Recognised Standard for Management Structures to develop and implement a SHMS

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Coal Inspectorate

Resources Safety & Health
Queensland

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Introduction

Management Structure Recognised Standard

Management Structure – Recognised Standard
Developed out of Direction from CMSHAC

Guidance Note
Developed in 2016 – Management Structures

Better alignment to the intent of the legislation is the intended outcome of this Recognised Standard as well as providing improved safety outcomes through competency in industry (Brady Report).

Committee:
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Glen Alsemgeest – Peabody
Trent Knack – New Hope
Liz Watts – BMA
Steve Woods – CFMEU
Brad Watson – Glencore

Expert Advice: Mark Parcell

Legislative Requirements

The Act requires:
Management Structures at coal mines so persons may competently supervise the safe operation of coal mines. (Section 7h)

The Coal Mine Operator is obligated to ensure the Site Senior Executive develops, implements and maintains a management structure for the mine that helps ensure the safety and health of persons at the mine. (Section 41 1e ii)

The Site Senior Executive is obligated to develop, implement and maintain a management structure for the mine that helps ensure the safety and health of persons at the mine (Section 42 g)

The Site Senior Executive is obligated to provide for adequate supervision and control of coal mining operations on each shift at the mine. (Section 42 i (iii))

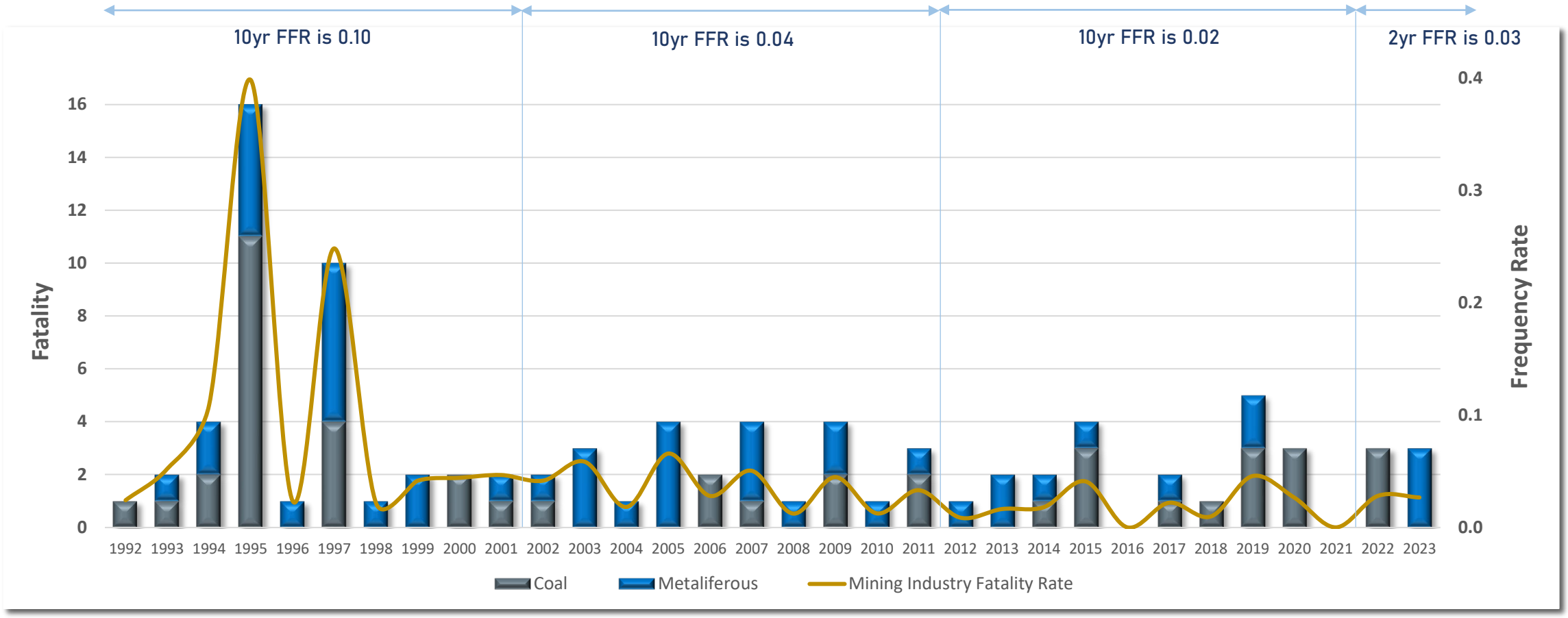
The Management Structure must ensure competent persons are responsible for the application of the risk management practices to allow for the development and implementation of the safety and health management system at the mine.

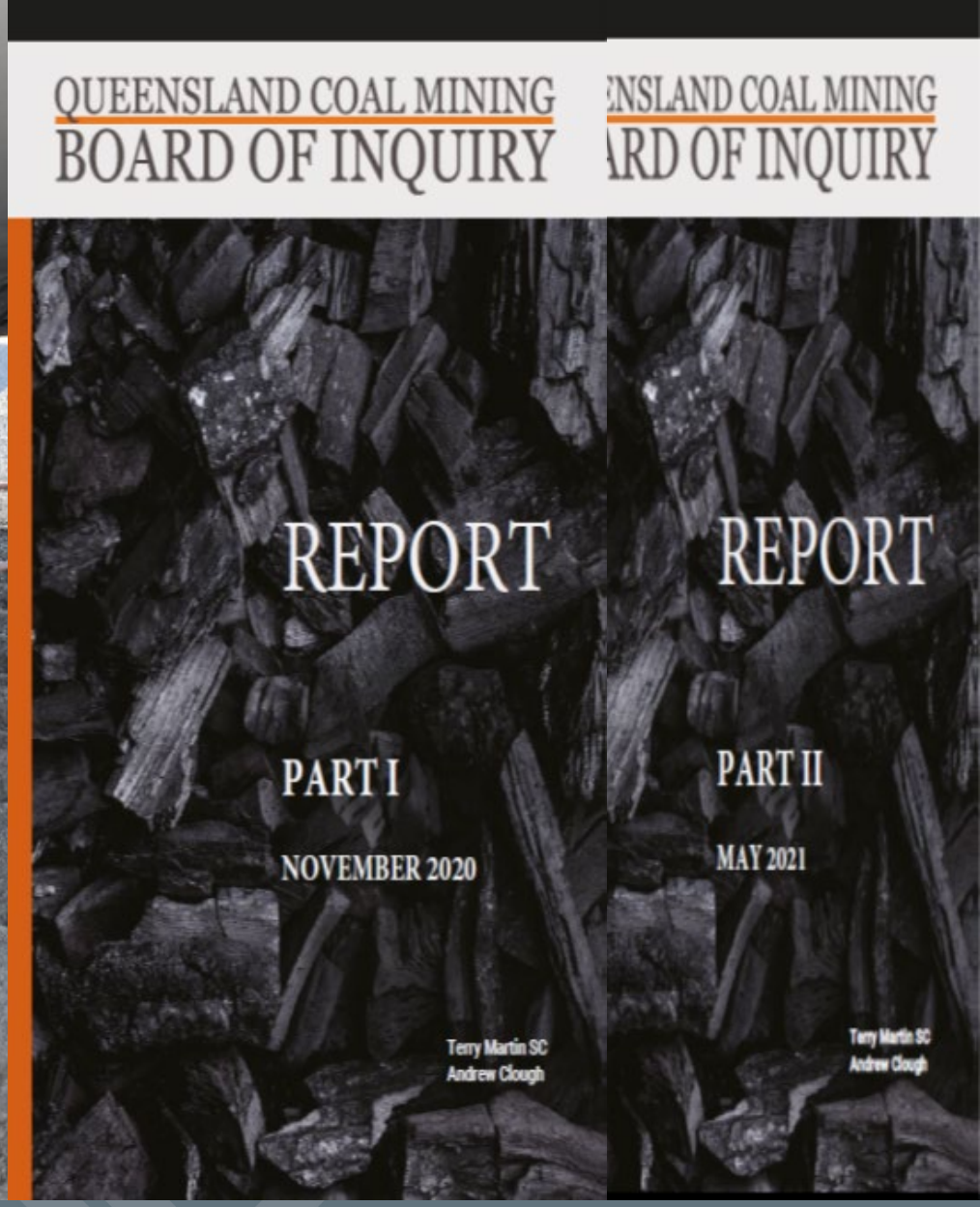
CMHS Regulation 82e – A coal mine must provide a training Scheme and establish a training program using the endorsed training packages that are relevant for training and assessing workers

Competence	Competence for a task at a coal mine is the demonstrated skill and knowledge required to carry out the task to a standard necessary for the safety and health of persons. (Section 12)

Case for change

Queensland Industry performance: Fatalities




QUEENSLAND COAL MINING
BOARD OF INQUIRY
REPORT
PART I
NOVEMBER 2020
Terry Martin SC
Andrew Clough
QUEENSLAND COAL MINING
BOARD OF INQUIRY
REPORT
PART II
MAY 2021
Terry Martin SC
Andrew Clough

Links to Brady Report

3.10 Role of Supervision in Fatalities

In 32 of the 47 fatalities, supervision was required for the tasks being undertaken, i.e. the 32 did not include routine tasks, such as driving.

25 of the 32 fatalities involved inadequate or absent supervision.

There were a variety of supervision issues, such as absent supervision, supervisors with inadequate knowledge of the hazards and level of risk, and supervisors who watched as workers undertook unsafe acts. An example of absent supervision occurred at Castle Creek Quarry in 2008, where supervision was absent for much of the time when the work was being performed. An example of inadequate supervision occurred at Wongabel Quarry in 2006, when the supervisor observed a worker driving a loader with the bucket too high, but did not intervene. A fatality occurred when the loader struck another worker.

Supervisors need to be competent!

SSE's job is to make sure supervisors are competent!

Regarding supervision, the Queensland legislation is clear with respect to coal mines: 'A ***supervisor*** at a coal mine is a coal mine worker who is **authorised** by the site senior executive **to give directions to other coal mine workers** in accordance with the safety and health management system'[38]. The legislation is also clear regarding a supervisor's competency. A site senior executive must not assign the tasks of a supervisor to a person unless the person 'is competent to perform the task assigned'[39]. The site senior executive must ensure 'adequate supervision and control of coal mining operations on each shift at the [illegible][40] and inadequate supervision and monitoring of contractors and service providers at th[illegible] legislation also includes similar provisions for Mineral Mines and Qu[illegible]

The WA Fatality Review also highlighted major deficiencies in supervision. From analysis of the 52 fatalities which occurred during this time period, it was found that '44 per cent of fatal accidents occur under the supervision of a person in their first year in the role, with 6 per cent in the first month'[43].

The WA Fatality Review further found that almost 'a quarter of fatalities involved a supervisor in their second and third year in the role' and overall '68 per cent of fatalities occurred during the supervisor's first three years in the role'[44]. The WA Fatality Review recommended in its Areas for Improvement that the 'training of supervisors is regarded as a key issue in accident prevention'[45].

The WA Fatality Review concluded that this data 'shows that new and inexperienced workers are at particular risk' and required 'close supervision' and adequate safety training[46].

RSHQ Coal Inspectorate - Supervisor audits

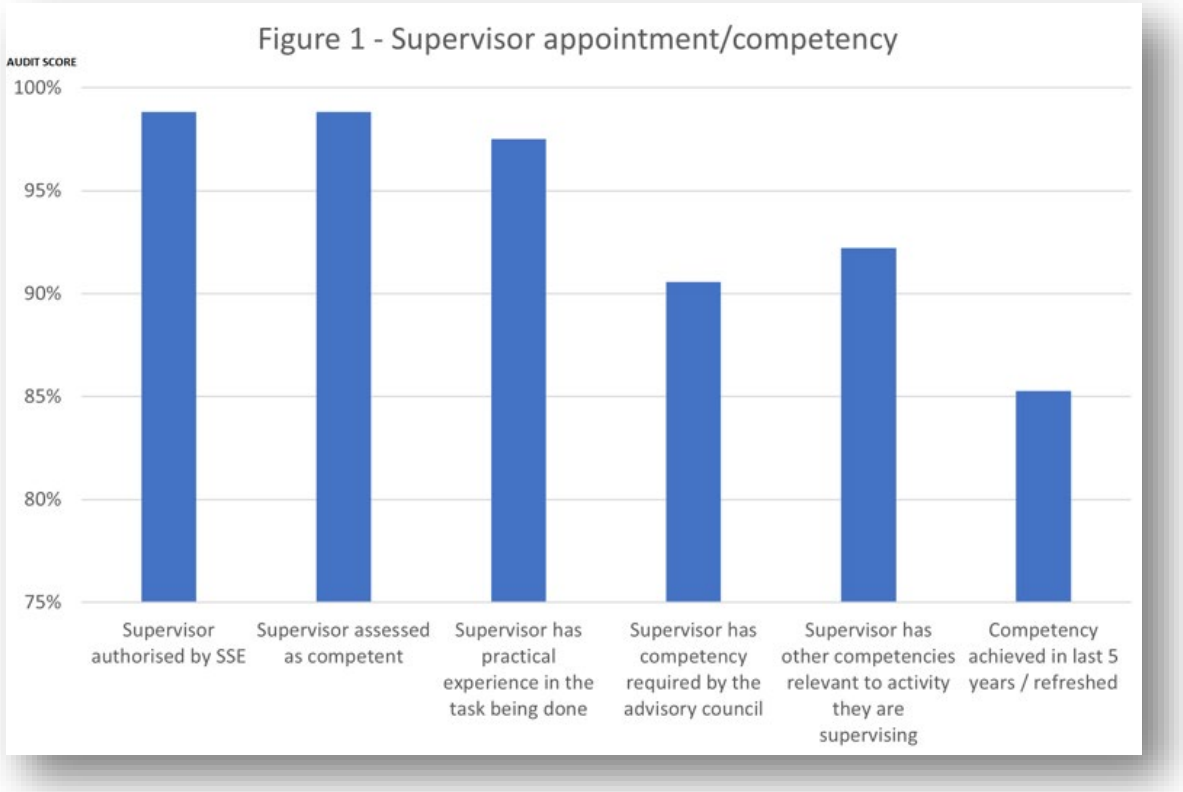
Since the publication of the Brady Review in 2020, the coal inspectorate conducted over >600 supervisor audits while undertaking inspections at coal mines. The aim of the audits was to identify how supervisors were appointed and their effectiveness in the field. Supervisory effectiveness was rated as a percentage score.

The audit focussed on the following:

- the appointment process.
- competency and experience of the supervisor.
- how work activities being supervised were conducted in terms of planning, risk management, and inspection frequency.

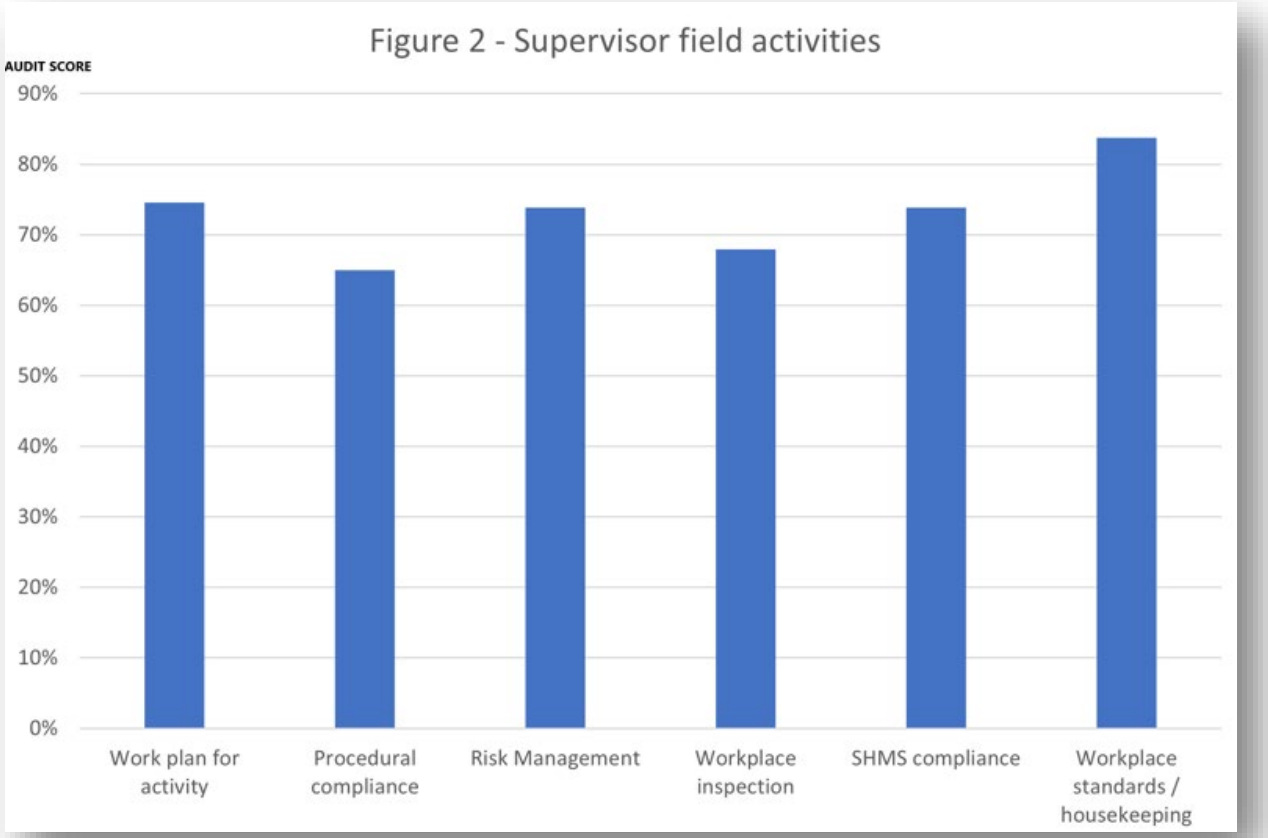
Supervisor appointments

The audit identified a high percentage of adherence to the competency and appointment process required for the appointment of supervisors. The competency requirements achieved in the past five years, or refreshed, has the lowest performance at 85%.



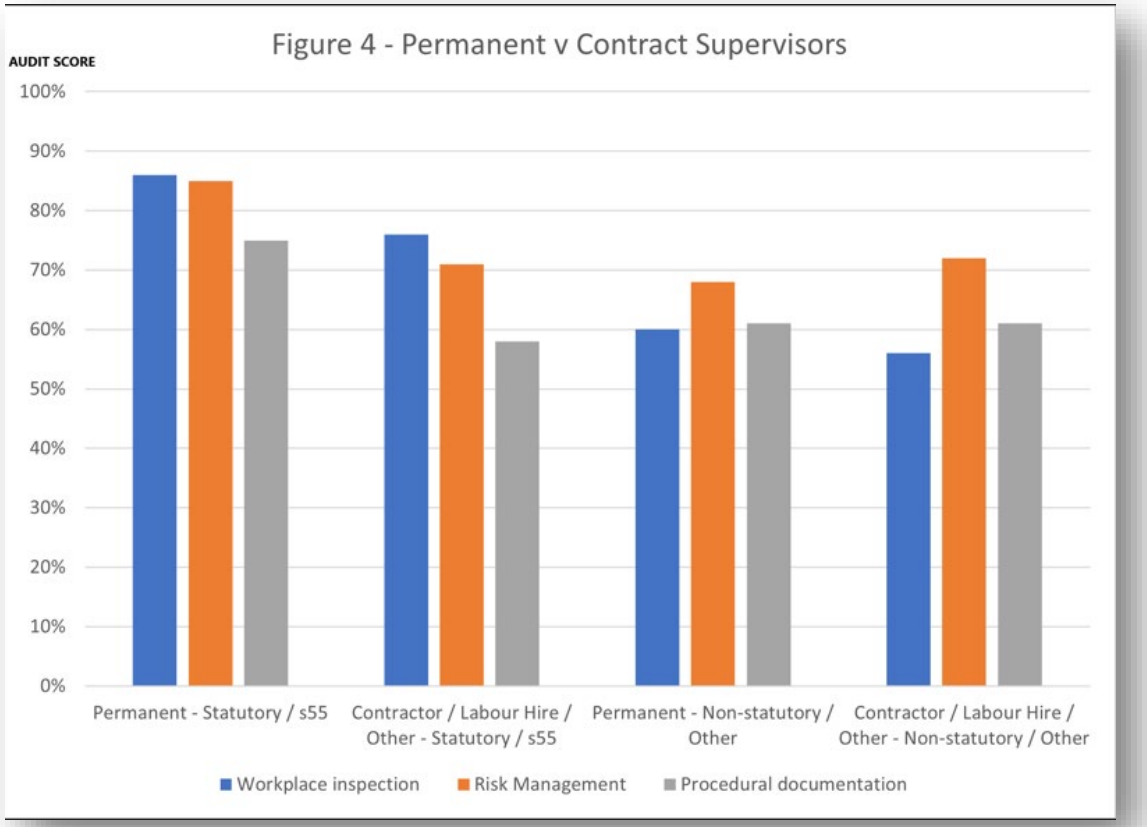
Field activity requirements for supervisor appointments

The audit identified low levels of supervisor effectiveness <70% for conducting timely workplace inspections and for procedural compliance.



Effectiveness comparison of permanent and contract supervisors

Less attention to detail in procedural documentation and a lower score for timely workplace inspections is evident for contract and non-permanent supervisors.



The RS 22 process

Kevin Poynter

Coal Inspectorate

Resources Safety & Health
Queensland

Process Steps

Taken from the Management Structure Recognised Standard that provides the process steps sequentially that an SSE should follow to comply with Legislative Requirements.

- SSE appointed by Coal Mine Operator
- Coal Mine Operator ensure SSE developes and maintains a management structure for the implementation of the SHMS

- SSE determines operational requirements for the mine and conducts a full mine risk assessment (Broad brush)
- Risk assessment identifies Principal Hazards (multiple fatality) , Serious risks (Fatality and serious harm) and health exposure risks that may affect the safety and health of persons as a result of Coal Mine operations
- SSE determines the requirements of the SHMS for managing the risks identified

- SSE determines the Senior positions for the developement and implementation of the SHMS and allocates responsibility for PHMPs , Fatal hazards, other hazard management plans and SOPs
- SSE states the the responsibilities in the management structure
- SSE states the competencies required for these positions in the management structure

- SSE determines each supervisory position required for the implementation of the SHMS including PHMPs , Fatal hazards, other hazard management plans and SOPs
- The SSE must state responsibilities of each supervisory position in the management structure
- The SSE must state the competencies required for the positions

- The documented management structure is entered into the Mine record
- The documented management structure is sent to an inspector in the region in which the mine is situated
- The docment should include a diagram representing the relationships between positions

Broad Brush Risk Assessment

Start with the Broad-Brush Risk Assessment at the Mine to define multiple fatality and single fatality risks.

Broad Brush Risk Assessment - Open Cut Example			
Hazard		**Potential Consequence**	**Critical Controls**
Slope Instability		Multiple Fatality	a, b, c
Explosives and Shotfiring		Multiple Fatality	a, b, c
Fall from Height		Multiple Fatality	a, b, c
Traffic Interaction		Multiple Fatality	a, b, c
Tyre and Rim		Multiple Fatality	a, b, c
Fire and Explosion		Multiple Fatality	a, b, c
Confined Space		Multiple Fatality	a, b, c
Inrush		Multiple Fatality	a, b, c

Map Competencies to positions

	Manager		Superintendent		Supervisor/OCE	
Risk Management	RIIRIS601D	Establish and maintain the risk management system	RIIRIS501D	Implement and maintain management system to control risk	RIIRIS402D	Carry out the risk management processes
					RIIRIS401D	Apply site risk management system
Legislation	RIIWHS601D	Establish and maintain the WHS management system	RIIWHS403D	Apply the mine work health and safety management plan	RIIWHS403D	Apply the mine work health and safety management plan
Emergency Management	RIIERR601D	Establish and maintain mine emergency preparedness and response systems	RIIERR503D	Implement emergency preparedness and response systems	RIIERR401D	Apply and monitor surface operations emergency preparedness and response systems

All positions require an element of competency in the areas of Risk Management, Legislation and Emergency Management. Positions mapped to RII competencies / training packages across these areas.

Map Competencies to Positions by Risk

	Manager		Superintendent		Supervisor/OCE	
Slope Stability	**RIIMEX 602D**	**Establish and Maintain Surface Mining Ground Control and Slope Stability Systems**	**RIIMEX405A**	**Apply and Monitor systems and methods of surface coal mining**	**RIIMEX404B**	**Apply and monitor systems for stable mining**
Traffic Interaction	**RIIMEX604**	**Establish and maintain surface production haulage and transport systems**	**RIIMPO502A**	**Manage the interaction of heavy and light vehicles and mining equipment**	**RIIMPO403A**	**Monitor interaction of heavy and light vehicles and mining equipment**
Explosives and Shotfiring	**RIIBLA602A**	**Establish and Maintain a Blasting System**	**RIIBLA402A**	**Manage Blasting Operations**	**RIIBLA402A**	**Manage Blasting Operations**

Utilise the Resources and Infrastructure Industry Training Package to provide competency framework aligned to risks requiring to be managed – link provided.
https://training.gov.au/Training/Details/RII09

Where a competency training package does not exist, SSE needs to determine how they will determine competency for a given risk. It is acceptable to map internal Company methods for competency provided the criteria of the RII is met to the same standard (RPL against RII criteria)

Map Positions to Risk

Under each risk, assign owners of the controls and the implementers of the controls.

Senior Position

Supervisor Positions

Map Positions to Risks						
Hazard		**Potential Consequence**	**Critical Controls**	**Risk Owner**	**Control Owners**	**Control Implementers**
Slope Instability		Multiple Fatality	a, b, c	Technical Services Manager	Technical Servies Superintendent	Production Supervisors/ OCE
Explosives and Shotfiring		Multiple Fatality	a, b, c	Production Manager	Production Superintendent	Production Supervisors/ OCE
Fall from Height		Multiple Fatality	a, b, c	Maintenance Manager	Maintenance Superintendent	Maintenance Supervisors
Traffic Interaction		Multiple Fatality	a, b, c	Production Manager	Production Superintendent	Production Supervisors/ OCE
Tyre and Rim		Multiple Fatality	a, b, c	Maintenance Manager	Maintenance Superintendent	Maintenance Supervisors
Fire and Explosion		Multiple Fatality	a, b, c	Engineering Manager	Engineering Superintendent	Maintenance Supervisors
Confined Space		Multiple Fatality	a, b, c	Engineering Manager	Engineering Superintendent	Maintenance Supervisors
Inrush		Multiple Fatality	a, b, c	Technical Services Manager	Technical Servies Superintendent	Production Supervisors/ OCE

Control owners implementers and apply and monitor positions – supervisory positions in the management structure that implement and monitor the controls associated with the risk.

Australian Government

"The SSE may determine that they do not necessarily have to obtain a Qualification through a training organisation, but must be able to demonstrate that they have been trained and assessed using the endorsed components of the resources and infrastructure industry training package in the relevant units of competency for the activities they are responsible for."

Assessment Requirements for RIIMEX602D Establish and maintain surface mining ground control and slope stability systems

Example of how an SSE might use the RII criteria to determine competency

Performance Evidence	Y	Knowledge Evidence	Y
1. Locates and applies relevant legislation, documentation, policies and procedures		The candidate must demonstrate knowledge in establishing and maintaining surface mining ground control and slope stability systems through: 1) The legislative, organisation and site requirements and procedures 2) Critical data 3) Audit methodologies 4) exploration techniques 5) ground support methods and systems 6) mining and general engineering principles 7) mining structure failure modes 8) slope stability criteria 9) stress analysis techniques including mining induced stress, vertical and horizontal stress tectonics	
2. Implements the requirements, procedures and techniques for the safe, effective and efficient establishment and maintenance of surface mining ground control and slope stability systems			
3. Works effectively with others to establish and maintain surface mining ground control and slope stability systems that meets all the required outcomes			
4. Demonstrates completion of establishing and maintaining surface mining ground control and slope stability systems that safely, effectively and efficiently meets all of the required outcomes			

In this way the SSE is using the elements from the RII to determine competency. This isn't saying that the SSE is issuing the RII Competency or needs an RTO to issue the competency. In the same way as an SSE uses the elements of the RII competency to develop training and assessing documents to authorise a truck driver to drive a truck around the mine (this isn't done by an RTO), an SSE would use the elements from within the endorsed training packages to demonstrate competency.

Examples of Competency options

Examples of Competency Options Available for a Mining Manager – could be advanced diploma OR specific units of competency aligned with specific risks

Mining Manager	
RIIRIS601D	Establish and maintain the risk management system
RIIWHS601D	Establish and maintain the WHS management system
RIIERR601D	Establish and maintain mine emergency preparedness and response systems
RII60209	Advanced Diploma of Surface Coal Mining Management

	Mining Manager	
	RIIRIS601D	Establish and maintain the risk management system
	RIIWHS601D	Establish and maintain the WHS management system
	RIIERR601D	Establish and maintain mine emergency preparedness and response systems
Traffic Interaction	RIIMEX604	Establish and maintain surface production haulage and transport systems
Explosives and Shotfiring	RIIBLA602A	Establish and Maintain a Blasting System

Management Structure Example

The RS 22 Implementation

Coal Inspectorate

Resources Safety & Health
Queensland

Recognised Standard 22 - Implementation

Gazetted 27 August 2021
The timeframe for RS22 considered in three stages:

Stage 1 requiring completion or review of the risk assessment to identify the principal and fatal hazards at the mine

Stage 2 involves identifying the competencies required of all positions in the management structure using the process in the recognised standard and completing a competency gap analysis against the competencies identified in line with the recognised standard
Due: *27 May 2022 (9 Months)*

Stage 3 involves persons in the management structure obtaining those competencies.
Due: *24 February 2023 (18 Months)*

Recognised Standard 22 Phase 1 Audits
(Q4 2022 – Feb 2023)

Review of Risk Assessment	Identify competencies	Complete gap analysis
81 %	49.1%	44.6%

Audits conducted at all coal mines to drive implementation prior to due date 24 February 2023

5 x Directives issued

17 x Substandard condition or practice notices issued

RS22 Audit Sheet

- **Risk Owner/Manager** (Design end develop)
- **Superintendent/Coordinator** (Implement)
- **Supervisor/OCE** (Apply and monitor)

PRINCIPAL/FATAL HAZARD RS22 Inspection Audit Tool

Resources Safety & Health Queensland

Mine Name	
Audit Date	

Manager Audit risk owner (Manager)	
Select Hazard for Audit	☐ Strata failure in a surface mine ☐ Strata failure in an underground mine ☐ Exposure to extreme weather conditions (surface) ☐ Vehicle collision LV/HV/HME or with built or natural structure ☐ Loss of control of explosives (surface mines) ☐ Spontaneous combustion (underground) leading to the ignition of gas (fire/explosion) or an underground fire ☐ Unplanned movement during lifting activities ☐ Uncontrolled release of pressure from tyre and rim assembly ☐ Ignition of methane in an extraction face (pillar or longwall underground) ☐ Ignition of methane in a goaf area ☐ Ignition of methane in a sealed goaf area ☐ Loss of control due to potential energy of tyre and rim assembly
Risk owner (Manager) (Name of appointed person in Management Structure?)	
Role identified in the Management Structure for the management of the selected hazard?	☐ Yes ☐ No

Required competencies in Section 55	RS 22 competency equivalency	Required competencies held

Additional Competencies	
Technical Competencies and Relevant Experience (Years and/or other roles)	

Employed by operator audit

Select one of the safety critical statutory roles below and ask the SSE for proof of direct employment		
On 25 November 2022 the Coal Mining Safety and Health and Other Legislation Amendment Act 2022 came into effect requiring persons appointed to the following positions to be directly employed by the operator of a coal mine:		
For all coal mines	Site Senior Executive (SSE)	☐
For surface mines only	Open Cut Examiner (OCE)	☐
For underground mines only	Underground Mine Manager (UMM)	☐
For underground mines only	Ventilation Officer (VO)	☐
For underground mines only	Electrical Engineering Manager (EEM)	☐
For underground mines only	Mechanical Engineering Manager (MEM)	☐
For underground mines only	Explosion Risk Zone (ERZ) controller	☐

Safety critical statutory role directly employed by the operator - Audit (Above)		
Name of Employee	Position	Organisation/Entity
Acting or permanent	☐ Acting ☐ Permanent	Is an entity that employs or otherwise engages 80% or more of the coal mine workers at the coal mine ☐ Yes ☐ No
If acting > 12 Weeks?	☐ Yes ☐ No	

Recognised Standard 22 Audits (Post February)

Risk Identified	Competencies Identified and in place	Employed by operator
100 %	85 %	100 %

- Regulator conducted random RS22 audits as part of inspections
- We are improving the sample audit process to make it less complex
- Several contract OCE's and deputies identified but < 3 months

In limited audits to date key findings:

- Compliance to legislation instead of identifying principal hazards and appointing hazard owners
- Mapping existing roles instead of mapping/appointing persons to specific fatal hazards
- Not mapping training/competency against AQA competencies
  - Level 6 Design and develop (Single role)
  - Level 5 Implement (Single role or role per area)
  - Level 4 Apply and monitor (Multiple roles e.g. per shift or area)
- Level 5 Implement level (Multiple roles/unclear accountability)

EVERYONE's RESPONSIBILITY IS NO ONE's RESPONSIBILITY

Recognised Standard 22
Pathway to risk reduction

- Use Broad Brush Hazards as basis for appointments/not legislation and compliance
  - SSE train and appoint Level 6 positions for fatal hazards/risk
  - Level 6 incumbent can both design develop **and implement** (Level 5)
  - Level 6 incumbent recommend to SSE to appoint persons to **apply and monitor on each shift**
  - Level 6 incumbent arrange training and recommend to SSE to appoint level 5 to assist level 6 with implementation
- Recommend to industry to embrace and develop more statutory certificates
- Statutory certificates are mapped against Level 4, 5 and 6
  - Promote statutory training and cadetships
  - Industry running parallel management lines, diminishing statutory roles
    - Underground:
      - Underground Mine Manager – Diploma (Level 6)
      - Second Class/Undermanager (Level 5)
      - Deputy/ERZC (Level 4)
    - Opencut
      - Opencut manager (Level 6)
      - OCE (Level 4)

Program Centric to Problem Centric

Zero Serious Harm

Risk Based Regulator

Problem Centric

Program Centric

The Role of the Coal Inspectorate
Problem centric (Expert Model)

1. **Risk based**

   Expert approach to industry problems where compliance is not resolving the issues (Includes Forums, Working Groups). Focus on Fatal and catastrophic risk. (RS22 implementation)

2. **Data driven**

   Analysis of data supporting the problem centric regulatory solution (Sharing supervisor and RS22 Audit findings)

3. **Compliance assistance**

4. **Partnership approach for regulatory solutions**

Examples:

- RS 22
- Industry sharing with industry

Sharing and implementing best Practice !

The Role of the Coal Inspectorate
Program centric (Legal Model)

1. **Educate**

   Forums, BoE, Seminars, Conferences, Safety Alerts, Bulletins, Reports, Recognised Standards, Guidelines, Inspections

2. **Correct**

   Inspections, Audits, SCPs, Investigations

3. **Deter**

   Directives, Part Suspension

4. **Punitive**

   Referral to SIIU, Prosecution, Cancellation, Full Suspension

Recognised Standard 22 Compliance Action

RS22 Gazetted 27 August 2021 (More than 2 years, more than 9 months since full implementation)

- RSHQ inspectors will continue to conduct spot audits each inspection and audit
- Issues identified may lead to a full RS22 compliance audit and/or compliance action depending on findings

SCPs (Correct)

- For admin and minor issues

Directives (Deter)

- Ineffective Safety and Health Management System

Suspension Directives (Deter)

- Suspension directives if an inspector believes the risk may reach an unacceptable level
- Continued failure of controls/ineffective controls involving a fatal hazard will inform the suspension directive

Punitive (Last resort)

- Serious injury or worst - RS22 form part of the investigation
- Referral to SIIU

Thank you

Questions?

I look forward to work together to achieve ZERO SERIOUS HARM in our important industry