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Integrating Human Factors into a Comprehensive Safety System

May 2019

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HSE's definition of Human Factors

“The environmental, organisation and job factors, and human and individual characteristics, which influence behaviour at work in a way which can affect health and safety”

Definition suggests the importance of three interrelated aspects ;

- The Job
- The Individual
- The Organisation

.....A very broad remit

The Safety Challenge Facing Industry Leaders



Years of industry experience and academic research have produced a wealth of material to help deliver safe operations

Incorporating these incremental changes in to day to day operations can be disjointed / piecemeal

This can lead to;

- Lengthy policy and procedures
- Duplication and contradiction
- Emergence of complex solutions rather than putting in the effort to simplify
- Differences in understanding between senior leaders and those executing in the field
- Differences in understanding between employees and contractors / sub-contractors
- Communication / training challenges – how does everyone keep up with change?
- Not enough emphasis on ‘bottom up’ feedback & input in to the continuous improvement process

Industry leaders must be alive to this continuous challenge



Professor James Reason

“Safe operational organisations have two traits;

- (1) Always have Chronic Unease, they always think today is going to be a bad day, they are ever vigilant, they are wary ALL the time
- (2) Are always taking big lessons, not local lessons from failings; asking how can we learn?”



Comprehensive safety programme



Plant Design

Plant
Operation

Management
Systems

Task
Procedures

Workforce
Performance

‘Chronic Unease’ & ‘Continuous Improvement’ apply in all areas

Effective Behavioural Safety enables the entire workforce to understand and apply ‘chronic unease’ and ‘continuous improvement’





99%+ of Safety Incidents and Injuries result from Management Failure

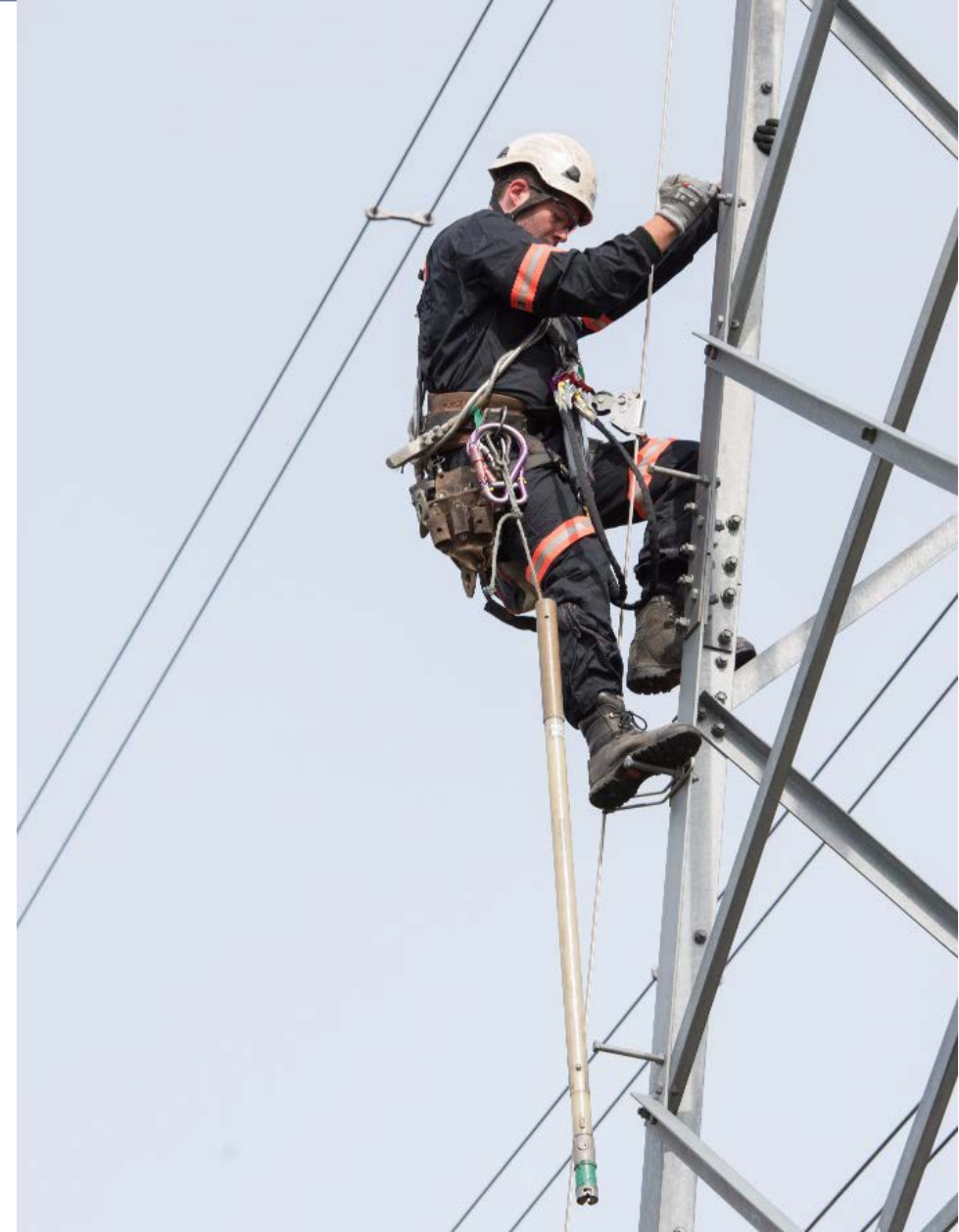
- Inadequate *Training*
- Inadequate *Standards*
- Inadequate *PPE / Tools / Plant & Equipment*
- Inadequate *Planning / Preparation*
- Inadequate *Risk Assessment & Procedures*
- Inadequate *Communication / Supervision*

- Poor Safety Culture

Do YOU and ALL Your Management Really Believe This?



What Does a Positive Safety Culture Look Like?



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Achieve right balance of teaching / coaching
accountability



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- Compliance



What Does a Positive Safety Culture Look Like?



Achieve right balance of teaching / coaching accountability

- Compliance
- Positive attitude to safety and incident prevention for;
 - Self / Colleagues / Public / Business
 - Workforce & management receptive and responsive to challenging safety discussion
 - No hesitation in 'stopping the job'

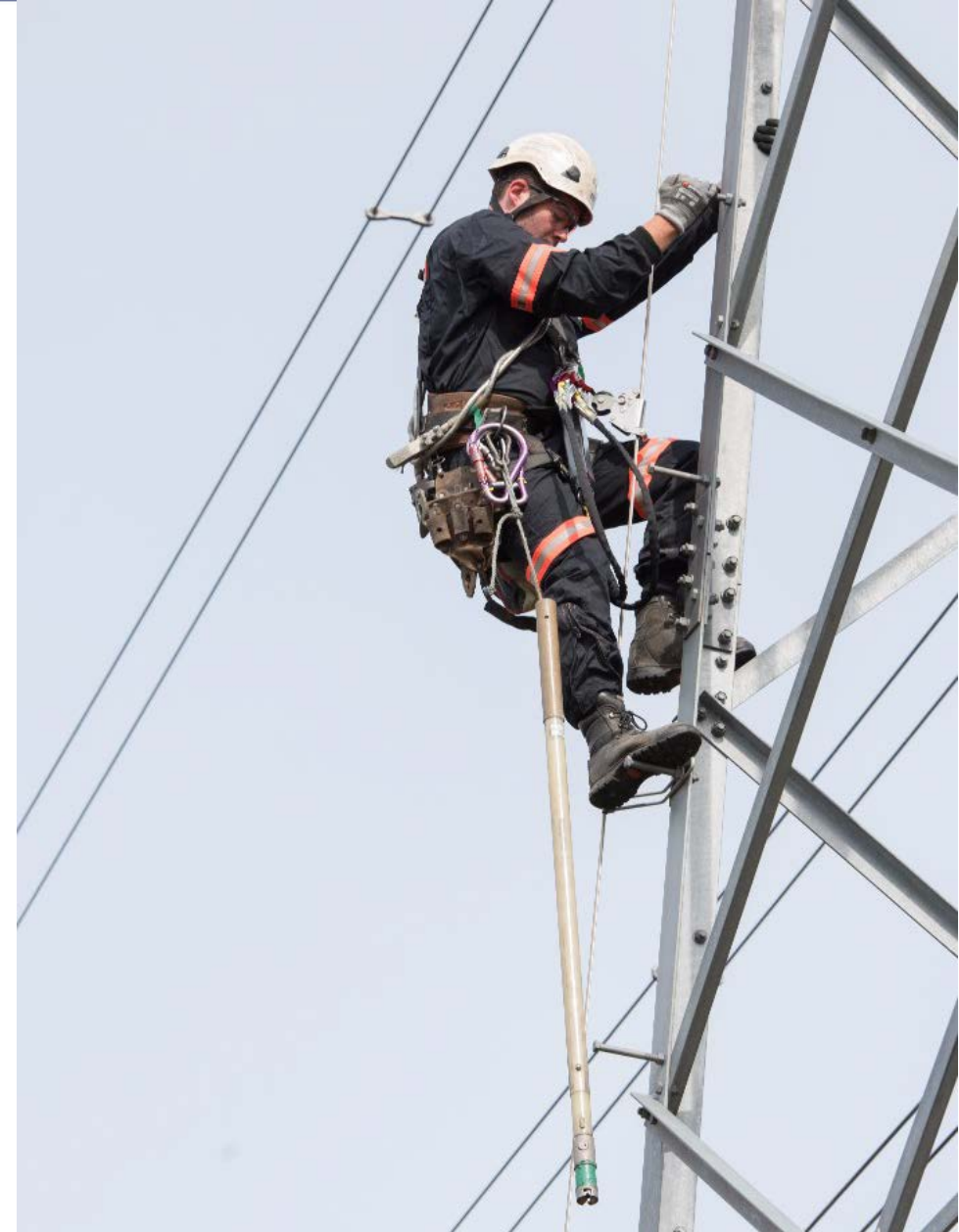


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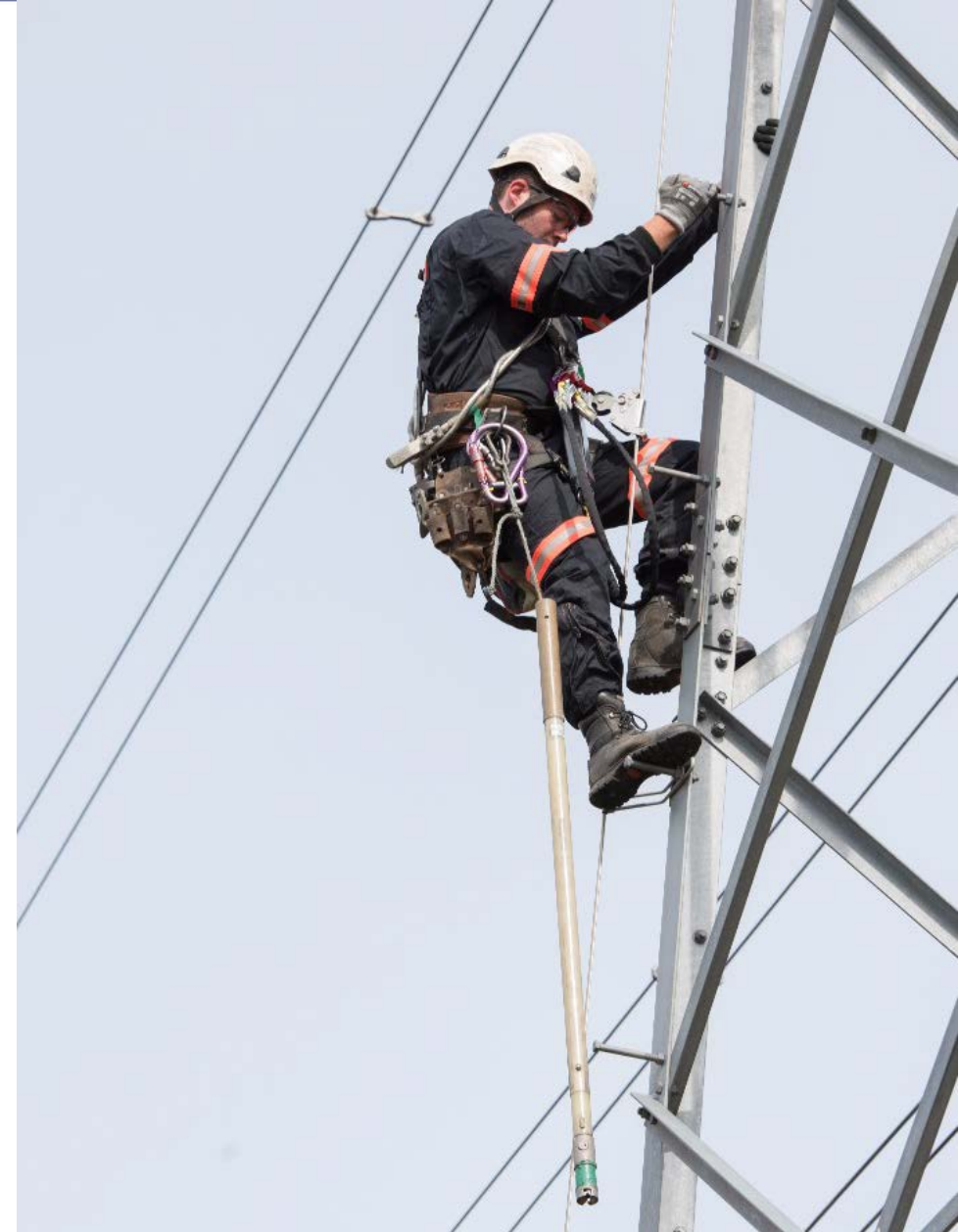


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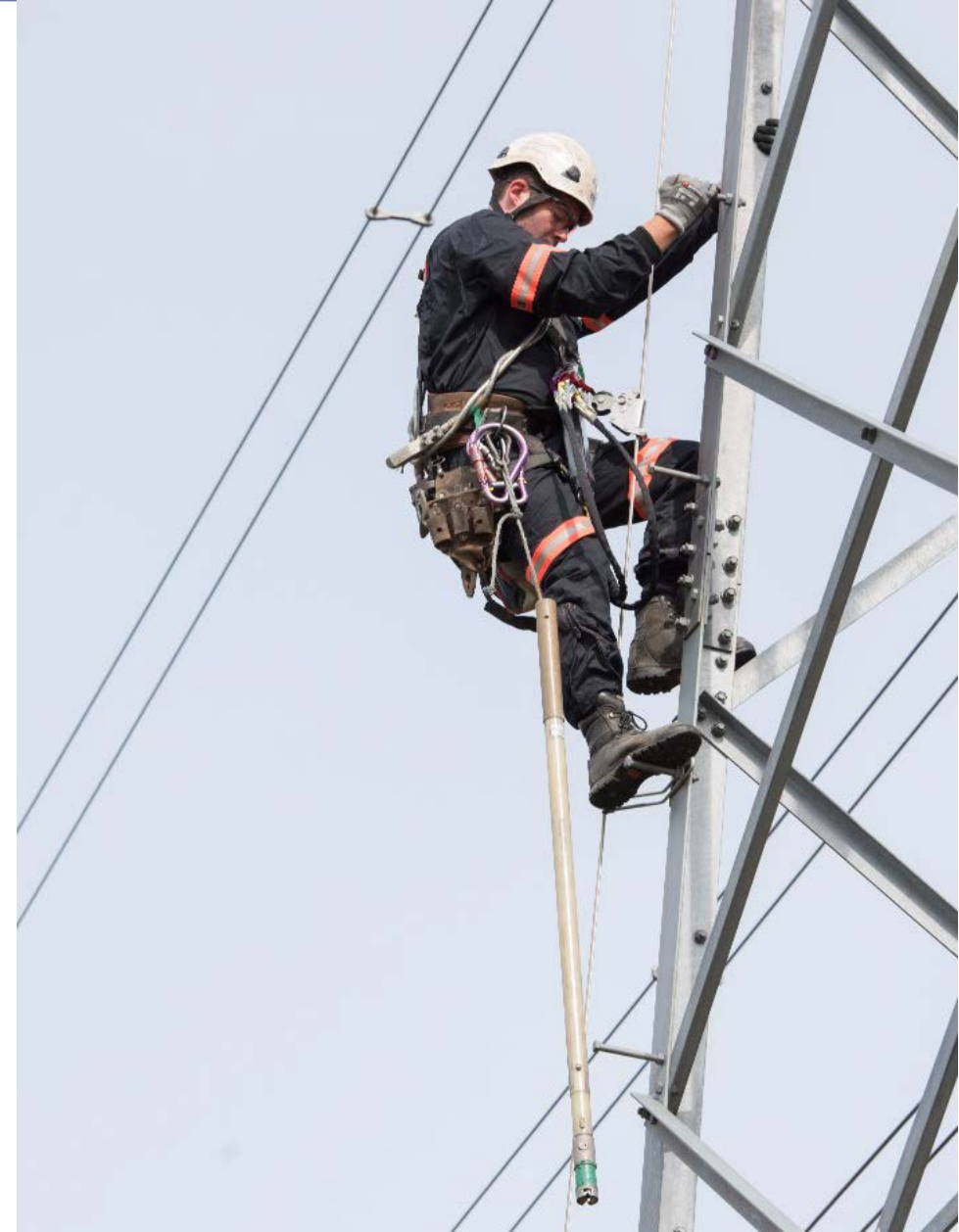


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- Desire to investigate and continuously improve



How Do You Achieve a Positive Safety Culture?



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Behavioural Safety is Powerless in Isolation;

- Management must deliver on;
 - Plant Design / Plant Operation / Management Systems / Task Procedures
 - The 'Inadequates' must be;
 - Tested
 - Simple
 - Robust
 - Resilient
 -and up to date



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All management **MUST** believe;

- All incidents are preventable
- 99%+ are due to management failings



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‘Just Culture’ is Critical

- Key Enabler for open & honest communication throughout the organisation
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- Share learning's / Change Management
- Solicit input / act upon it / feedback
- Recognition
- Supervision must really engage with their teams





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Fundamental Principles will remain – Technology & Social Attitudes Change

- Materials
- Automation & Control
- Facilities Design
- Data Management
- Documentation
- Methods of Communication & Engagement
- Expectations of Individuals

Intelligently apply / respond to new developments to address evergreen issues

Experience shows that the energy industry has made huge progress over the last 30 years

Strive for continuous improvement without the ‘help’ of costly major incidents

Powering Improvement is an important vehicle in our industry to help make this happen



2003 to 2017 - 13 Fatalities

- 2003 – hit by falling pole
- 2003 – induced voltage incident
- 2005 – linesman electrocuted
- 2006 – linesman electrocuted
- 2006 – linesman electrocuted in 400kV substation
- 2007 – jointer electrocuted making a cable joint
- 2007 – engineer electrocuted from pole mounted transformer
- 2008 – tap changer explosion
- 2012 – induced voltage incident
- 2012 – linesman killed when pole snapped
- 2013 – linesman fell from pole
- 2015 – engineer electrocuted at substation – charged cable incident
- 2017 – apprentice electrocuted making a cable joint

