

REINVENTING THE SAFETY ALERT SYSTEM

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E N E R G Y E D G E

Introduction

- + Safety alerts released through the EEA since 2016
- + At the **safety alert reports** that the EEA produces biannually
- + Takes an objective look at **deficiencies** and **biases** in these alerts
- + Are there fundamental problems?
- + What's missing?
- + How can we do things better?
- + Extend the use and usefulness of safety alerts

What Are Safety Alerts for?

- + An important tool for communicating risks
- + Signalling actions or directives
- + Reach their audience quickly
- + Are concise and accessible

Typically issued:

- + After an accident or incident
- + As administrative control where hazards are identified
- + To convey findings of an investigation and the lessons learnt
- + Where policy, procedures and practice have drifted apart



Background & Genesis

Realisation that: risks tend to increase downstream in a distribution network: lower voltages, protection harder, greater exposure, large number of assets, \$\$\$ + more people problems

My observations:

- + Most safety alerts are driven by workplace events (HSWA)**
- + Skewed towards the acute workplace issues and incidents**
- + Safety information shrouded by commercial risk**

few safety alerts address:

- + Downstream risks**
- + Public safety issues**
- + Asset risks & precursor events**

The safety alerts that are currently produced by the electricity distribution sector go nowhere near to addressing actual risks

Safety Alerts in the ESI: a “Snap Shot”

- + 250 alerts issued through the EEA since 2016 (NZ only)
- + Archive going back as far as 1999: identify similar incidents, events or underlying issues.
- + Over representation of transmission
- + **Two thirds** of alerts coming from the transmission workspace.
- + Notifiable incidents (HSWA) from April 2016 to March 2018
36 in distribution, 18 in transmission and 9 in generation.
- + All else being equal, there should be **twice as many alerts** being shared by the distribution sector as transmission and half as many by the generation sector

Quantity of Alerts

Transmission shares **75** alerts per year

Distribution < **30**

∴ transmission **5x** Distribution w.r.t. notifiable incidents

is the distribution sector 'under-reporting'

or is transmission **'Over-reporting'?**

Do we really want > 250 alerts a year?

EEA: Categories of Safety Alerts

Injury

Asset or Equipment

Health / Illness

Hazard Observation

Fatality

Near Miss

Public Safety

Safety alert categorisation as used by the EEA in their reporting template and biannual report

- + EEA categories are not compatible with those of NEDeRs**
- + Four categories to left being roughly equivalent to NEDeRs DIN (Dangerous Incident Notification)**

Framing Incidents and Discoveries and the Categorisation of Safety Alerts

Often hard to know:

- + How should an incident be framed or categorised.**
- + E.g. a quality alert can have profound safety implications.**
- + Eye of the beholder, underlying cause**
- + Often alerts cross several categories**

It is noted that:

- + There is a workplace focus in these definitions.**
- + Definition of near miss is effectively: ESI notifiable incident**

Distribution Channels

- + EEA 450 Direct Recipients**
- + Including 60 corporate member organisations**
- + EEA is the main distributor of alerts to ESI**
- + EEA Safety Notice Board ~2500 page views annual**

Other channels:

- + Intra-organisational**
- + Inter-organisational**
- + NZTA's Zeroharm scheme**
- + Chorus New Zealand**
- + Staylive**

Quantity of Alerts

Year	2014	2015	2016	2017	2018
EEA (NZ)	102	105	117	106	29
EEA (UK&IRE)			56	55	24
EEA (AUS)			1		
StayLive			15	12	10

Since 2016 there have been over 250 alerts issued through EEA, of these 70% are related to workplace injuries or incidents, and 8 were environmental alerts not related to safety.

Table 2: EEA Safety Alert and StayLive Alerts Notice Boards

Alerts: Production & Reporting Bias

- + **Transmission sector bias (~70%)**
- + **Workplace incidents (~70%)**
- + **Dominance of the HSWA**
- + **Little or no Regulatory (ESR) compliance issues save MADS**
- + **Alerts with public safety issues framed from workplace perspective**
- + **Only 2 alerts from suppliers and manufacturers since 2016**
- + **Suppliers and manufacturers are PCBU's with a great deal of influence**
- + **Tempered by commercial risk**
- + **EEA safety notice board framed as being for accident and incident reports (are hazard observations etc. a by-catch?)**

Quality of Information

- + It is hard to get further information**
- + Often safety alerts are vague or guarded**
- + Ephemeral contact information**
- + Of the 2016 alerts <50% contact details are still valid**
- + Publisher not the author**
- + Person is typically 'too busy' or does not respond in a timely manner**
- + Information is shrouded in guise of commercial sensitivity**
- + Virtually impossible to get at the true narrative or assess actual risks**

What's Missing?

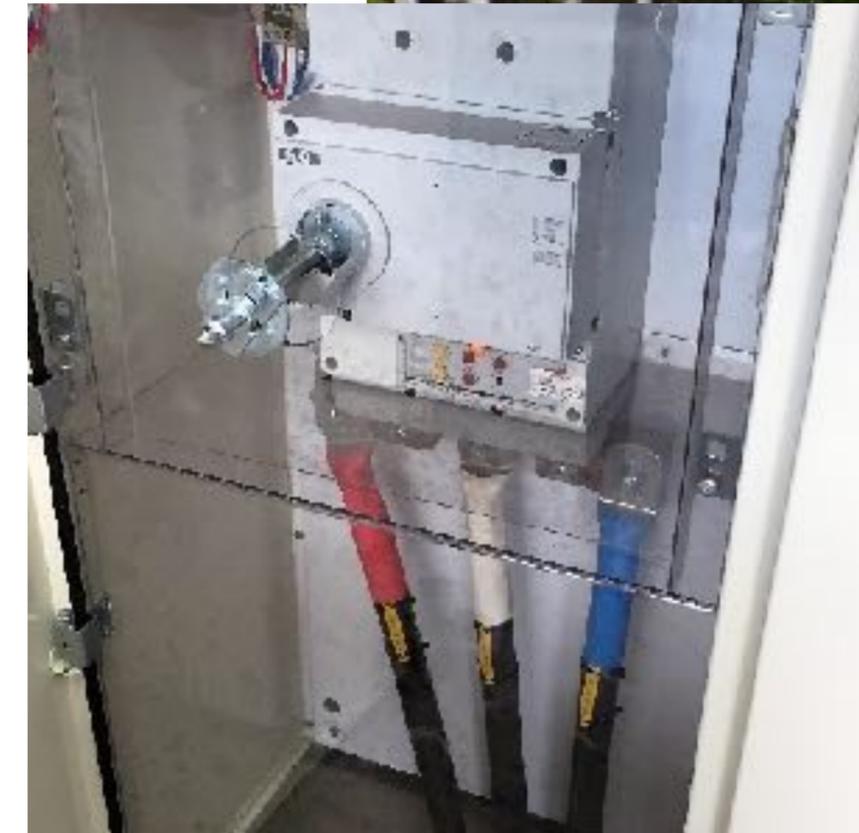
- +** The "Boundary Issues"
- +** Public safety issues
- +** At risk behaviours
- +** Asset risks
- +** Precursor events

Boundary Issues

- + **Networks' have influence but not ownership**
- + **Where third parties interact with the network**
- + **Overlapping Duties (proportionate to influence)**
- + **Electricians (e.g. arc flash risks MSB)**
- + **Telecommunication workers / Contractors**
- + **Roofers / Builders / Scaffolders**
- + **Road Users**
- + **Ownership boundaries**
- + **Overhead services / Streetlights**

Often blurred, unknown or obfuscated due to:

- + **Commercial risk**
- + **Political lobby process**



Public Safety Issues

- + Only 7% (8/121) of alerts are identified as public safety issues by the EEA
- + EEA's public safety definition uses the term '**significant risk**' from the Electricity Act to allow for a different public risk tolerance.
- + the public's risk tolerance is typically seen as an order of magnitude lower than that of an ESI worker
- + Involuntary nature of risk versus voluntary
- + Introduction of (Public) Safety Management Systems

Why so few public safety alerts?

Notification of Incidents

In Electricity Industry, there are two main paths to the notification of accidents or incidents to workers and members of the public:

- + HSWA (immediate or imminent risk of serious harm)**
- + Electricity Act section 16 (significant risk of serious harm)**

Worksafe itself acknowledges that it has set a high bar for mandatory notification and reporting under HSWA

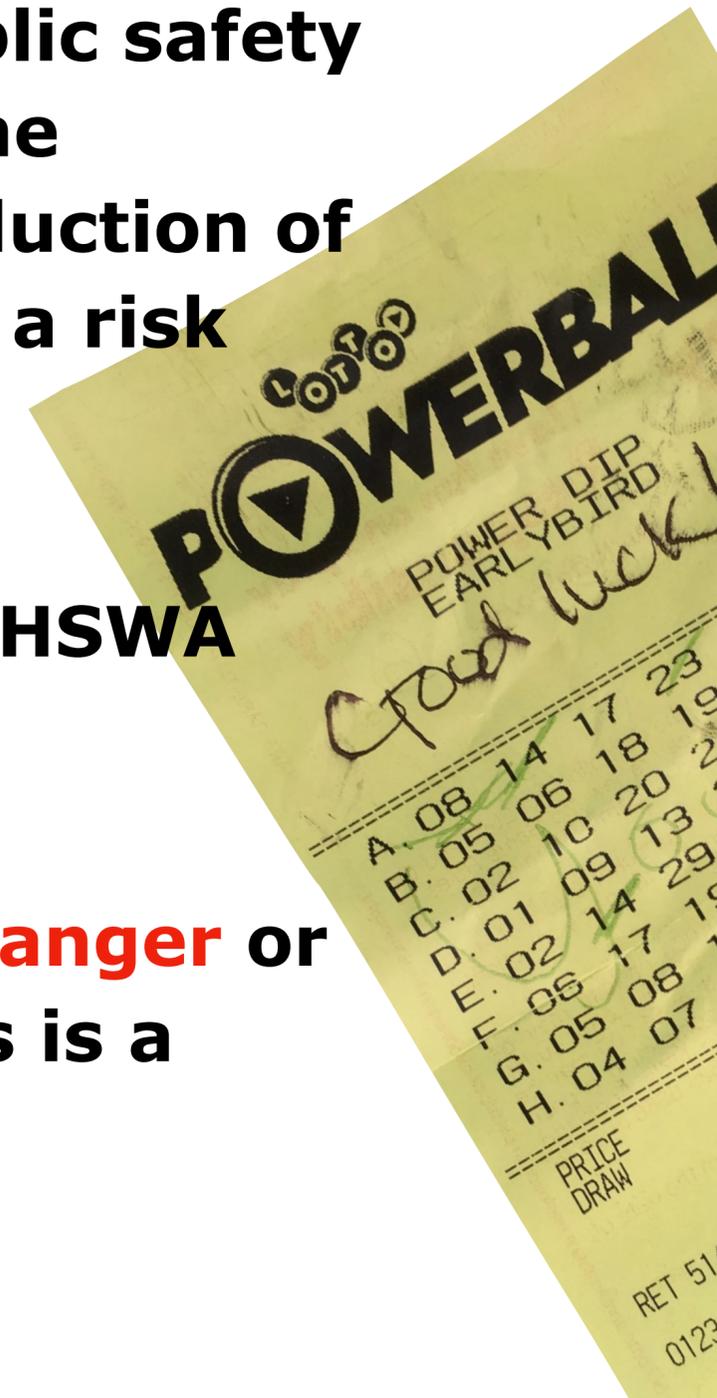
As discussed previously, it is intended that the threshold for reporting public incidents be lower than those for workplace incidents.

Public Safety in General

It is evident that the EEA has tried to separate out the public safety issues that arise from industry operations from those of the workplace, in the same way legislation has with the introduction of the (public) safety management systems, thus facilitating a risk based approach to safety

Is the ESI notifying public incidents to the high bar of the HSWA instead of the lower bar of the Act?

If the public must be exposed to **immediate or imminent danger** or **serious harm** before public incidents are notified, then this is a concern.



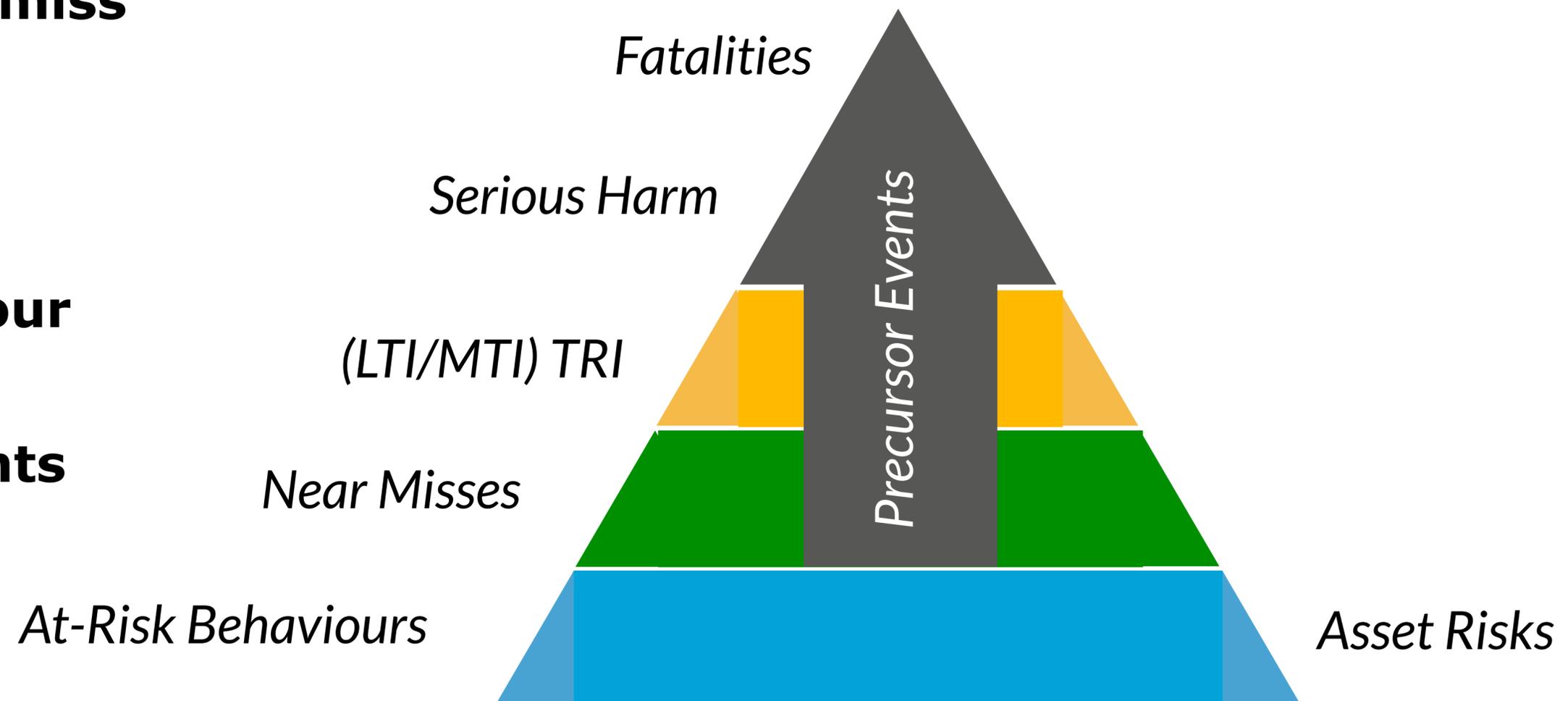
Importance of Near Misses and Precursor Events

Precursor events are now seen as the critical drivers of serious harm events:

- + Establish minimum reporting standards**
- + Lower the reporting bar**
- + Redefine near miss**

capture & identify:

- + At risk behaviour**
- + Asset risks**
- + Precursor events**



Minimum Reporting Standards

- + Target market: the 'blunt end' of the organisation**
- + Encourage safety observations**
- + Examples of what is considered unsafe**
- + Safety alerts can set expectations**
- + Separate incidents from the causal factors**

Improving Safety Alerts

- +** Quality
- +** Relevance
- +** Efficacy
- +** Dissemination
- +** Sharing

To help Capture:

- +** At risk behaviours
- +** Asset risks
- +** Precursor events

The Medicine ...

Capturing Anecdotes, 'Trade Secrets' and Mistakes

The electricity supply industry should look to the medical industry, where anecdotes are a powerful tool that can be used to develop an 'early warning system' for precursor events.

Just as anecdotes have proved very important in medicine it is vitally important that the '**side effects**' of running an Electricity Network are captured as well as '**off-label**' and past practices.

To use the words of Sydney Dekker: *we must find the symptoms of deeper trouble*

Behaviour is now seen as an outcome and not a causal factor

Capturing Anecdotes, 'Trade Secrets' and Mistakes

- + The 'pre-existing conditions', past mistakes and latent risks need to be captured.**
- + Normalised historic practices need to be documented and managed in the context of today's risk framework.**
- + Decisions made 10, 20, 50 years ago, cannot be allowed to govern today's injury rates.**
- + It is important we stop blaming, start reporting and develop a more reflective learning environment.**

"Safety is a people problem .. put away your accident statistics and start listening to the real experts on safety: your employees"

- Dan Petersen

A Good Safety Alert Process

- + Starts a conversation
- + Harvests the wisdom of crowds
- + Untapped (institutional) knowledge (known-unknowns)
- + Alerts define the key issues
- + Identify root causes & the deeper trouble
- + Set strategies and objectives
- + Individual knowledge-base to **organisational knowledge-base**

Safety Alerts should:

- + Serve as a problem statement
- + Define solutions and help manage assets and risk consistently
- + Drive the asset management process

Improving the Management of Assets & AMPs

- + AMP's are Regulatory Compliance Documents**
- + Regulatory focused Narrative**
- + AMP's can be "A Dismal Science"**

Industry Needs:

- + Evidenced Based Safety**
- + Bottom-Up Approach to Risk and Asset Management**
- + To share**

For far too long distribution networks have relied on storms and trees to harvest defective equipment and poor workmanship and to hide bad management decisions.

Duties and Privileges

- + **Asset owners and contractors have different duties and influences which can **conflict**.**
- + **Duties extend far beyond the HSWA**
- + **Relying on engineers, electrical workers, directors etc. to act on their own personal and professional ethics**
- + **Challenge barriers imposed by systems or chains of command**
- + **Encourage bad news to travel up**
- + **Qualified privilege should be used more**
- + **Ask more questions - demand more answers**
- + **Protected disclosures should be encouraged**

Those that are not listened to tend to either stop talking or speak

louder

Conclusions

- + There are some good safety alert systems already out there
- + The problem is a lack of content
- + And a lack of resourcing and will to create and share it
- + The top down approach is not working
- + We need to harvest and communicate the real risks
- + We must recognise and use our **influence**
- + We must not be paralysed by the spectre of commercial risk
- + Facts are facts

Above all:

Public and **Boundary** risks need **much more** attention



Thank You



Questions? Comments? (Or Hard Stares?)

“Rather than being the main instigator of an accident, operators tend to be the inheritors of system defects created by **poor design, incorrect installation, faulty maintenance** and **bad management decisions**. Their part is usually that of adding the final garnish to a lethal brew whose ingredients have already been long in the cooking” - James Reason.