1. Introduction

2. Industry Observation and Current Challenges

3. Contractor/Supplier Due Diligence Best Practices
   a) Communication
   b) Pre-qualification and Selection
   c) Conformance and Performance Monitoring
   d) Continual Improvement

4. Statistical Analysis and Results

5. Questions and Answer
Introduction: What is ISNetworld?  www.isnetworld.com

- Contractor & Supplier Information Management
- Collect and review HSE, Quality, Procurement, Compliance, and other data
- Over 27,000 suppliers and contractors
- 160+ Owner/Operators

- Oil and Gas
- Mining
- Steel
- Manufacturing
- Pharma / Biopharma
- Power/Utilities
Contractor/Supplier Management
Industry Observations & Challenges

- Lack of process standardization
- Regularly changing regulations and requirements
- Contractor / Sub-contractor visibility
- Multiple stakeholders (HSE, QAQC, Procurement, Risk Management, Operations etc.)
- Duplicative administrative work
- Beyond compliance – how to achieve continual improvement
Contractor/Subcontractor Management  
Existing Guidance and Tools

ANSI/ASSE A10.33:

Safety and Health Requirements for Multi-Employer Projects

1. Ensure all **applicable regulations** are “complied with for all Contractors, subcontractors and sub-tier Contractors.”

2. “**Evaluation of Contractor Safety and Health Programs** to determine appropriateness to the specific job site and work to be performed”

3. “Maintenance of accurate and complete accident, injury, illness **records**”

4. “**Disciplinary policy** and procedures for Contractors, supervisors and employees not complying with the Project Safety and Health Program.”

OHSAS 18001:

Occupational Health and Safety Management Systems

1. Hazard identification, risk assessment and determining controls:

   “Procedures for hazard identification and risk assessment shall take into account:

   b) activities of all persons having access to the workplace (including contractors and visitors)”

2. “Ensure that the organization’s safety and health requirements are applied to contractors. This is implicit in OHSAS.”
Contractor Management Process – Best Practice

Levels of Information
- Company
- Project
- Individual

Self-Reported Information
- Joe’s WELDING
- FLINT ENERGY SERVICES LTD.
- VEOLIA ENVIRONMENTAL SERVICES
- BAKER HUGHES

Verified Information
- ISNetworld Review & Verification Services (RAVS)
  - Written Programs
  - Accident/Incident Records
  - EMR
  - Training
  - Insurance
  - Citation/Prosecution Search
  - Workers Comp Clearance & Rates

Owner Client
- Post Job Evaluation
- Field Feedback
- Working Relationship

3rd Party (Data Providers)
- Training
- D&A & Background Checks
- Audits
- Operator Qualification (OQ)

Customized Owner Client Grading

- Chevron Status: A
- Weyerhaeuser Status: B
- EnCana Status: B
- Bristol-Myers Squibb Status: A
- Nucor Status: A-Prequalified
Contractor Management Process - Best Practice Elements

- Communication
- Continual Improvement
- Prequalification & Selection
- Conformance & Performance Monitoring
- Contractor Information Management

Contractor Information Management
#1 – Effective Communication Strategy

- Communication
- Prequalification & Selection
- Conformance & Performance Monitoring
- Continual Improvement
- Contractor Information Management
What and How to Communicate to Contractors

**Topics/Subject**
- Your values
- Guidelines to pre-qualify
- Evaluation thresholds
- Requirements & standards
- Scores/Rating
- Feedback

**Tools**
- Written documents
- Email and email groups
- Online bulletin board
- Telephone contact
- On-site trainings/meetings
- Web based platform
#2 – Contractor Prequalification and Selection

- Communication
- Prequalification & Selection
- Conformance & Performance Monitoring
- Continual Improvement

Contractor Information Management
A 3-Tiered Information Due Diligence Process

Contractor Information Due Diligence Levels

1. Management System Questionnaire (MSQ), Insurance, Certificates/Letters, Training
2. Desktop HSE program review, Statistical verification, Insurance screening, Certificate validation, Citation/Prosecutions, Training documentation verification
3. 3rd Party and Owner/Operator Audits shared by Owner companies

*RAVS – Review and Verification Services
A 3-Tiered Information Due Diligence Process

**Contractor Information Due Diligence Levels**

1. **Self-Reported Information**
   - Management System Questionnaire (MSQ), Insurance, Certificates/Letters, Training

2. **Desktop Audit**
   - Desktop HSE program review, Statistical verification, Insurance screening, Certificate validation, Citation/Prosecutions, Training documentation verification

3. **Office/Field Audit**
   - 3rd Party and Owner/Operator Audits shared by Owner companies

*ISNetworld/RAVS* – Review and Verification Services
Key Lagging Indicators - Contractor

- **Safety Performance Statistics:**
  - Injury and Illness Frequency
  - Fatality History and Rates
  - Workers Compensation Rate / Experience Modification Rate (EMR)

- **Citations/Prosecutions History**

- **Post Job Evaluations and Audit Scores**
## Common Prequalification Thresholds - US

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Typical Evaluation Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recordable Incident Rate (TRIR)</td>
<td>$\leq 3.0$</td>
</tr>
<tr>
<td>TRIR Comparison to Industry</td>
<td>At or below industry average</td>
</tr>
<tr>
<td>Fatality Rate</td>
<td>$0$</td>
</tr>
<tr>
<td>Experience Modification Rate (EMR)</td>
<td>$\leq 1.0$</td>
</tr>
<tr>
<td>Health &amp; Safety Manual</td>
<td>$&gt; 90%$ conformance</td>
</tr>
<tr>
<td>Insurance Certificate</td>
<td>Requirements Met</td>
</tr>
</tbody>
</table>
### Table of Leading Indicators

<table>
<thead>
<tr>
<th>Group</th>
<th>Group Header</th>
<th>MSQ Main Category Title (OHSAS 18001 Aligned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>General Information</td>
<td>1. General Information</td>
</tr>
<tr>
<td>B</td>
<td>Leadership and Commitment</td>
<td>2. Leadership and Commitment</td>
</tr>
</tbody>
</table>
| D     | Planning | 4. Hazard Identification and Risk Assessment  
5. Legal and Other Requirements  
6. Operational Controls – Programs and Procedures |
| E     | Implementation and Operation | 7. Training and Awareness  
8. Emergency Preparedness and Response  
9. Sub contractor management  
10. Document and Records Management  
11. Communication and Reporting |
| F     | Checking and Evaluation | 12. Safety Performance Monitoring and Measurement  
13. Key Performance Indicators and Metrics  
14. Incident Investigation, Reporting and Analysis  
15. Audits  
16. Management Review |
| G     | Miscellaneous | 17. Environmental Policy and Controls  
18. Quality Assurance/Quality Control  
19. Owner Client Specific |

- Updated quarterly
- Standardized across industry
- Shared by multiple owners
- Incorporates definitions and guidance
**Level 2 - Review and Verification**

**Contractor Information Due Diligence Levels**

1. **Management System Questionnaire (MSQ), Insurance, Certificates/Letters, Training**

2. **Desktop HSE program review, Statistical verification, Insurance screening, Certificate validation, Citation/Prosecutions, Training documentation verification**

3. **3rd Party and Owner/Operator Audits shared by Owner companies**

*RAVS – Review and Verification Services*
Review and Verification

• Trust but verify - *do not assume conformance*

• 30-40% of contractors have a discrepancy between self reported and verified incident records

• 20-30% comply initially with agreed upon insurance requirements

• Inconsistent or **missing documentation** - cannot provide evidence of policies, programs, SOP’s
Due Diligence on Contractor Written Programs, Policies

- Management Responsibility
- Organization & Personnel
- Training
- Equipment Maintenance
- Managing Subcontractors
- Transportation Safety
- Bloodborne Pathogens
- Confined Space Entry
- Fall Protection
- Hazard Communication
- Lockout/Tagout
- NFPA 70E
- Trenching, Shoring, Excavations
- Welding, Cutting, Hot Work
- PSM
- Behavior Based Safety
- Waste Management
<table>
<thead>
<tr>
<th>Contractor HSE System Documentation Requirements Matrix</th>
<th>HSE Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 - General Contractor</td>
<td>X</td>
</tr>
<tr>
<td>2.0 - Boiler Repair</td>
<td>X</td>
</tr>
<tr>
<td>3.0 - Building Construction</td>
<td>X</td>
</tr>
<tr>
<td>4.0 - Drilling</td>
<td>X</td>
</tr>
<tr>
<td>5.0 - Tanks</td>
<td>X</td>
</tr>
<tr>
<td>6.0 - Pipeline Construction/Maintenance</td>
<td>X</td>
</tr>
<tr>
<td>7.0 - Heating, Ventilation, &amp; Air Conditioning</td>
<td>X</td>
</tr>
<tr>
<td>8.0 - Gas Processing</td>
<td>X</td>
</tr>
<tr>
<td>9.0 - Labs/Cleanrooms</td>
<td>X</td>
</tr>
<tr>
<td>10.1.1 - Demolition/Salvage</td>
<td>X</td>
</tr>
</tbody>
</table>
#3 – Conformance & Performance Monitoring

- **Communication**
- **Prequalification & Selection**
- **Continual Improvement**
- **Conformance & Performance Monitoring**

**Contractor Information Management**
Contractor Information Due Diligence Levels

1. Management System Questionnaire (MSQ), Insurance, Certificates/Letters, Training
2. Desktop HSE program review, Statistical verification, Insurance screening, Certificate validation, Citation/Prosecutions, Training documentation verification
3. 3rd Party and Owner/Operator Audits shared by Owner companies

*RAVS – Review and Verification Services
Monitor What Matters

- Corrective/Preventive Actions
- Near Miss Reports
- Environmental Monitoring
- Job Safety Analyses (JSA’s)
- BBS Observations
- Incident Investigations
- Work Permits

Audits & Inspections
Field Audit Models

1. **Contractor Sponsored** – Contractor initiates its own audit, shares certification/results with clients

2. **Owner/Operator Sponsored** – An Owner/Operator initiates audit per its own standard

3. **Industry/Network** – Shared audits commissioned by a sponsoring Owner/Operator as part of an industry network
Shared Field/Office Audit Results Management

- Audit findings to be shared by Chevron, Shell, PXP & Others
  - Minimize duplication of effort
  - Reduce audit cost
  - Operators choose not to share their internal ranking of the contractor

1. Cultural shift

2. Developing standard audit protocols

3. Which Owner/Operator Companies will participate?
   - How to ensure commitment and avoid “free riding”

4. Guidelines for sharing audits
   - Who pays for the audit?

5. Auditors
   - Competency guidelines, training

6. Action items
   - Who follows up and close them?
From Data to Information
Centralized Conformance Tracking

Dashboard

KNOX CONSTRUCTION

Score: 100.00

Contractor Score: 100.00

<table>
<thead>
<tr>
<th>Scoring Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100</td>
<td>A - Recommended to use this contractor</td>
</tr>
<tr>
<td>80 - 89.99</td>
<td>B - Acceptable to use this contractor</td>
</tr>
<tr>
<td>70 - 79.99</td>
<td>C - VP approval required prior to using this contractor</td>
</tr>
<tr>
<td>0 - 69.99</td>
<td>F - VP approval required prior to using this contractor</td>
</tr>
</tbody>
</table>

Dashboard Grade: A

Vendor List (Site A)

94.12% Completed (Request Now)

Suppliers:
- Questions: Details
- Exceptional (97.50%)
- Update: Jan 07, 2010

Statistics & Graphs

Audits, Evaluations, & Reviews
- Audits: Details
- Evaluation Reports: Vendor Performance and Contractor Post Job Review (VPR): Details
- RAVS Citation/Prosecution: Details (Last Review Date: Jan 08, 2010)
- RAVS OSHA/EMR: Details (Last Review Date: Jan 13, 2010)

Procurement
- Financial Documents: Details
- Insurance: Details (Request Now)
- NOR: Details
- QAQC Certificates of Authorization or Registrations: Details
#4 – Continual Improvement

Communication

Prequalification & Selection

Conformance & Performance Monitoring

Contractor Information Management

Continual Improvement

What Gets Measured, Gets Done.
Drive Continual Improvement Using Data

• Use data collected on your contractors – put it to work!

• Track and **trend lagging indicators** yearly or quarterly
  - Understand patterns and trends in incident rates
  - Compare performance of sites

• Employ statistical models **to identify leading indicators**
  - Highlight key factors associated with increased incident rates
  - Act on these indicators
Valero Case Study

Statistical analysis of 1,486 Valero contractors data within ISNetworld

• **Analysis Objectives:**
  • To use statistical methods to objectively identify the subset of variables that correlate most closely to the Total Recordable Incident Rate (TRIR)
  • Identify time-based trends in incident frequency
  • Highlight items associated with increased/decreased incident rates

• **Statistical Methods Used:**
  • Data trending annually and quarterly
  • Comparing Valero contractors to industry averages
  • Linear and logistic regression models
Valero ISN Contractors Dashboard Grade vs. TRIR by Year
Data From 1,486 Contractors Through December 2009 (99th Percentile Data)

A & B Grade contractors have a **78% lower** TRIR than C & F contractors.
Logistic regression models predict the likelihood of an event:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Likelihood of Recordable Incident</th>
<th>MSQ Response</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>US:10:15:11</td>
<td>3.0x</td>
<td>+1</td>
<td>Vendors are <strong>3.0 times more likely</strong> to have at least one recordable incident in 2008 for each additional Case with Restricted/Job Transfer Work Days from two year's prior</td>
</tr>
<tr>
<td>US:5:2:10</td>
<td>3.5x</td>
<td>Yes (96%)</td>
<td>Vendors who subject employees to periodic drug screening are <strong>3.5 times less likely</strong> to have at least one recordable incident in 2008</td>
</tr>
<tr>
<td>US:8:1</td>
<td>1.5x</td>
<td>Yes (24%)</td>
<td>Vendors who use a temporary labor/leasing agency are <strong>1.5 times more likely</strong> to have at least one recordable incident in 2008</td>
</tr>
<tr>
<td>US:8:2</td>
<td>1.3x</td>
<td>Yes (47%)</td>
<td>Vendors who use subcontractors are <strong>1.3 times more likely</strong> to have at least one recordable incident in 2008</td>
</tr>
<tr>
<td>US:8:22</td>
<td>2.2x</td>
<td>Yes (15%)</td>
<td>Vendors who require your construction/high hazard subcontractors to join ISNetworld are <strong>2.2 times less likely</strong> to have at least one recordable incident in 2008</td>
</tr>
<tr>
<td>US:10:1:1</td>
<td>1.6x</td>
<td>Yes (28%)</td>
<td>Vendors who have received any INSPECTIONS from a regulatory agency during the last three (3) years are <strong>1.6 times more likely</strong> to have at least one recordable incident in 2008</td>
</tr>
<tr>
<td>US:10:1:4</td>
<td>6.1x</td>
<td>Yes (10%)</td>
<td>Vendors who have received any CITATIONS from a regulatory agency during the last three (3) years are <strong>6.1 times more likely</strong> to have at least one recordable incident in 2008</td>
</tr>
</tbody>
</table>
### Summary of Results

#### Highlights

- A well-populated dataset of \( N=1486 \) contractors with 2008 TRIR data was analyzed for Valero.
- **2008 TRIR Statistical Summary:**
  - 48% of Valero contractors had no recordables in 2008; 3.5% of contractors had TRIR > 5.0
  - Average 2008 TRIR = 1.05 with a 99\(^{th}\) percentile range of 0 to 11.8

#### Factors Significantly Associated with Reduced/Increased 2008 TRIR

**REDUCED**

- Communicates accident reporting policy so all employees understand company’s position
- Has a written Accident Investigation training policy
- Subjects employees to periodic drug screening
- Investigates and discusses near miss accidents and incidents
- Requires construction/high hazard subcontractors to join ISNetworld
- Utilizes a permit to work system

**INCREASED**

- Higher prior years incident rates:
  - 2005, 2006, 2007 TRIR
  - 2005, 2006, 2007 Restricted Workday Case Rate
  - 2005, 2006, 2007 DART Rate
- Uses a temporary labor/leasing agency
- Uses subcontractors
- Received any CITATIONS from a regulatory agency within the last 3 years
Monitoring and Feedback = Improvement: “The Hawthorne Effect”

ISNetworld Contractors vs. BLS Incident Rate Comparison
2008 Total Recordable Incident Rate, Most Frequent NAICS Codes
Data from 9,000 US Contractors (99th Percentile Data)

North American Industry Classification System (NAICS) Code and Name (# of contractors)
Contractor Safety Performance by Industry

• Comparing incident rates of 1,200 contractors in the Oil & Gas and Mining industries

ISNetworld Contractors Average Injury Rate by Primary Industry Classification
1,221 ISN Canada Contractors Data Through November 2009 (99th Percentile Data)
2009 Injury Rate by Primary Industry Classification

ISNetworld US Contractors TRIR by Primary Industry Classification
3,265 ISN US Contractors Data Through April 2010 (99th Percentile Data)

Injury Rate per 100 Employees (TRIR)

- Government: 3.78
- Mining - Underground: 3.56
- Facilities Mgmt: 3.08
- Mfg - Steel: 2.57
- Mfg - Manufacturing: 2.56
- Mfg - Onshore: 2.56
- BioPharma: 2.44
- Midstream (Pipelines): 2.38
- Mining - Surface: 2.04
- Mfg - Wood/Consumer: 1.98
- Downstream: 1.88
- Upstream - Offshore: 1.18
- Petrochem - Chemical: 0.91
- Petrochem - Environ.: 0.82
- 0.76

0.00 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50

Injury Rate per 100 Employees (TRIR)
Key Takeaways for Better Decision Making

1. Manage your risk **early** in the operation or project

2. Establish / adopt a comprehensive system
   - Self reported data – Review & Verification – On Site Audit layers

3. Follow it **consistently**, on **all** affected contractors
   - Risk based approach
   - Leave nothing to chance

4. Measure what matters, obsessively

5. Optimize continually, share information
Questions and Comments

• Questions or Comments?

• Contact:

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  Director, Review and Verification Services
  214-303-4980
  dyemenu@isn.com

  www.isnetworld.com