Saudi Aramco: Overview & Interaction with the Valve Industry

Presented by:
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Part 1
• Quick Overview - A look from 33,000 feet

Part 2
• Mega projects & development plans

Part 3
• Usage patterns and valve standards

Part 4
• Doing business with Saudi Aramco
SAUDI ARAMCO
OVERVIEW
... a fully integrated, global energy provider

Completed its first 75+ years as a reliable supplier of energy.
Broad statistics

- World’s largest producer of crude oil
- World’s largest producer and exporter of LPG
- Manages the world’s largest proven conventional crude oil reserves (259.7 billion barrels)
- Manages the world’s 4th largest gas reserves (282.6 trillion SCF)
The start of reliable supplies

Oil in commercial quantities found: 1938.
First international shipment: 1939.
The National Oil Company of Saudi Arabia

On any given day in 2011, Saudi Aramco produced:

- 9.1 million barrels of oil
- 9.9 billion standard cubic feet of natural gas

Total capacity = 12.5 million bpd
Pipelines network = 12,000 miles
Domestic refining capacity: More than 2 million barrels per day.
A global refiner

Total refining capacity: More than 4 million barrels per day.
Moving into petrochemicals.....

Completion of Petro-Rabigh Phase I
2011 Exports By Region

- Crude Oil
- Refined...
- NGL
- Far East
- Europe
- Mediterranean
- USA
- Other

Legend:
- Far East
- Europe
- Mediterranean
- USA
- Other
MEGA PROJECTS
SATORP (Refinery) (2009–2013)

- 400 MBD deep conversion refinery
- Arabian heavy crude oil
- JV with Total at Jubail
- Fuels/benzene/PX/propylene
YASREF (Refinery) (2010–2014)

- 400 MBD deep conversion
- Arabian Heavy crude oil
- JV with SINOPEC
- Fuels & Benzene
JIZAN (Refinery & Terminal) (2012–2016)

- Arabian Heavy & Medium crude
- Marine Terminal for VLCC’s
- 400 MBD refining capacity
- 2,400 MW Power Plant
• SADARA CHEMICAL COMPANY - Saudi Aramco – Dow Petrochemicals project in Jubail

• Petro-Rabigh Phase II (JV with Sumitomo)
VALVE ISSUES
Purchases by purpose

- MRO
- Projects
Valve type usage (% of spend)

- Ball: 56%
- Plug: 5%
- Globe: 1%
- Check: 1%
- Butterfly: 6%
- Choke: 11%
- Gate: 18%
<table>
<thead>
<tr>
<th>04-SAMSS-, Valve Type</th>
<th>API STANDARD referenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>-001, Gate</td>
<td>API 600</td>
</tr>
<tr>
<td>-002, Globe</td>
<td>API 600</td>
</tr>
<tr>
<td>-005, Check</td>
<td>API, BS</td>
</tr>
<tr>
<td>-047, Butterfly</td>
<td>API 609</td>
</tr>
<tr>
<td>-049, 10K test &amp; inspection</td>
<td>API 6A</td>
</tr>
<tr>
<td>-050, Thru-conduit gate</td>
<td>API 6D</td>
</tr>
<tr>
<td>-051, API 6D Ball</td>
<td>API 6D</td>
</tr>
<tr>
<td>-052, API 6A Ball</td>
<td>API 6A</td>
</tr>
<tr>
<td>-053, Plug</td>
<td>API 599</td>
</tr>
<tr>
<td>-054, Choke</td>
<td>None</td>
</tr>
</tbody>
</table>
## Valve Reliability Study Results

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TOTAL</th>
<th>DEFECTIVE</th>
<th>OVERALL DEFECT RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khursaniyah</td>
<td>63,415</td>
<td>2,098</td>
<td>3.3%</td>
</tr>
<tr>
<td>Khurais</td>
<td>9,090</td>
<td>319</td>
<td>3.5%</td>
</tr>
<tr>
<td>Nuayyim</td>
<td>860</td>
<td>47</td>
<td>5.4%</td>
</tr>
<tr>
<td>Shaybah</td>
<td>2,545</td>
<td>266</td>
<td>10.4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75,910</td>
<td>2,730</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
Location of defects

<table>
<thead>
<tr>
<th>Defect types</th>
<th>SEAT</th>
<th>BODY</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of defects</td>
<td>1,660 valves (60%)</td>
<td>458 valves (17%)</td>
<td>612 valves (23%)</td>
</tr>
</tbody>
</table>

Diagram showing the distribution of defects among SEAT, BODY, and OTHERS categories.
## Sample manufacturer results

<table>
<thead>
<tr>
<th>SIZE NPS</th>
<th>TOTAL QTY TESTED</th>
<th>DEFECTIVE QTY</th>
<th>DEFECTIVE RATE PER SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>10224</td>
<td>873</td>
<td>8.54%</td>
</tr>
<tr>
<td>2</td>
<td>6649</td>
<td>648</td>
<td>9.74%</td>
</tr>
<tr>
<td>4</td>
<td>718</td>
<td>14</td>
<td>1.94%</td>
</tr>
<tr>
<td>6</td>
<td>601</td>
<td>24</td>
<td>3.99%</td>
</tr>
<tr>
<td>8</td>
<td>308</td>
<td>15</td>
<td>4.87%</td>
</tr>
<tr>
<td>10</td>
<td>215</td>
<td>30</td>
<td>13.90%</td>
</tr>
<tr>
<td>12</td>
<td>180</td>
<td>17</td>
<td>9.40%</td>
</tr>
<tr>
<td>14</td>
<td>38</td>
<td>4</td>
<td>10.50%</td>
</tr>
<tr>
<td>16</td>
<td>72</td>
<td>9</td>
<td>12.50%</td>
</tr>
<tr>
<td>18</td>
<td>31</td>
<td>2</td>
<td>6.45%</td>
</tr>
<tr>
<td>20</td>
<td>36</td>
<td>1</td>
<td>2.70%</td>
</tr>
<tr>
<td>24</td>
<td>21</td>
<td>1</td>
<td>4.90%</td>
</tr>
</tbody>
</table>
Resulting actions

- Re-assessment of certain valve manufacturers
- Packing and storage instructions updated
- Increased casting quality requirements
- Increased pressure testing requirements
- Contractor site procedures updated
DOING BUSINESS WITH SAUDI ARAMCO
ASC Sourcing Regions

- North America
  - Canada
  - USA

- South America
  - Argentina
  - Brazil
  - Trinidad-Tobago
  - Columbia

- Central America
  - Mexico
To utilize best practices to identify and select suppliers within North and South America for long-term partnerships that will add value to SAUDI ARAMCO.
Strategic Sourcing Offices

- Aramco Overseas Co. Tokyo
- Aramco Overseas Co. India
- Aramco Overseas Co. China
- Aramco Services Co. Houston
- The Hague

Saudi Aramco Strategic Sourcing
How do I become registered?

1. There has to be a need for the material that you offer (A list of priority products required can be found at: [www.ascstrategicsourcing.com](http://www.ascstrategicsourcing.com))
2. A special request (Ad Hoc) has been created for your material
3. A Purchase Requisition (PR) has been created with no approved source to fulfill the PR
Registration Process

Complete Vendor Registration Package

- ASC 5254
- PT 202
- Copy of Quality Manual
- Copy of Certifications
- Technical Documents
- Compliance Letter to Saudi Aramco Specification (if applicable)

Pre-Screening
1. Strategic Sourcing
2. Engineering

Time

- One Week for Strategic Sourcing
- One Week for Engineering
Registration process

- One Week for Strategic Sourcing at Saudi Aramco
- Send Package to Strategic Sourcing in Saudi Arabia for Review
- Generate workflow for CSD (Consulting Services Department) approval
CSD approves evaluation request

Technical & Quality Screening

On-site Technical & Quality Evaluation

Evaluation report is prepared

CSD provides final output
The evaluation process

Two distinct evaluations - Technical and Quality

- **Technical Evaluations** - Product oriented
  Conducted by CSD and/or delegate (ASC Engineering)

- **Quality Evaluation** – Quality oriented
  Conducted by ASC Inspection
Technical Evaluation elements:

- Conformance to Industry and Aramco specification requirements
- Customer references
- Review of field or laboratory testing data
- Capabilities and resources
Local Manufacturing Facility - Why Saudi Arabia?

WORLD RANKINGS

- Number 4 for “fiscal freedom”
- Number 7 for “most rewarding”
- Number 7 for “freest labor market”
- Number 23 for “size of economy”
- One of the world’s fastest growing economies
For a proposed project, Saudi Aramco will:

- Provide consumption assessment for a specific product/service
- Assist in developing a preliminary commercial assessment
- Assist in acquiring technical capabilities
- Provide advice on meeting technical requirements
- Provide continuous support after start up
Selected incentives & benefits

- Financial assistance
- Preferential treatment by Saudi Aramco and Government
- Can own 100%
- Maximum income tax rate is 20%
- Repatriate 95% of profits and capital
THANK YOU