Life Saving Rules

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Overview of the EIGA Life Saving Rules

- What are the Life Saving Rules?
- Why we need the Life Saving Rules of Safety?
- Brief explanation of the rules and rationale for the choice of the 14 Life Saving Rules.
- How they should work.
- Implementation.
- Explore the interface with consequence management.

Basic assumption on safety

- Safety is a basic pre-requisite for us all and any business activity we undertake.
- Everyone is responsible for their own personal safety and also must take care for the safety of those around them.
- Managers have specific responsibilities for employees and other people working under their direct supervision.
- Every employee, contractor, or any other person involved should be able to go about their work or business without being harmed.

What are the EIGA Life Saving Rules?

- Set of key safety rules that define minimum standards of behaviour and performance for everyone
  - Address the areas that are causing the majority of our fatal and major incidents.
  - Must be adhered to at all times by everyone.
  - Failure to meet the minimum standards of safety behaviours defined in the rules should be regarded as a severe breach and will have consequences

- Apply to the whole organisation
  - all managers, supervisors and employees), our contractors (both long term and short term) and any 3rd parties on our sites.

- Although the primary focus of the Life Saving Rules is safety, many of the requirements are equally applicable to occupational health and protection of the environment.

Why do we need Life Saving Rules?

- To prevent people from being harmed.
- To have an immediate impact on our serious or potentially fatal accidents
- To focus on the critical areas that we know from experience are the recurring causes of most fatalities.
- To set clear expectations for our employees and managers so that they are able to behave in line with industry / company requirements in these critical areas.
- To help drive the right safety culture in our industry.

Life Saving Rules

- EIGA believes that if all workers in our industry follow a fundamental set of rules, many serious or potentially fatal accidents could be avoided.
- Rules remind workers:
  - of the hazards
  - to refer to their local risk assessments.
- Developed from our knowledge of gas industry accidents and incidents.

Life Saving Rules

- Each of the 14 Rules addresses a different set of hazards
- Each Rule consists of
  - a descriptive text,
  - additional detailed guidance to explain why the Rule is important and what aspects workers, supervisors and managers should focus on.
  - Links to EIGA publications
- Reinforce existing in-company safety messages, and/or
- Provide the basis of a safety culture in any member company.

Guidance documents relevant for Life Saving Rules

[1]	EIGA Doc 44, Hazards of inert gases and oxygen depletion.
[2]	EIGA Doc 154, Safe location of oxygen and inert gas vents.
[3]	EIGA Doc 40, Work permit systems.
[4]	EIGA Safety Leaflet SL 01, Dangers of asphyxiation.
[5]	EIGA Safety Newsletter NL 77, Campaign against asphyxiation.
[6]	EIGA Presentation PR 01, Oxygen deficiency presentation.
[7]	EIGA Doc 04, Fire hazards of oxygen and oxygen enriched atmospheres.
[8]	EIGA Doc 33, Cleaning of equipment for oxygen service – guideline.
[9]	EIGA Safety Leaflet SL02, Hazards of oxygen enrichment.
[10]	EIGA Training Package TP12, Fire hazards of oxygen enriched atmospheres.
[11]	EIGA Doc 136, Selection of personal protective equipment.
[12]	EIGA Doc 23, Safety training of employees.
[13]	EIGA Doc 30, Disposal of gases.
[14]	EIGA Doc 130, Principles for the safe handling and distribution of highly toxic gases and mixtures.
[15]	EIGA Info 24, Carbon dioxide physiological hazards - Not just an asphyxiant!
[16]	Info HF 01 to 13, Safety Information – Human Factors (various).
[17]	EIGA Info 30, Electrical safety.
[18]	EIGA Doc 51, Management of change.
[19]	EIGA Info 36, Working at height – the hazard of suspension trauma when using fall arrest systems.
[20]	EIGA Training Package TP 28, Safe driving in bad weather conditions.
[21]	EIGA Info TS 01, Transport safety information, an overview.
[22]	EIGA Info TS 02, Vehicle rollover and other serious vehicle incident prevention.
[23]	EIGA Info TS 03, Training: induction and refresher training of drivers, management & other transport function personnel.
[24]	EIGA Info HF 11, Organisation – safety culture.

EIGA Life Saving Rules

Understand and search for potential **asphyxiation hazards**, in enclosed spaces as well as near to equipment containing gases or cryogenic liquids... take care and warn others.

Be aware of fire hazards whenever dealing with oxygen... never deviate from the procedures and be sure to maintain **cleanliness for oxygen service**.

Understand the effects of substances **hazardous to health**, on themselves and others... use prescribed safeguards, including PPE, properly.

Recognise and respect the hazards of **confined or enclosed spaces**... and be properly prepared for a rescue.

Use the **work permit** process to identify hazards, to anticipate and prevent possible accidents... and if anyone does not feel safe, they should ask questions.

Make sure that equipment is **isolated from energy sources** and de-energised before working on it... prevent reenergising by proper locking and tagging.

Only work on **electrical systems** if qualified... and confirm that proper precautions are in place.

EIGA Life Saving Rules

Never override safety equipment! Respect the original intent and importance of safeguarding devices, and the time required to work safely... make any suggestions for improvement formally.

Recognize the risks of making changes... and follow all the steps of the **Management of Change** (MOC) process exactly.

Understand that the consequences of a **fall from height** can be life changing... and make sure that all specified precautions and equipment are properly used

Ensure that any **lifting task** is thoroughly planned, assessed, controlled and executed... and stop the operation if any problem or unexpected situation arises.

Know the correct **Personal Protective Equipment** (PPE) to use for each task or work area... and use it properly

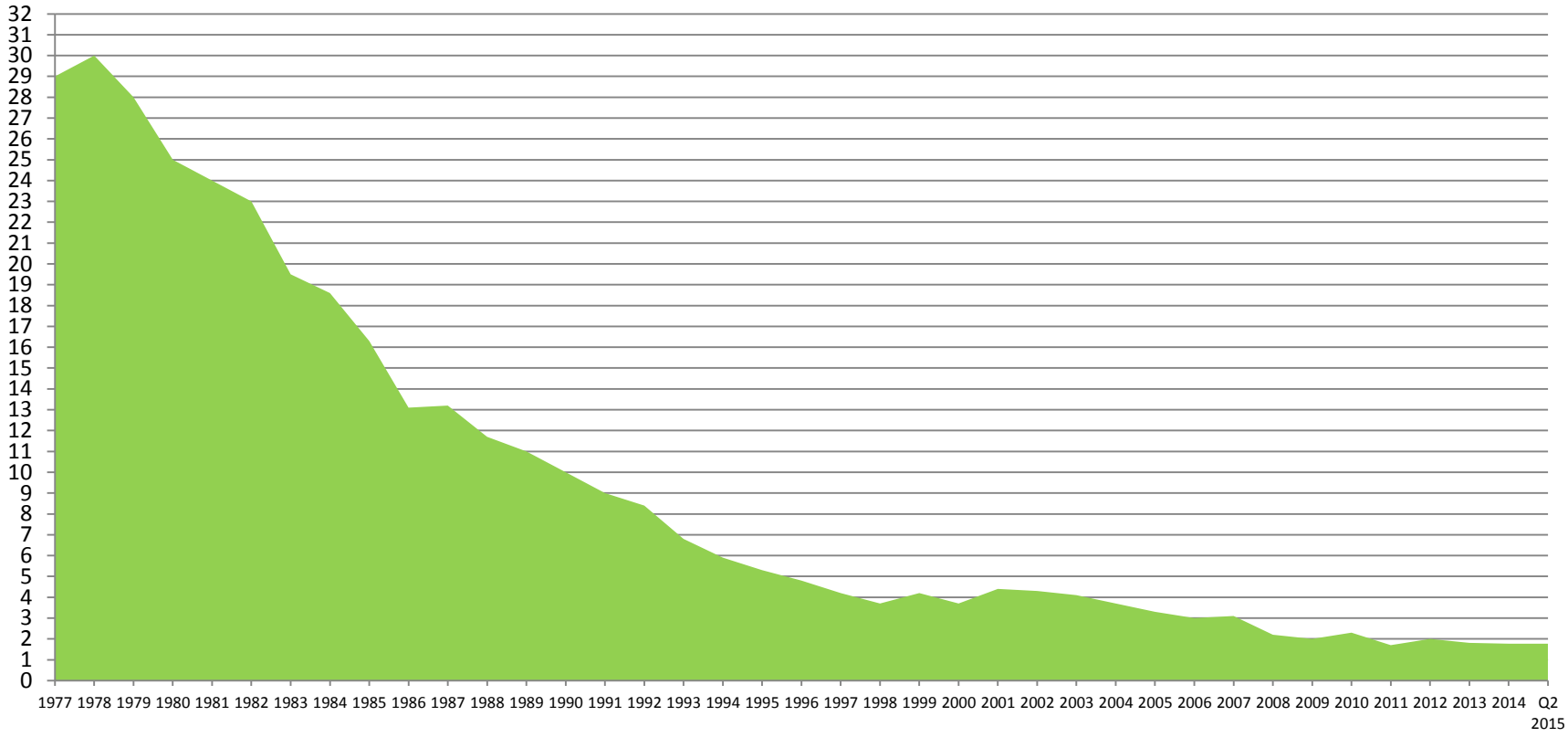
Be alert, rested and focused on the traffic conditions whenever **driving**... and if not, stop for a break

Take **responsibility** for their own actions, condition and decisions.....whenever they feel unsafe they should speak up

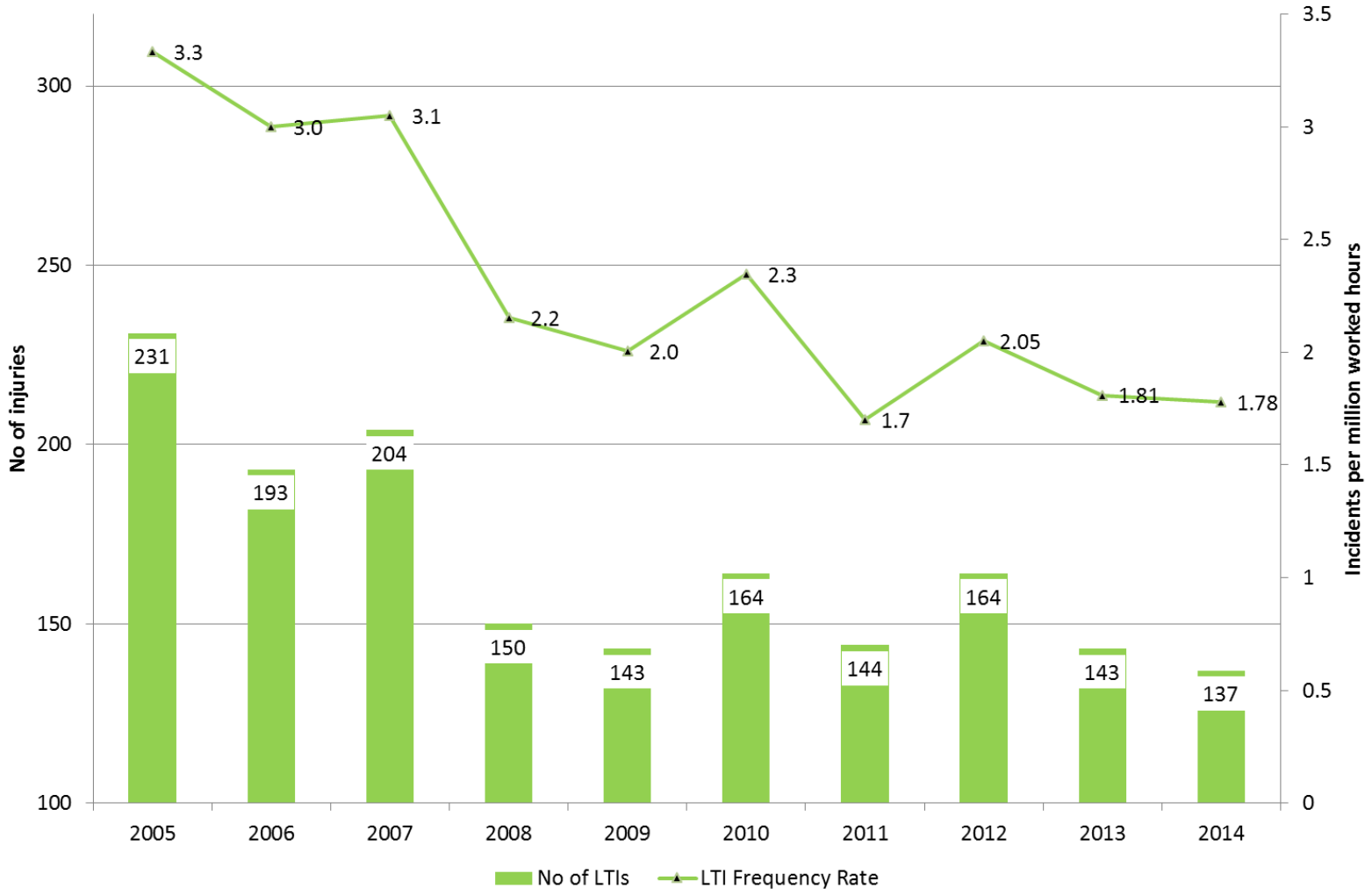
WHY DO WE NEED LIFE SAVING RULES?

EIGA Safety Performance: Lost Time Injuries since 1977

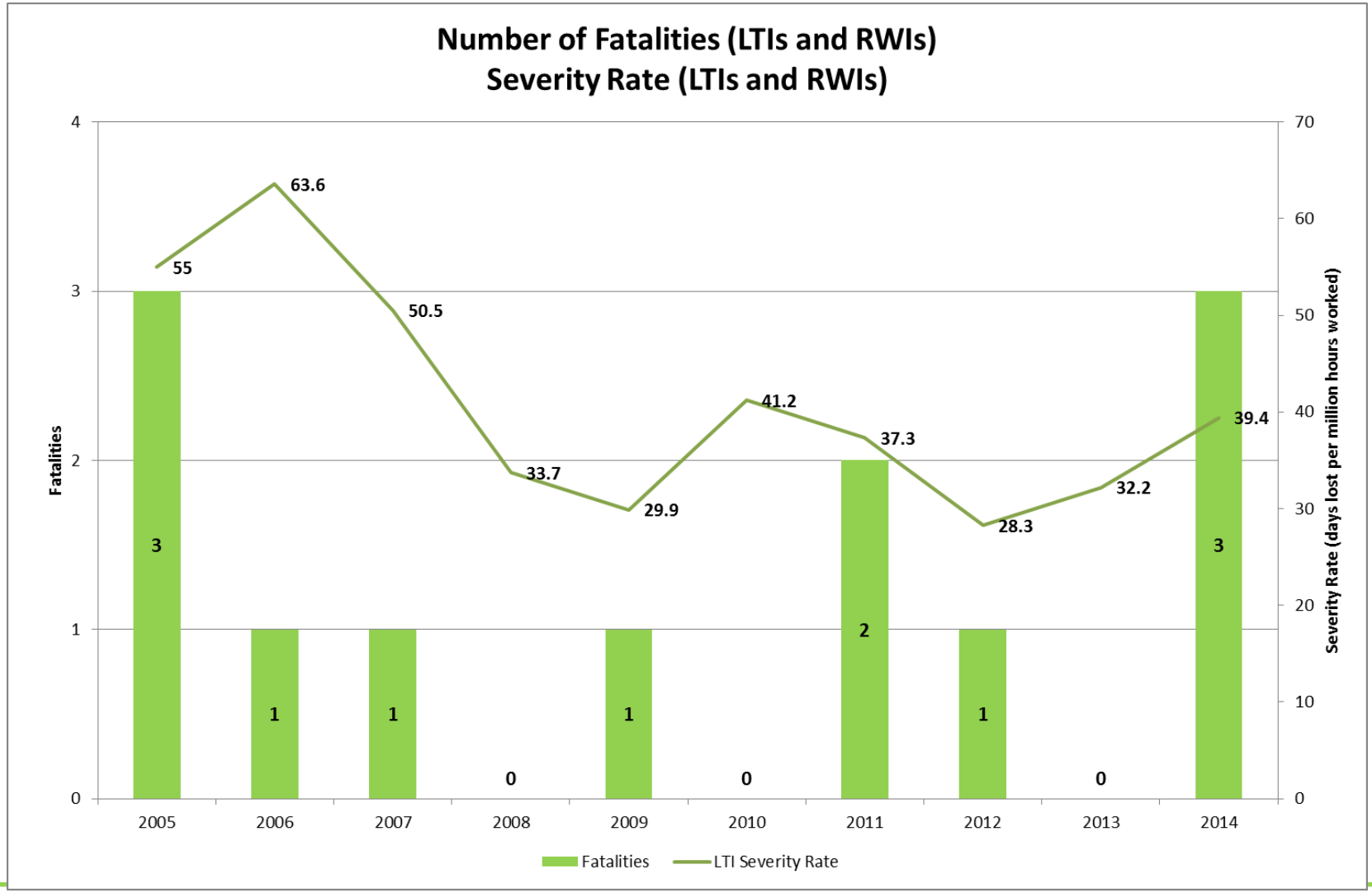
European Industrial Gases Association
Lost time injury rate per million hours
(number of work injuries resulting in one or more lost working days per million worked hours)



EIGA Safety Performance: Lost Time Injuries



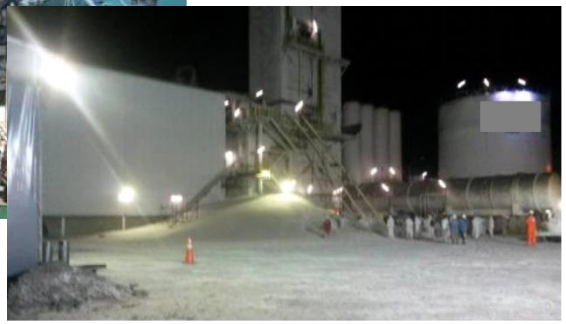
EIGA Safety Performance



Why do we need EIGA Life Saving Rules?

- Analysis of 274 fatal incidents reported by EIGA member companies over the last thirty six years indicates that adoption, conformance and enforcement of these simple Rules may have prevented many of these fatalities.

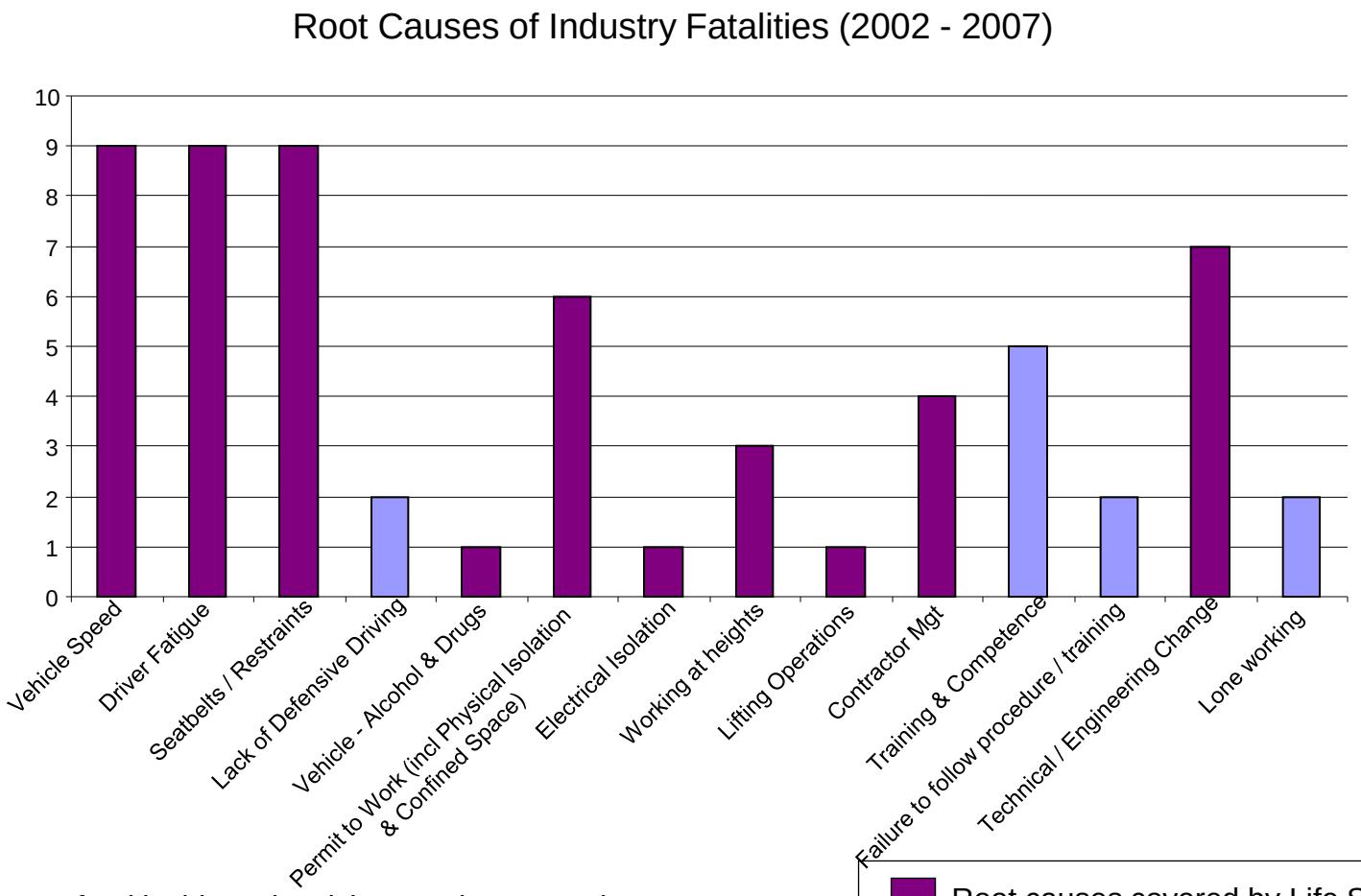
Why do we need EIGA Life Saving Rules?



West side of the coldbox, note the 4 pipes
From where perlite was extracted

East side of coldbox after initial cleaning, immediately after release about 4 m of perlite was piled up here. Arrow indicate where the victim was found

Why these Rules were selected



— 59 separate fatal incidents involving employees and contractors
— 63 total fatalities (29 employees and 34 contractors)

How should the Life Saving Rules work?

- Supplement and support existing company management systems, programmes and policies.
- Modifying worker and supervisor behaviours in the workplace
  - awareness of activities which are most likely to result in fatalities.
- Highlight simple actions individuals can take to protect themselves and others.
- Set of industry life-saving rules will improve understanding and compliance, with the aim of reducing serious incidents and fatalities.

- Companies without life-saving rules should consider adoption.
- Companies who already have rules should, at the next revision cycle, consider adoption of or alignment with the EIGA Rules.
- Companies actively support their contractors in implementing the EIGA Life Saving Rules.

Implementing the EIGA Life Saving Rules

- EIGA Life Saving Rules should be implemented as a project with the commitment of senior management.
- It is important that the Rules are communicated to all workers, preferably as part of each new worker induction, safety awareness campaign, pre-job discussion and other opportunities.

Implementing the EIGA Life Saving Rules

Fundamental requirements

- Work will not be conducted without a pre-job risk assessment and a safety discussion
- All personnel will be trained and competent for the work they conduct.
- Personal protective equipment shall be provided and worn in accordance with the requirements identified.
- We will have the right tools and equipment to do our work, and ensure those people working for us are also provided with what they need to do their work safely.
- Emergency response plans will be in place with suitable and sufficient resources available, before commencement of work.
- Everyone is authorised to stop work that they consider to be unsafe, and immediately report any concerns that they have to their Supervisor or Manager.

Link between the Life Saving Rules and Consequence Management.

Failure to meet the minimum standards of safety behaviours defined in the rules should be regarded as a severe breach and will have consequences

Do we apply the same standards to safety as we do to other areas?

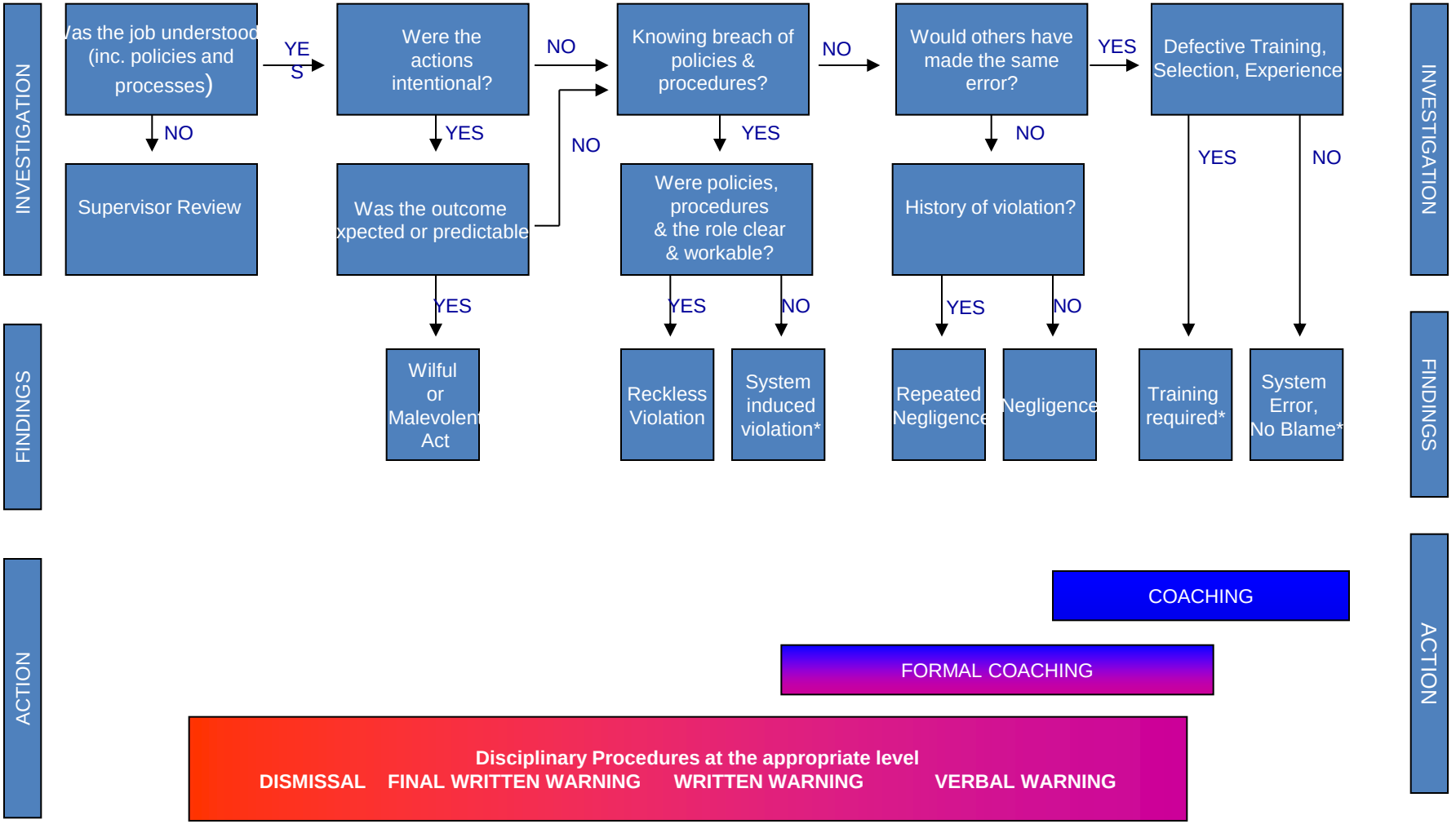
- What do employees think will happen if they put in a false expense claim & are caught?
- What does a manager think will happen if he tells a worker to work at height without a safety line and there is no incident?
- Consequence management is a key component of any high performing safety culture.
- The consequences must be:
  - Based on the action or omission, not the outcome (potential risk).
  - Fair (& legal) – commensurate with the potential risk.
  - Consistent and repeatable (the grade you have is irrelevant).

Dismissing someone is a small price to pay if it saves someone's life!

Types of violations

- Un-intentional
- Situational
- Organisational benefit
- Personal benefit
- Reckless
- Routine violations raise questions about the role of supervisors and managers
  - Did they know and condone the behaviour?
  - Didn't they know what was going on in their part of the organization?

Consequence Management Decision Tree



Practical Examples of Application of Consequence Management to Safety

1. An employee is observed not wearing correct PPE (e.g. safety glasses) in a plant area for the first time.

2. An employee is observed not wearing correct PPE (e.g. safety glasses) in a plant area. The same employee has been previously stopped and received coaching for a similar offence 3 months ago.

3. A sales representative is stopped by police for roadside breath analysis whilst driving a vehicle one evening. The breath analysis returns a reading over the prescribed legal limit. Police immediately confiscate the drivers' licence of the sales representative. It is expected that the licence will be suspended for a minimum of 1 year. The sales representative is dependent on driving a motor vehicle top undertake their role

Life Saving Rules - What do others do?

- Air Liquide, Air Products and Linde have life saving or golden rules
- Both BP and DuPont have equivalent of Life Saving Rules.
- BP originally launched in 2005 but believe that they missed an significant opportunity.
  - There was no consequence associated with breaking the rules.
  - There were no changes in behaviours (or no. and severity of incidents).
- In DuPont the whole organisation understands that if you put your own life, or that of a co-worker, at risk then you have effectively resigned from the company.
  - Working safely is a condition of continued employment.
  - This has become viewed as a positive aspect of their culture by all

Lessons learned in rules implementation

- Based on the experience of companies that have implemented similar life-saving rules:
  - Conduct a risk assessment of your organisation's activities and review historical data related to fatalities and high potential events within your own organisation.
  - Compare the rules to the risk profile of your organisation.
  - Develop a business case and change management programme to ensure commitment to implement the rules.
  - Develop a communications and roll-out plan for the implementation of the chosen Rules.
  - Develop performance monitoring measures (KPIs) to determine the level of effective implementation of the Rules
  - Monitor performance and conduct management review to identify improvement opportunities.

Life Saving Rules – Part of the safety picture

Our plants and sites are well designed, maintained and operated.

This results in operations that are highly productive, efficient and are very safe to work in.

Managers at all levels are personally involved and their passion and commitment is evident to all.

Our people have the right level of knowledge and competence to make the correct decisions and take the right actions every time.

Our people understand and respect the work processes, rules & procedures, & are motivated to work in the correct way.