Webinar on

“Do you have the right HSE Measures in your Company Balanced Score Card?”

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Topics to be covered in this Webinar!

- Background & Observations
- Misconceptions?
- What is BSC?
- Why we need HSE Measures in BSC?
- What are the best practices across the World?
- What should be the reasonable measures?
- How to arrive at these right measures?
- Recommendations!
Despite having very good HSE Managements Systems, majority of the companies are not having right HSE Measures in their BSC.

Reasons may be:
- Lack of knowledge
- Lack of Confidence to achieve
- Don’t want to commit on challenging measures
- Misleading the management?

- You can’t manage what you don’t measure!
- If you don’t manage, you can not achieve and enhance HSE Performance!
Back ground & Observations-HSE Management System

Committees

- HSE Vision, Mission, Policy; Strategic Objectives
- HSE MS Procedures
- Operational Procedures, Instructions, Check Lists
- HSE Teams

Check whether this system has right HSE Measures???
Misconceptions

- If a company has only LTIFR (Lost Time Injury Frequency Rate) as a HSE Measure, will it be enough?
- But, unfortunately it is happening in many companies?

- In the end what is happening!
  - Trying to reinterpret the incidents of LTIs as Minor incidents-FACs/MTOCs/RWCs
  - Managements are focusing only LTIs
  - Less focus on Severity of the Incidents
  - Less focus on Asset Damages/Fires

- If Minor Incidents such as FACs/ MTOCs/ RWCs are not focused and controlled, how can we control Severe/Major Incidents?
- Are we learning from our proven theories?
What is Balanced Score Card?

- The **Balanced Scorecard (BSC)** is a strategic performance management tool - that can be used by managers to keep track of the execution of activities by the staff within their control and to monitor the consequences arising from these actions.
- Since 2000, use of the BSC has become common in the industries.

- Balanced Scorecard ultimately is about:
  - Some measures/ targets
  - Verifying/Reviewing the Performance
  - Alerting the management
  - Introducing the programs to control
  - Achieving the assigned Targets/Tolerances/
  - Enhancing HSE Performance

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Why We need HSE Measures in BSC?

- How to control Incidents and enhance HSE Performance?

- Lagging Indicators

- Leading Indicators

- Measures on Production!
- Measures on Profit!
- Measures on HSE?
### A Typical Balanced Score Card?

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Some of the Best Practices Across the World

- As per IOGP  (International Association of Oil & Gas Producers)
- As per GCC  (Gulf Cooperation Council) Petroleum Companies Loss Prevention Statistical Report
- As per IADC  (International Association of Drilling Contractors)
- And so on.....
Safety Performance Indicators-As per IOGP

- Fatal Incident Rate:
  - The number of Company/Contractor fatalities per 100 million hours worked.

- Lost Time Injury Frequency Rate
  - The number of Lost time injuries (Fatalities + Lost workday cases) per 1,000,000 hours worked.

- Total Recordable Injury Rate
  - The number of recordable incidents per 1,000,000 hours worked.
  - Recordable injuries: FACs+ MTOCs+ RWCs.

- Severity Rate of LWCs
  - Average Days Lost per LWDC

- Severity Rate of RWCs
  - Average Days Lost per RWDC
Environmental Performance Indicators - As per IOGP

- Gaseous Emissions
  - Emissions per thousand tonnes of Hydrocarbon Production
  - Carbon Dioxide (CO2) - Emissions per Unit of Production
  - Methane (CH4) - Emissions per Unit of Production
  - Green House Gas Emissions -- Emissions per Unit of Production
  - Sulphur Dioxide (SO2) - Emissions per Unit of Production
  - Nitrogen Oxides - Emissions per Unit of Production

- Flaring (% of Gas Flared) - Flaring per Unit of Hydrocarbon Production

- Spills of Oil & Chemicals

- Oil Spilt per Unit of Hydrocarbon Production (Tons per Million Tons)

- Aqueous Discharges - Oil Discharged per unit of produced water discharged

- Discharges of Non Aqueous Drilling Fluids (NADF) on Cuttings

- Energy Consumption - Energy Consumed per Unit of Hydrocarbon Production
Indicators - As per GCC
(GCC Petroleum Companies Loss Prevention Statistical Report)

- **Incident Rate:**
  - On-job lost workday cases with days away from work per 200,000 hours worked.

- **Incident Rate:**
  - Total On-Job recordable Cases (MTC+RDI+LTI+FAT) per 200,000 hours worked.
  - No of Accidents*1000,000/ Total Hours worked during the period

- **Incident Rate:**
  - Restricted duty cases per 200,000 hours worked

- **Motor Vehicle Accident Rate:**
  - No of MVIs per million kilometers driven.
Indicators - As per IADC

- **LTI INCD Rate:**
  - \((\text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}\)

- **DART INCD Rate:**
  - \((\text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}\)

- **RCRD INCD Rate:**
  - \((\text{MTOs} + \text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 200,000 / \text{Total Man hours.}\)

- **LTI FREQ Rate:**
  - \((\text{LTIs} + \text{FTLs}) \times 1000,000 / \text{Total Man hours.}\)

- **DART FREQ Rate:**
  - \((\text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 1000,000 / \text{Total Man hours.}\)

- **RCRD FREQ Rate:**
  - \((\text{MTOs} + \text{RWTCs} + \text{LTIs} + \text{FTLs}) \times 1000,000 / \text{Total Man hours.}\)

(DART-Days Away (LTI) cases + Restricted Work/Transfer Cases); RCRD-Total Recordable
How do you compare HSE Measures?

<table>
<thead>
<tr>
<th></th>
<th>LTIs (Lost Time Injuries)</th>
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<tbody>
<tr>
<td>Company -A</td>
<td>5</td>
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<tr>
<td>Company -B</td>
<td>3</td>
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</table>

Which Company is Good in HSE Performance? A or B?
How do you compare HSE Measures?

<table>
<thead>
<tr>
<th></th>
<th>LTIs</th>
<th>Employees</th>
<th>Man hours</th>
<th>LTIFR</th>
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<tr>
<td><strong>Company -A</strong></td>
<td>5</td>
<td>5000</td>
<td>10,560,000</td>
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<td><strong>Company -B</strong></td>
<td>3</td>
<td>1500</td>
<td>3,168,000</td>
<td>0.95</td>
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Which Company is Good in HSE Performance? A or B?
How do you compare HSE Measures?

<table>
<thead>
<tr>
<th>Company</th>
<th>Severity of Lost Work day cases</th>
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<tr>
<td>Company -A</td>
<td>6</td>
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<td>Company -B</td>
<td>81</td>
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</table>

Which Company is Good in HSE Performance? A or B?

Severity of LWDC: Average Days Lost per LWDC
# How do you compare HSE Measures?

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<th></th>
<th>LTIs</th>
<th>No of Days Lost</th>
<th>Severity of LWDC</th>
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<td>Company -B</td>
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Which Company is Good in HSE Performance? A or B?

Severity of LWDC: Average Days Lost per LWDC
What are the HSE Measures to be selected?

- Select the right measures.
- Don’t Re-invent the wheel.
  - Make use of the expertise available in the World.
  - LTIFR/ TRIR/ LWDC Severity Rate/ RWC Severity Rate etc..
- Focus on Zero Incidents/ Not on achieving the Targets
- Leading Indicators:
  - Choose the best and suitable Leading Indicators which can help you to address your challenges and enhance HSE Performance
### Some Sample HSE Measures for Upstream Oil Industry

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It depends on your requirements and commitment! Company to company it may vary.
## Some Sample HSE Measures for Upstream Oil Industry

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It depends on your requirements and commitment! Company to company it may vary
Keep these HSE Measures as part of your system!

- Programs to enhance HSE Performance
- Evaluation of Performance
- Balanced Score Card
- SMART HSE Targets/Tolerances
- HSE Measures
- Good HSE Performance
- HSE Organogram
- HSE Management System
Programs to enhance HSE Performance?

- Identify the right programs?
- Implement them in the entire company?
- Verify whether they are effective or not?

Programs should address all the risks and hazards.
Programs should address the root causes.
Safety Performance Indicators as per IOGP

Figure 15: Number of fatalities and fatal incidents (2008–2017)
**Figure 7:** Fatal accident rate by company & contractor (2008–2017)
Safety Performance Indicators as per IOGP

**Figure 24:** Lost time injury frequency by company & contractor (2008–2017)

**Figure 25:** Lost time injury frequency by onshore & offshore (2008–2017)
Safety Performance Indicators as per IOGP

1.3 Total recordable injuries

The rate for all recordable injuries (TRIR) [fatalities, lost work day cases, restricted work day cases and medical treatment cases] was 0.96 injuries per million hours worked (1.03 in 2016).

Figure 23: Total recordable injury rate by onshore & offshore (2008–2017)

Figure 8: Total recordable injury rate by company & contractor (2008–2017)
Safety Performance Indicators as per IOGP

Figure 36: Severity of LWDC by company & contractor (2008–2017)
Environmental Performance Indicators as per IOGP

**Figure B.1:** GHG emissions per unit of hydrocarbon production

**Figure B.2:** CO₂ emissions per unit of hydrocarbon production

GHG: Total Greenhouse Gases (CO₂ + CH₄, expressed in CO₂ equivalent)
Environmental Performance Indicators as per IOGP

Figure B.3: CH₄ emissions per unit of hydrocarbon production

Figure B.5: SO₂ emissions per unit of hydrocarbon production
Environmental Performance Indicators as per IOGP

Figure B.7: Flaring (HC + other) per unit of hydrocarbon production

Figure B.8: Oil discharged per unit of produced water discharged
Environmental Performance Indicators as per IOGP

Figure B.9: Oil spill per unit of hydrocarbon production

Figure B.10: Energy consumed per unit of hydrocarbon production
Recommendations?

- Choose Right measures for your company Balanced Score Card
- Debate/Discuss and take the commitment of all the Departments and support them in making an agreement to accept the challenging/SMART HSE Measures.
- Link each measure with some Tolerances/Targets.
- Your Targets/Tolerances should be in line with the 5/20 year plan
- Always try to Benchmark your HSE Performance
- Make use of the expertise available. Be part of entities such as IOGP, GCC, IADC…ETC. which is applicable to your company.
- Verify whether your measures are addressing the problems and enhancing the employees commitment to achieve?
- Evaluate your performance periodically
- Have sufficient programs achieve these targets/tolerances.
SMART HSE Measures supported with Good Leadership and Commitment will bring good results.
THANKS

With best wishes from

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Past President & Present Advisory Committee Member of ASSP, Kuwait Chapter
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