Experience of Applying Hazard Management in the Oil and Gas Sector in Developing Countries

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Countries Visited

Neighbouring Countries

- ► Egypt
- ► Azerbaijan

Other Countries

- ► Iraq
- ► Indonesia
- ► Trinidad
- ► Colombia

Activities

▶ Site surveys and management systems review

▶ HAZID and coarse HAZAN

▶ Identification of primary hazards and risk drivers

▶ Review of aged installations to provide and rank recommendations

▶ Qualitative risk ranking

▶ Hazard communication

▶ Review of proposed regulations offered by a UK consultancy and certification body

▶ Preparation of exemplar regulations for a UK consultancy

Industries and Facilities

► Oil and gas exploration, production and storage

► Offshore platforms and complexes, onshore oil fields and gathering stations, tank farms, bulk LPG storage and marine terminals

Major Hazard Management Capability:

- ► Highly variable between and within countries
- ► Safety culture and processes driven by history
- ► Overseas influence driven by major operating companies
- ► Mainly focussed on operational safety
- ► Production and cost are real drivers
- ► Technical resource variable – some very good discipline engineers but few hazard specialists
- ► Original designs sound (to standards at the time)
- ► Plant integrity generally in decline
- ► Quality of safety management systems dependent on owners and "corporate measurement criteria"
- ► Layouts did not consider hazard effects
- ► ESD planning not hazards based and crews at risk
- ► Generally sites remote from populated areas
- ► Significant potential for major accidents and financial loss

What have you got and where did it come from?

▶ What were the national and international influences; US, UK, EU. China, Russia or national?

▶ What is the national perception and tolerance of risk?

▶ Culture: Good news, compliance, LTI, blame

▶ Basic standards; engineering, management, integrity?

▶ Resources; industry, regulator, engineering, management, hazard and risk

Value what you've got

► Listen and encourage people to talk openly in a non threatening environment

► Respect the individuals for what beliefs and skills they have

► Respect what they have achieved

► Build on whatever management systems they have

► Empower those who care but beware of empire builders

Influences

- ► Countries: US, UK, Europe, Russia, China
- ► Overseas owners/operators
- ► Age and history
- ► National culture
- ► Business, local and national priorities
- ► Financial and production pressures
- ► Political situation
- ► Resources
- ► HSE priorities and culture

Openness

► Good news culture predominates

► Denial of major hazards and consequences both by workforce and management

► Discussion of financial and production losses can have more high level influence

► Audit and blame culture will have to be overcome.

► Real openness will be difficult to achieve

One step at a time

► 5 – 10 year programme

1. Open Culture

2. Core resource of pragmatic technical expertise

3. High level industry appraisal; culture, systems, integrity, hazards, risks,

4. Resources, management systems, plant integrity, responsibility

5. Hazard analysis and management

6. Quantitative risk assessment – if ever

What works (and might not)

► Build systems to suit the culture

► West might not be best

► Prescription vs. risk based (US vs. EU)

► Beware systems dependent upon consultants

► Measurement and regulation

► Responsibility and accountability