الإتحاد العربي للأسمدة
Arab Fertilizer Association
Since 1975

OCP

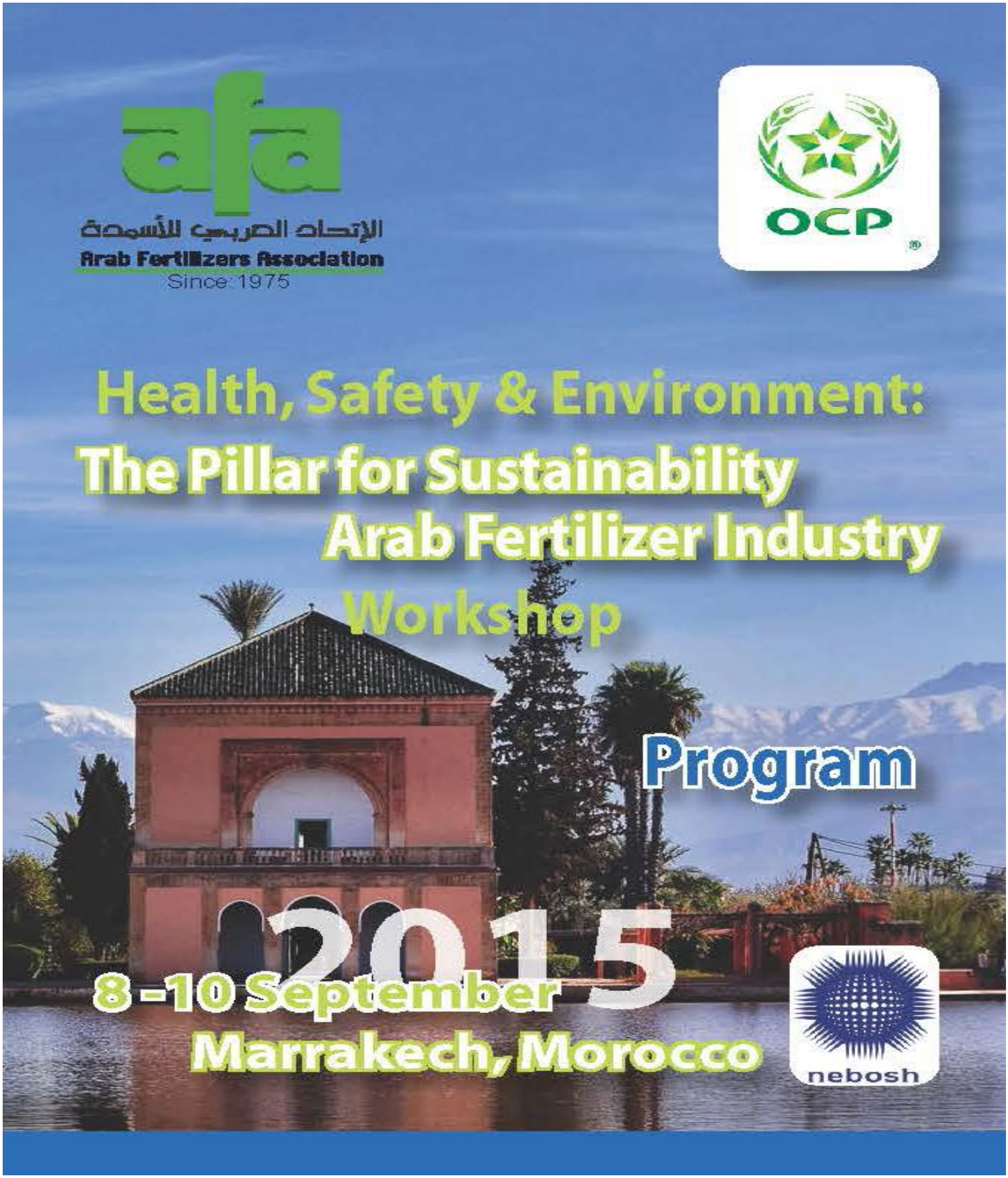
Health, Safety & Environment: The Pillar for Sustainable Arab Fertilizer Industry Workshop

Papers

2015

8-10 September

Marrakech, Morocco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Health, Safety & Environment:
The Pillar for Sustainability
Arab Fertilizer Industry
Workshop
Program
2015
8 -10 September
Marrakech, Morocco
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7 September 2015

17:00 - 20:00 Registration

Day One 8 September 2015

8:00 Registration

09:00 Opening Address

09:05 Welcome
- **Derrick Farthing,** Vice Chair NEBOSH

09:15 Leadership in high hazard industries
- **David Morris,** Former Deputy Chief Inspector of Railway at the Office of Rail and Road

10:45 Break

11:15 Accident investigation & risk assessment
- **David Morris,** Former Deputy Chief Inspector of Railway at the Office of Rail and Road

12:45 Lunch

13:45 Enabling Success – Business Excellence and How We Achieved It
- **Derrick Farthing,** Vice Chair NEBOSH

15:00 Current Issues in Occupational Health
- **Barry Wilkes,** Development Manager, NEBOSH

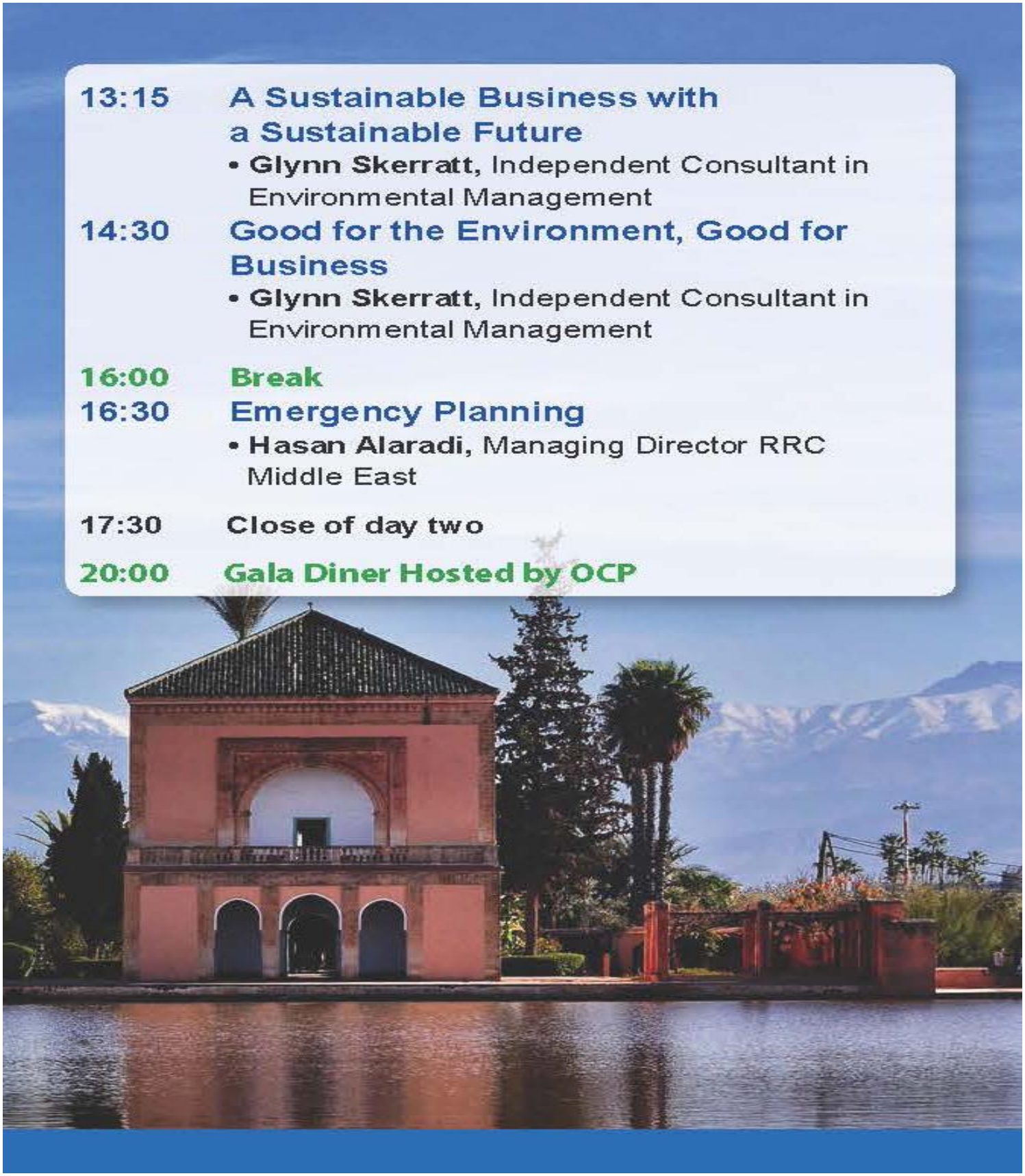
16:00 Break

16:30 Why Bother With Competency? The Research Evidence
- **Luise Vassie,** Director TNL Consulting

17:30 Close of day one

Day Two 9 September 2015

09:00	**Reflection on day one** • **Barry Wilkes,** Development Manager NEBOSH
09:15	**Assessing Competency within an Organisation, and the use of Competency Frameworks** • **Barry Wilkes,** Development Manager, NEBOSH
10:45	**Break**
11:15	**Practitioner Skills – A View from the Profession** • **Matthew Powell-Howard,** Qualifications Development Executive NEBOSH
12:15	**Lunch**


13:15
A Sustainable Business with a Sustainable Future
• Glynn Skerratt, Independent Consultant in Environmental Management
14:30
Good for the Environment, Good for Business
• Glynn Skerratt, Independent Consultant in Environmental Management
16:00
Break
16:30
Emergency Planning
• Hasan Alaradi, Managing Director RRC Middle East
17:30
Close of day two
20:00
Gala Diner Hosted by OCP

Day Three 10 September 2015

09:00 OCP's Environmental Excellency Program

- **Abdelhak KABBABI**
  Environment Manager - OCP – Morocco

09:45 Best Practices in' Arab Potash Company (APC) For Health, Safety and Environment

- **Yousef Ma'aytah**
  Safety Superintendent - APC - Jordan

10:30 Closing

Notes:

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Leadership in High hazard Industries

David Morris


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Session Aims
I. Why Focus on Leadership?
II. Link to Health and Safety Culture
III. Benefits of Effective Leadership
IV. Types of Leadership
V. Being a Leader
VI. Promoting Leadership

Why the focus on directors? ACCOUNTABILITY

- Growing understanding of accidents as organisational safety failures
- Calls for public accountability and corporate manslaughter
- Limited prosecution of directors for health and safety offences in some countries
- Public profile
- Commitment of senior officers determines corporate compliance
- Company performance often matches the attitudes of senior management by providing the 'authority to act'

DeepWater Horizon

- Explosion on the Deepwater Horizon oil platform, causing 11 fatalities and
- Millions of gallons released into the Gulf of Mexico.
- $5 billion to $20 billion penalties
- CEO left and destroyed shareholder value
- High regulatory scrutiny
- A federal judge ruled BP was "grossly negligent"
- Culture deemed as one of extreme risk taking
- Leaders seen to be not taking effective action
- Unclear who was in charge

Source: Harvard Business Review

Baker report

BP Texas City Refinery Accident 2005:

- 15 dead, 170 injured
- $21 million fine
- Destroyed shareholder value
- CEO + senior managers left
- High regulatory scrutiny
- Board did not validate effective health and safety management or strive for excellence
- Lack of a common unifying health and safety culture
- Over-reliance on measures of personal v process safety
- Failure to analyse lead/lag indices of process safety

Safety Culture

- The United Kingdom Health and Safety Executive formally defines the **safety culture** of an organization as:
- "the product of individual and group values, attitudes, and perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management."

Positive director focus

To enhance:

- Accident and ill health reduction
- Reduction of loss and improvement of productivity
- Overall corporate governance
- Response to stakeholder expectations
- Influence via the contracting/supply chain
- Transparency in performance reporting
- Corporate reputation

Negative director focus

To avoid:

- Corporate manslaughter/manslaughter
- Enforcement by Regulators
- Higher fines
- Effect on share price and higher insurance premiums
- Loss of business continuity
- Low workforce morale
- Adverse publicity
- Threats to corporate (and personal) reputation

Elements of a Safety Culture

- An informed Culture
- A reporting Culture
- A learning Culture
- A flexible Culture
- A just Culture

Source – OGP Shaping Safety Culture through leadership 2013

Benefits of Effective Leadership

- Safety culture Starts with Leadership
- Leadership Drives Culture
- Culture drives behaviour and performance
  - Reduction in lost time injuries; improved business continuity; improved reputation
- Core element of effective H&S Management

Types of Leadership

- Transactional
- Transformational
- Authentic
- Evidence points to authentic leadership as most powerful, but all leaders have elements of each

Leadership styles

- The question becomes which one is a leaders predominant style, and when is it appropriate to use each of the others
- Vroom-Yetton-Jago decision model

Being a Leader

- Credibility
- Action orientation
- Vision .
- Accountability
- Communication.
- Collaboration
- Feedback and recognition

Discussion

- Do you think you are a good safety leader?
- What do you do to demonstrate good safety leadership?

Discussion -Safety Leader

- Include health and safety on agenda for board meetings
- Set targets to define what the board is trying to achieve
- Meet regularly with safety representatives
- Talk directly to all parties about health and safety concerns – chair safety meetings
- Take part in industry/sector initiatives
- Personal notes to high performing managers
- Create Board 'champions' on specific safety issues

Discussion -Safety Leader

- Carry out site visits and engage with workforce
- Encourage employees and clients to discuss safety concerns
- Nominate for safety awards
- Design and present health and safety training
- Personally email employees to disseminate safety lessons and praise initiatives
- Audit health and safety performance of the Board

Discussion - Safety Leader

- Participate in health and safety tours and inspections
- Lead investigation teams and review serious accidents/incidents
- Challenge unsafe acts and conditions
- Never cancel scheduled health and safety meetings
- Set a good personal example
- Direct responsibility for health and safety
- Lead reviews of safety management
- Communication of expectations to managers

Exercise

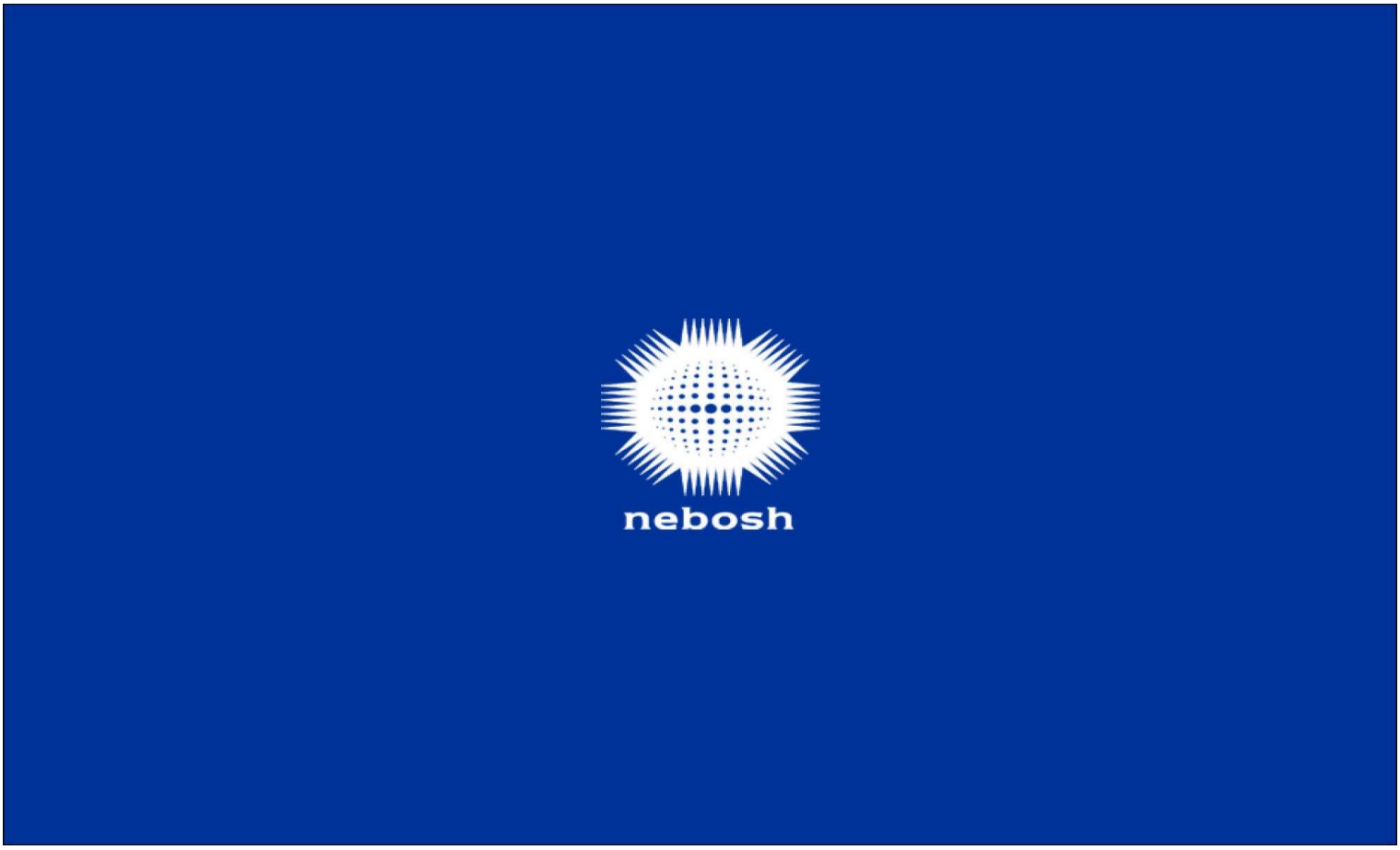
How do we promote health and safety leadership in our Organisations?

Exercise (Cooper and Finley 2013)

- Identify Sponsor to oversee and resources
- Safety Leadership Behavioural Competency framework and get feedback
- Identify gaps in leadership skills among all managerial staff
- Developing Safety Leadership accountability measures
- Conducting Safety Leadership training appropriate to each level
- Setting goals
- KPI's and annual appraisal

Sources

- HSE/IoD - http://www.hse.gov.uk/pubns/indg417.pdf
- Strategic Safety Culture Roadmap" (Cooper & Finley, 2013)
- HSE - Leadership case studies http://www.hse.gov.uk/leadership/casestudies.htm
- OGP- Shaping Safety Culture through Safety Leadership http://www.ogp.org.uk/pubs/452.pdf
- HSE - Leadership for the Major Hazard Industries INDG 277 http://www.hse.gov.uk/pubns/indg277.pdf
- OECD – Corporate Governance for Process Safety http://www.oecd.org/chemicalsafety/corporategovernanceforprocesssafety.htm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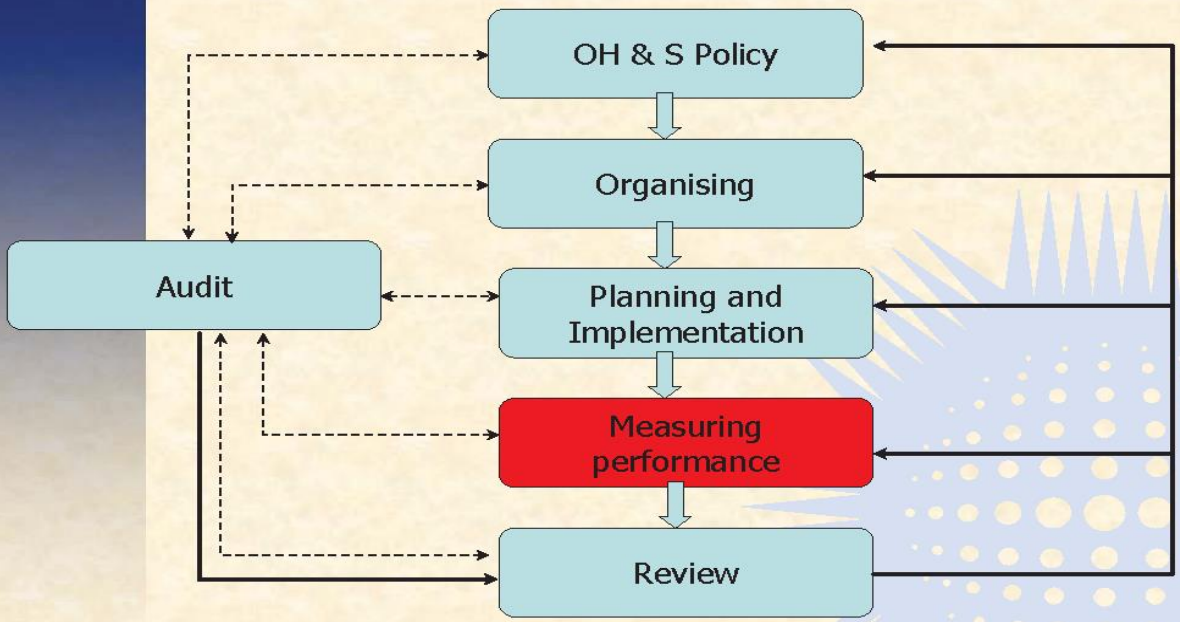
Accident investigation & risk assessment

David Morris

Session Aims

I. Describe a system of classification of incidents
II. Explain simple incident causation theory
III. Explain the role of incident investigation
IV. Outline the main issues to be considered in an investigation
V. Linking investigations to risk assessment

Management systems – Reactive monitoring



Traditional Approach to Incident Investigation – Concentrated on immediate cause

Accident

Investigate accident
– process and outcome steered by the preconceptions of the investigator about accident causation

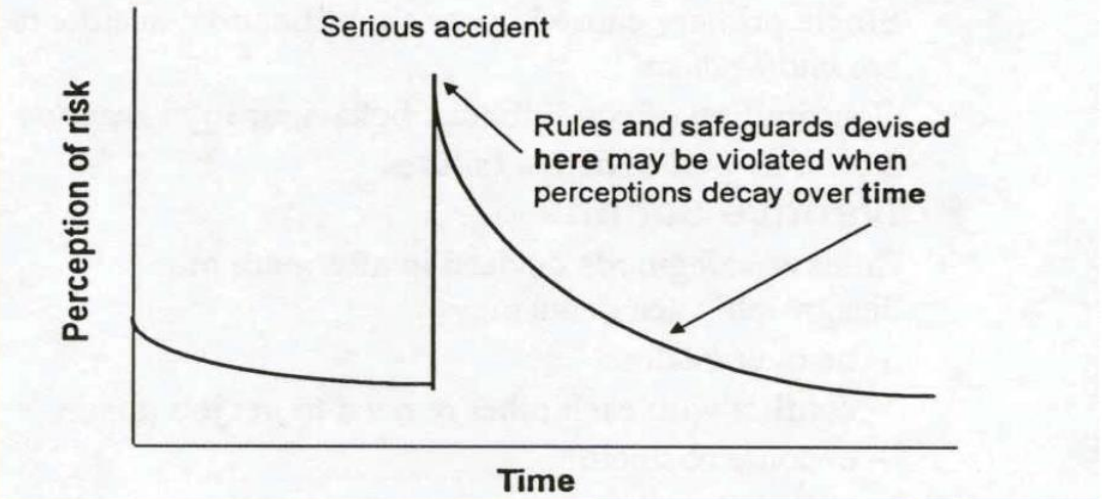
Attribute primary cause to shortcomings in the behaviour of the injured person (unsafe acts)

Devise a *rule* forbidding the recurrence of the unsafe acts

Attribute primary cause to shortcomings in the physical environment (unsafe conditions)

Devise a *technical solution* to make the conditions safe

Traditional Reactive Approach



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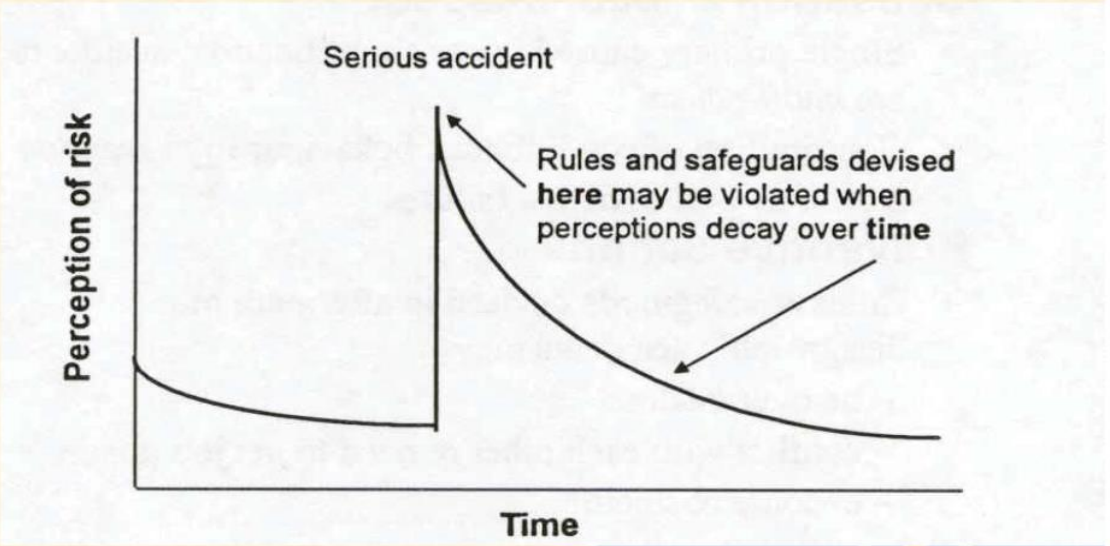
Traditional Reactive Approach

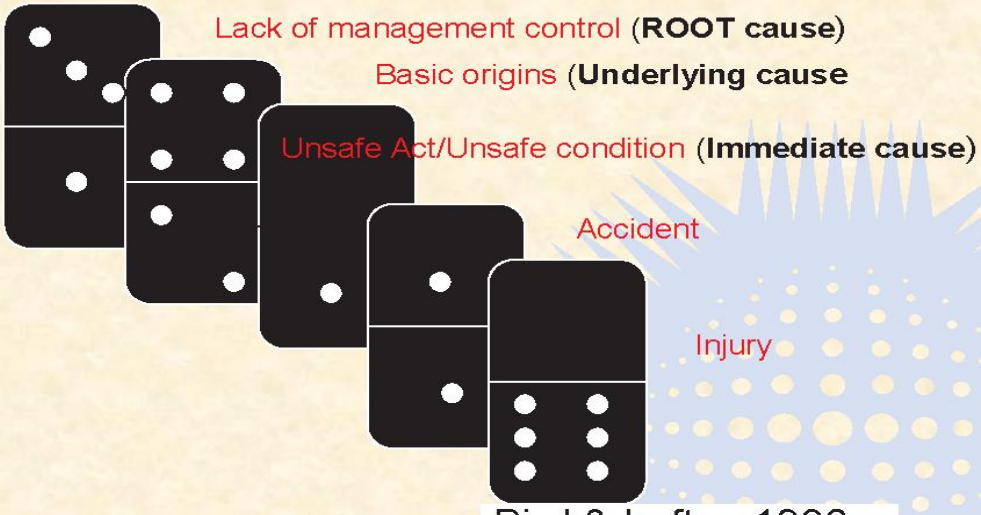


But.....

- Accidents generally have no single cause.
  - Immediate cause – the most obvious reason why an adverse event occurs
  - Underlying cause – the less obvious system or organisational reasons
  - Root cause - An initial event or failing from which all other failings spring – generally management failings

Updated Domino Theory -

Accident sequence was likened to a row of dominoes knocking each other down



Bird & Loftus 1980

Immediate cause

Unsafe Condition

- Inadequate guards or safety device
- Unexpected movement

Unsafe Act

- Operating at unsafe speeds
- Use of defective equipment

Underlying cause

Individuals:

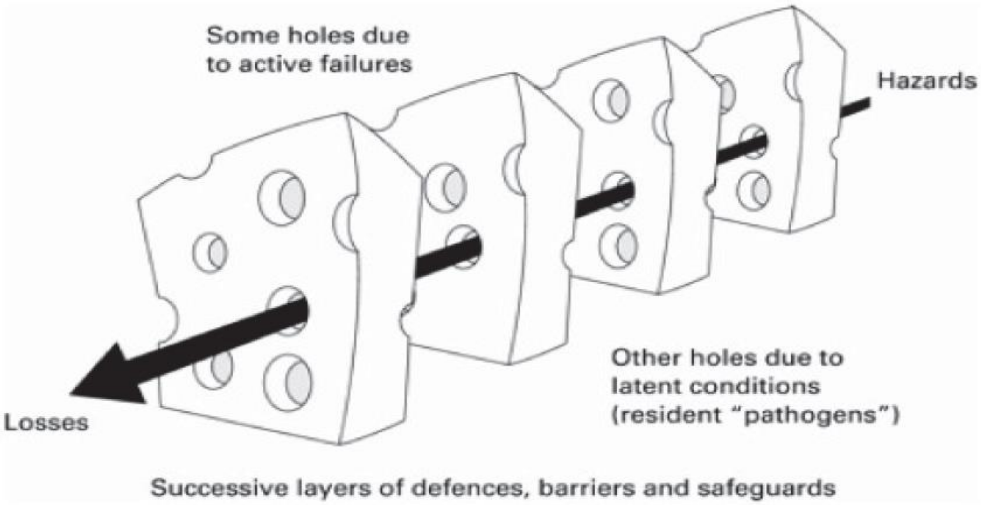
- Training and Awareness
- Conflicting motivations / instructions
- Job demands / Individual capabilities
- Equipment Interface
- Tiredness / Fatigue
- Attracting attention
- Asserting independence

Underlying cause

Management System:

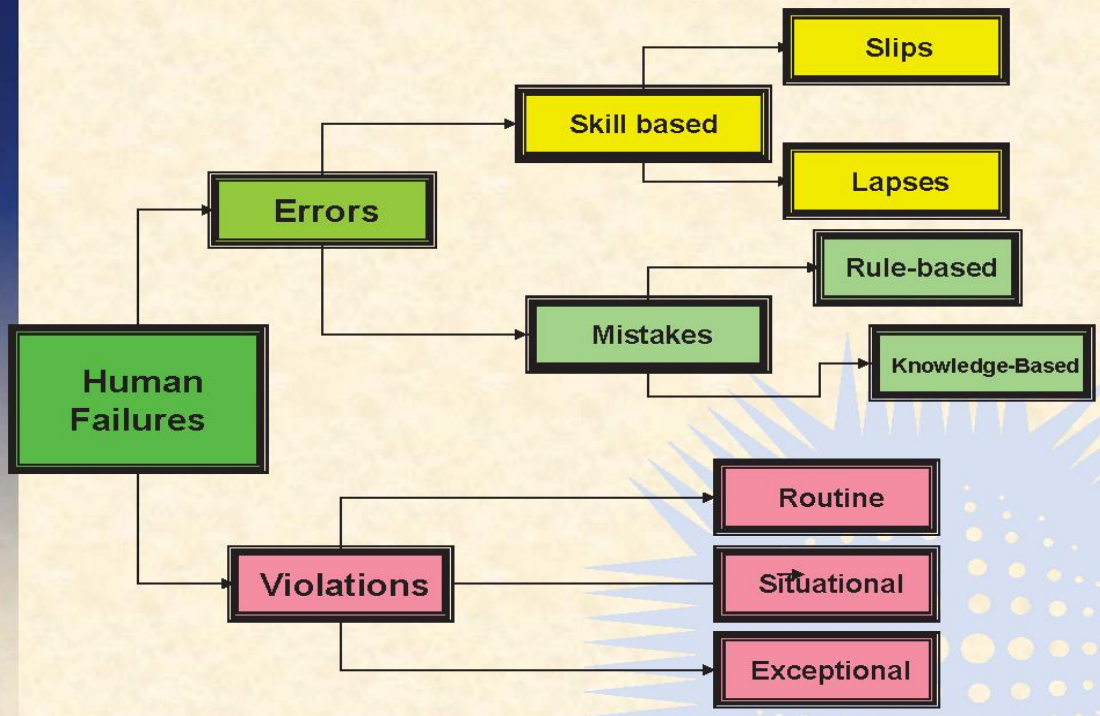
- Training
- Reward Structure
- Monitoring – equipment / areas/ activities
- Control
- Poor maintenance
- Equipment design

'Swiss Cheese' Model (Reason)



Accident at Esso Plant, Longford, Victoria, Australia,

- Operators did not understand dangers of cold metal embrittlement
- Carried out incorrect sequence of actions.
- Organisational failures
  - Previous incidents not investigated
  - resident engineers removed
  - no one to refer to for an expert opinion
  - Assessment could be passed without understanding significance of answers



HSG48 REDUCING ERROR AND INFLUENCING BEHAVIOUR

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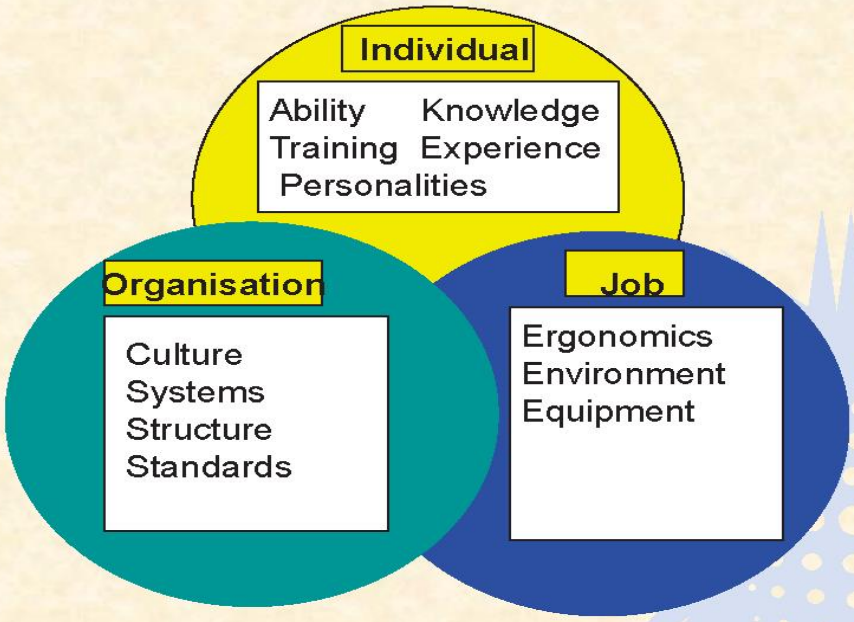
Minimising Human Error



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Incident reporting and investigation

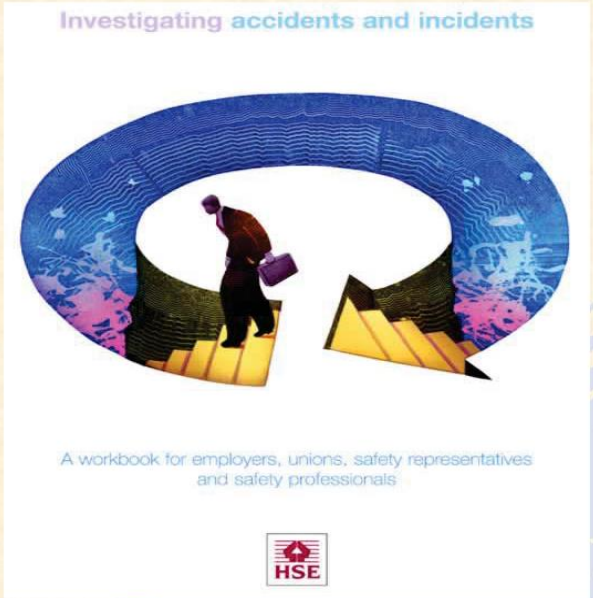
- Provides an opportunity to learn from mistakes and prevent incident occurring again thus improving H&S performance
- Identifies weaknesses in risk control
- Legal requirement to investigate in some countries
- Improves culture
- Insurance company requirement
- Window on reality

Scope of Investigation

- Ideally all accidents should be investigated.
- Based on safety significance:
  - Severity of outcome
  - Potential for loss
  - Likelihood of reoccurrence
  - Previous occurrences
  - Potential for learning

Incident Investigation

- HSG 245
  - Where do you find information?
  - What sort of information do you look for ?
  - How do you get it ?
  - Generally aimed at small to medium sized enterprises (SMEs)



Investigating an Accident

- If necessary consult enforcing authority before disturbing the site
- Obtain basic facts witness names, plant conditions, time substances being used etc
- Establish the circumstances, what was being done at the time - gather evidence
- Try to understand the sequence of events leading up to, during and immediately following the accident.

Investigating an Incident

- Incidents can always be prevented
- Normally underlying systematic causes
- Seldom is the injured person entirely to blame
- Virtually Never a single Cause.
- Incident investigation is an important part of the safety management system
- Incident investigations can help the company defend claims

Accident Investigation - Sources of Information

- Five steps :
  1. Gathering of information
  2. Data Collation;
  3. Analysing of information;
  4. identifying risk control measures - recommendations;
  5. Action plan and its implementation

1. Gathering Information

- Observation
- Interviews
- Information sources

Observation - Gather Evidence

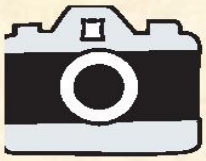
- Examine the incident scene. Look for things that will help you understand what happened:
  - Dents, cracks, scrapes, splits, etc. in equipment
  - Tyre tracks, footprints, etc.
  - Spills or leaks
  - Scattered or broken parts

Observation - Gather Evidence

Diagram of the scene

- Use blank paper or graph paper. Mark the location of all pertinent items; equipment, parts, spills, persons, etc.
- Note distances and sizes, pressures and temperatures
- Note direction (mark north on the map)

Observation - Gather Evidence



Take photographs

- Photograph any items or scenes which may provide an understanding of what happened to anyone who was not there.
- Photograph any items which will not remain, or which will be cleaned up (spills, tire tracks, footprints, etc.)

Information sources

Check training records

- Was appropriate training provided?
- When was training provided?

Check equipment maintenance and inspection records

- Is regular inspection or service provided?
- Is there a recurring type of failure?

Check accident/health records

- Have there been similar incidents or injuries involving other employees?
- Hazardous substance data sheets

Interviewing Witnesses: Set the Scene & Prepare the Witness

- Conduct the interview in a neutral location that was not associated with the accident.
- As quickly as possible after incident
- Introduce yourself be polite, patient, and friendly.
- Treat witnesses with respect.
- Describe the investigation's purpose: to prevent accidents, not to assign blame.
- Explain that witnesses may be interviewed more than once but allow them to bring friend
- Stress how important the facts given during interviews are to the overall investigative process.

5 - Why's How do we use it ?

Simply ask the question

"WHY" 5 times

1) WHY will TV not come on ?

Because there is no power.

5 - Why's How do we use it ?

2) WHY is there no power ?

Because the fuse has blown.

3) WHY has the fuse blown.?

Because the fuse amp rating is too low.

4) WHY was the fuse amp rating too low?

Because it was incorrectly selected.

5) WHY was it incorrectly selected?

Because the house holder was ignorant of the need for correct selection.

Questioning Witnesses - Funnelling

- Start with open questions to gain an **overall understanding of the situation** and their role in it.
  - Can you tell me what your role in the company is?
  - What happened on the day of ?
- **Clarify**
  - Tell me more about :-
  - Could you explain what happened?
- **Confirm**
  - Are you saying this is what happened ?
  - Can you confirm that…:

Interviewing Don'ts

- DO NOT rush the witness while he/she is describing the accident or answering questions.
- DO NOT judge, display anger, refute, threaten, intimidate, or blame the witness.
- DO NOT suggest answers.
- DO NOT make promises that cannot be kept (for example, unrestricted confidentiality).
- DO NOT use inflammatory words ("violate," "kill," "lie," "stupid," etc.).
- DO NOT omit questions during the interview because you think you already know the answer.

Interviewing Do's

- Establish a line of questioning and stay on track during the interview.
- Ask the witness to describe the accident in full before asking a structured set of questions.
- Let witnesses tell things in their own way; start the interview with a statement such as "Would you please tell me about...?"
- Ask several witnesses similar questions to corroborate facts.

Interviewing Dos

- Keep an open mind; ask questions that explore what has already been stated by others in addition to probing for missing information.
- Use visual aids, such as photos, drawings, maps, and graphs to assist witnesses.
- Be an active listener, and give the witness feedback; restate and rephrase key points.
- Ask open-ended questions that generally require more than a "yes" or "no" answer.

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Interviewing Dos ☑

- Take notes/recordings : Your memory is not as good as you think!

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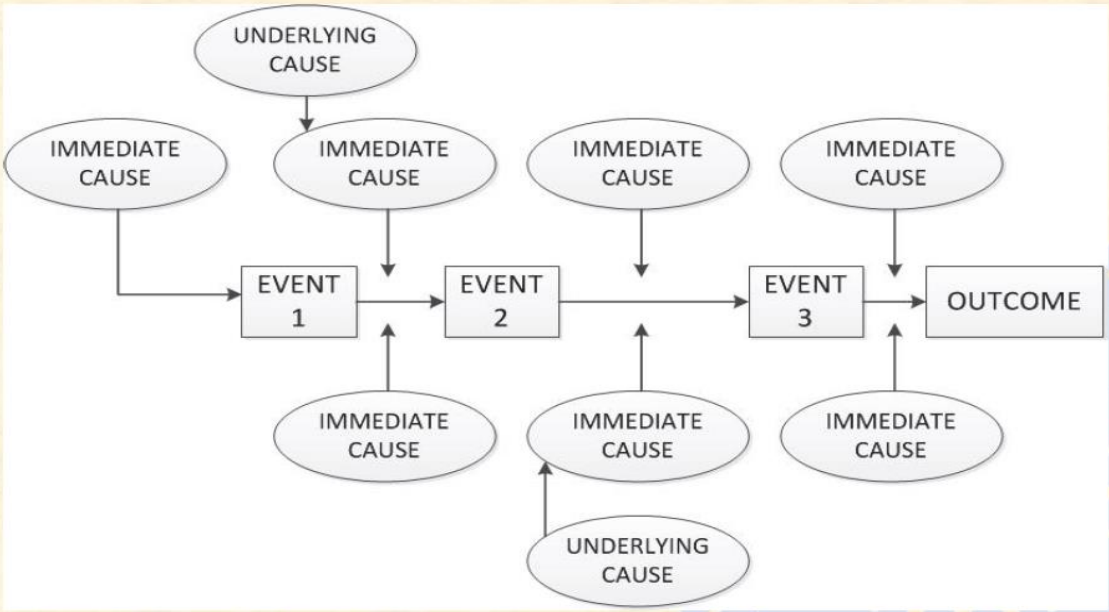
2. Information Collation

- Makes sense of information gathered
- Identifies any contradictions or gaps in evidence
- Identifies what is known and what is not – helps the investigation team.

2. Information Collation and Analysis - Event and Causal Factors Analysis



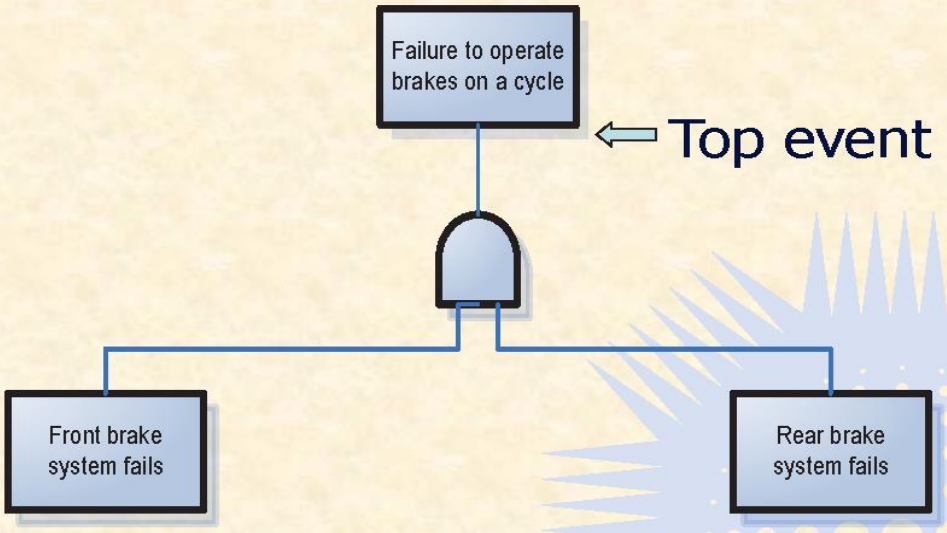
3. Investigation Analysis

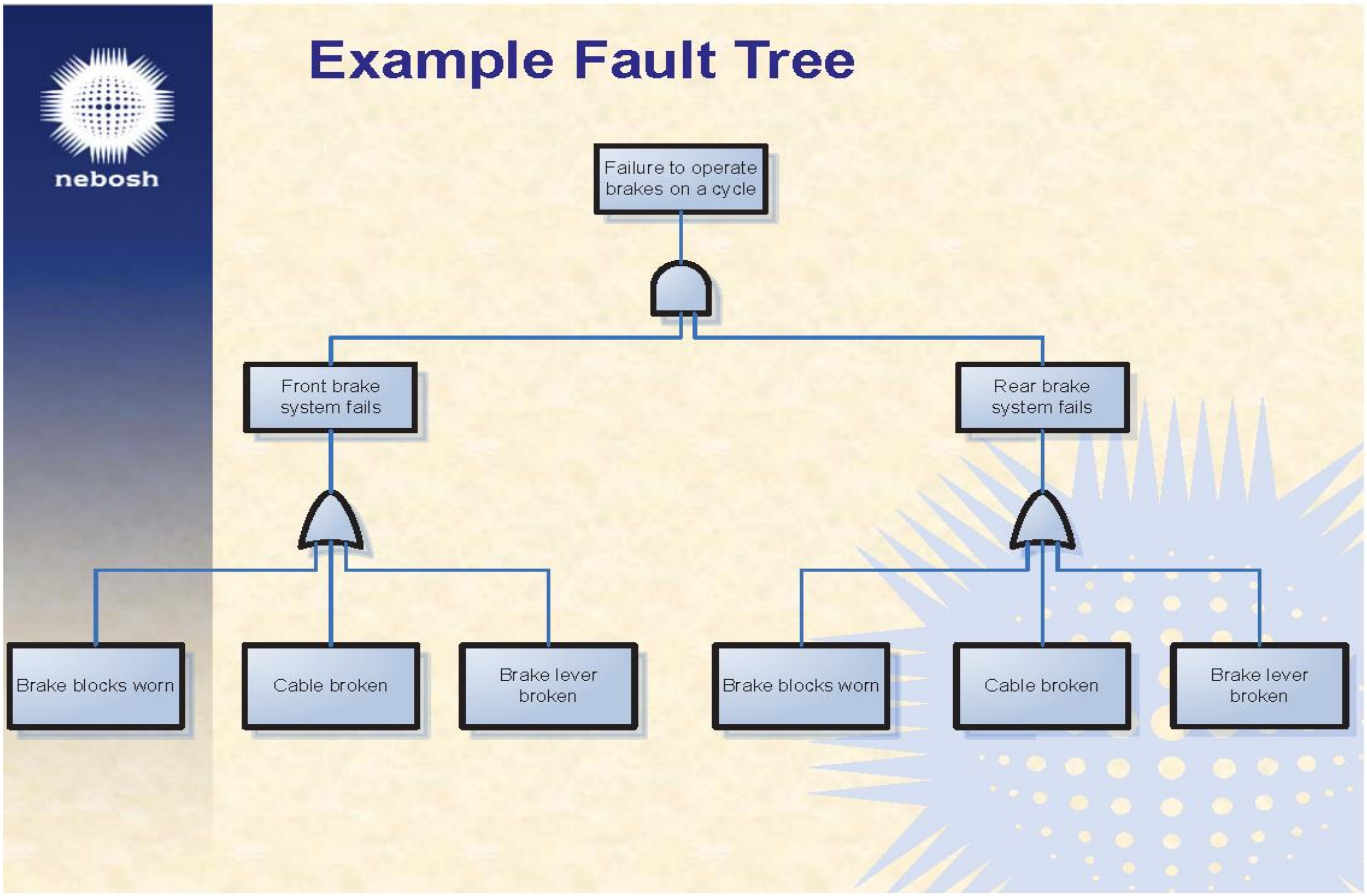
- Try and identify the underlying and root causes of the accident, by asking **why** did this occur for each cause. Could use Fault Tree Analysis
- For each of the underlying causes identified consider what steps need to be taken to prevent a re-occurrence. Consult relevant guidance

3. Investigation Analysis Task

- Do an ECFA? OR
- Scenario based on David's experience – how would they approach an accident investigation OR
- How could they improve accident investigations in their organisation; OR
- How could they share accident data across AFA members???

Example Fault Tree

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Example Fault Tree
Failure to operate brakes on a cycle
Front brake system fails
Rear brake system fails
Brake blocks worn
Cable broken
Brake lever broken
Brake blocks worn
Cable broken
Brake lever broken


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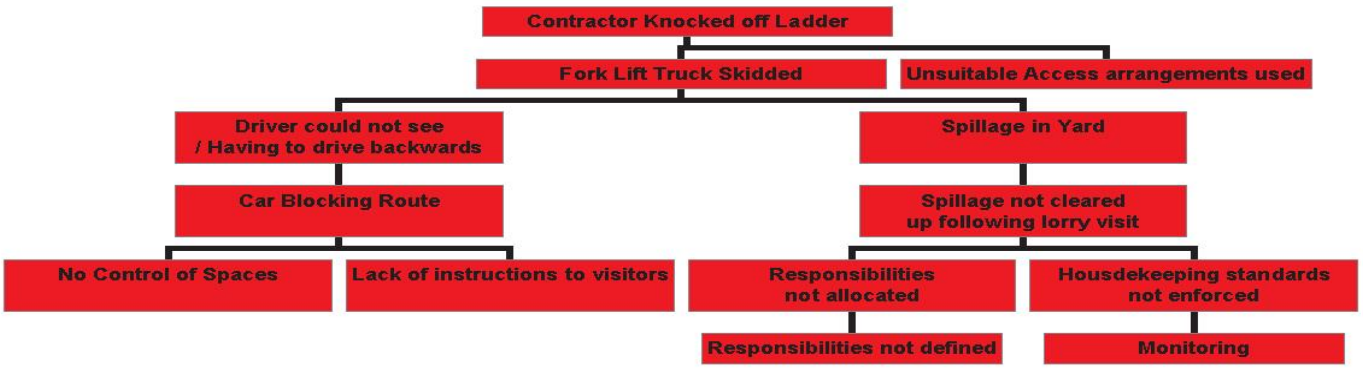
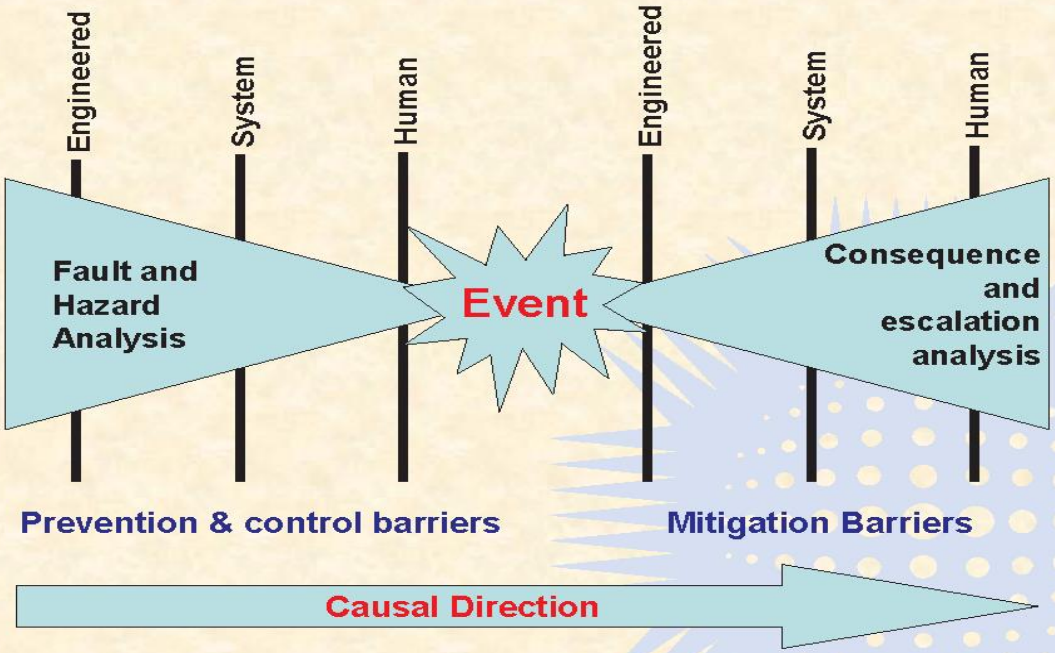
Example of a Fault Tree


Contractor Knocked off Ladder
Fork Lift Truck Skidded
Unsuitable Access arrangements used
Driver could not see / Having to drive backwards
Spillage in Yard
Car Blocking Route
Spillage not cleared up following lorry visit
No Control of Spaces
Lack of instructions to visitors
Responsibilities not allocated
Housdekeeping standards not enforced
Responsibilities not defined
Monitoring

Bow Tie Model



Investigation Outcomes

- Consider was the initial response adequate
- Effective first aid response ?
- Were correct spillage arrangements used?
- Consider if any of the lessons learned apply elsewhere within the organisation
- Consider of the risk assessments need to be reviewed in the light of your findings.

Develop/take remedial action

- Consider alternative controls
- Lower the likelihood of occurrence
- Reduce the potential loss severity
- Immediately take temporary remedial actions
- Take permanent actions as soon as possible

Review findings and recommendations

- Every report to be reviewed by the writer's manager and the safety professional
- The quality of each report to be evaluated and guidance given on how to improve

Implement & Monitoring

- Feedback
- Report reviews
- Conduct investigation review meetings
- Draw up a plan
- Monitor the implementation of the remedial actions against plan

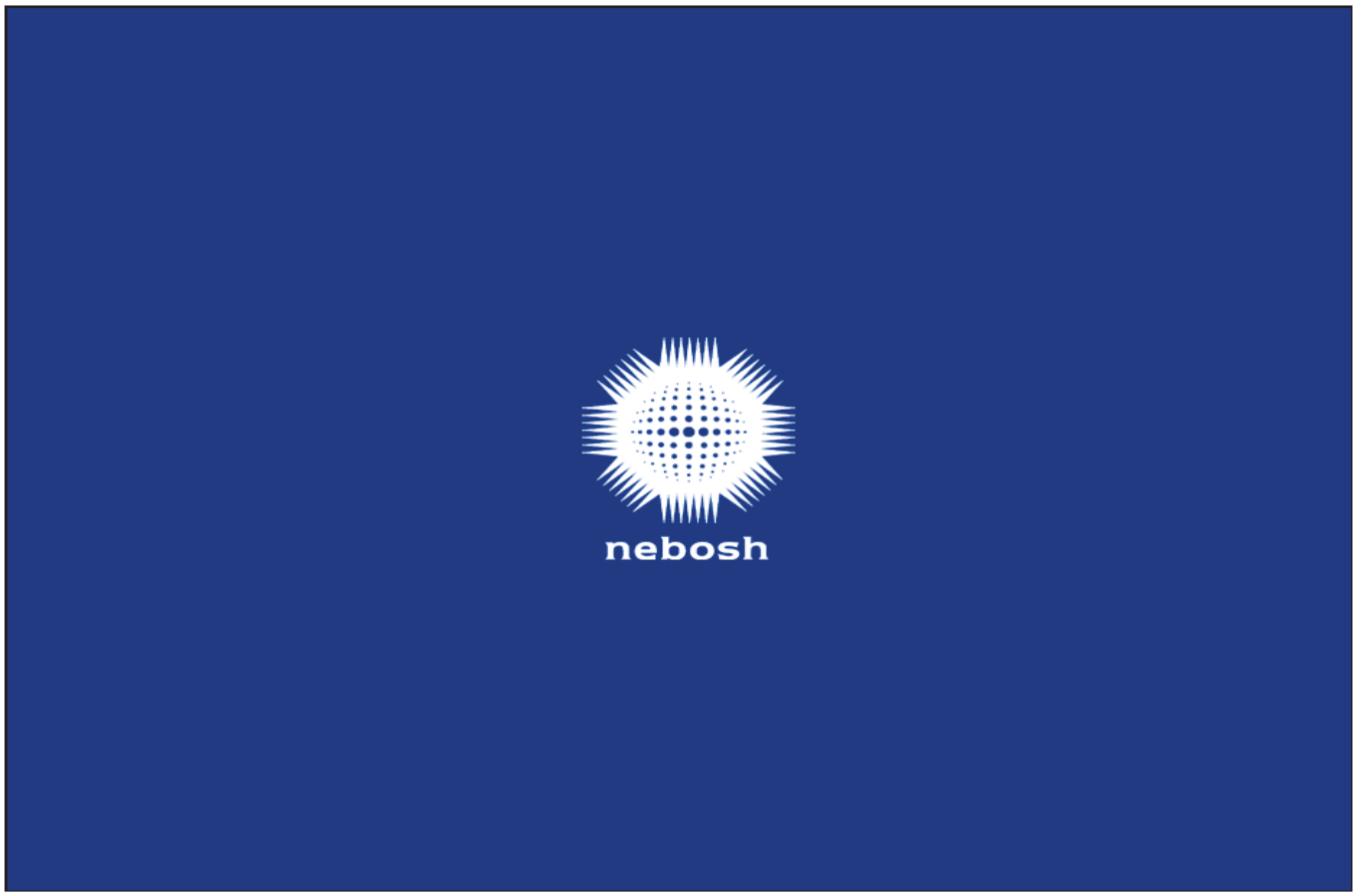
Event and Causal Factors

- Exact chronological order
- Record the events
- Record the Causal factors
- Use cards or post-it notes
- Chart them on a wall

Link to Risk Assessment

- Use the results of investigations to review risk assessment locally; across the whole organisation and share findings with other organisations

Questions?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Enabling Success – Business Excellence and how we achieved it

Derrick Farthing

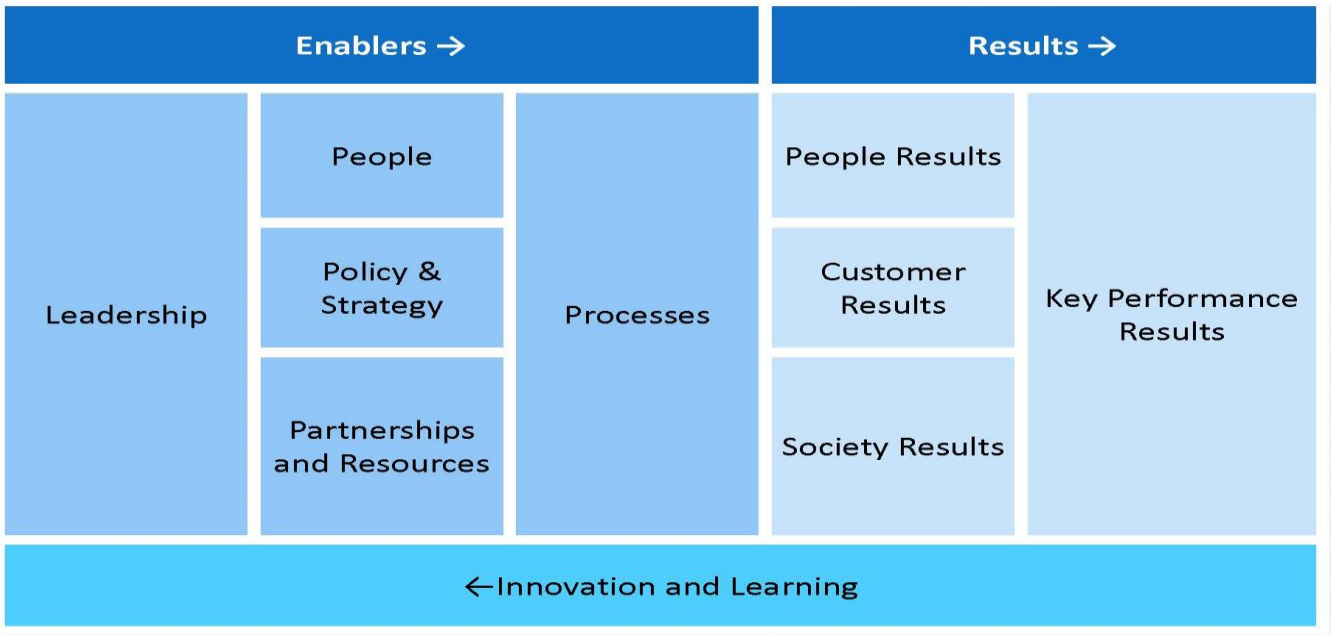
Vice Chair NEBOSH

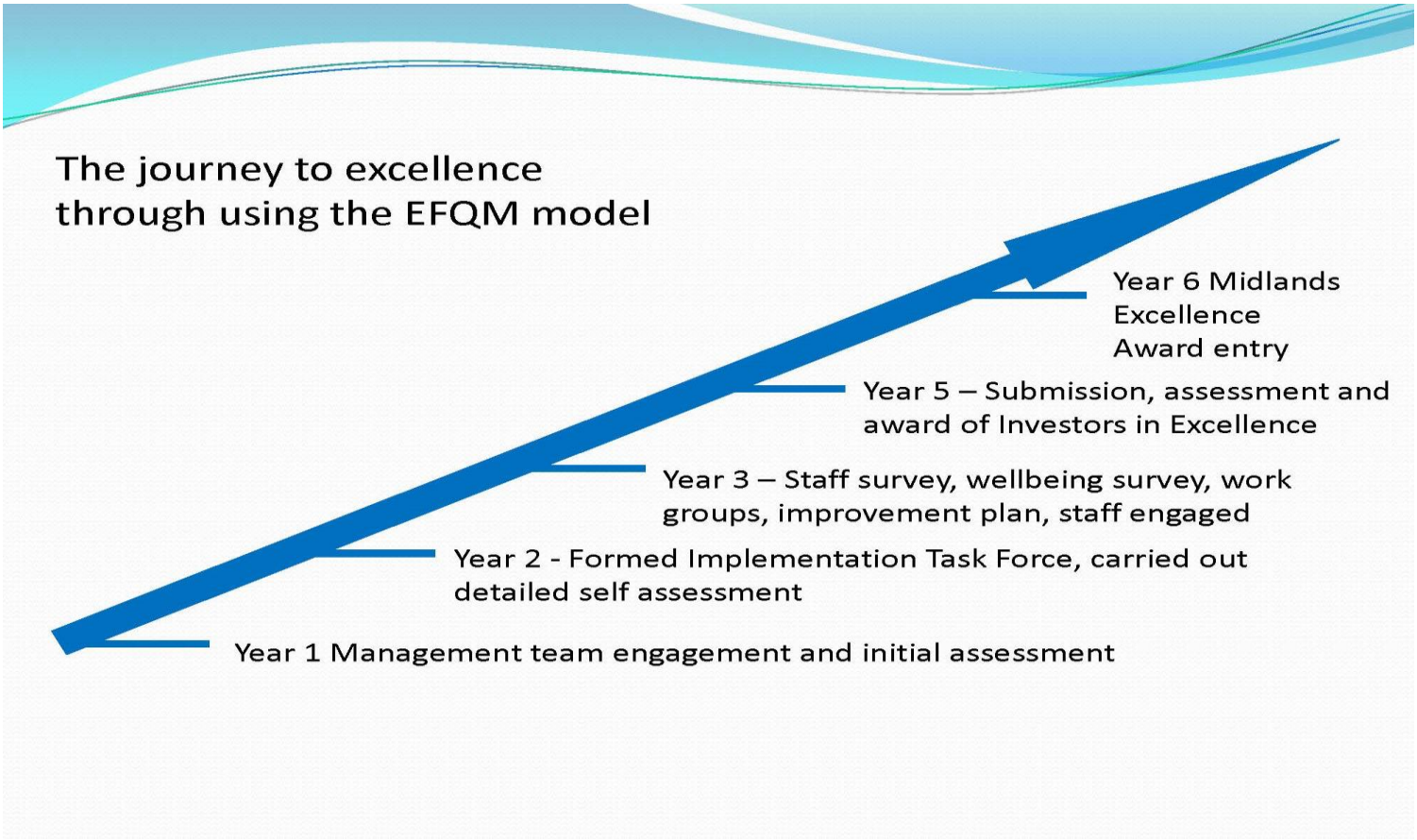
The Business in Question…

Powergen Power Technology…

- Centre of excellence for engineering and scientific support
- Focus for Research and Development
- Leading supplier of independent technical support into external and internal markets
- 250 Staff (started at 250, scaled down to 190, grown back to 250)
- Profit Centre turnover circa £32m (started from circa £20m)
- Technical support for coal, gas, wind and other renewable assets
- Over 200 Customers across 400 sites

Business Excellence Model (EFQM)





Leadership criteria...

- Leaders develop the mission, vision, values and ethics and act as role models
- Leaders define, monitor, review and drive the improvement of the organisations management system and performance
- Leaders engage with external stakeholders
- Leaders reinforce a culture of excellence with the organisation's people
- Leaders ensure that the organisation is flexible and manages change effectively

Strategy criteria…

- Strategy is based on understanding the needs and expectations of both stakeholders and the external environment
- Strategy is based on understanding internal performance and capabilities
- Strategy and supporting policies are developed, reviewed and updated
- Strategy and supporting policies are communicated, implemented and monitored

People criteria…

- People plans support the organisation's strategy
- People's knowledge and capabilities are developed
- People are aligned involved and empowered
- People communicate effectively throughout the organisation
- People are rewarded recognised and cared for

Partnerships and resources criteria...

- Partners and suppliers are managed for sustainable benefit
- Finances are managed to secure sustained success
- Buildings, equipment, materials and natural resources are managed in a sustainable way
- Technology is managed to support the delivery of the strategy
- Information and knowledge are managed to support effective decision making and to build the organisation's capability

Processes products and services criteria...

- Processes are designed and managed to optimise stakeholder value
- Products and services are developed to create optimum value for customers
- Products and services are effectively promoted and marketed
- Products and services are produced delivered and managed
- Customer relationships are managed and enhanced

The journey to excellence through using the EFQM model

Year 6 Midlands Excellence Award entry

Year 5 – Submission, assessment and award of Investors in Excellence

Year 3 – Staff survey, wellbeing survey, work groups, improvement plan, staff engaged

Year 2 - Formed Implementation Task Force, carried out detailed self assessment

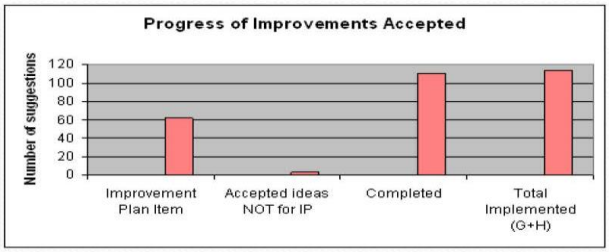
Year 1 Management team engagement and initial assessment

Involving people in the development of the business

- Year 2 - Formed Implementation Task Force from cross functional team of people across the business
- Aim: To identify and assist in the implementation of practical measures to improve the business

Terms of reference:

Raise awareness of EFQM
Administer regular staff surveys
Carry out self assessment and identify improvements
Apply the EFQM model to the assessment of improvement ideas
Report progress to the management team



Involving People in the development of the business

Year 3 – Staff survey and working groups:

Staff survey - 90% response rate – 6 key themes identified

6 working groups established – ToR agreed – diagonal slice across the business lead by staff member with "managerial mentoring"

- Communication
- Leadership & Management
- Working environment
- Learning and development
- Health and Safety
- Employee morale and satisfaction

Recommendations reported to Implementation Task Force, Management Team and added to improvement plan

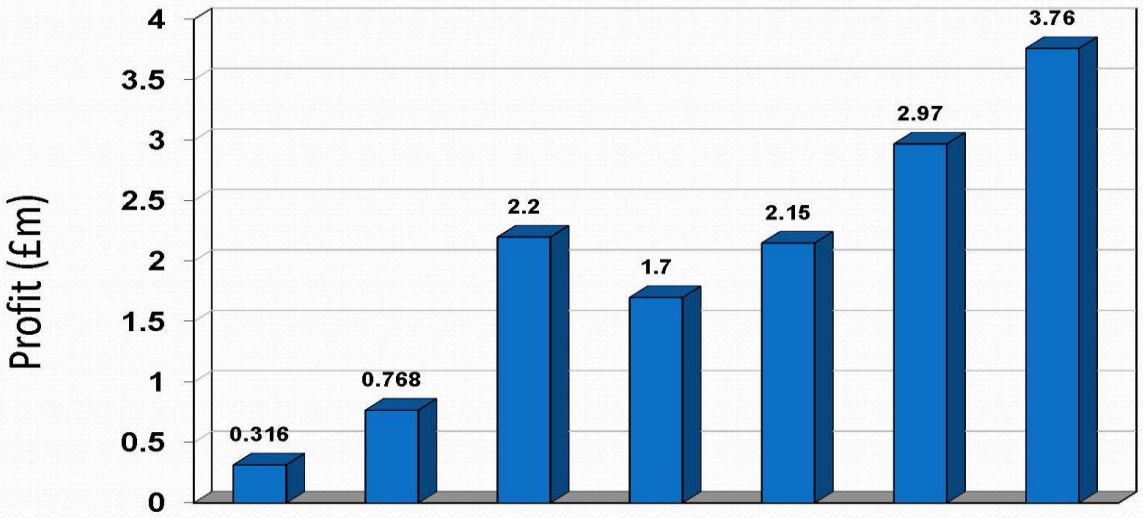
Results criteria...

- Customer results uses a set of perception measures, as well as clear targets based on needs and expectations of customers (in line with their strategy)
- People results also uses a set of perception measures as well as key indicators such as competency performance management and training
- Society results again uses perception measures with respect to external stakeholders and key indicators such as regulatory, environmental and safety performance

Results criteria...

- Excellent organisations achieve and sustain outstanding results that meet or exceed the needs and expectations of their business stakeholders
- Business results are the set of key financial and non-financial results that determine the successful deployment of the business strategy in line with the expectation of the business stakeholders.

Business Profit Year 1 to Year 7 ...



Ongoing need to use Business Excellence Model

- Tool for self assessment and measurement to ensure continued focus on excellence.
- Basis for common vocabulary and a way of thinking about the organisation.
- Framework for positioning existing initiatives, removing duplication and identifying gaps.
- Structure for organisation's management system
- In a busy operational world it's easy to gravitate to your favourite areas and inadvertently drift off course!

Thank you

Questions?

Further EFQM information available at…

- http://www.efqm.org
- http://investorsinexcellence.com/the-iie-standard/how-it-works
- http://www.bqf.org.uk/efqm-excellence-model

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Current Issues in Occupational Health - The Forgotten Issue???

Barry Wilkes

Session

I. What is Occupational Health
II. The Burden of Occupational Disease
III. The Business Case
IV. Current and Emerging Issues
V. Management and Auditing

Definitions - Occupational Health

- To protect the health of workers from risks arising from their employment, place workers in environments which are adapted to their physical and psychological capabilities.

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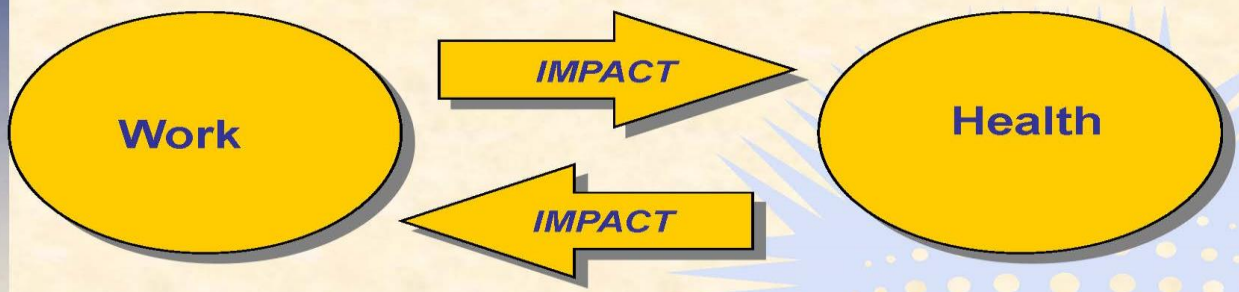
What is Occupational Health?

The effects of work on health and the effects of health on work



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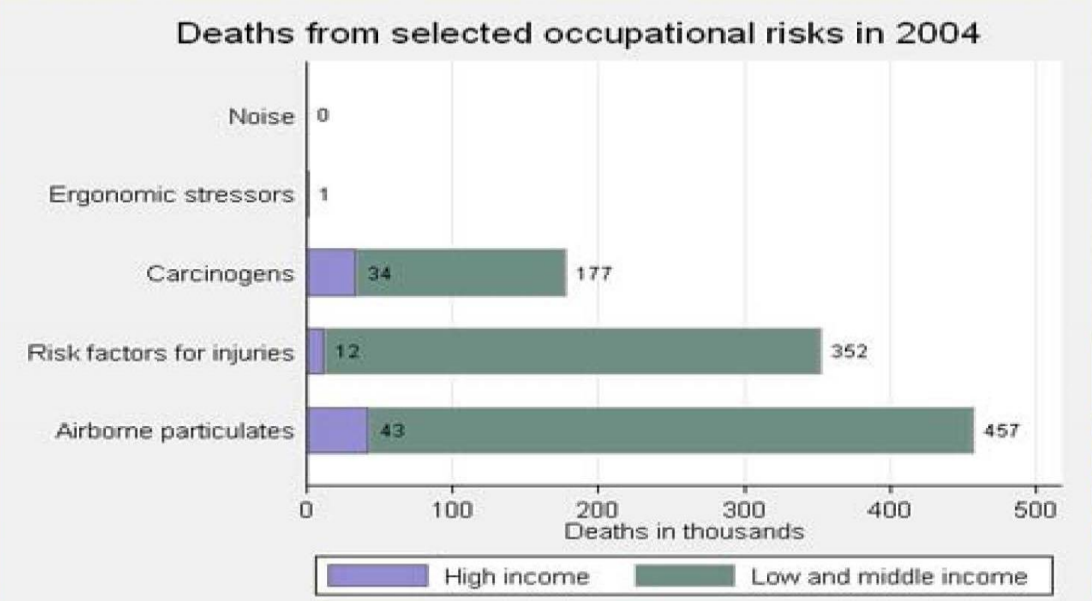
Occupational Health: 3 Main Areas

- Maintenance and promotion of workers health and workers capacity
- Improvement of the working environment and work to be conducive to health
- Development of work organisations and cultures which support health at work; whilst advancing the productivity and smooth operation of the enterprise.

(adapted from the ILO definition)

- .

Global Burden



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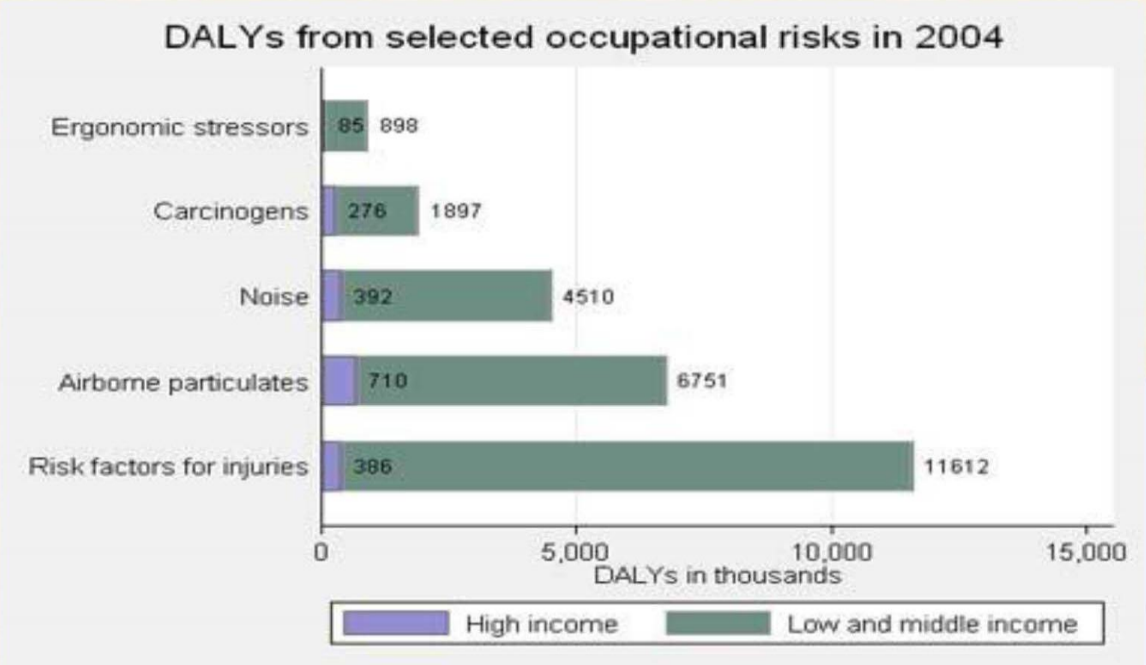
Global Burden



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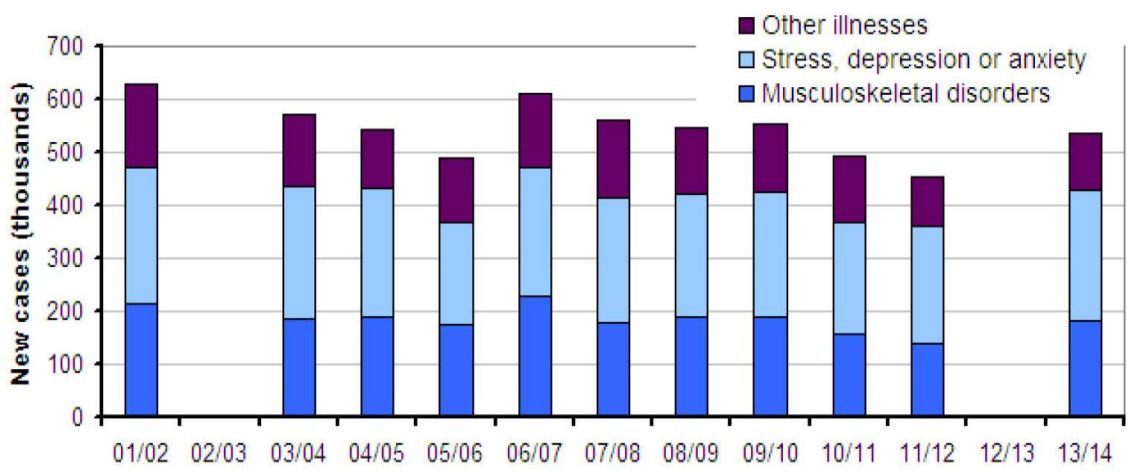
UK Burden (HSE)



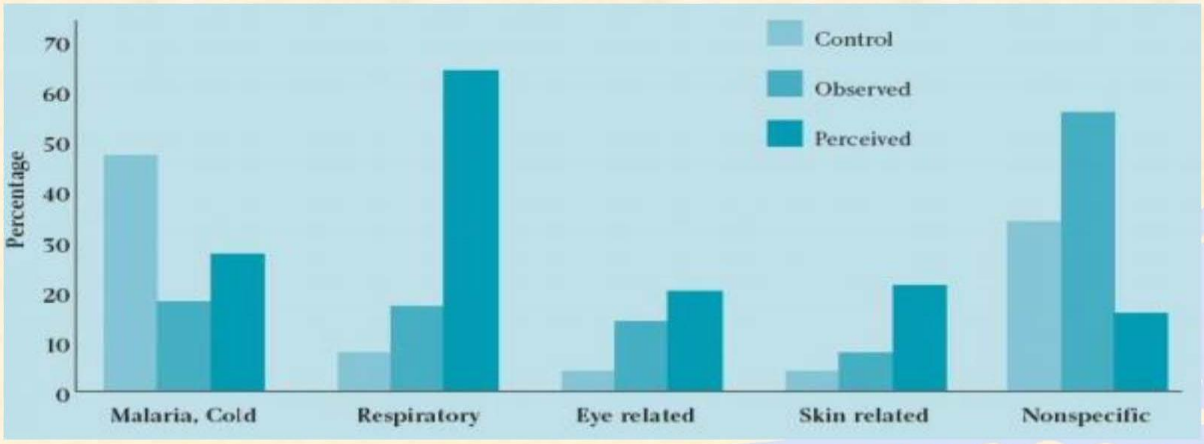
Question?

- Do the WHO figures reflect your industry?
- What are the main Occupational issues that you face?

OH Hazards in Fertiliser Production (World Bank Group)

- Noise
- Chemical hazards – ammonia; acid vapours (sulphuric, nitric, phosphoric, HF); salts of phosphorus/potassium; urea; formaldehyde
- MSD's

Issues in Nitrogenous Fertiliser Production



Dodson R (2005)
http://www.cieh.org/jehr/jehr2column.aspx?id=11400

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Current and Emerging issues

- Work is good for you!
- Managing absence
- Mental health and the link to physical health
- Older Workers
- Occupational cancers e.g. from asbestos exposure
- New technologies e.g. nano technology

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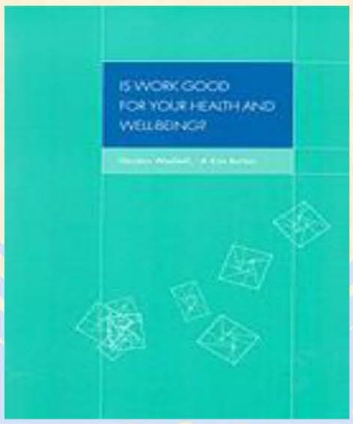
Is Work Good For You Health and Wellbeing? Gordon Waddell and Kim Burton

- Commissioned by the Department for Work and Pensions in 2006,
- Examines scientific evidence on the health benefits of work,
- focusing on adults of working age and the common health problems that account for two-thirds of sickness absence and long-term incapacity

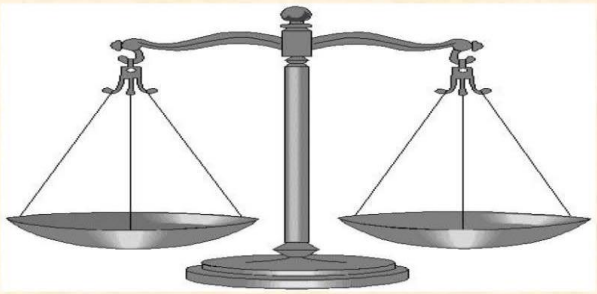


Is Work Good For Your Health and Wellbeing? The study found that:

- There is a strong evidence base showing that work is generally good for physical and mental health and well-being
- 'Worklessness' is associated with poorer physical and mental health, and
- Work can be therapeutic and can reverse the adverse health effects of unemployment,

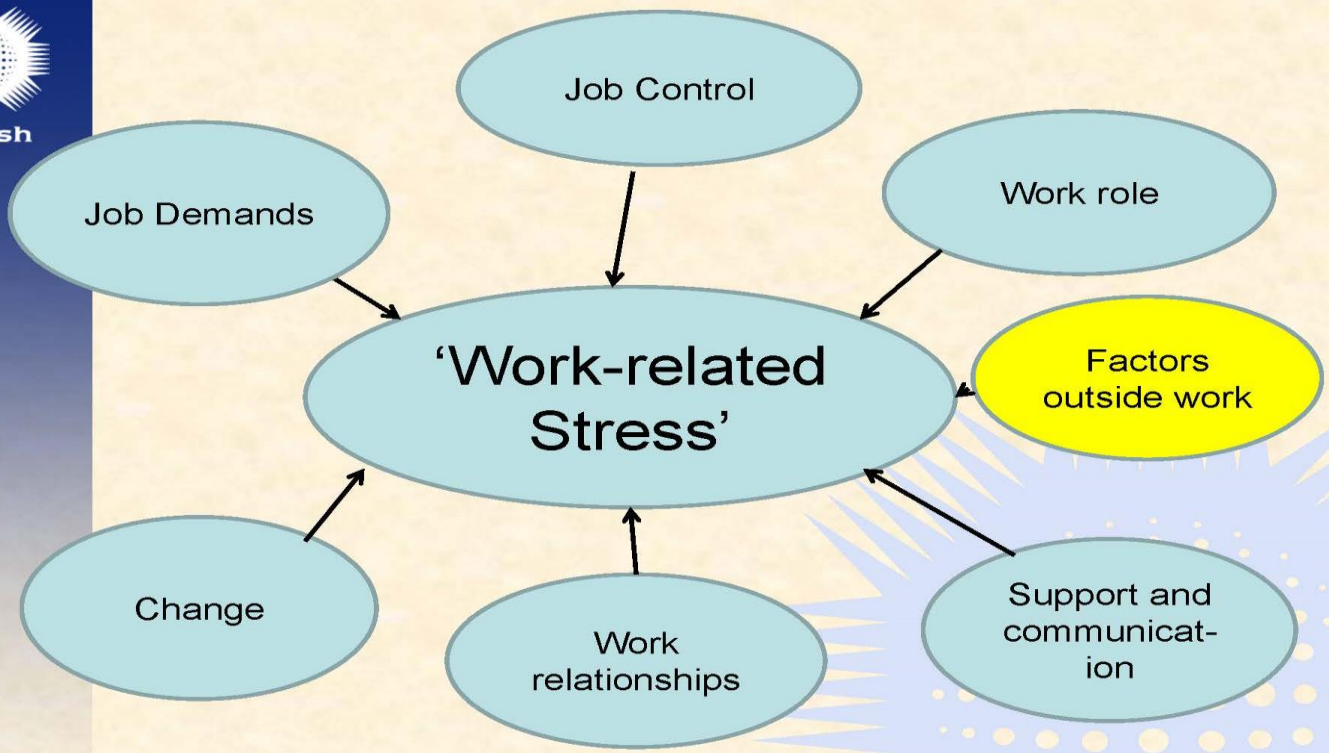
Is Work Good For You Health and Wellbeing? The study found that:

- Overall, the beneficial effects of work outweigh the risks of work, and are greater than the harmful effects of long-term unemployment or prolonged sickness absence.



Working for a Healthier Tomorrow:
(Dame Carol Black)

- Employees likely to have worse health if:
  - Employment is insecure
  - Work is monotonous and repetitive
  - Workers have little or no autonomy
  - Imbalance between effort and reward so that workers feel exploited or taken for granted
  - Few supportive social networks
  - Workers don't think they are treated fairly
  - Watch out for 'presenteeism'



Does this sound familiar?

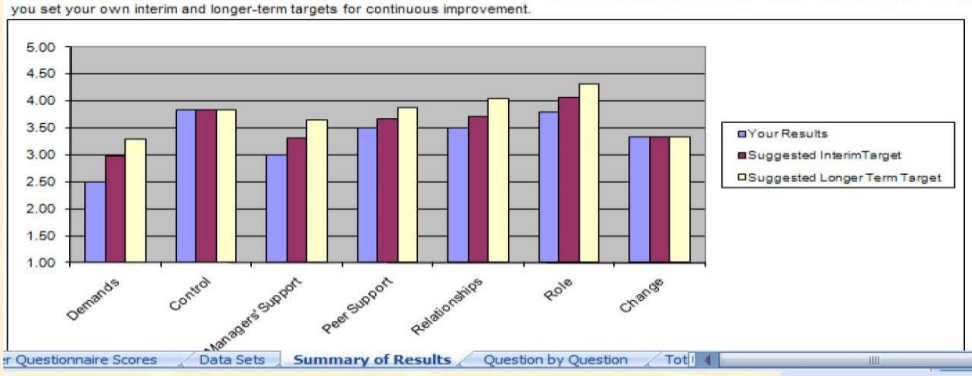
HSE Stress Management Standards Indicator Tool

	Your Results	Suggested Interim Target	Suggested Longer Term Target
Demands	2.50	2.98	3.29
Control	3.83	3.83	3.83 *
Managers' Support	3.00	3.31	3.65
Peer Support	3.50	3.66	3.89
Relationships	3.50	3.72	4.04
Role	3.80	4.07	4.31
Change	3.33	3.33	3.33 *

Data Set: Organisational Averages

Key
- Doing very well - need to maintain performance
  Represents those at, above or close to the 80th percent
- Good, but need for improvement
  Represents those better than average but not yet at, ab
- Clear need for improvement
  Represents those likely to be below average but not bel
- Urgent action needed
  Represents those below the 20th percentile†

*You are doing very well on the following stress factors: Control, Change (you are above the 80th percentile for these stress factors). We suggest that you set your own interim and longer-term targets for continuous improvement.



www.hse.gov.uk/stress/standards/downloads.htm

HSE Manager Competence Indicator Tool

- HSE ; CIPD and IIP, designed a tool to allow managers to assess whether they currently have the behaviours identified as effective for preventing and reducing stress at work.
  1. Managing emotions and having integrity
  2. Managing and communication existing and future work
  3. Managing the individual
  4. Reasoning/managing difficult situations

http://www.slipalert.com/SlipQuestions/qB-physics.htm

Older workers

- Stereotyped views of the abilities and attitudes of older
- No consistent evidence that older workers are generally less productive than younger workers
- Strong evidence that work is generally good for physical and mental health and wellbeing for people of all age groups
- Evidence that cognitive performance does not generally show any marked decrease until after the age of 70.

http://www.hse.gov.uk/research/rrpdf/rr832.pdf

Older workers

- Evidence that both muscle strength and aerobic capacity decline progressively with age, there is little evidence that these declines generally have an adverse effect on performance.
- Evidence concludes that older workers can adapt to change
- Ilmarinen

http://www.hse.gov.uk/research/rrpdf/rr832.pdf

HSE Manager Competence Indicator Tool

AREA 1
RESPECTFUL AND RESPONSIBLE: MANAGING EMOTIONS AND HAVING INTEGRITY

Behaviour/Competency	*Strongly Disagree*	*Disagree*	*Slightly Agree*	*Agree*	*Strongly Agree*
Integrity					
I am a good role model					
I treat my team members with respect					
I am honest					
I do what I say I will do					
I never speak about team members behind their backs					
Managing Emotions					
I act calmly in pressured situations					
Note down the total number of ticks in each column					
Now multiply each column total by the number indicated to calculate your column score	x 1 =	x 2 =	x 3 =	x 4 =	x 5 =
Add the column scores together and note the total score (maximum score is 85)					
Now divide your total score by 85 and multiply by 100	(...../85) x 100 =				

http://www.hse.gov.uk/stress/mcit.htm

HSE Manager Competence Indicator Tool

- A score of below 75% in any area indicates a development need

Competency	Percentage	Effectiveness
Respectful and responsible: Managing emotions and having integrity		
Managing and communicating existing and future work		
Managing the individual within the team		
Reasoning/Managing difficult situations		

www.hse.gov.uk/stress/mcit.htm.

HSE Research Report 638

Issues Identified by WHO

1. To devise and implement policy instruments on workers' health
2. To protect an promote health at the workplace
3. **Improving performance of and access to occupational health services**
4. Provide and communicate evidence for action and practice
5. Incorporate workers health into other policies

http://www.who.int/occupational_health/publications/global_plan/en/

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Integration in Management System (NICE Guidance)

- Make health a priority
- Positive leadership style
- Look to develop the business case
- Incorporate health into policies
- Communicate with workers
- Training of staff

https://www.nice.org.uk/guidance/ng13

Auditing OH Service Delivery (SEQOHS)

- A. Business Probity
- B. Information Governance
- C. People
- D. Facilities and Equipment
- E. Relationships with Purchasers
- F. Relationships with Workers

https://www.seqohs.org/

Auditing OH Service Delivery

Standard C1

An OH service must ensure that its staff are competent to undertake the duties for which they have been employed

The following minimum requirements apply to all OH services

C1.1 An OH service must ensure that its clinical staff are registered with the relevant regulatory body on the appropriate part(s) of its register(s)

C1.2 An OH service must ensure that its staff have the knowledge, skills, qualifications, experience and training for the tasks they perform

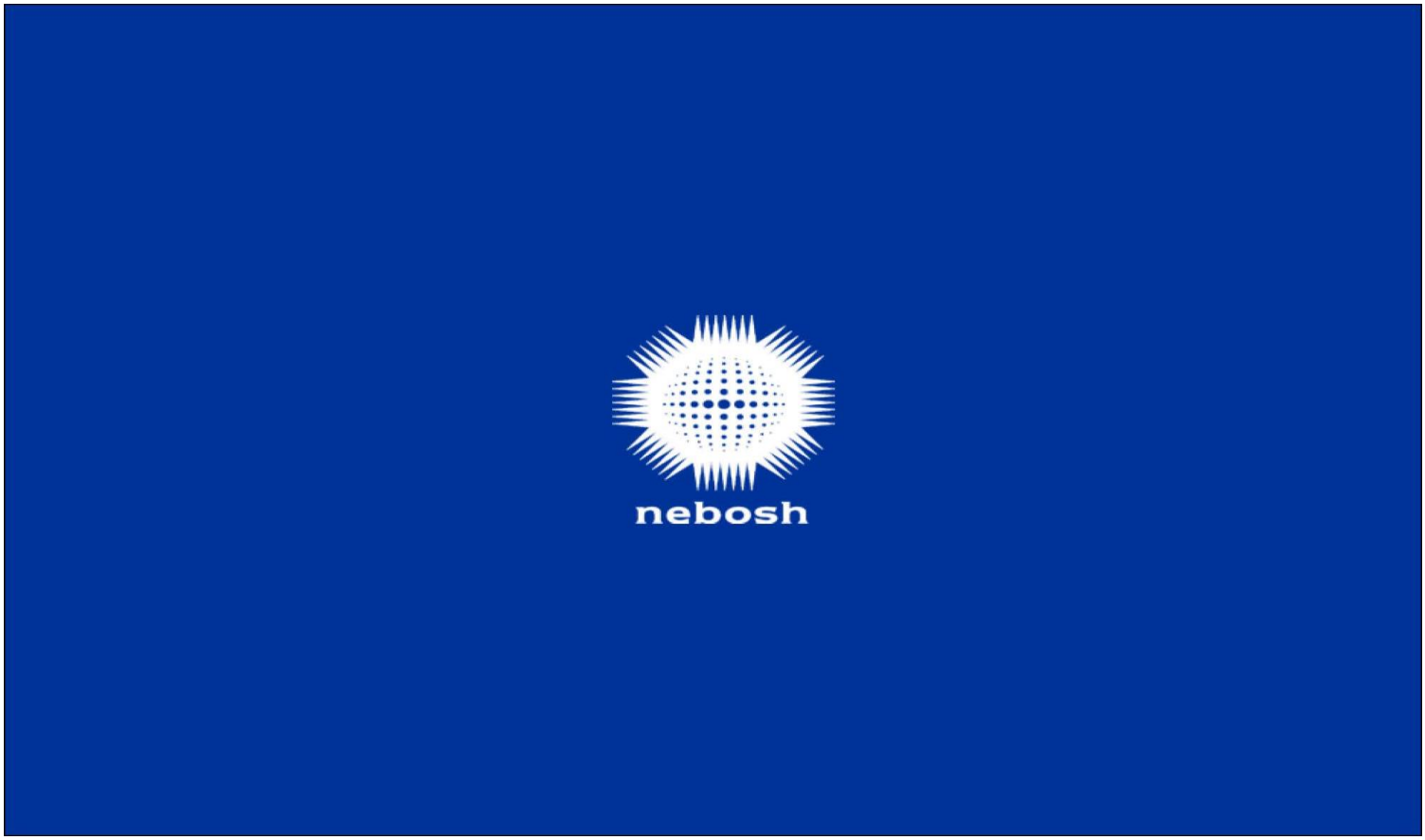
C1.3 An OH service must support its clinical staff in maintaining continuing professional development and revalidation

C1.4 An OH service must ensure that all staff have an annual appraisal and that their personal development plans for continuing professional development meet the needs of the staff member and the occupational health service

C1.5 An OH service must familiarise new staff with the OH service policies and procedures, duty of confidentiality, health and safety, the roles of others and accountability for service quality and

https://www.seqohs.org/

Questions?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Competence – why bother? Research evidence

Dr Luise Vassie PhD CFIOSH

TNL Consulting Limited

What is competence?

* A competent person will have:
  * Knowledge
  * Skills
  * Experience
* Be aware of their limitations
* Capability – applying knowledge and skills in complex and changing circumstances

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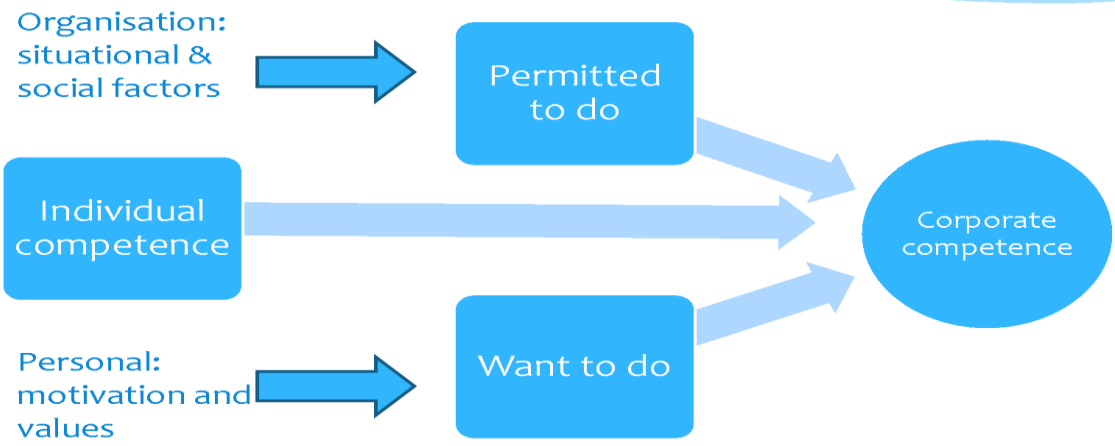
Competence and organisational performance



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Competence and organisational performance

Impact of presence

* Increasing investment in h&s practitioners linked to improved performance
* Companies with line managers with higher levels of h&s training linked to lower accident rates (8x)

Impact of absence

* Lack of competence cited as contributory factor in enquiries in major accidents

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Competence assessment & assurance

* Major hazard industries - observational assessment for safety critical roles
* Weaknesses in assessment of 'underpinning 'roles e.g. engineers and auditors
* Other industries - fragmented approach

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Competence assessment & assurance

* ISO45001: new international standard for OHS management systems
  * criteria for supplier selection
  * assessment of adequacy of supplier OHS practices
* Challenge and opportunity to drive up the standard of competence assessment

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Group discussion 1

* In your groups, discuss your experience of the impact of individual competence on performance (10 minutes)
* Consider positive and negative examples
* Nominate a spokesperson to feedback

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Group discussion 2

* In your groups, discuss the common health and safety competences required for the following roles (20 minutes):
  * Operator
  * Supervisor
  * Manager
* Nominate a spokesperson to feedback

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Any questions?

luise@tnlconsulting.co.uk

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Assessing Competency within an Organisation and the use of Competency Frameworks

Barry Wilkes

Member Organisations

inshpo

aias dal 1975 network aias

NZISM NEW ZEALAND INSTITUTE OF SAFETY MANAGEMENT

Singapore Institution of Safety Officers

Accident Prevention KOSHA

iosh the heart of health and safety

IFAP Safer Healthier Workplaces

Canadian Society of Safety Engineering

НАЦОТ

BCSP Board of Certified Safety Professionals

nebosh

S.I.A. Safety Institute of Australia Ltd

INSHPO - *A Global Alliance* http://www.inshpo.org

inshpo

OHS Professional Competence Frameworks

INSHPO - *A Global Alliance* http://www.inshpo.org

What is a Competence Framework?

- A **competence framework** is a structure that sets out and defines each individual competency required for an individual working in an organization (CIPD).
- It establishes defined, consistent and current standards or attributes required to undertake professional roles competently.

Why Frameworks?

"One of the foundations of modern performance management"

"The single most important tool for driving key HR functions"

Why Frameworks?

- Competence frameworks are used:
  - As benchmarks for professional bodies to ensure that their members possess relevant and up-to-date skills which allow them to undertake their roles competently and effectively.
  - To provide clear guidance to employers on how to develop and assess competence and how to maintain and update these capabilities during the employee's career.

INSHPO - *A Global Alliance* http://www.inshpo.org

Why Competence Frameworks?

- Leading organizations use competence frameworks to:
  - Recruit and select employees with a strong fit to the role and organization
  - Set performance expectations and measure contributions objectively
  - Provide a roadmap for employee development and career planning
  - Identify and assess 'competency gaps' in individuals and groups
  - Make the appraisal fairer and more open and differences between levels, job titles and grades more transparent
  - Assist with workforce planning and succession management

INSHPO - *A Global Alliance* http://www.inshpo.org

Why OHS Frameworks?

- INSHPO pursued the development of an OHS Competence Framework to:
  - Promote high standards of competence for and among OHS professionals
  - Promote a shared understanding of OHS roles
  - Establish the role as a key advisor, strategist and leader
  - Set the role in the context of the management of risk within sustainable business practices
  - Provide information/guidance for employers, recruiters, regulators and educators
  - Promote evidence-based decision making in identifying competencies

INSHPO - *A Global Alliance* http://www.inshpo.org

Task 1 - Discussion

1. **Do <u>your</u> Companies use formal competence frameworks for roles within the workplace?**
2. **If <u>Yes</u>; do these competence frameworks include Occupational Health and Safety? Do any issues arise?**
3. **If <u>No</u>, do you see any benefits in using competency frameworks? If so what are they?**

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Role, knowledge and skills of OHS professionals

INSHPO's Process

- INSHPO undertook a commonly accepted process to develop a competency framework, starting with:
  - A detailed analysis of the environment in which the professional operates
  - Identifying the key roles and responsibilities and sub-dividing these roles into tasks
  - Specifying the attributes required for these tasks to be completed to a defined standard.
- From this analysis, a set of defined standards for the identified tasks were developed which are measurable and verifiable.

Structure of framework

- Context
  - Generalist (OHS focus)
  - 'Professional' ('technician' separate profile)
  - Internal or external employment
  - Applicable across a range of roles/levels
  - Generic to allow for country/organizational customization
- Role or tasks
  - Knowledge
  - Skills

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Role or tasks

Dimensions: Distinguishing boundaries of the OHS Professional role
Domains: Fields of activity within the dimensions
Explanatory comments: Information on the scope of the activity within the domain

Dimensions

1. Systems approach
2. Organisational OHS culture
3. OHS risk management
4. Measurement and evaluation of OHS performance
5. Knowledge management
6. Communication, engagement and influence
7. Professional and ethical practice

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Role – example

	Dimension		Domain	Comment
1	Lead and support the development & implementation of a systems approach to OHS	1.1	Lead the development of OHS management systems, policies and procedures	
		1.2	Advise on & facilitate commitment of appropriate resources for managing OHS	Resources include finance, competent personnel & equipment
		1.3	Support and motivate senior management and	

Knowledge

Topic areas

A. Understanding hazards and risks
B. Understanding hazard and risk controls
C. Safety and health management
D. Professional role and functioning
E. Underlying technical and social sciences
F. Underlying management science

Knowledge may be at 6 levels (Bloom taxonomy):

- **Remembering**
- **Understanding**
- **Applying**
- **Analysing**
- **Evaluating**
- **Synthesizing/creating**

Knowledge - example

C. Safety and health management

	Knowledge category	Illustrative generic topics
C1	Safety management	OHS MS System safety Systems of work, work procures and instructions Theories of safety management .....
C2	Organizational culture	
C3	Law, regulation and societal context	
C4	Risk assessment and decision making on risk	
...	....	

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Skills

A. Personal skills
- Verbal communication
- Professional presentation

B. Professional practice
- Evidenced based practice
- Influence
- Leadership
- Management
- Professional and ethical practice

C. Professional technical skills
- Training
- Surveying, inspecting and auditing
- Investigating
- Measuring and monitoring

- Described under 3 headings:
  - Skill
  - Action
  - Performance criteria
- Sub skills (not listed here)
- Bloom-style taxonomy describes developing complexity/ sophistication

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Skills - example

B. 3 Leadership

3.1 Teamwork 3.2 Negotiation and conflict management 3.3 Leadership

Skill	Action	Performance criteria
Teamwork	Identifies	Understands & identifies different traits, styles ad team roles
	Facilitates	Understands & recognises the steps in group/team formation &supports the maturation of the group to from an effective team
	Clarifies	Supports discussion to ensure the team members have a common understanding of the goals and individual roles & they share a commitment to the activity
	Shares	Shares information & ideas openly& willingly inside and outside formal team processes and offers assistance …
	Respects	…
	Commits	…
	Adapts	…
	Challenges	…

Task 3 Option - Discussion

From the competences that were identified yesterday?

1. **Identify the knowledge and or skills required for this competency**
2. **Identify how this competency could be measured?**

Competence	Knowledge	Measure	Skill	Measure
• Accident Investigation • Development of KPI's • Developing H&S Policies • Develop and deliver H&S training				

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Task 3 Option - Example

Competence	Knowledge	Measure	Skill	Measure
Risk assessment (general)	• Task analysis • Sources of information on risk • Company risk assessment methodology • ALARP principle • Risk standards	• Formal training e.g. In-company training course • Audit of risk assessments • Questions	• Hazard spotting • Basic Mathematical • Problem solving and critical thinking • IT skills and ability to search database • Teamworking	• Observation of task • Application and HR record • IT training

Task 4 - Discussion

Presentation and discussions on Member Company frameworks

Questions?

- Barry Wilkes barry.wilkes@nebosh.org.uk
- Dennis Hudson, dhudson@asse.org

Best Practices in' Arab Potash Company (APC) For Health, Safety and Environment

Eng. Yousef Ma'aytah
Safety Superintendent
Arab Potash Company

المؤسسة العامة للضمان الاجتماعي
Social Security Corporation

جائزة التميز في السلامة والصحة المهنية

Award of Excellence

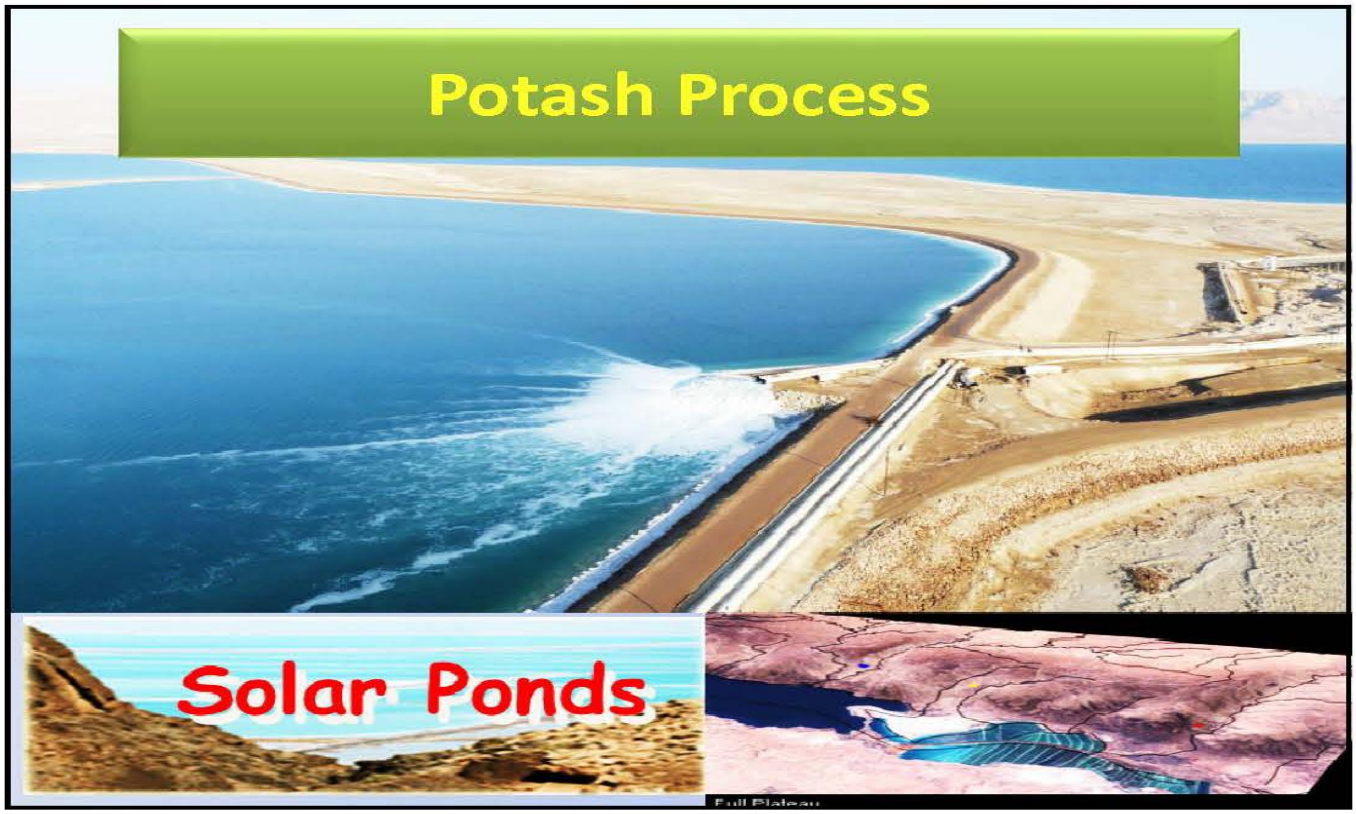
The Board of Directors of the Social Security Corporation
has the pleasure to award

Arab Potash Company

this certificate of excellence in recognition of the outstanding efforts in promoting and implementing occupational safety and health standards and practices in the workplace in 2012.

Nadia AL-Rawabdeh
Director-General

3



2014 APC LTI-s Monthly Update Versus 2013

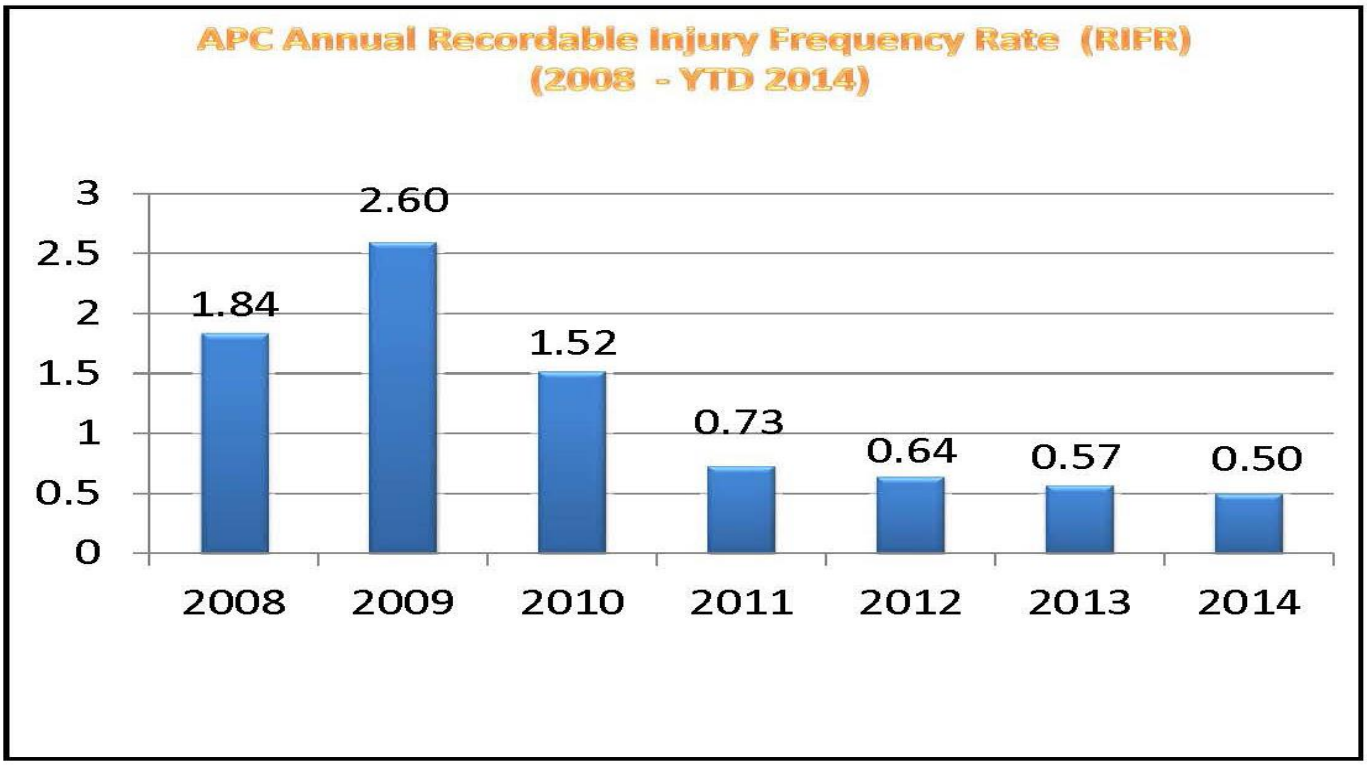
As of Dec-31-2014

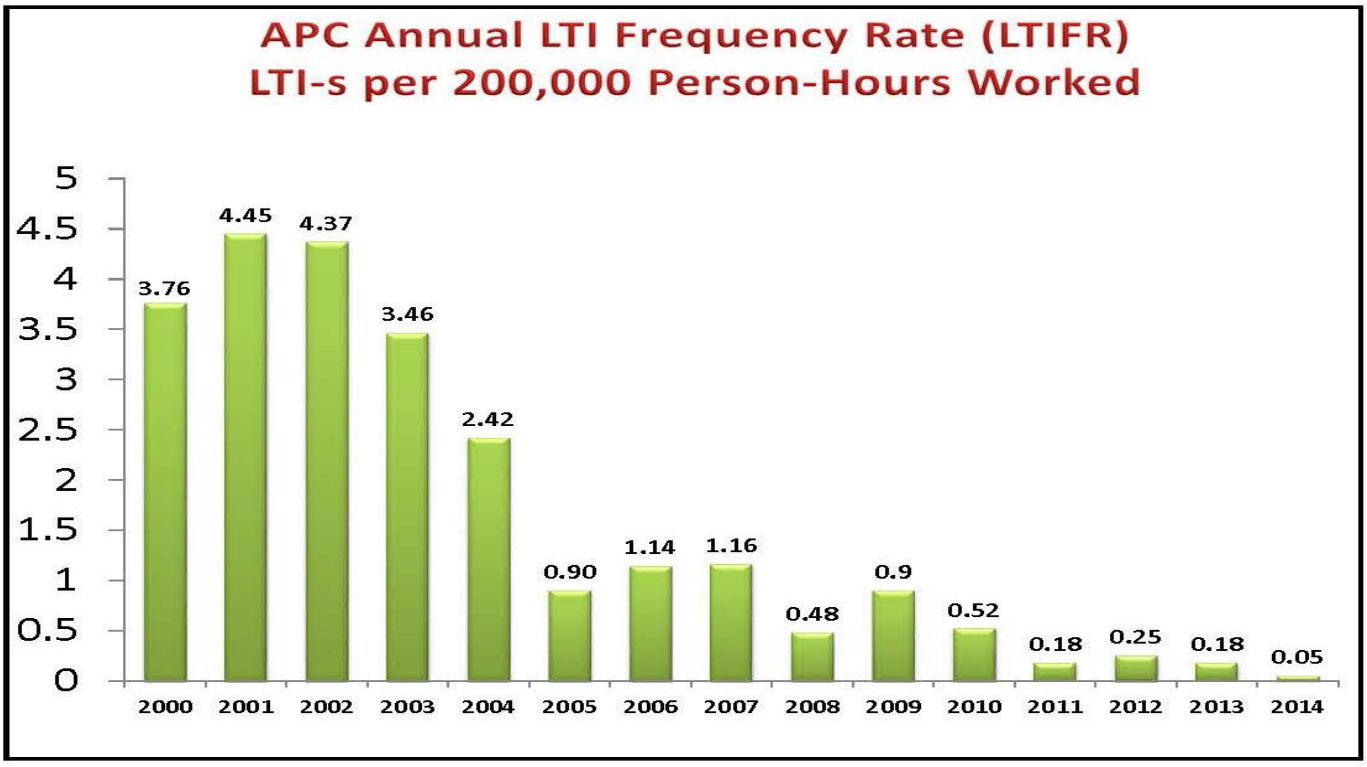
LTI = Lost Time Injury		2013 Full Year	2014 Full Year
Workplace	LTI	4	1
	Days Lost	149	120
Non (work Place)	LTI	2	0
	Days Lost	46	41*
Total	LTI	6	1
	Days Lost	195	161*

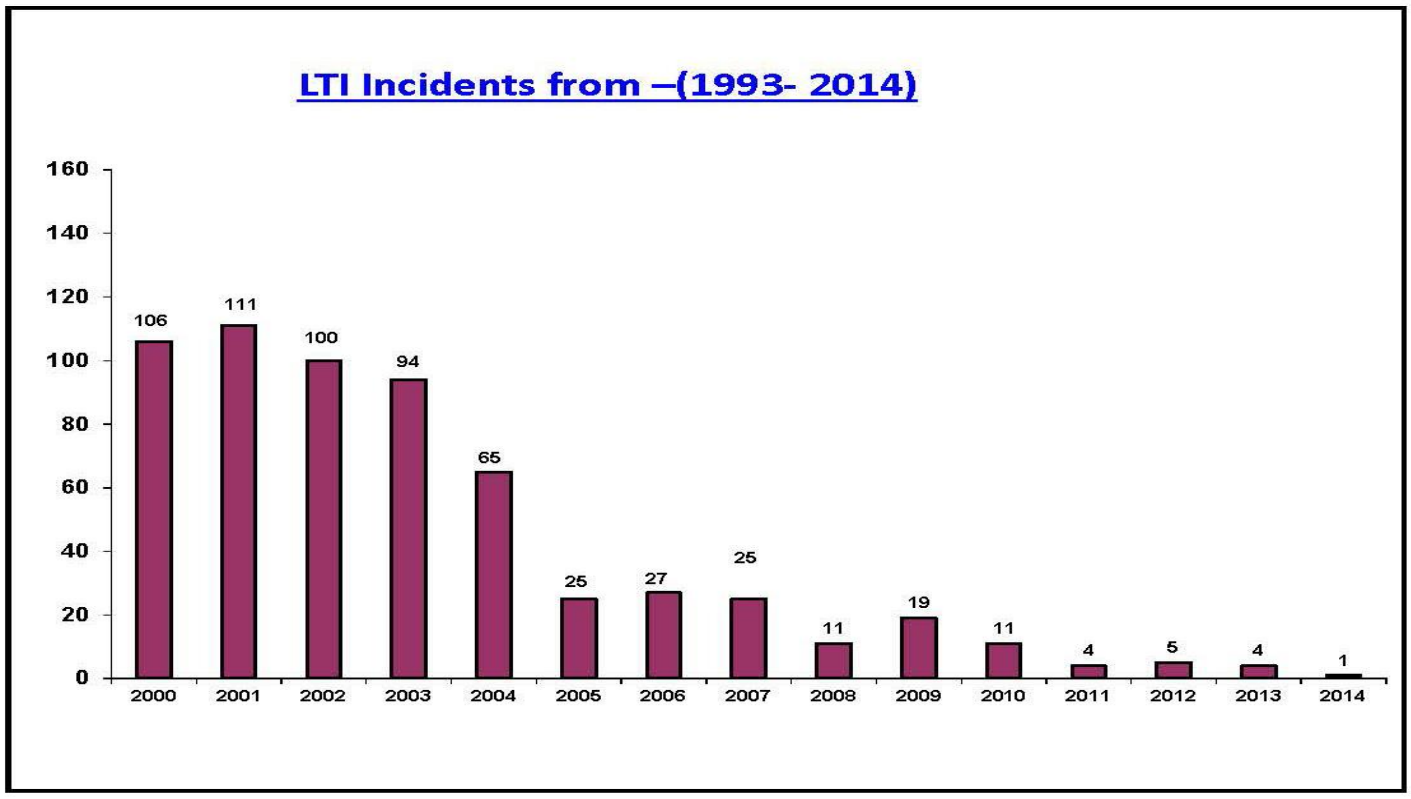
*41 days for an injury occurred in 2013

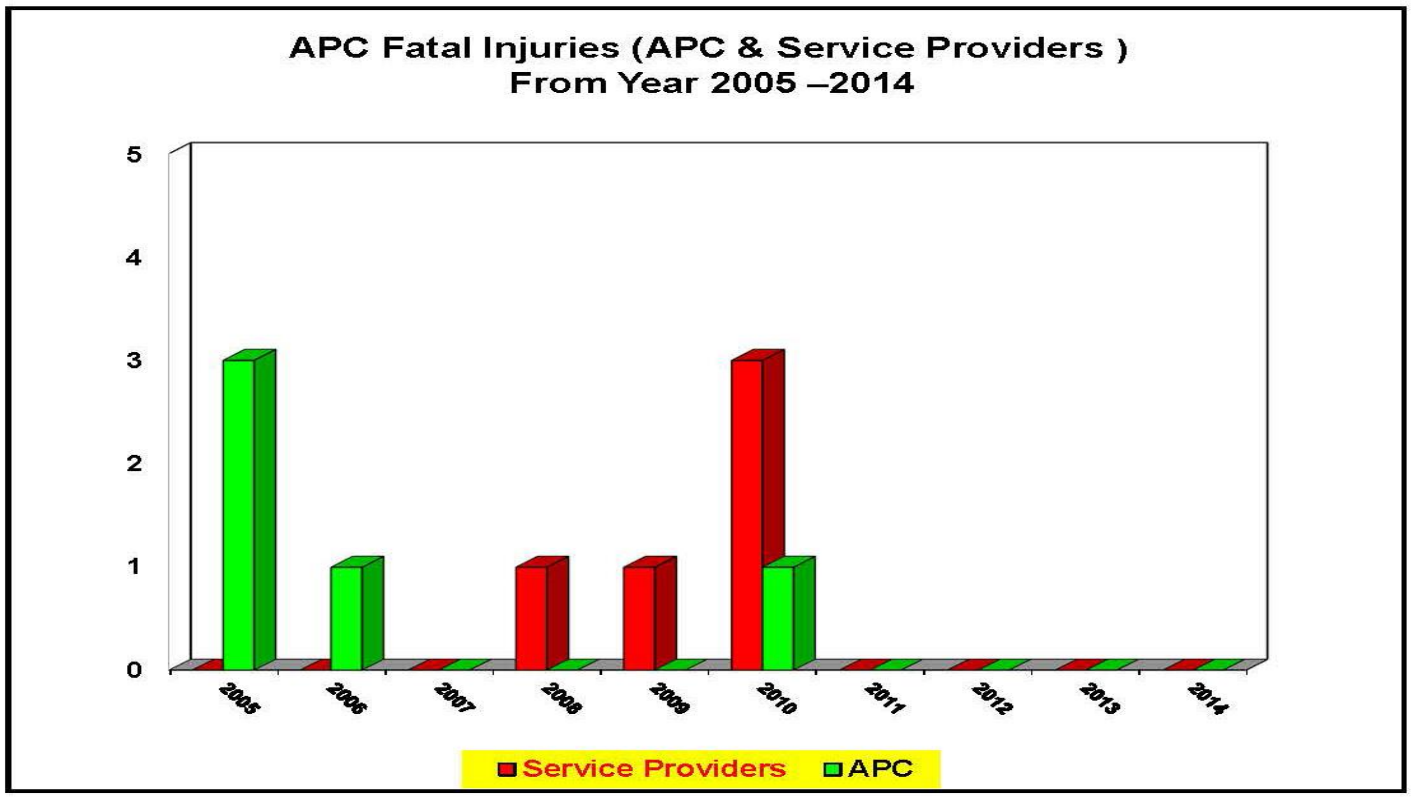
Achieved **5,000,000** Person hours without an LTI on Dec. 27, 2014.

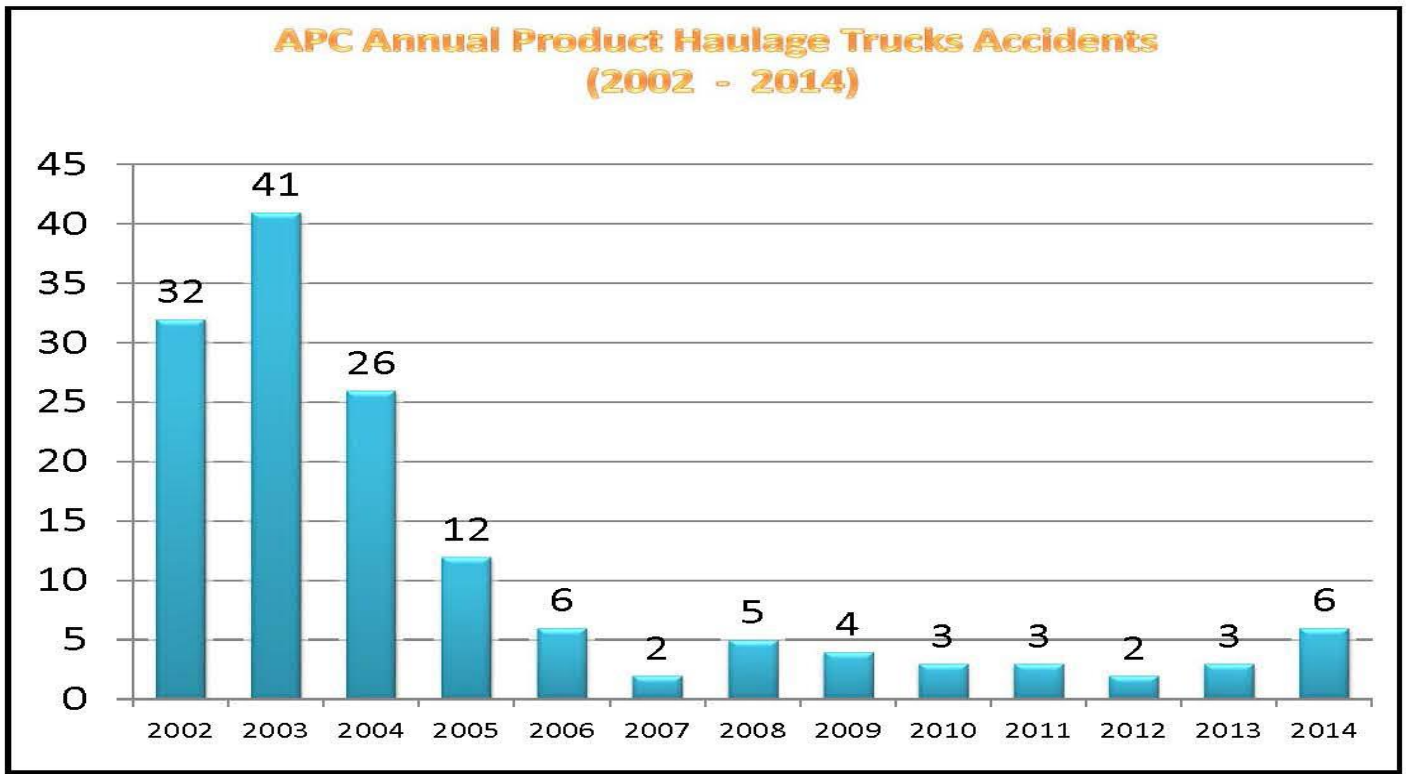
5


APC Annual Recordable Injury Frequency Rate (RIFR)
(2008 - YTD 2014)
3
2.5
2
1.5
1
0.5
0
1.84
2.60
1.52
0.73
0.64
0.57
0.50
2008
2009
2010
2011
2012
2013
2014


APC Annual LTI Frequency Rate (LTIFR)
LTI-s per 200,000 Person-Hours Worked
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3.76
4.45
4.37
3.46
2.42
0.90
1.14
1.16
0.48
0.9
0.52
0.18
0.25
0.18
0.05
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


LTI Incidents from –(1993- 2014)
160
140
120
100
80
60
40
20
0
106
111
100
94
65
25
27
25
11
19
11
4
5
4
1
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014


APC Fatal Injuries (APC & Service Providers)
From Year 2005 –2014
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Service Providers
APC



Fields of Best Practices

- 1. Safety
  2. Environment
  3. Safety Corporate Social responsibility

Summary of Safety System

Electrical Safety Committee:

Electrical Maintenance Hand Tools, extension cords & RCDs for APC & Contractors. Check lists were prepared and audits are being done.– index-1

Sling & Lifting Ropes Committee:

Sorting, Tagging and periodical inspection internally & externally. index -2

- Effective Incidents' Investigation Methodology -Taproot investigations.
- Effective Safety Control on APC Service Providers. Contractor Safety: orientation, inspections, documentation. . index -3
- Task Risk Assessments. index -4
- Safety Forums.
- Effective Key Safety Procedures Audits KPAs.
- Effective Emergency Response Planning and Application-index-5
- Safety Work Permits – LOTO, Hot work, Cold , Confined space)& Excavation Work Permit index-6
- Housekeeping inspections index-7
- . GPS Control for APC Product Haulage Trucks and Buses

Electrical Safety Committee:

Electrical Maintenance Hand Tools, extension cords & RCDs for APC & Contractors. Check lists were prepared and audits are being done.

Index 1

Sling & Lifting Ropes Committee:

Sorting, Tagging and periodical inspection internally &externally .

Index 2

Effective incidents' investigation Methodology

- Effective 2007 APC has applied TapRoot Incidents' Investigation Methodology
- TapRoot methodology is applied through a software developed by Systems' Improvements' Company in Tennessee/U.S.A and proved to be the most effective incidents' investigation methodology and it is widely applied in US.

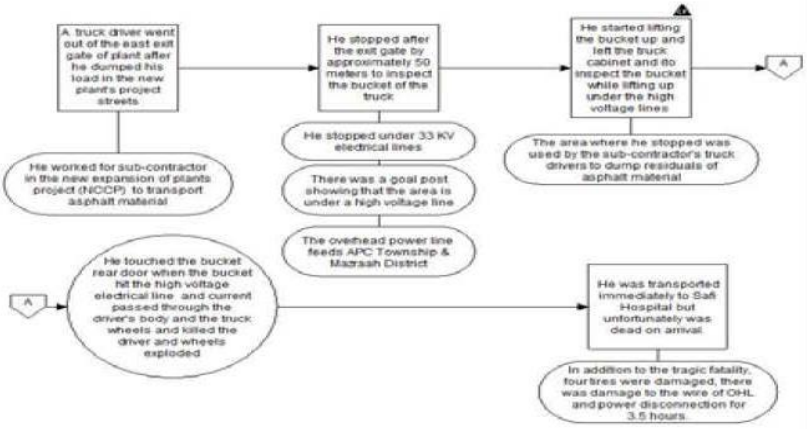
- TapRoot is a Non-Blame oriented investigation process that addresses the sequence of events that led to the incident in chronological order, defining the causal factor, then root cause/s and then the development of SMARTER corrective actions.
- A group of highly skilled TapRoot investigators from APC engineers were trained and they effectively perform the investigations to APC incidents.

Taproot investigations

ARAB POTASH COMPANY

Flash Report # 61 **Fatal Injury for a Sub-contractor**

Report Date:	June -30- 2010
Classification of Incident:	Fatal Injury for a Sub-contractor
Plant/Facility:	APC Safi Site- The area between Petrojet Gate & the Highway to Aqaba
Department/ Affected Area:	Expansions - DAR- Petrojet - APC/110/R/2006- Sub-contractor Issa Jared Tarawneh
Date of Incident:	June -28- 2010
Time of Incident:	10:26 AM
Account of Incident:	The operator of a tandem dumper employed by a subcontractor had been hauling hot asphalt. The operator left the site via the Petrojet gate, which is used by contractors and is several hundred meters north of the APC employee entrance. He ignored the "Goal Post" outside the gate which clearly indicates the clearance under the existing power line, and proceeded to empty residual asphalt from the rear box. He parked the dumper under the power line and switched on the lifting jack using controls near his seat, and the box started to rise. He left the cab, walked to the back of the truck and touched the door at the back of the truck box. At the same time, the front of steel truck box contacted the overhead power line that feeds APC Township & Mazraah District and caused a short- circuit. The driver was subjected to an electrical shock and four tires exploded. He was transported immediately to Safi Hospital but unfortunately was dead on arrival. In addition to the tragic fatality, four tires were damaged, there was damage to the wire of OHL and power disconnection for 3.5 hours. Attached are illustrative pictures.
Nature of Incident:	Fatal Injury.
External Agencies:	Safi Hospital & Local Police
Immediate Actions Taken to Prevent Recurrence:	1. DAR/ The consultant sent a letter to Petrojet to request the sub-contractor to prohibit dumpers' parking outside their gate under OHL and to assure that all safety instructions are followed. 2. A detailed investigation report is awaited from the contractor; this report will be reviewed by the Tap Root investigation team. 3. Taproot investigation has been assigned.
Dept. Manager:	Keith Thornton



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Corrective Action: 01

To raise up the 33kV overhead lines at locations where trucks and heavy equipments are expected to cross under energized lines; this will give more clearance and more safety distance since wooden poles at both sides of the crossed road could be elevated by two meters utilizing a concrete foundation built above ground level. Execution by Civil and Maintenance Departments.

. **Responsible Person/Department:** / Civil Works

Implementation Due Date:October-03-2010 **Verification Due Date: March-03-2011**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Corrective Action Corrective action NI

Corrective Action: 02

To installation of Overhead line Insulating Sleeve on 33kV conductors passing across roads and main entrances.

. **Responsible Person/Department:** Maintenance

Implementation Due Date: December -12-2010 **Verification Due Date: June -12-2011**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Corrective Action Corrective action NI

Corrective Action: 03

To install and maintain of Goal Posts at all locations where 33kV overhead lines cross roads and main entrances

. **Responsible Person/Department:** Maintenance

Implementation Due Date: Oct-25-2010 **Verification Due Date: Dec-30-2010**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Corrective Action Corrective action NI

Corrective Action: 04

To assure that high level of Safety awareness among all contractors who is/will working in APC projects is implemented , this could be achieved by conducting individual safety lectures and by introducing individual bulletins informing them of the electrical hazardous associated with APC high voltage networks

. **Responsible Person/Department:** Safety

Implementation Due Date: September -26-2010 **Verification Due Date: Feb-23-2011**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Standards, Policies, or Admin. Controls NI Not strict enough

Corrective Action: 05

Warning signs shall be fixed at all locations where there is a road crossing with high voltage lines and main entrances

. **Responsible Person/Department:** Safety

Implementation Due Date: Aug. -01-2010 **Verification Due Date: Jan.-02-2011**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Corrective Action Corrective action NI

Corrective Action: 06

The contractors and sub-contractors to have close supervision regarding their safety activities and their adherence to APC safety instructions

. **Responsible Person/Department:** Safety

Implementation Due Date: Oct-20-2010 **Verification Due Date: Dec-28-2010**

Associated Causal Factor(s)	Associated Root Cause(s)
He started lifting the bucket up and left the truck cabinet and into inspect the bucket while lifting up under the high voltage lines	Human Performance Difficulty Management System Standards, Policies, or Admin. Controls NI Not strict enough

17


5 m

Effective Safety Control on Contractors

- Effective Safety Procedure was developed for APC Service Providers-(Bi-lingual), of pocket size and a copy is timely distributed for every contractor worker.

ARAB POTASH COMPANY

APC Service Providers' Safety Procedure

HSP # 4-4-6-10

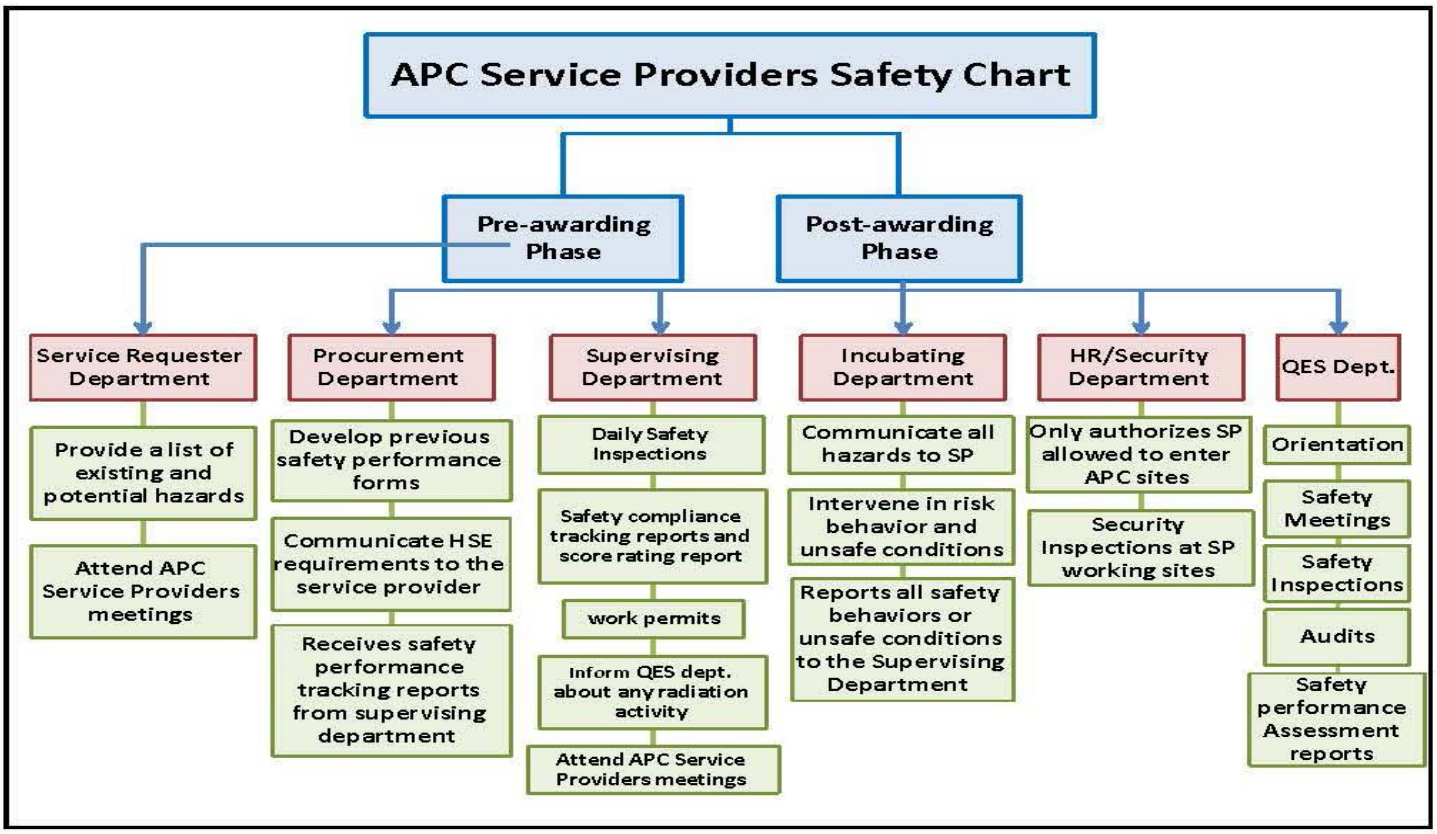
Issued By QES Department

شركة البوتاس العربية

إجراء السلامة لمزودي الخدمة لدى شركة البوتاس العربية

HSP # 4-4-6-10

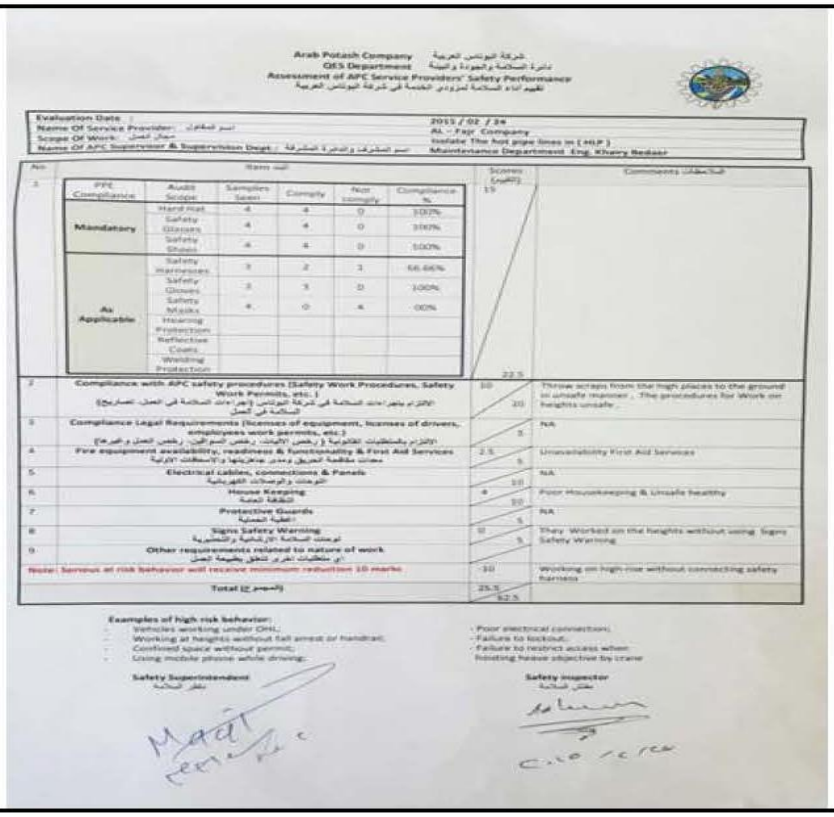
اصدر من قبل دائرة الجودة والبيئة والسلامة



Contractors' Safety Performance Assessment Criteria for Full Compliance

- Mandatory PPE "Full Compliance" = 15 scores
- As Applicable PPE "Full Compliance" = 3 Scores for each equipment/individual
- APC Procedures = 20 Scores
- Legal Requirements = 5 Scores
- Electrical Safety Requirements = 10 Scores
- Protective guards = 05 Scores
- Warning Signs = 05
- Effective Fire Protection Availability = 05
- Housekeeping = 10
- Others safety requirements as applicable = 10

- Demerits = Minus Scores
- For each "Serious at Risk Behavior" observed, 10 points from the total score will be deducted.



Arab Potash Company
OES Department
Assessment of APC Service Providers' Safety Performance

Evaluation Date : 2015 / 02 / 24
Name Of Service Provider: Al – Fajr Company
Scope Of Work: Isolate The hot pipe lines in (HLP)
Name Of APC Supervisor & Supervision Dept : Maintenance Department Eng. Khairy Nedaier

No.	Items		Samples Seen	Comply	Not comply	Compliance %	Scores (mark)	Comments
1	PPE Compliance	Audit Scope					15	
	Mandatory	Hard Hat	4	4	0	100%		
		Safety Glasses	4	4	0	100%		
		Safety Shoes	4	4	0	100%		
	As Applicable	Safety Harnesses	3	2	1	66.66%		
		Safety Gloves	3	3	0	100%		
		Safety Masks	4	0	4	00%		
		Hearing Protection						
		Reflective Coats						
		Welding Protection					22.5	
2	Compliance with APC safety procedures (Safety Work Procedures, Safety Work Permits, etc.)						10 / 10	Throw scraps from the high places to the ground in unsafe manner , The procedures for Work on heights unsafe .
3	Compliance Legal Requirements (licenses of equipment, licenses of drivers, employees work permits, etc.)						5	NA
4	Fire equipment availability, readiness & functionality & First Aid Services						2.5 / 5	Unavailability First Aid Services
5	Electrical cables, connections & Panels						10	NA
6	House Keeping						4 / 10	Poor Housekeeping & Unsafe healthy
7	Protective Guards						5	NA
8	Signs Safety Warning						0 / 5	They Worked on the heights without using Signs Safety Warning
9	Other requirements related to nature of work						-10	Working on high-rise without connecting safety harness
Note: Serious at risk behavior will receive minimum reduction 10 marks								
	Total (المجموع)						25.5 / 82.5	

Examples of high risk behavior:
- Vehicles working under OHL;
- Working at heights without fall arrest or handrail;
- Confined space without permit;
- Using mobile phone while driving;
- Poor electrical connection;
- Failure to lockout;
- Failure to restrict access when hoisting heave objective by crane

Safety Superintendent
Safety Inspector

Task risk Assessment

- Hazard Identification
- Risk assessment
- Risk control
- Evaluation the control

Index 3

Safety forums

- A Total of 8 Safety forums are conducted every year
- The targeted attendees are : Superintendents, Supervisors and Trucking Drivers
- GM, DGMT, Directors and Managers attend these forums and they are profoundly engaged at these forums.
- At Trucking Drivers' Forums; "Incident Recall Technique" is applied, where those drivers who encountered dangerous driving situations and DID prevented an accident from happening, explain WHAT happened and WHAT was that element they did which prevented the accident from happening
- Effective Direction, Coaching , Awareness and Recognition Platform

- Drivers' Proposals for improving Trucking Safety are taken during the forum, timely acted upon and the corrective actions taken are announced at the next forum
- Superintendents and Supervisors' forums:
- As Superintendents and Supervisors are the most important link in the supervisory chain:
- Effective Communication, Direction, Coaching, Awareness and Recognition platform.
- Critical Near Misses are discussed at these forums and corrective actions are developed at these forums.
- Actual performance on the set Sectional Safety Objectives is addressed
- The APC Service Providers attend these forums and asked to present their safety performance

Safety Celebrations and Forums:

— Achievement of 5,000,000 hours.

— Supervisor and/or Superintendent Forums.

— Truck Drivers Forums.

29

Effective key safety procedures audits

- A special audit procedure has been developed and applied at APC for our Key Safety Procedures. Examples of these Key Safety Procedures are:

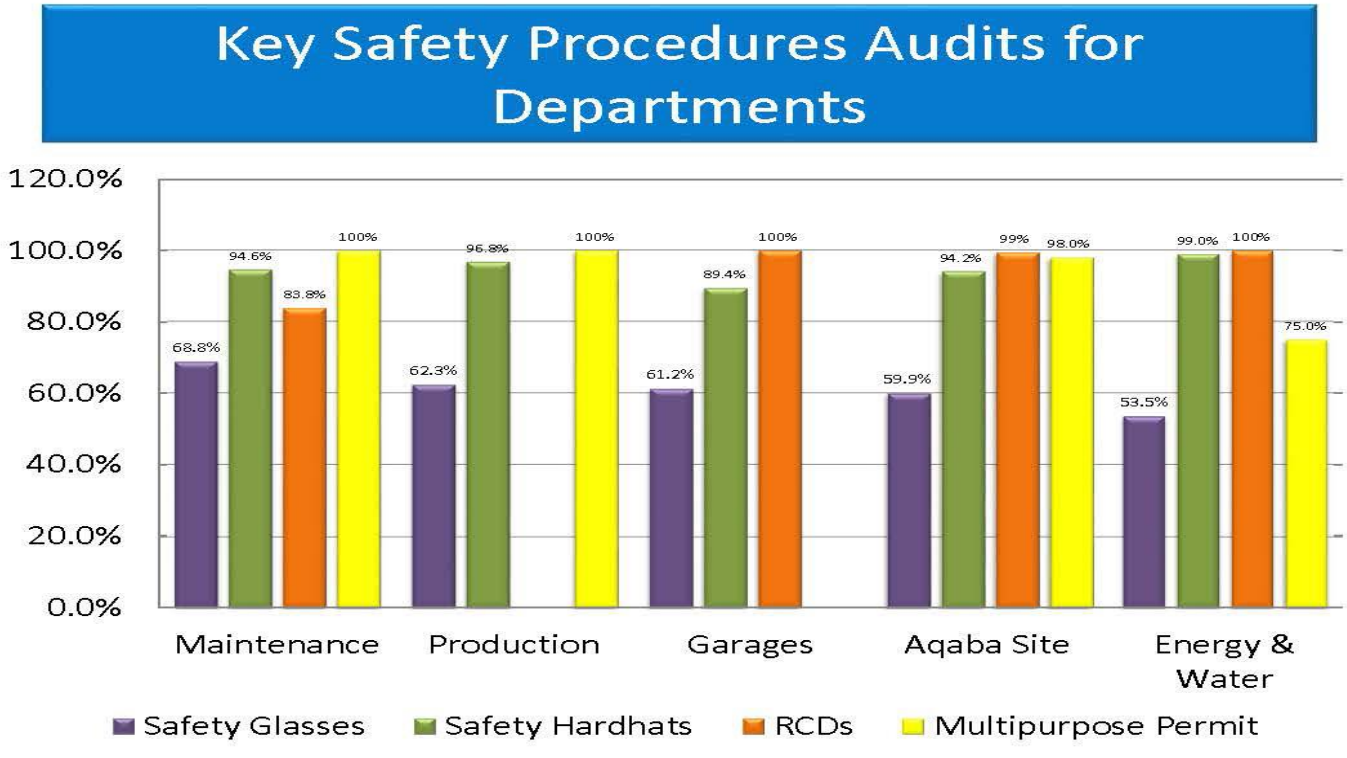
1. Energy Isolation (LOTO)
2. Confined Space Entry
3. Fall Protection

•4. Crane Use

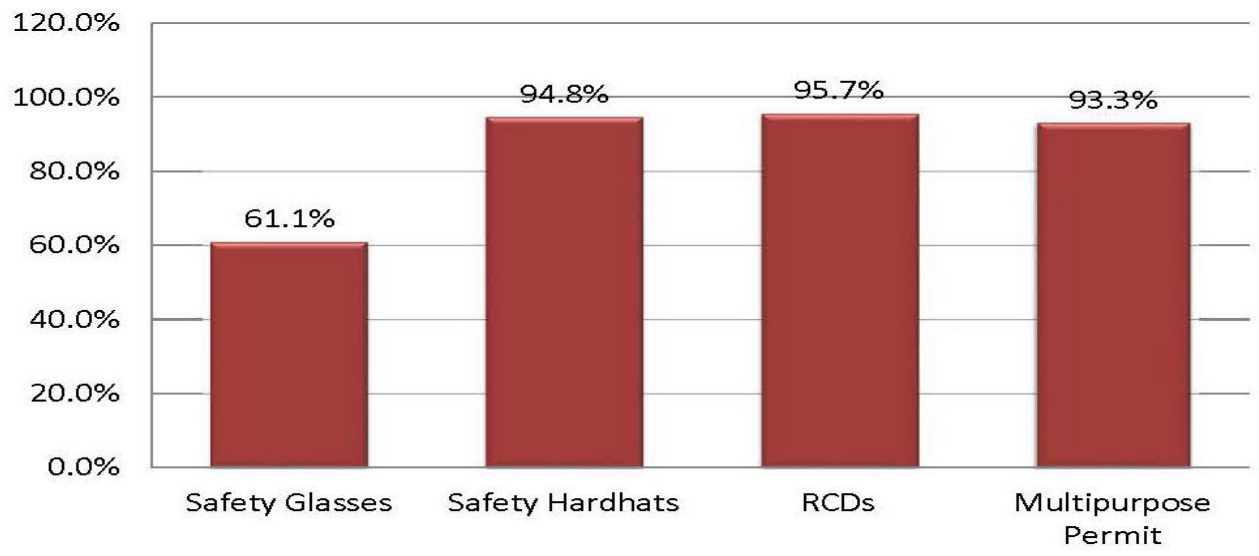
•5. Work Permit Procedure (HSP 4.4.6.4)

•6. Hot Work Permit (HSF 4.6.6.4.1)

•7- Safety Instructions for Operators and Maintenance technicians for Avoiding injuries caused by Rubber Joints of Hot Lines (HSWI 4.4.6.1.22)



Total Average for Key Safety Procedures Audits

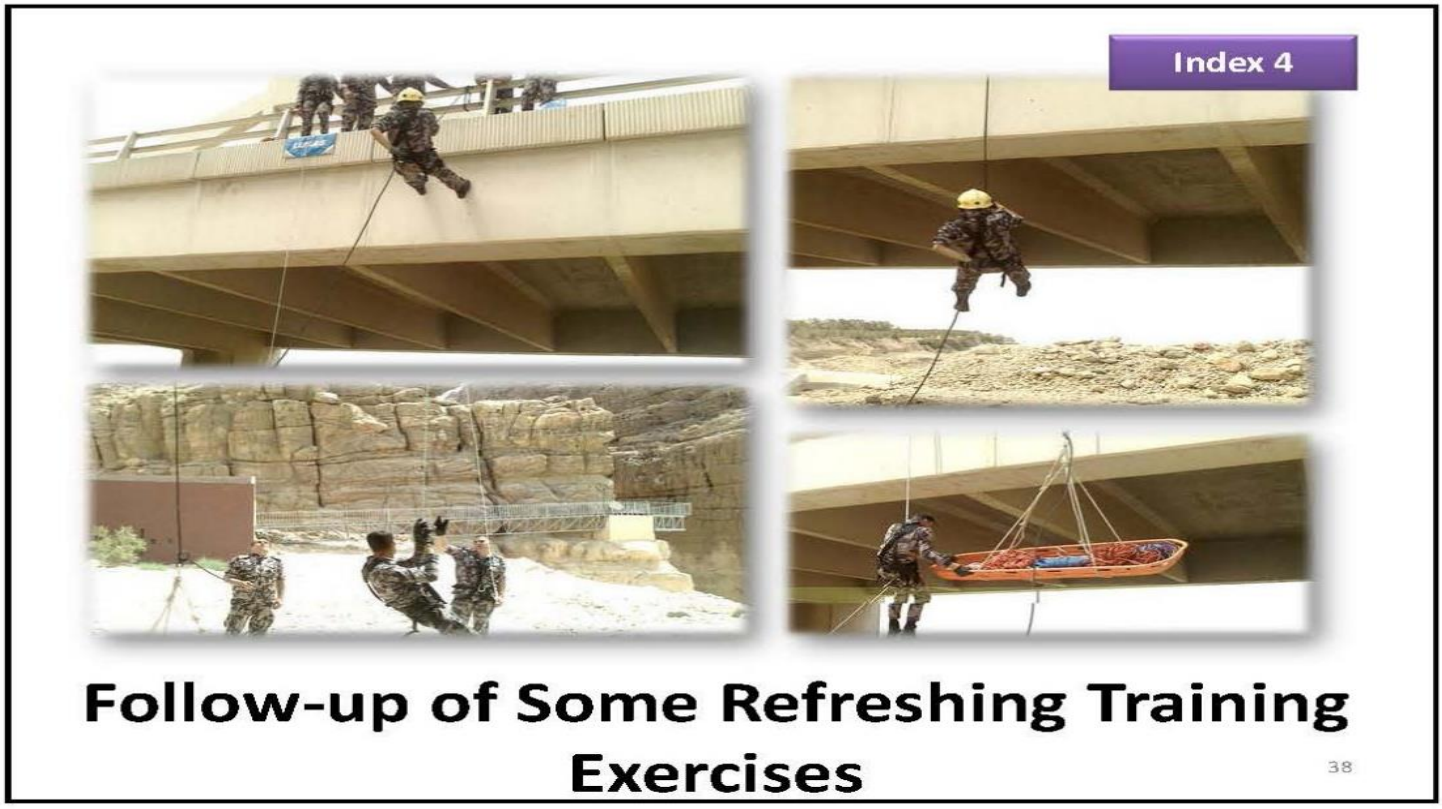


Effective Emergency Response Planning and Application

- As a part of APC Management commitment to protect APC individuals and assets, APC established an Emergency Response Center operated by Civil Defense crew in 2009 through an agreement with Civil Defense to ensure high level performance in rescue, Paramedic and Fire Fighting operations.
- The location of the center was carefully selected vis-à-vis APC plants which enables very short response time to all APC work units.

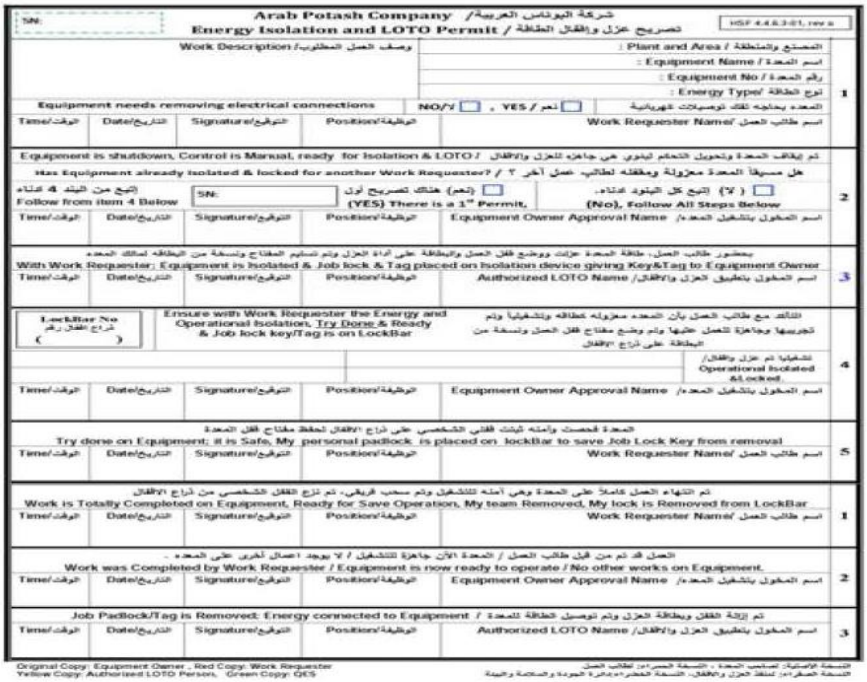
Rescue Operations: Logistic support to Potash Civil Defense for rescue operations from heights, sinking accidents and the related paramedic. Training Drills were implemented.

APC supports & shares effectively to open the closed roads by snow accumulation & landslides also in rescue operations & emergency cases such as floods, as support to local community.


Index 4
Follow-up of Some Refreshing Training Exercises
38


Preparations for Winter Season and supporting the local authorities.

Safety Work Permits – LOTO, Hot work, Cold , Confined space)& Excavation Work Permit



Arab Potash Company / شركة البوتاس العربية
Energy Isolation and LOTO Permit / تصريح عزل وإقفال الطاقة

SN: HSF 4.4.6.3-01, rev 5

Work Description /وصف العمل المطلوب

Plant and Area / المصنع والمنطقة :
Equipment Name / اسم المعدة :
Equipment No / رقم المعدة :
Energy Type/ نوع الطاقة :

1
Equipment needs removing electrical connections — NO/لا ☐ , YES / نعم ☐ — المعدة يحتاجه لفك توصيلات كهربائية
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Work Requester Name/ اسم طالب العمل

2
Equipment is shutdown, Control is Manual, ready for Isolation & LOTO / تم إيقاف المعدة وتحويل التحكم ليدوي هي جاهزه للعزل والاقفال
Has Equipment already isolated & locked for another Work Requester? / هل مسبقاً المعدة معزولة ومقفله لطالب عمل آخر ؟
Follow from item 4 Below إتبع من البند 4 أدناه — SN: — (YES) There is a 1st Permit, (نعم) هناك تصريح أول ☐ — (لا) إتبع كل البنود أدناه. ☐ (No), Follow All Steps Below
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Equipment Owner Approval Name اسم المخول بتشغيل المعدة/

3
بحضور طالب العمل، طاقة المعدة عزلت ووضع قفل العمل والبطاقة على أداة العزل وتم تسليم المفتاح ونسخة من البطاقة لمالك المعدة
With Work Requester; Equipment is Isolated & Job lock & Tag placed on Isolation device giving Key&Tag to Equipment Owner
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Authorized LOTO Name اسم المخول بتطبيق العزل والاقفال/

4
LockBar No ذراع القفل رقم ( ) — Ensure with Work Requester the Energy and Operational Isolation, Try Done & Ready & Job lock key/Tag is on LockBar
التأكد مع طالب العمل بأن المعدة معزوله كطاقه وتشغيليا وتم تجربتها وجاهزة للعمل عليها وتم وضع مفتاح قفل العمل ونسخة من البطاقة على ذراع الاقفال
تشغيليا تم عزل وإقفال/ Operational Isolated &Locked
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Equipment Owner Approval Name اسم المخول بتشغيل المعدة/

5
المعدة فحصت وأمنه ثبتت، قفلي الشخصي على ذراع الاقفال لحفظ مفتاح قفل المعدة
Try done on Equipment; it is Safe, My personal padlock is placed on lockBar to save Job Lock Key from removal
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Work Requester Name/ اسم طالب العمل

1
تم انتهاء العمل كاملاً على المعدة وهي آمنه للتشغيل وتم سحب فريقي، تم نزع القفل الشخصي من ذراع الاقفال
Work is Totally Completed on Equipment, Ready for Save Operation, My team Removed, My lock is Removed from LockBar
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Work Requester Name/ اسم طالب العمل

2
العمل قد تم من قبل طالب العمل / المعدة الآن جاهزة للتشغيل / لا يوجد اعمال أخرى على المعده .
Work was Completed by Work Requester / Equipment is now ready to operate / No other works on Equipment.
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Equipment Owner Approval Name اسم المخول بتشغيل المعدة/

3
Job PadBock/Tag is Removed; Energy connected to Equipment / تم إزالة القفل وبطاقة العزل وتم توصيل الطاقة للمعدة
Time/وقت | Date/التاريخ | Signature/التوقيع | Position/الوظيفة | Authorized LOTO Name اسم المخول بتطبيق العزل والاقفال/

Original Copy: Equipment Owner , Red Copy: Work Requester
Yellow Copy: Authorized LOTO Person, Green Copy: QES

النسخة الأصلية: لصاحب المعدة ، النسخة الحمراء: لطالب العمل
النسخة الصفراء: لمنفذ العزل والقفل، النسخة الخضراء: إدارة الجودة والصحة والبيئة

GPS Control for APC Product Haulage Trucks and Buses

- The GPS control function has been re-assigned to QES/Safety Department
- > Speed Limits have been set for Safi Aqaba Road that vary from a portion to another and effectively communicated to all APC trucking drivers.
- > Speed limits have been set at Safi-Karak, Saf-Tafila, Plats Township, Plants-Mazra'a and Plants-Safi that vary from a portion to another and effectively communicated to all APC buses drivers.
- > Monitoring of trucking drivers and buses drivers' speeds is continuous around the clock.
- > Compliance results are daily reported and a disciplinary procedure is in place.
- > There has been a significant improvement in drivers' compliance with speed limits as a result of this new control, as follows:
- - Improvement in Trucking Drivers Compliance: from 80 % to 98 %
- - Improvement in Buses Drivers Compliance: from 50 % to 98 %

Environment

- APC had been granted the certification of compliance for ISO-14001:2004 effective 2001 and had been continuously certified since then.
- Effective and periodic measurements and monitoring for APC Plants effluents and emissions
- Effective Waste management Projects had been implemented

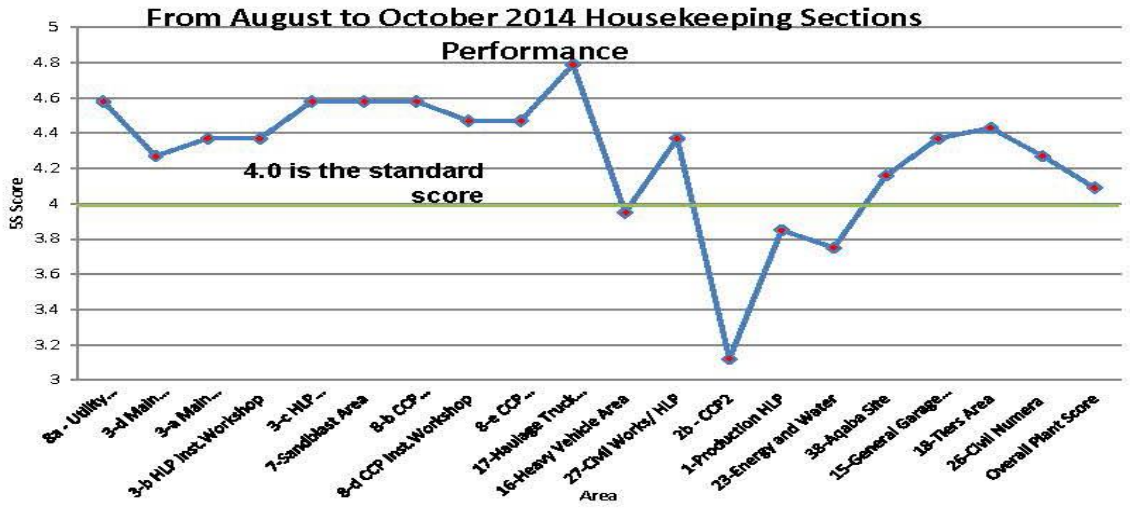
Used Oil Separation and Collection Station at APC Solid and Liquid Waste Yard => 100000 JD Saving Annually

Ambient Air Quality Stations

Water effluent from Softener is used to irrigate 50,000 m^2 of plants, these mainly are date palms and olive trees.

Housekeeping

Index 5



Housekeeping Scoring program is adopted by APC according to 5S Criteria

Corporate social responsibility:

- Water
  Solar energy
  . Education
  . HEALTH

- APC's CSR work is inspired by the vision of His Majesty King Abdullah II's vision that that the first priority is to secure a better life for all Jordanians. Accordingly, APC actively cooperates with government organizations, local community leaders, charities and NGOs to drive social development across Jordan, particularly in the governorates of Karak, Tafileh and Ma'an where we operate.

- Our annual CSR contributions support and sustain initiatives focus primarily on the vital sectors of education, health, water, and the environment, with the overall aim of alleviating poverty, raising living standards, upgrading infrastructure and public services, and addressing community needs. In 2012 and 2013, APC's CSR programs amounted to JD 10 million each year and directly benefited more than 2,000 organizations and 100,000 citizens.

Arab potash Company's CSR program 2014 in Jordan Dinars

Sector	Sub-Sector	Subsector total	Sector total
	Universities	949,117	
	Schools	1,254,140	
Education			2,203,257
	Welfare associations	918,249	
	Welfare packages	513,670	
	Orphans' care	122,500	
Social development			1,554,419
	Municipalities	567,329	
	Official organization	288,619	
	Community halls	530,000	
	Development associations	165,000	
Official bodies			1,550,948
Water & environment			256,147
	Health organization	586,500	
	Health associations	174,800	
	Special needs care	70,440	
Health			831,740
Sports			604,550
	Churches	18,000	
	Mosques	168,899	
Houses of worship			186,899
Culture			209,340
Professional associations			102,700
Total			**7,500,000**

Electrical Safety Working Committee

Progress And Achievements

Electrical Safety Regulations

Objectives:

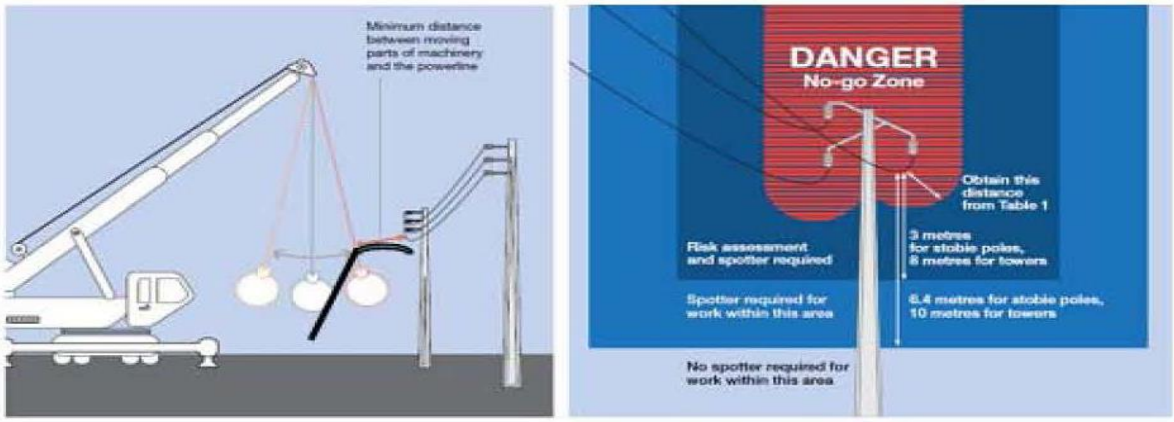
Electrical installations, plants and processes are safe:

- risk from electrical hazards are eliminated, minimised and controlled
- designed, constructed, installed, protected, maintained and tested so as to minimise the risk of injury, electrical shock or fire
- electrical work performed by competent person

Electrical Hazards

- Electric shock
- Electrocution
- Arc flash
- Arc blast

Working safely near overhead powerlines



Possible movement of powerlines and machinery must be taken into consideration

Electric Shock

(IEC/AS 60479-1 Limits)

Body response	Reaction Threshold Current Level (mA/mm^2)	Physiological Effect
Perception	>1 uA r.m.s.	Tingling sensation
Reaction	0.5 mA r.m.s	Involuntary muscular contraction
Let-go	10 mA r.m.s.	Voluntary muscular action
Electric burn	300 mA r.m.s.	10-20 mA – reddening of skin 20-50 mA – brownish colour and possible blisters > 50 mA – carbonisation of skin
Type I RCD trips at >= 10mA	**Type II RCD trips at >=30 mA**	
Ventricular fibrillation	> 500 mA rms (< 0.1 sec & 1 cardiac cycle)	Heart failure – could lead to electrocution

Electrocution Can Happen To You !!!!

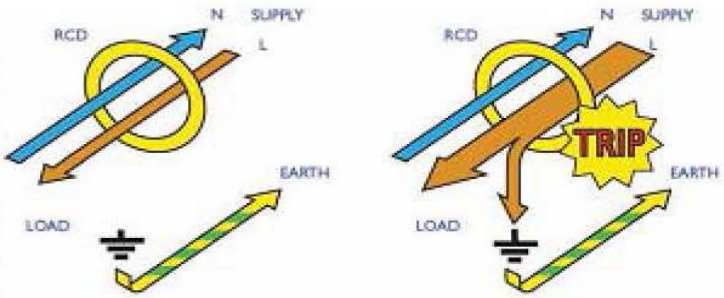
- A small amount of electrical current can cause injury, even death
  - The current from a 7.5-watt, 120-volt lamp, passing across the chest, is enough to cause fatal electrocution
- Deaths from 120 volts represent about 12 percent of all electrocutions
- Virtually everyone uses electricity every day
- More exposure = more opportunity for accidents
- ~2/3 of electrical incidents involve non-electrical workers
- Electrocution continues to rank as the fourth highest cause of industrial fatalities (behind traffic, violence and construction incidents)
- One person is electrocuted in the home every 36 hours
- One person is electrocuted in the workplace every 24 hours

Do You Know Those Devices?? You Should Know Them Carefully to Protect your Life!! They are called "RCDs"

How does an RCD work?

Principle of RCD Operation

Residual Current Devices are now firmly established around the world as a primary means of providing protection against electrocution and fires caused by electrical faults.



Less than one quarter of an amp (250mA) leaking to earth from a faulty installation can generate sufficient heat to start a fire (the heating effect is proportional to the current squared), or if leaking through a human body for only 200mS can cause heart fibrillation and possible subsequent death.

An RCD protects by constantly monitoring the current flowing in the live and neutral wires supplying a circuit or an individual item of equipment.

Under normal circumstances, the current flowing in the two wires is equal. When an earth leakage occurs due to a fault in the circuit or an accident with the equipment, an imbalance occurs and this is detected by the RCD, which automatically cuts off the power before injury or damage can result.

Main Tasks Of the Electrical Safety Committee

- The committee will report to "Electrical Safety Management Steering Committee".
- Review and evaluate the earthing systems of APC facilities.
- Review and make sure that all Electrical equipments in all APC facilities are connected to earthing networks.
- Check, evaluate, recommend and implement proper earth fault protection units (RCDs) for the outgoing circuits that are used for different electrical appliances.
- Review, recommend and implement TR recommendations for high voltage electrical incidents.
- Check out electrical installations for none APC facilities (contractors, subsidiary companies,..) inside APC boundary limits.
- Review PCS working documents related to Electrical Safety Procedures and extract applicable ones for APC.
- The committee will ask any of APC specialized personals to attend its meetings whenever necessary.
- Site Tours to APC facilities to check out full compliance of using safe portable connections, deviations will be reported accordingly.
- Third Party inspections to determine condition of wiring
- systems, grounding, cabling,...etc.
- Make the necessary recommendations to the DGM/T.

Progress and Achievements

- **Issuance of the following Circulars:**

- Circular # 1 : Electrical Connections for Portable Hand Tools.
- Circular # 2 : Residual Current Devices (RCDs) for Electrical Distribution Boards
- Circular # 3 : Purchasing and Evaluating Electrically Powered Hand Tools
- Circular # 4 : Working on Live Electrical Power Circuits

Progress and Achievements / Cont.

- Issuance of Hand Tools, Extension Cords and RCDs Check lists and Usage Procedure, approved as QES Document.
- Issuance of Contractors Safety Regulations for Electrical Connections ,approved as QES Document.
- Follow up the site surveys in all APC facilities to install RCDs on Electrical circuits that feed multi purpose 230V Socket outlets.
- Follow up purchasing process of RCD components
- Conducting weekly meetings for investigation and follow up.

Sample of Purchased RCD Units

- Cable Reels with RCDs → 45 Pieces Received at Stores.

Sample of Purchased RCD Units / Cont.

- RCD Plugs and Adaptors →Delivery End of July

Sample of Purchased RCD Units / Cont.

- Twin Switched RCD Socket 13Amps →Delivery end of July

Sample of Purchased RCD Units / Cont.

- IP66 Weatherproof Twin Switched RCD Socket 13Amps →Delivery End Of July

Next Steps for Implementing The RCDs On Electrically Operated Hand Tools

- Procedures are approved and under printing as log books.
- Once RCDs are received at APC Storage facilities, the USE of RCDs is a MUST on all Electrically Operated Hand Tools.
- Checklists shall be filled before each use of the electrically operated hand tools, copy of the check list shall be available with the user for further daily inspections.
- Use of RCDs is a must for all APC service providers , instructions and declaration statement are attached to each tender document.

Areas Of Concern for the Electrical Safety Committe

- All Electrical panels in APC Facilities will be surveyed and provided with RCD protection units.
- All APC Housing facilities in Township , Hussein Camp and Aqaba City will be surveyed and provided with RCD protection units

Help Us To Improve Your Electrical Safety

- Familiarize Yourself to the Safe use of the Electrically Operated Hand Tools and Strictly follow up the Checklists as detailed in the Checklist Procedure.
- Always inspect and Test Your Electrically Operated Hand Tools and extension Cords before each use.
- Keep In Mind to Test the RCD unit Before Each Use.
- Contact your Electrical Safety Engineers concerning additional questions you may have about the Safe use of RCD Units.
- When Using Any of the Electrically Operated Hand Tools; Remember to Protect yourself through the use of RCD Units.

Thanks

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APC Lifting Tools Tested by I.D Technical Services Company

No	Section	Available Quantity					
		Tool Name					
		wire sling	web sling	D-shackle	Lever Hoist	Chain Block	Eye Bolts
1	Hot Leach Plant Mech	124	78	66	46	30	30
2	Cold Cryst. Plant 1 Mech.	35	24	0	5	11	0
3	Cold Cryst. Plant 2 Mech.	38	20	26	7	6	10
4	Mech. Workshop	100	10	7	1	16	21
5	Garages-TRK (Trucks)	0	2	0	0	2	0
6	Garages- GRG (General)	0	0	0	1	0	0
7	Garages- HVG (Heavy Vehicles)	0	3	6	0	1	2
8	Construction W/S	13	53	41	1	2	0
9	Aqaba Site Mech.	2	9	11	8	8	0
10	Off Site Mech.	26	55	47	11	4	0
11	Utilities Mech.	22	26	13	1	1	0
12	Spare Parts Manuf. W/S	18	67	44	10	7	0
	Total	378	347	261	91	88	63
	Total						1228

Lifting Tools Inspection

Section : Hot Leach Plant / Mech.

Hot Mechanics	Chain Blocks	Lever hoists	Eye bolts	Shackles	Web slings	Wire rope slings		Total	Percent %
Quantity	30	46	30	66	78	124		374	
Safe	14	23	7	52	63	67		226	60.4
Unsafe	16	23	23	14	15	57		148	39.6

Lifting Tools Inspection

Defects Reasons

- Age
- Bad use
- Wrong Order
- Tough operating condition

FIXING TAG NUMBERS

Tag numbers have been prepared & fixed on all lifting hand tools.




LIFTING HAND TOOLS SURVEY

All lifting hand tools in all concerned sections / departments have been defined, Total lifting hand tools is 983, distributed on all concerned sections / departments as below:-

No	Section	Available Quantity					
		Tool Name					
		Wire sling	Nylon Belt	D-shackle	Lever Hoist	Chain Block	Elect. Chain Block
1	Hot Leach Plant Mech	66	39	43	24	15	0
2	Cold Cryst. Plant 1 Mech.	47	26	16	13	14	0
3	Cold Cryst. Plant 2 Mech.	58	30	34	7	10	0
4	Mech. Workshop	156	12	16	20	12	0
5	Garages-TRK (Trucks)	1	8	1	1	7	4
6	Garages- GRG (General)	3	4	0	2	2	0
7	Garages- HVG (Heavy Vehicles)	4	11	12	0	1	1
8	Construction W/S	8	7	8	9	6	0
9	Aqaba Site Mech.	13	17	32	7	13	0
10	Off Site Mech.	13	38	6	10	4	0
11	Utilities Mech.	15	13	12	7	2	0
12	Spare Parts Manuf. W/S	1	6	11	3	2	0
Total		385	211	191	103	88	5
Total							983

Chain blocks & lever Hoists

Defect Reason : bad use

Hot leach plant	Chain Blocks	Lever hoists	Percent %
Quantity	30	46	
Safe	14	23	60.4
Unsafe	16	23	39.6

Chain block & lever hoist
Defects Reason: Age

Corrosion
Rust
Wear

Shackles

Hot leach plant	Eye bolts	Shackles
Quantity	30	66
Safe	7	52
Unsafe	23	14

Defect Reason : wrong order

- Brand new

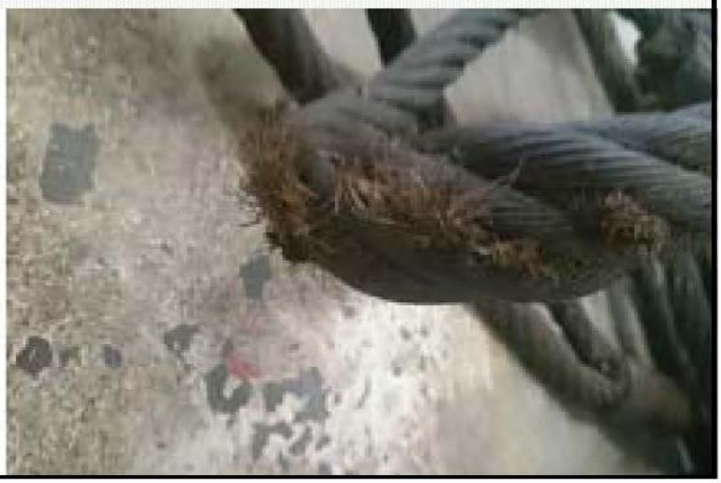
Eye bolt not for lifting purposes

Defects reason: Bad use

Wire ropes & web Slings

Defect Reason : Age

Hot leach plant	Web slings	Wire rope slings
Quantity	78	124
Safe	63	67
Unsafe	15	57



Wire rope & web sling

Defect Reason : bad use

Overhead Cranes

Defect Reason : bad use

Overhead Cranes

Defects Reason: tough operating condition

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Delegates List

Arab Fertlizer Association
since 1975

Delegate Report

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Delegate Report

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since 1975

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