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Qualitative Observations of OHS Management Systems from Recent Investigations

Monday 3 May 2010
4.10 – 4.30pm



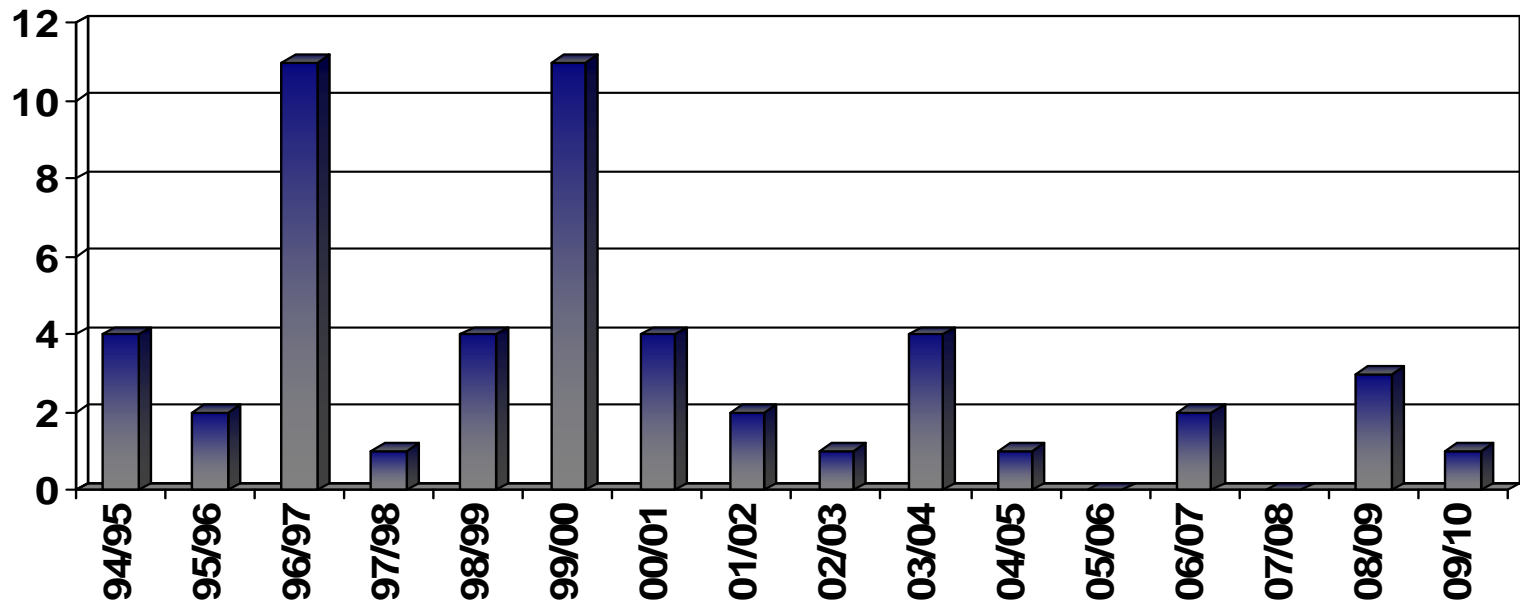
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Investigation Unit

- Established in 1999
- Independent of Inspectors
- Fatalities, Serious
- > 50 investigations

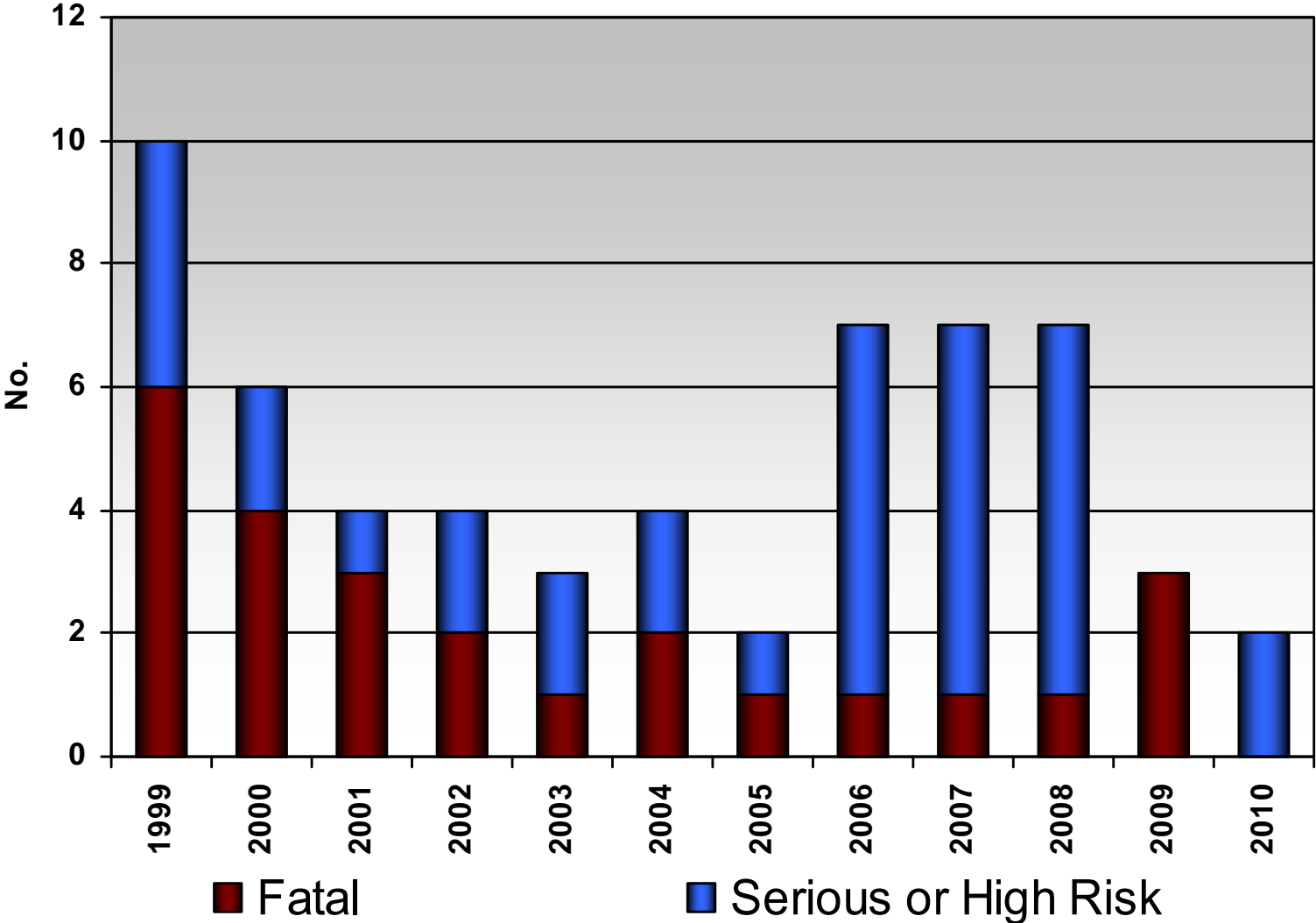




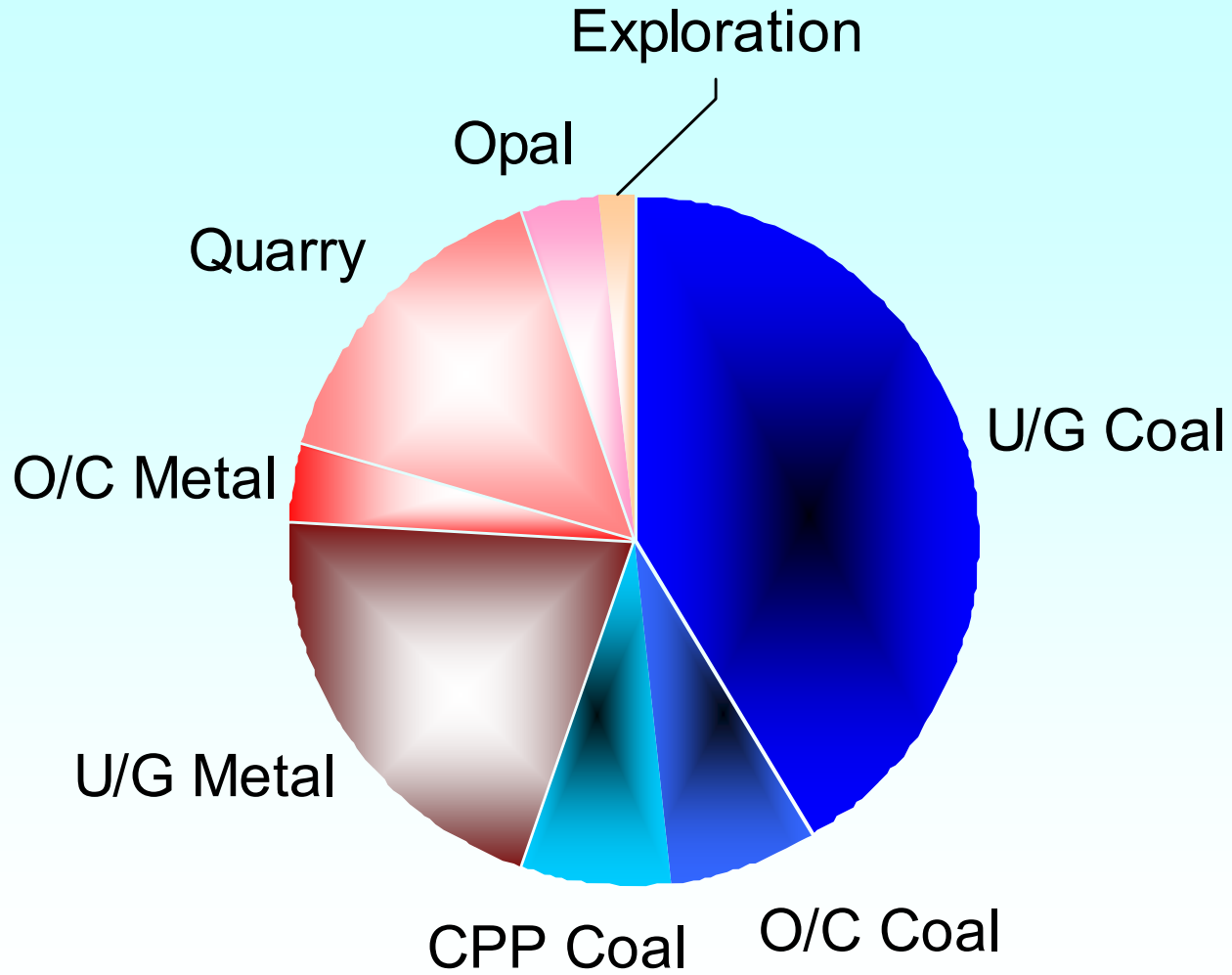
What does the Unit do?

- Very detailed and thorough inquiry
- Drill down to underlying causes
- Reports for the Director General and Coroner
- Examine the role of Department
- Have unique perspective on industry's safety performance

Investigations



Investigations by mine type



Sample case studies

Case No.	Location	Incident	Outcome
1	UG coal	Chain Connector failed while pulling AFC	Major head injuries
2	UG coal	Riding on CM boom while hanging cable	Spinal Cord / Paraplegia
3	Coal Prep	Contact live 11kV bus bar in switchboard	Electric shock and burns
4	Quarry	Dump truck runaway over embankment	Operator killed
5	UG coal	Struck by high pressure oil while sampling	Serviceman killed
6	OC coal	EWP ran into machine trapping two men	Severed finger tip
7	UG coal	Struck in eye by high pressure grout	Serious eye injury
8	UG Metal	Crushed by remote controlled loader	Fatally crushed
9	UG coal	Arm entangled around drill steel	Amputation

Case study: preparation plant

- Planned mtce in HV switchroom with all power removed
- Last minute, power left on half of the board
- 7 cubicles isolated, and 8 were live
- Contractor contacted live 11 kV bus bars



11kV electric shock,
burns to thumb and
finger

Case study: u/g coal mine

- Grouting roof bolts
- Grout hose blocked up
- Screw driver used to unblock
- Screw driver and grout ejected under pressure
- Grout enters eyes



Serious eye injury

Case study: u/g metal mine

- Operating remote controlled loader to empty a long hole stope
- Attempting to clean around a large boulder in preparation for blasting
- Working alone, found trapped between loader and wall of drive



Fatality

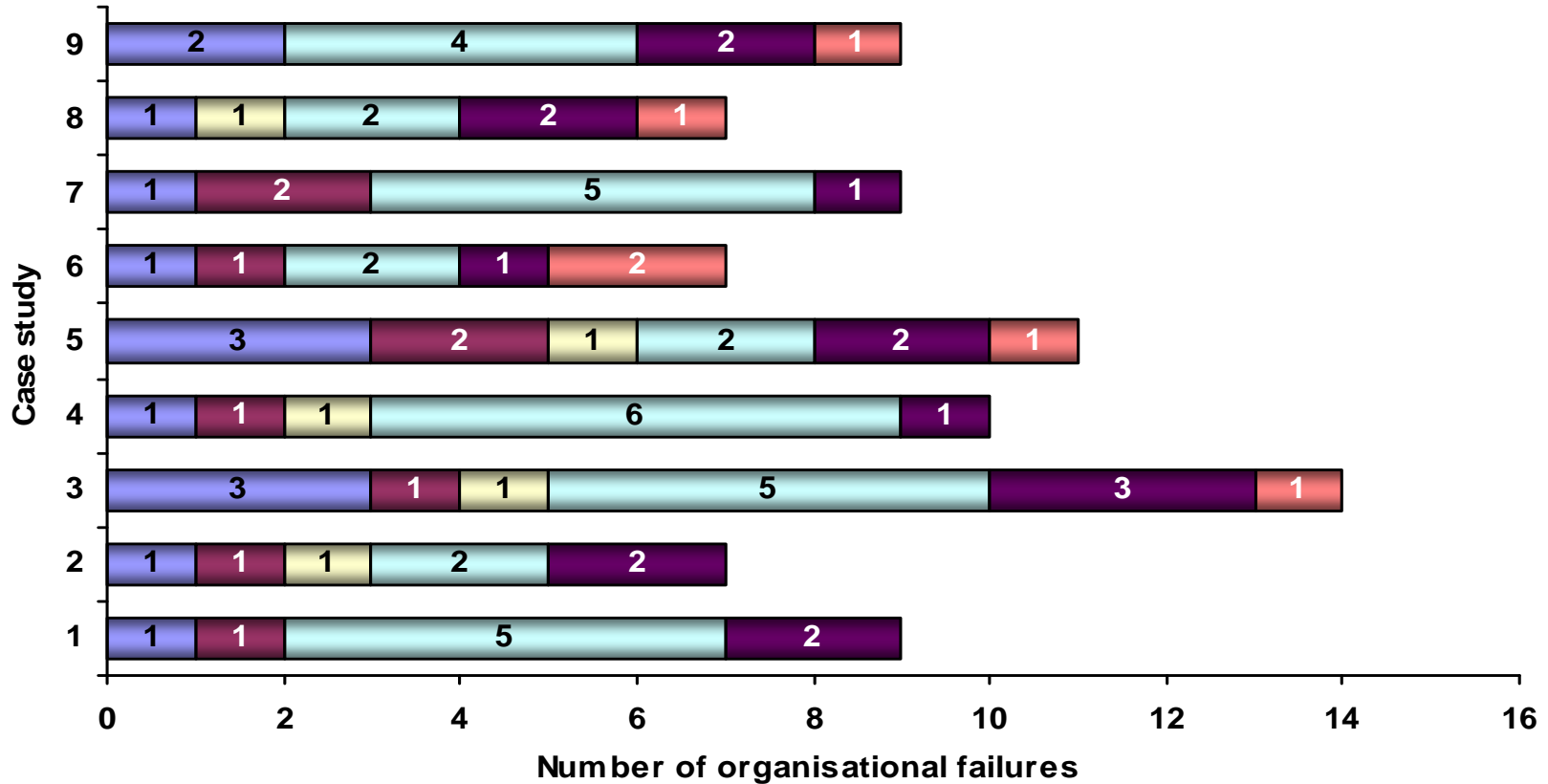
Case study: u/g coal mine

- Operating a continuous miner mounted bolting rig
- Twin wing drill bit caught roof mesh
- Operator's arm became entangled in mesh and wrapped around the rotating drill steel.



Severe trauma to left arm, later amputated

Organisational causations





Organisational failures (1)

- **Systems of work**
 - inadequate safe work procedures
- **Risk management**
 - poor identification and assessment of risks
 - lack of engineered controls
- **Information and instruction**
 - poor quality of information
 - lack of instruction for task



Organisational failures (2)

- **Training**
 - lack of training for task undertaken
 - no training in safe work method
- **Supervision**
 - failed to enforce rules and work procedures
- **Monitoring and review**
 - lack of monitoring of SWPs
 - review of effectiveness not occurring



Concluding message

- Industry has more work to be done on OHS management systems
- In particular ► risk management
- Return to risk control basics – engineered controls before procedural controls
- Improve monitoring, review and audit
- Continue to improve the ‘safety culture’



Further information

- Freeman, M. (2007). *Observations on Mine Safety Management from Review of Major OHS Prosecutions and Investigations*. I&I NSW.
- Raftery, P. & Freeman, M. (2009). *Risky Positioning – Observations from Recent Investigations*. I&I NSW.

Papers by IU available at:

<http://www.dpi.nsw.gov.au/minerals/safety/publications/seminar-presentations/mine-safety---general>