific suppliers, and customer information are not allowed
• If any meeting participant has any questions/concerns regarding these antitrust considerations with respect to the meeting, he/she will consult his/her counsel
<table>
<thead>
<tr>
<th>Time</th>
<th>Duration</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:00</td>
<td>00:30</td>
<td>Networking &amp; Coffee</td>
</tr>
<tr>
<td>13:30</td>
<td>00:10</td>
<td>Safety Moment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Welcomes</td>
</tr>
<tr>
<td>13:40</td>
<td>00:25</td>
<td>JIP33: The Case For Change</td>
</tr>
<tr>
<td>14:05</td>
<td>00:40</td>
<td>JIP33 Explained: The Past, Present, and Future</td>
</tr>
<tr>
<td>14:45</td>
<td>00:40</td>
<td>Advocacy - Views from Member Operator leadership</td>
</tr>
<tr>
<td>15:25</td>
<td>00:15</td>
<td>Advocacy - An Eng. Contractors View on JIP33 Aker Solutions</td>
</tr>
<tr>
<td>15:40</td>
<td>00:15</td>
<td>Break</td>
</tr>
<tr>
<td>15:55</td>
<td>01:15</td>
<td>Benefits realisation workshop</td>
</tr>
<tr>
<td>17:10</td>
<td>00:10</td>
<td>Break</td>
</tr>
<tr>
<td>17:20</td>
<td>00:30</td>
<td>Reconvene and key messages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Questions from the audience/ going round the tables</td>
</tr>
<tr>
<td>17:50</td>
<td>00:10</td>
<td>Closing remarks</td>
</tr>
<tr>
<td>18:00</td>
<td></td>
<td>Finish</td>
</tr>
</tbody>
</table>
My organisation is an:

- Operator: 27%
- Engineering Contractor: 15%
- Supplier: 53%
- Other: 6%
Before today, I knew what IOGP stands for

- Yes: 62%
- No: 38%
How much do you know about JIP33

- 22% I know nothing about JIP33
- 43% I have heard of JIP33 but not been involved
- 35% My company has been involved in review or use of JIP33
Global Context from an IOC perspective

- Oil Price crash – lower for longer
- Abundancy of Fossil Fuels – Peak supply to Peak demand
- Rise of Shale
- The Reducing Cost of Renewables
- Dual Challenge – more energy – less carbon.
- International Policy and the volatility in oil price
Case for Change

Our relevancy and profitability is becoming increasingly challenged

We have evolved deeply ingrained Sector wide inefficiencies

Efficiency will be key to Sector competitiveness

Standardisation is a key driver of efficiency
IOGP Madrid workshop 2014: Laying the foundations for JIP33

Evolution of Operator Company specifications - IOGP Reports 450, 500 & Madrid workshop 2014:
- Average number of specifications per company: 466;
- Average number of pages: 28
“Standardization is a key lever we can pull as an industry to structurally reduce large capital project lifecycle costs”

Source: McKinsey Energy Insights

Project A: specification requires key components, including motors to be painted ORANGE.

Project B: specification requires key components, including motors to be painted BLUE.

Same company, different projects
JIP33 Context, Objective and vision

Context
Between 2010-2014, 75% of large E&P projects exceeded budget by 50% on average, and 50% of projects exceeded schedule by almost 40%.

Objective
We seek to drive a structural reduction in upstream project costs and schedule improvement with a focus on industry-wide, non-competitive collaboration and standardization.

Vision
To standardize specifications for procurement for equipment and packages, facilitating improved standardization of major projects across the globe.
“The old way” of procuring equipment

Generated for procurement by engineering contractor

Operator Technical Practices

Industry Standards

Project bespoke/customized

Company and Industry ‘Standards’

Standardized documents

Project Specs

Data Sheets

Project Quality Requirements

Project Document Requirements

Suppliers
“The new way” with standard specs

Operator Technical Practices

Industry Standards

Standard Project Specs

Standard Project Quality Requirements

Standard Project Document Requirements

Data Sheets

Generated for procurement by engineering contractor

Project bespoke/customized
Company and Industry ‘Standards’
Standardized documents

Suppliers

Rapid Learning
Completed HV Switchgear Example

Generated for procurement by engineering contractor

Supplementary Specification to IEC 62271-200 High-voltage switchgear and controlgear

Data Sheets for High-voltage switchgear and controlgear

Quality Requirements for High-voltage switchgear and controlgear

Information Requirements for High-voltage switchgear and controlgear

Rapid Learning

Suppliers

Project bespoke/customized
Company and Industry ‘Standards’
Standardized documents
JIP33 – Structure, Scope

Adri Postema – Programme Director – JIP33
## JIP33: A supplier’s perspective

### Before JIP33

- **RFQ from EPC #1**
  - Project A
- **RFQ from Operator #1**
  - Project B
- **RFQ from Operator #2**
  - Project C

**Unique set of requirements developed for project**

**Industry Standard** *(e.g. API, ISO etc.)*

### After JIP33

- **RFQ from EPC #1**
  - Project A
- **RFQ from Operator #1**
  - Project B
- **RFQ from Operator #2**
  - Project C

**Options selected for project**

- JIP33 Specification, IRS
- QRs requirements

**Industry Standard** *(e.g. API, ISO etc.)*

### Supplier

**Many designs to meet different customer requirements**

**Large inventory to accommodate all customers variations and spares**

**Many variations on procedures and documents for different customers**

### Supplier

**Core set of standard designs meet majority of user needs**

**Smaller inventory, shorter lead times, standard items**

**Common and well developed procedures and documentation cater to majority of customers**
Key elements to realising value

1. **Standardized requirements**
   - Industry adoption means repeatability for the supplier leading to improved efficiency, reducing schedule and cost risk.

2. **Essential Minimum**
   - Aim **not** to harmonize existing specifications, but to create a new set of minimum requirements to meet essential needs only.
   - Vendor can standardize production processes to a cost effective design

3. **Defined Optionality**
   - The supply chain only remains “standardized” when users choose from the options given within the standardised specifications.
   - No changes by the user, supplementary requirements added by users will erode the benefits of standardisation.
The output of each JIP33 specification takes the form of:

- **A Supplementary Specification** to an industry standard
  - Containing a set of “minimum requirements” sufficient to purchase equipment that meets the functional needs of the users

- **An Information Requirements Specification** or “IRS”
  - Containing a list of pre-defined documents and data required to be delivered by the supplier

- **A Quality Requirements Specification** or “QRS”
  - Containing the quality management system, inspection and testing activity

- **An Equipment Data Sheet Template**
  - Containing the options the purchaser wishes to select, and project specific information
JIP33 scale up

Phase 3 – Scale up
- 12 Operators
- 35+ specifications
- Early supply chain engagement
- Leveraging digital developments
Successful delivery of Phase 2

<table>
<thead>
<tr>
<th>Specs delivered end-2018</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air compressor packages</td>
<td>9/10</td>
</tr>
<tr>
<td>Ball valves (Revision of IOGP S-562)</td>
<td>9/10</td>
</tr>
<tr>
<td>Centrifugal pumps</td>
<td>10/10</td>
</tr>
<tr>
<td>Gate valves</td>
<td>9/10</td>
</tr>
<tr>
<td>HV switchgear</td>
<td>10/10</td>
</tr>
<tr>
<td>Line pipe for critical service</td>
<td>9/10</td>
</tr>
<tr>
<td>Offshore cranes/pedestal cranes</td>
<td>10/10</td>
</tr>
<tr>
<td>Pressure vessels</td>
<td>10/10</td>
</tr>
<tr>
<td>Shell and tube heat exchangers</td>
<td>10/10</td>
</tr>
<tr>
<td>Subsea trees (Revision of IOGP S-561)</td>
<td>8/9</td>
</tr>
<tr>
<td>Dryers</td>
<td>10/10</td>
</tr>
<tr>
<td>Materials</td>
<td>8/9</td>
</tr>
</tbody>
</table>

Facts and Figures:
- 152 SMEs involved
- 40 workshops conducted including framing and final alignment sessions
- 100 suppliers involved
- 5,000 supplier comments provided and reviewed
- 4,000 supplementary requirements defined in published specs
- 36 Steering Committee meetings in less than 2 years
JIP33 Phase 2 engaged vendors
The library today:

<table>
<thead>
<tr>
<th>Spec</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air compressor packages</td>
<td>Air Compressor – Integrally Geared Centrifugal to API Std 672</td>
</tr>
<tr>
<td>Air Dryer Package</td>
<td></td>
</tr>
<tr>
<td>Cranes – Offshore General purpose to EN 13852-1</td>
<td></td>
</tr>
<tr>
<td>Cranes – Offshore Pedestal Mounted to API Spec 2C</td>
<td></td>
</tr>
<tr>
<td>Heat Exchangers – Shell and Tube to API Std 660</td>
<td></td>
</tr>
<tr>
<td>High-voltage switchgear and controlgear to IEC 62271-200</td>
<td></td>
</tr>
<tr>
<td>Line Pipe to API Spec 5L and ISO 3183</td>
<td></td>
</tr>
<tr>
<td>Low-Voltage Switchgear and Controlgear to IEC 61439-1 and 2</td>
<td></td>
</tr>
<tr>
<td>Pressure Vessels – Unfired, Fusion Welded</td>
<td></td>
</tr>
<tr>
<td>Pumps – Centrifugal to API Std 610</td>
<td></td>
</tr>
<tr>
<td>Subsea Trees to API Spec 17D</td>
<td></td>
</tr>
<tr>
<td>Valve – Ball to API Spec 6D</td>
<td></td>
</tr>
<tr>
<td>Valve – Gate to API Spec 600 and API Spec 603</td>
<td></td>
</tr>
</tbody>
</table>

Freely available to all on JIP33 website: [https://www.iogp-jip33.org](https://www.iogp-jip33.org)
Adoption dashboard (October 2019)

### JIP33 Implementation Ladder:
- 10%: Company intention to adopt declared
- 30%: Issued in company standards library & approved by Technical Authorities for use
- 50%: Request for Quotation made using spec
- 70%: Purchase order placed using specification
- 100%: Tenders issued

### Average Progress (Supplementary Specification only)

<table>
<thead>
<tr>
<th>Full title</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-560 LV Switchgear</td>
<td>100%</td>
<td>100%</td>
<td>30%</td>
<td>100%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>70%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>S-561 Subsea Trees</td>
<td>0%</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>S-562 Ball Valves</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>70%</td>
<td>10%</td>
<td>30%</td>
</tr>
<tr>
<td>S-563 Piping and Valve Materials</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>30%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>S-611 Gate Valves</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>S-612 Air Compressor</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>S-613 Air Dryer</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>S-614 Heat Exchanger</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>30%</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>S-615 Centrifugal Pumps</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>S-616 Line Pipe Material</td>
<td>10%</td>
<td>10%</td>
<td>30%</td>
<td>0%</td>
<td>10%</td>
<td>30%</td>
<td>50%</td>
<td>70%</td>
<td>50%</td>
<td>30%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>S-617 Offshore cranes to EN Standard</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>70%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>S-618 Offshore Cranes to API Standard</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>70%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>S-619 Unfired Fusion Welded Pressure Vessels</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>70%</td>
<td>30%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Value proof points

LV Switchgear
- LV switchgear operational
- Confirmed 13% cost reduction
- Supplier feedback on LV switchgear
  - 10% cost reduction
  - 4 weeks schedule reduction

JIP33 LV SG spec now actively offered up in tenders from major EPC
- LV switchgear PO placed
  - 13% Cost Reduction
  - Potential reduction in schedule

HV Switchgear
- Significant savings at PO placement for HV and LV switchgear on major project

Centrifugal Pumps
- Supplier feedback
- Costs of a JIP33 design align closely with Base API 610 cost
- 9% – 19% overall predicted saving vs company spec
- Potential 30% – 40% reduction in supplier engineering hours if this became the standard design

Cranes to API 2C
- Crane PO placed
- Improved equipment reliability.
- Potential LCC cost saving up to $300M per Crane

Ball Valves
- Purchase order placed on ball valves.
- Costs appear similar to company spec
Phase 3 current scope

### Packages
- Uninterruptible Power System (UPS)
- Diesel/Emergency Generator
- Flare Packages
- Air Cooled Heat Exchanger
- Firewater Pump Package
- Gas Dehydration (Glycol) Package

### Equipment Specs
- Low Voltage Motors
- High Voltage Motors
- Stationary Batteries
- DC Power Supplies
- Low Voltage A.C. Drives
- Transformers
- Electric Process Heaters
- Actuators for On/Off Valves
- Pressure Relief Valves
- Control Valves and Pressure Regulators
- Elec Transmitters (Press/Level/Flow/Temp)
- Water Mist Fire Protection Package
- Positive Displacement Pumps – Reciprocating
- Diesel Engines
- General and Special Purpose Gear Units
- Subsea valves
- Deluge skid

### Supporting Spec (tbd during Framing)
- General Engineering Specifications for Packaged Equipment
- Noise Control
- Instrument Tubing and Fittings
- General and Special Purpose Couplings
- Lubrication, Shaft-Sealing, and Control-Oil Systems and Auxiliaries
- Isolation of Packaged Equipment
- Materials Specifications
- Welding Specifications
- Coating and Painting of Supplier Equipment

Next tranche to be decided in course of 2019
Maintenance

JIP33 Programme members recognise that an effective maintenance process is critical to achieving sustained benefits

**Specification publishing and maintenance principles:**
- IOGP will publish, promote and maintain the JIP33 specifications on behalf of its members for broad energy sector use.
- Management and resourcing will initially be provided by JIP33 Project Management Team (Transition Phase – nominally to end Phase 3 - end 2020).

<table>
<thead>
<tr>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transition Phase (2-5 years)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- JIP33 Project Management Team Managed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Established JIP33 processes and tools;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| | | | | |
| | | | | |
| **Sustaining Phase** | | | | |
| - Management organization embedded within IOGP | | | | |
| - Specification ownership and leadership through IOGP committees and subcommittees | | | | |
| - Established JIP33 processes and tools; Execution resourcing and contracting strategy to be developed ** | | | | |

Propose content back to base standard bodies
Constructive discussions with API

The last API 17D Sub-Committee meeting occurred in January and we are still waiting for the balloting of the 3rd edition, when we will know what has been incorporated
Standardization gives a range of benefits

Standardization will create a mutually-beneficial outcome for industry by addressing safety, cost, schedule, quality, reliability

- **Safety**
  - Familiarity with designs over time
  - Safety transfers between projects

- **Cost**
  - Minimum standards
  - Est. lifecycle savings: 10-20%

- **Schedule**
  - Rapid procurement
  - Est. lead time reduction: 25-40%\(^1\)

- **Quality**
  - Continuous improvement and innovation of designs

- **Reliability**
  - Elimination of inconsistencies in performance

---

1. Estimated reduction from supplier based on Phase 1 LV switchgear specification and expert interviews for ball valves and subsea trees
And brings supply chain benefits

Optimization through simplification and standardization

**Bids and proposals**
- Standard bid template and clarification process
  - Fewer questions to answer
  - Less deviation requests
  - Increased focus
  - Quicker response and decisions possible

**Saved time, resources and costs**

**Engineering and manufacturing**
- Optimized engineering / more certain information
  - Streamlined design and approval process
  - Fewer last-minute changes / interruptions
  - Fewer inspection hold points / quicker release
  - Repeatability enables continuous improvement

**Enhanced efficiency and quality of supply**

**Installation and commissioning**
- Streamlined equipment simplifies fleet management
  - Reduced wiring / testing / tools / spare parts
  - Fewer items on secondary punch list
  - Condensed commissioning time
  - Reduced drawing updates required

**Enhanced reliability and improved safety**
Summary

✓ Huge industry commitment for JIP33 supported with funding and resources
✓ Successfully demonstrated the concept and developed the framework
✓ Adoption process has started and first benefits proven

We welcome your feedback

feedback@jip33.org
www.iogp-jip33.org
Questions From the Audience
Operator Advocacy - Petronas

Khairol Anuar Shukri - Head of Group Technology Solutions, Petronas
IOGP JIP33 Industry Day

Khairol Anuar Shukri
Head of Group Technology Solutions, PETRONAS
Member of IOGP Engineering Leadership Council

18 Nov. 2019
Adoption of IOGP JIP33 Specification from PTS example for LV Switchgear
Adoption of IOGP JIP33 Specification from PTS example for Ball Valve from 3 PTS to 1 IOGP JIP33 Document

Ball Valves Technical Specification

Open
Adoption of IOGP JIP33 Specification from PTS example for Ball Valve from 3 PTS to 1 IOGP JIP33 Document

• We have reached 30% to 50% adoption of specification in our company. All specification has been uploaded to AXIS, (the engineering standard platform for the company). 6 Specifications have been added to new Projects (Great Project and Ledang Project). Soon we will reach RFQ stage and continue to PO stage where we can declare our 100% adoption of JIP33 Specification

• For Phase 3, there are 18 numbers of SMEs from PETRONAS in the core team of 25 Workgroup producing new JIP33 Specification. We have spent total of 5200 man-hours to realize this effort. By December 2020, we will upload these specification is AXIS, which will cover most of our procured equipment in capital projects.

• PETRONAS is in the process of Technical Requirement simplifications on Standards and equipment specifications with full adoption of International Codes and Standards for Capital Projects and IOGP JIP33 fits in very well with this effort.
Thank you for your passion!
Operator Advocacy – Saudi Aramco

Zuhair Al Qahtani - Standards Specialist
IOGP JIP 33
Adoption of Unified Standard Specification

Zuhair Al Qahtani - Standards Specialist
(JIP33 Steering Committee rep.)

11/18/2019
• Saudi Aramco established in-house program to maximize alignment of company standards to International/Industry specifications.

• IOGP JIP33 supported by Saudi Aramco through WEF, Capital Project Complexity.

• Chief Engineer of Engineering oversees JIP 33 progress by:
  1. Providing financial support to the project.
  2. Dedicating 44 SMEs to participate in specification development of JIP 33.
  3. Participating in ELC and JIP33 Steering Committee.
  4. Adopting IOGP JIP33 published documents:
    ➢ Two specifications have been adopted for project use:
      a. Low Voltage Switch Gear (S-560).
      b. Pedestal Cranes to API 2C (S-618).
    ➢ Placing gradual adoption plan to uniffy company standards with O&G Companies.
Value Add

- LV Switch Gear
  - Up to 13% cost reduction.
  - Improved delivery schedule.

- Pedestal Cranes to API 2C
  - Improved equipment reliability.
  - Potential LCC cost saving up to $300M per crane.
We have overcome some incredible challenges to be where we are today. Now, we draw on that pioneering spirit as we embrace the opportunities ahead.
ACHIEVED

- Application of IOGP Switchboard Standard: Fit For Purpose Switchboard for OED Marine switchboard
- Performance Excellence
  - 13% Cost ▼
  - 20% Size ▼
  - Effort▼
  - Reliability▲
  - Complexity▼
  - No compromise on safety

CHALLENGES/LEARNING

- Industrialised solutions vs. discipline centric Basis of Design
- Standardise equipment/package vs. whole of facility standardisation

COMMITMENT

Engineering Function
+ IOGP Specifications → Central Library

Active Major Capital Projects
+ Browse & Scarborough → 7 specifications
  - Xmas Trees, Ball Valves, Gate Valves, Materials, Cranes, LV & HV Switchgear

Woodside Support
+ Founding member of JIP33
+ Active participants in all phases
+ Technical Authorities as SMEs
+ FT secondee → Integrating Chair

Australian Perspective
+ Chair ME-092 Technical Committee
+ Influence Standards Australia to work with and adopt International Standards
Operator Advocacy – Shell

Graham Henley - Shell Projects & Technology, Vice President Engineering & Asset Support
IOGP JIP33
KL Industry Day

18th November 2019

Graham Henley
Shell Projects & Technology, Vice President Engineering & Asset Support
IOGP Engineering Leadership Council, Chair
IOGP JIP33

Industry transformation through commoditized procurement specifications

Our Commitment:

• Leadership support, with Executive sponsorship
• JIP33 is part of our integrated programme that is simplifying and focusing how we deliver projects
• 42 Subject Matter Experts supporting Phase 3 across the various equipment workgroups
• 2 Full-time secondees provided to IOGP JIP33 team

Implementation:

• Replacing sections of our company standards, integrating the published JIP33 specs
• Updating buying descriptions and Frame Agreements to align with JIP33 specs
• Projects to clearly state in Contractor & Vendor communications that we seek JIP33 commodity items

Demonstrated Success:

• Already placed $10’s millions of POs for JIP33 equipment
• Demonstrated to remove inefficiencies, and allow opportunities for commoditized equipment
  • reducing variants and aligned intervention points
  • reduced cost and delivery times

Our Ambition:

• Standardisation across a full suite of procurement specifications, and extending to modules/packages
• Seeking essential minimum, while ensuring process safety
• Through sharing we learn and improve
• Move our industry to a more competitive position
An Engineering Contractors View on JIP33

Dean Watson, COO
Aker Solutions
Acceptance of a “Lower Forever” Future

Source: Rystad UCube, EIA, Worldbank.org, Ernst & Young, WoodMac
A Drop in FID - $50bbl Breakeven

Source: Rystad DCube (Sep 2019) Offshore Conventional CAPEX, split by field breakeven price benchmark
Outdated Way of Working | New Operational Platform

- Reduced time to first production
- Improving production at lower development cost
- Enhanced Recovery

Graphical representation with phases:
- CAPEX PHASE
- OPEX PHASE

- LIFE OF FIELD SERVICES
- FEED
- Detailed Design
- Fabrication
- Commissioning
- Operations
- Engineering
- Procurement
- Construction
Making it Happen

Operations

Culture and Change Management

Platform

LIFE-SAVING RULES

Work Authorisation

Driving

Combined Space

Isolating Safety Controls

Energy Isolation

Safe Mechanical Lifting

Hot Work

Working at Height

Line of Fire
Competitive Platform | Preferred Technology & Value Chain

Why
Customized & non-competitive project deliveries

What
Drive preferred value chain towards repetition

How
Accelerating competitive platform results

Main causes for project differences
• High customisation cost
• Preferred value chain not used
• Contracts demanding flexibility

JIP 33 & Platform

Study & Tender

Project Execution

Aftermarket

Targets 2023
10-30% Reduction manhours
50% Reduction Quality Cost
30% Reduced schedule
10-20% Proc cost reduction

Low Levels of Re-use
Long Lead Time
High Cost of Quality
High Procurement Cost Levels

Repetitive, platform based execution
Accelerated start up and stocking
Repetitive quality improvement
Improved cost from volume and CI

1. Align on cost driven value chain
2. Deploy competitive platform pilots
3. Embed competitive platform cross projects

Aker Solutions – preferred platform based technology, execution, suppliers and aftermarket services
Illustrations: McKinsey & Company
BREAK
15 minutes

NEXT: Benefits Realisation workshop
Benefits Realisation Workshop
Why identify and track benefits

• To ensure we work together, in the right direction towards strategic outcomes

• To demonstrate the measurable value of the programme for ourselves, and our stakeholders

• To ultimately leverage the programme benefits through a united focus on prioritised activities
Types of benefits

Benefits are traditionally categorised as:

- **Tangible** (e.g. cost savings) or
- **Intangible** (e.g. customer satisfaction)

There can also be negative disbenefits.

If these do not return to being benefits (or reach equilibrium) you need to:
- find ways to mitigate or minimise their impact
- offset with other benefits for net positive outcomes

They can be delivered in different timescales:

- **short** – quick wins to build momentum
- **medium** – a broader mix that sets the scene for long term improvements
- **long term** – deliver sustainable strategic value

Benefits can and should be measured

Leading indicators – predictive measures,
(eg. number of projects using JIP33 specis)
Lagging indicators – outcome measures,
(eg. were projects delivered on schedule/budget)
## Generic example

<table>
<thead>
<tr>
<th>Enabler</th>
<th>Changes needed</th>
<th>Benefit</th>
<th>Theme or Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine that automatically does the washing up</td>
<td>Load the dishwasher with dirty dishes every time</td>
<td>More free time every evening</td>
<td>Improved quality of life</td>
</tr>
<tr>
<td>Enabler</td>
<td>Changes needed</td>
<td>Benefit</td>
<td>Theme or Objective</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>JIP33 Specs</td>
<td>Develop JIP33 compliant designs / products</td>
<td>Time and effort to respond to bids significantly reduced</td>
<td>Reduce costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Improve delivery times</td>
</tr>
</tbody>
</table>
JIP33 - benefits realization for Operators

**ENABLER**
- Delivery of JIP33 specifications
- JIP33 integrated technical procurement framework
- Requirements have recorded justifications

**OPERATORS**
- Align procurement processes to JIP33 methodology
- Embedding JIP33 specifications in company systems
- Make JIP33 specification default for all new projects
- Follow a policy of “No Deviations”
- No overlays without justification
- Input to JIP33 feedback loop (lessons, deviations)
- Be part of JIP33 maintenance process

**EPCs**
(Establish during workshop)

**SUPPLIERS**
(Establish during workshop)

**CHANGES NEEDED**

**BENEFITS**
- Faster procurement processes
- Reduced engineering hours on projects
- Leaner designs
- Operational familiarity with designs
- Reduced equipment lead times
- Fewer non-conformances
- Reduced Inspection + Testing
- Fewer late design changes
- Improved cost + schedule predictability
- Reduced commissioning time

**EPCs**
(Establish during workshop)

**SUPPLIERS**
(Establish during workshop)

**OBJECTIVES**
- Improved safety
- Lower project costs
- Quicker delivery of projects

**TO REALIZE THE FULL BENEFITS, CHANGES NEEDED:**
Internally across organisation functions | From all levels in the supply chain, in collaboration

**Track leading indicators**
Summing up what we heard from the workshops

- Fire Pump
- Time to Prepare Quotation and review spec
- Global opportunity to local vendors
- Reduced and standard testing requirements
- Supplier held stock / inventory
- Training
- Complexity
- Role of EPC
- Common supplier quality audits
- How do we brand JIP-33 Specs
- Raise value of engineering roles
- Best Feed-back Presenter
Best Feed-back Presenter

Sharifah
How did we do?

I understand the objectives of JIP33: 4.5

I see the benefits of JIP33 for my organisation: 4.3
Closing remarks

• Our requests
  • *Tell your organisations, spread the word!*
    • JIP33 team will share a version of this slidepack following this event
    • We welcome requests for follow-up meetings, lunch and learns etc
  • Sign up to our mailing list at www.iogp-jip33.org

• Invite your colleagues to our future industry days
  • Next industry day TBA
  • Welcome offers to present at industry days from Engineering Contractors, Suppliers

• Download and use the published JIP33 specifications

• Support JIP33 phase 3 development
  • Draft specifications are published online during development for comments from the supply chain

• Give us your feedback via [www.iogp-jip33.org](http://www.iogp-jip33.org) or email feedback@iogp-jip33.org
For more information, please contact:

feedback@iogp-jip33.org – Programme Mailbox

ap@iogp.org – Adri Postema (JIP33 Project Director)
jb@jip33.org – Jack Bristow (JIP33 Project Engineer)