



Center for Enterprise Risk Management

Accidents don't happen - They are caused
“Safety doesn't happen by accident.”



Center for Enterprise Risk Management

INDUSTRIAL SAFETY & RISK ASSESSMENT

Risk Management, Key Underwriting Considerations & Loss Estimation
Techniques

November 16, 2018

9:30 am - 5:00 pm

Venue : Faletti's Hotel

Agenda

- ▶ **Safety compromised when an accident occurs**
- ▶ **How to React**
- ▶ **The Questions to be asked**
- ▶ **Incident Reporting & Review Process**
- ▶ **Causes of Failures**
- ▶ **Golden Rules & Principles**
- ▶ **The Laws governing Industrial safety in Pakistan**

Where does it all Start ???

Why do people bend / break the rules - violate

- ▶ Expectation - to get the work done
- ▶ Powerfulness - feeling of ability
- ▶ Opportunity - to do it better
- ▶ Inadequate work plans - “Violation” Vs “Initiatives”

First Actions by Affectees/Investigators

- ▶ The investigation should be carried out as soon as possible after an incident.
- ▶ The quality of evidence will deteriorate rapidly with time
- ▶ The investigation should include the following activities:
 - ▶ Protect the scene, people and property
 - ▶ Conducting interviews
 - ▶ Inspecting the location and gathering physical evidences
 - ▶ Collecting background information
 - ▶ Fact finding
 - ▶ Review records and procedures
 - ▶ Conducting specialist studies
 - ▶ Resolving conflicts in evidence

THE SIX W's

- ▶ **WHAT** happened?
- ▶ **WHEN** did it happen?
- ▶ **WHO** was involved?
- ▶ **WHERE** did it occur?
- ▶ **WHY** did it happen?
- ▶ What can we learn to prevent it from happening again?

REMEMBER...THE DEVIL IS IN THE DETAILS!

Accident Investigation Process

- ▶ Investigate promptly & thoroughly
- ▶ Protect the scene, people and property
- ▶ Ensure you have good resources
- ▶ Remember the 6 w's
- ▶ Interview witnesses / casualty - relax them
- ▶ Determine remedial actions that will prevent - reoccurrence
- ▶ Write up a good report - during the shift
- ▶ Communicate to others

Accidents are caused by

- ▶ **General Failure Type - Normal Wear & Tear**
- ▶ **Hardware Defects**
- ▶ **Inadequate Housekeeping**
- ▶ **Inadequate Training**
- ▶ **Inadequate Procedures**
- ▶ **Communication Failures**
- ▶ **Incompatible Design**
- ▶ **Maintenance Management**
- ▶ **Incompatible Goals**
- ▶ **Housekeeping**







*Piper Alpha Oil Rig - North Sea, UK: July 1988
FIRE -: 167 Dead, 59 injured*



Chernobyl, Russia: April 1986 EXPLOSION: 32 Dead, 1000's injured & hundreds now with CANCERS

Waiting to Catch Fire



HSE Golden Rules

- ▶ **Comply with the law, standards and procedures**
- ▶ **Intervene on unsafe or non-compliant actions**
- ▶ **Respect neighbors**

Two principles:

- ▶ **ASSIB: And Still Stay In Business**
- ▶ **ALARP: Keep your risks As Low As Reasonably Practicable**

Pakistan's Safety Regulatory Laws

- ▶ **Factories Act 1934 / Sindh Factory Rules 1975**
- ▶ **Workmen's Compensation Act 1923**
- ▶ **Hazardous Occupation Rule - 1963**
- ▶ **Electricity Act 1910, 1937**
- ▶ **Boiler Act 1923 & Boilers & Pressure Vessel Ordinance 2002**
- ▶ **Mines Act 1923**
- ▶ **Petroleum Act 1934, 1985**
- ▶ **Explosive Act, 1940**
- ▶ **Gas Cylinder Rules 1998 / LPG - NFPA-58 Code**

Contd.

- ▶ Sindh Building Control Authority (BCA) - Building byelaws
- ▶ Motor Vehicle Ordinance 1965,1969
- ▶ Environmental Protection Act 1997
- ▶ IEE and EIA Regulations 2000
- ▶ Environmental Sampling Rules -2001
- ▶ NEQS, 2000 / 2010 SROs Effluents, Gaseous Emission, Noise ---



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