

# RESPONSE TO MAJOR THEMES FROM SUBMISSIONS

## Proposed changes to experience requirements for statutory function certificates of competence

### Overview

On behalf of the Mining and Petroleum Competence Board, the NSW Resources Regulator received 18 stakeholder submissions in response to the board's proposal to increase experience requirements for statutory function certificates of competence.

The Regulator has:

- analysed the submissions to identify major themes (refer 'major themes' on page 8), and
- provided a recommended response to the major themes from the submissions for the board's consideration (refer 'Resources Regulator's recommendation page 3).

**Note:** At its 19 November 2019 meeting, the board noted the recommended response to the major themes from submissions and agreed to implementing the new experience requirements from 1 July 2020 (with appropriate transition arrangements to be developed).

### Consultation questions

Stakeholders were invited to comment on the following questions:

1. Are the proposed changes to experience requirements adequate?
2. Is the inclusion of supervision experience and the proposed length of supervision experience appropriate?
3. Are the recommended experience activities appropriate, specifically, being present at extraction?
4. Do you have any comments of a general nature?

## Submissions

Of the 18 submissions received:

- 10 were from organisations
- eight were from individuals.

ORGANISATIONS	INDIVIDUALS
Institute of Quarrying Australia (IQA) (submission 1)	Individual (submission 2)
Glencore CSA Mine (submission 3)	Individual (submission 4)
Cement Concrete and Aggregates Australia (CCAA) (submission 10)	Tony McPaul (submission 5)
Mine Managers Association of Australia (MMAA) (submission 11)	Individual (submission 6)
Clean Teq Sunrise Pty. Ltd. (submission 12)	Luke Neesham (submission 7)
Aeris Resources and its subsidiary operating company Tritton Resources (submission 13)	Individual (submission 8)
Association of Mining and Exploration Companies (AMEC) (submission 14)	Individual (submission 9)
CMOC Northparkes Mines (submission 15)	Individual (submission 16)
Collieries’ Staff and Officials Association (APESMA Collieries Staff Division) (submission 17)	
NSW Minerals Council (submission 18)	

## Our recommendation

We developed the following recommended responses to the major themes (page 8) from the stakeholder submissions for the board's consideration.

**Note:** Some of the stakeholder views in the submissions were quite subjective, general in nature and were not supported with evidence.

### 1. Are the proposed changes to experience requirements adequate?

#### Appropriate length of time to truly embed theory and practical

The board should consider the proposed total length of experience is appropriate to enable people to truly embed the theory and practical experience, providing applicants with the necessary skills to competently carry out the safety critical role.

The proposed experience requirements have been discussed with the Australasian Mining Competency Advisory Council. For coal positions, the proposed experience requirements are moving into line with the Queensland requirements.

#### Parity across the three levels of safety critical roles

The proposed changes achieve parity across the three levels of safety critical roles which means the total practical experience requirements are consistent across the mining sectors, as follows:

- **three** years for supervisors (deputies, open cut examiners, and underground supervisors)
- **four** years for middle managers/specialists (undermanagers, quarry managers, electrical engineers and mechanical engineers).

Note: It is important these positions have more experience than front line supervisors.

- **five** years for high level managers (mining, electrical, and mechanical) as they have a similar level of responsibility at a mine.

#### Broader issues impacting on whether people pursue mining engineering

Regarding the impact the proposed changes may have on the limited availability of mining engineers, the board should consider there are broader issues impacting on a person's decision to pursue mining engineering. No evidence was presented to support the view the proposed changes will limit the market of available mining engineers.

There are two pathways to becoming a mining engineering manager – either as a university graduate or through the vocational education and training system.

## 2. Is the inclusion of supervision experience and the proposed length of supervision experience appropriate?

### Clarification of what activities comprise supervision experience

It was evident from submissions that the breadth of activities comprising supervision experience (as explained in the discussion paper – see extract below) was not well understood. Based on this, it is understandable some stakeholders considered it too difficult to gain the supervision experience.

The Regulator with the board will reinforce to stakeholders that the context of supervision experience is quite broad. This is demonstrated by the guidance in the discussion paper which defines **direct** and **general** supervision and provides context around the type of activities supervision experience may include. Clarifying this will address the main concerns from submissions around the perceived difficulty in obtaining the supervision experience.

The board should also reinforce to stakeholders that this guidance will be used as the basis for assessing applicants.

Figure 1 Extract from page 9 of the discussion paper

SUPERVISE	OVERSEE OR DIRECT SOME PART OF MINING OPERATIONS
Direct supervision	Verifying through direct observation that mining operations and any contractors involved are applying the requirement of the safety management system.
General supervision	Where the individual may not always be present or directly responsible for supervising the activities but will monitor to ensure that the safety management system is implemented, applied and monitored, and provide advice to supervisors and workers.

The context of 'supervision' has been extended to include 'leadership' and 'coordination'. Experience requirements are required to have a certain amount of experience in the supervision of mining operations which may include:

- coordination of mining activities, where the candidate is organising, planning and scheduling work, and/or
- showing leadership within the work group, where the candidate demonstrates they enlist support from others in the work group in achieving a common task safely, and/or
- mentoring or coaching others to develop their skills either in a specific task (as a coach in a formal setting), or in an informal setting as a mentor in developing another's knowledge and skill in an overall sense including providing support.

### **Theory is no substitute for practical supervision experience**

The board should not support the stakeholder suggestion that completion of certificate III or IV in Front Line Management (or equivalent) should be substituted for the supervisory experience. There is no substitute for real experience where candidates have had to put the theory into practice to demonstrate practical leadership.

Candidates must be able to address [human and organisational factors](#) and develop their [non-technical skills](#) in leadership, problem solving, team work, communication and situation awareness.

The board has developed a [competency framework](#) that includes the following non-technical competencies:

- situational awareness and risk assessment
- effective communication
- collaboration
- operational decision making and initiative
- organised and disciplined, and
- responsiveness to change.

It is through this real experience that candidates are well placed to meet the competencies for the statutory function.

### **3. Are the recommended experience activities appropriate, specifically, being present at extraction?**

#### **Clarification of what extraction experience comprises**

It was evident from submissions that greater clarity is needed regarding the meaning and application of extraction experience.

There is a breadth of work activities that comprise extraction experience and to help clarify this, the wording from page 10 of the discussion paper will be broadened to include **'or during development works or other mining operations to support or enable extraction'**, as shown in Table 1.

Table 1 Amended wording regarding extraction experience

DISCUSSION PAPER WORDING	AMENDED WORDING
<p><b>Mining:</b> at least the specified number of years being present at an extraction face during production to support mining operations and openings.</p>	<p><b>Mining:</b> at least the specified number of years being present at an extraction face during production <b>or during development works or other mining operations to support or enable extraction.</b></p>
<p><b>Electrical and mechanical:</b> at least the specified number of years involved in the installation, commissioning, maintenance and repair of electrical plant and installations; and within the specified number of years' experience, one year must involve electrical plant and installations at an extraction face during production at the class of mine specified.</p>	<p><b>Electrical and mechanical:</b> at least the specified number of years involved in the installation, commissioning, maintenance and repair of electrical plant and installations; and within the specified number of years' experience, one year must involve electrical plant and installations at an extraction face during production <b>or during development works or other mining operations to support or enable extraction</b> at the class of mine specified.</p>

## 4. Do you have any other comments of a general nature?

### Clarification of practical experience

The practical experience requirements use the wording '**working in or about a mine**'. However, this does not mean a person has spent time on development and extraction activities in the mine. Therefore, as outlined in the discussion paper, the proposed changes use the term '**practical mine experience**'.

Candidates should refer to the [Competency Framework](#) for guidance on the type of activities that count as '**practical mine experience**'. The framework identifies seven areas of competence required to exercise the statutory function and includes examples of the type of work activities that demonstrate the competency.

Further to this, candidates should refer to the [sample of practical experience](#) supplied in support of an application. This sample shows an example of an application that was rejected (including the reasons why the experience was not acceptable), and an example of how practical experience should be supplied for use in support of an application.

### Response to other comments

The board:

- should be open to the concept of including the Advanced Diploma of Extractive Industries as an acceptable qualification for quarry managers and will explore this further separately
- previously decided that reinstating Part A examinations is not appropriate. A Bachelor of Mining Engineering is only one pathway to becoming a manager of mining engineering. The VET pathway is another.
- should discuss alignment with other jurisdictions through the Australasian Mining Competency Advisory Council.

# Major themes from submissions

We have analysed the stakeholder submissions and identified the following key themes in response to the four consultation questions:

## 1. Are the proposed changes to experience requirements adequate?

### 1.1. Support for proposed length of experience

The following stakeholder views relate to support for the proposed total length of experience (note: these stakeholders also expressed concerns regarding the proposed breakdown of activities):

- support increasing the experience requirements to five years for mining engineering managers (submission 9-individual)
- In relation to underground supervisor-metalliferous and mining engineering manager-metalliferous:
  - changes are appropriate and adequate (Aeris Resources-Tritton)
  - support the proposed total length of experience (CMOC Northparkes Mines)
  - support proposed three year practical experience for underground supervisor-metalliferous and five years for mining engineering managers (submission 16-individual).
- no concerns with the length of practical experience required but do have concerns with supervision element (refer section 2) (Mine Managers Association of Australia (MMAA)).

### 1.2. Opposition to proposed length of experience

#### 1.2.1. Inadequate and impracticable

- The Association of Mining and Exploration Companies (AMEC) believe the proposed changes don't appropriately account for differences between large coal mines and small metal mines. They believe some of the changes are impracticable for small operations and could drive people out of the industry.
- Submission 4 (individual) believes changes are required but the proposed changes won't improve the situation.

- Submission 8 (individual) believes the proposed changes don't go far enough and believes the underground experience requirements for Underground Supervisor-metalliferous should be increased to five years (not three).

### 1.2.2. Changes may impact on mining engineering workforce and won't address technical shortcomings of candidates

The following stakeholder views are in relation to the impact of the proposed changes for mining engineering managers:

- the length of the process may be a deterrent to candidates and limit the already low number of people available (NSW Minerals Council)
- may further impact on the limited availability of mining engineers (submission 4-individual and Glencore CSA Mine).
- won't address technical shortcomings of candidates. The skills are better gained through broader operational management, often gained in an office based environment (AMEC and 6-individual).
- inappropriate and flawed (Tony McPaul-Individual).

### 1.2.3. Quarry managers – current (status quo) requirements adequate

The following stakeholder views are in relation to the proposed changes for quarry managers:

- opposes changes to practical experience. Current requirements for three months' handling explosives and nine months' practical experience are adequate (submission 6-individual).
- the current requirements provide exposure to various practical experiences and are more suitable to create a quarry manager who can assess risks (submission 16-individual).
- opposes the increase as impractical given constraints across the sector (submission 10-individual).

## 2. Is the inclusion of supervision experience and the proposed length of supervision experience appropriate?

### 2.1. Support for including supervision requirements

Five stakeholders support the proposed supervision requirements (IQA; submission 2-individual; Glencore; CCAA; Collieries' Staff and Officials Association).

**Note:**

1. IQA and CCAA would oppose any further increases in addition to the proposed requirements.
2. Glencore supports proposed six months supervision requirements (unclear which certificate of competence) but believes it should specify as a crew leader or similar with direct control over workforce.
3. IQA believe the Regulator should recognise other pathways in the surface extraction industry where staff have undertaken supervision, for example, a person transitioning from a geologist or a machine operator into a senior role.

## 2.2. Opposition to proposed supervision requirements

**Note:** Some of the stakeholders below support the concept of including supervision but not the proposed requirements.

Stakeholder views opposing the proposed supervision requirements include the following:

- proposed supervision requirements should go further (submission 8-individual). Impractical, detrimental and costly, especially to smaller operations (submission 4-individual)
- impractical and detrimental to industry, three months as an underground shift supervisor would be appropriate (regarding Mining Engineering Managers-metalliferous) (submission 6-individual)
- impractical and confusing (regarding Underground Supervisors-metalliferous) (Aeris Resources-Tritton)
- impractical, especially for small metalliferous mines, detrimental to industry, three to six months supervisory experience is realistic (AMEC)
- six months as an underground supervisor is adequate (regarding mining engineering managers-metalliferous) (CMOC Northparkes Mines and NSW Minerals Council)
- six months as a shift supervisor or construction/development supervisor is adequate (regarding mining engineering managers) (submission 9-individual)
- three-six months supervision experience is more appropriate than two years (regarding mining engineering managers) (Tony McPaul-individual).

### 2.2.1. Difficult to obtain the proposed supervision experience

The following views are in relation to supervision opportunities being dependent on holding the certificate of competence (primarily for deputy-underground coal; open cut examiner; and underground supervisor):

- oppose the supervisory requirements for deputy (underground coal) and open cut examiner as they are only given the responsibility of supervision once they obtain their certificate of competence (NSW Minerals Council).
- difficult to contemplate supervisory roles (regarding deputy role) when statutorily qualified deputies normally fill those roles unless some 'leading hand' role can be designed (MMAA)
- how do you get the required supervisor experience without a practising certificate unless you work as a 2IC? It will be very difficult for a small mine to undertake (submission 8-individual).
- as mechanical activities at coal mines must be supervised by a person holding a statutory position, there are challenges for a degree educated engineer to get supervisory experience before obtaining their certificate of competency (this is in relation to the electrical engineering manager-underground coal; mechanical engineering manager-underground coal; and electrical engineer-surface coal) (NSW Minerals Council).

### 2.2.2. Flat management structures – primarily in the metalliferous sector

The following stakeholder views are in relation to the difficulty in obtaining supervision experience due to flat management structures primarily in the metalliferous sector:

- lack of supervision opportunities in relation to Underground Supervisors-metalliferous due to flat management structures, particularly in small mines (submission 4-individual, submission 6-individual, NSW Minerals council)
- in relation to underground supervisor-metalliferous, opposes having multiple tiers of supervision just to enable personnel to gain experience. It is almost impossible to gain six months of supervisory experience unless a company pays two people to complete the one role which is unsustainable and impractical (submission 16 (individual))
- in relation to open cut examiners and quarry managers, supervisory experience is difficult to obtain in a quarry/open pit environment where contractors are used (submission 16-individual).
- it is rare for any graduate working for an owner (mining contractor) to get front-line supervision experience (Luke Neesham-individual).

### 2.2.3. Legislative changes have decreased supervision opportunities in the metalliferous sector

The following stakeholder views are in relation to how legislative changes have decreased supervision opportunities in the metalliferous sector:

- legislative changes have impacted on the metalliferous industry's ability to provide supervision experience (submissions 4 and 6-individuals; Aeris Resources-Tritton; AMEC; NSW Minerals Council).
- in relation to underground supervisor-metalliferous:
  - there are no longer opportunities for persons without a certificate of competence to act in the role which was the best method of training people to take on the role full time (Aeris Resources-Tritton).
  - before recent legislation changes, supervisory experience was gained through being nominated as a relief supervisor and supervising in short blocks under the scrutiny of the mine manager. This allowed progressive development of skills and assessment by management (NSW Minerals Council).

### 2.2.4. Practical mechanism (e.g. step up) to allow candidates to gain supervisory experience (applies to underground supervisors-metalliferous)

The following stakeholder views are in relation to the need for a process to enable candidates to gain supervision experience before applying (the views apply to underground supervisors-metalliferous):

- the Board needs to develop a practicable mechanism/protocol to allow candidates to gain supervisory experience before applying for a certificate of competence. In the absence of such a protocol, the supervisory prerequisite should be removed (NSW Minerals Council).
- supervision should be removed unless there is a practicable mechanism to allow candidates to gain supervisory experience before applying (submissions 4 and 6-individuals)
- an acting underground supervisor role should be introduced, i.e. for periods not exceeding one week under the guidance of a person with a certificate of competence (if this is not possible, the completion of Certificate III or IV in Front Line Management (or equivalent) should be substituted for the supervisory experience (Aeris Resources-Tritton).
- oppose including supervision time unless an exemption is granted to allow a relief shift supervisor without a certificate of competence to supervise (submission 16-individual).

### 2.3. Definition of supervision

The following stakeholder views are in relation to confusion over the definition of 'supervision':

- for open cut examiners and quarry managers, client supervision of contracted workers or internal supervision of client work teams should be included (submission 6-individual)
- for mining engineering manager-metalliferous and underground supervisor-metalliferous:
  - it is unclear if time spent supervising also counts as time spent being present at the face. Clearer guidance around 'frontline' verse 'direct' and 'general' should be include (Luke Neesham-individual)
  - appears that the definition is intended to be more similar to the interpretation under the Qld system e.g. the need for all 'supervisors' to have undertaken safety training resulting in most tech services doing S1, S2, S3 because anyone issuing an instruction anywhere in the mine is interpreted to be a supervisor. (Luke Neesham-individual).
  - the supervision experience is poorly defined. Would expect a portion of this two year period to be experience working as a front-line underground supervisor, not in a vague supervisory or coordinating role (Aeris Resources-Tritton).

## 3. Are the recommended experience activities appropriate, specifically, being present at extraction?

### 3.1. Support for the recommended experience activities

The following stakeholder views are in support of the proposed experience activities:

- the recommended experience activities are appropriate (MMAA and submission 8-individual - noting submission 8 thinks they could be extended further).
- three years for underground supervisors is appropriate (except for degree qualified candidates) (Aeris Resources-Tritton)

*(Note: Aeris Resources-Tritton believes time at extraction face should be the same for mining engineering managers and underground supervisors with one year requirement for degree qualified engineers).*

### 3.2. Opposition to proposed experience at extraction face

#### 3.2.1. Impact on already limited number of mining engineers

Stakeholders views regarding the impact the proposed 'time at the extraction face' would have on the mining engineer workforce include the following:

- won't yield any further understanding and will most likely reduce the already limited available engineering workforce. Requiring triple the 'extraction face' time compared to other Australian jurisdictions will result in people choosing to gain certification and work in other states (relates to mining engineering managers-metalliferous and coal)(submission 16-individual).
- current requirements are adequate. Industry is lacking mining graduates and doesn't have resources to provide three years underground experience (submission 9-individual).
- will severely limit the number and quality of mining engineering manager candidates (Aeris Resources-Tritton).

#### 3.2.2. Proposed 'time at the extraction face' is impracticable

Stakeholder comments opposing the proposed 'time being present at the extraction face' include the following:

- impracticable and doesn't support the goal of increasing mining engineering manager (metalliferous) candidate quality (submission 6-individual and Aeris Resources – Tritton).
- excessive, impracticable for many metalliferous operations and won't necessarily increase competence (AMEC).
- current requirements for quarry managers are appropriate. Proposed increase won't result in more suitable candidates (submissions 9 and 16-individuals).
- not practical or sustainable for an engineer or a business (NSW Minerals Council and CMOC Northparkes Mines).
- current requirement should be retained for mining engineering managers-metalliferous (3 months) and 1 year for: mining engineering manager-u/g and surface coal; undermanager-u/g coal; deputy; and electrical engineer-surface coal (NSW Minerals Council).
- for mining engineering managers (coal and metalliferous) it is of equal or greater relevance to have experience in technical design, mine design and ventilation (i.e. engineering

experience more so than operator experience) in order to understand all the principal hazards (NSW Minerals Council).

- engineers need an appreciation of the risk and hazards in the workplace but don't need to be expert operators. We need to be creating competent leaders (CMOC Northparkes Mines).
- mandating a longer time at the extraction face won't achieve appropriately experienced mining engineering manager candidates. Essential skills are emergency preparedness, knowledge of legislation, safety management and controls which are not skills and experience gained working at the extraction face (Tony McPaul-individual).

### 3.2.3. Open cut examiners: production experience is less valuable than learning technical aspects

The following stakeholder views are in relation to the proposed changes for open cut examiners:

- opposes increasing required experience from one to three years and believes the additional practical 'production experience' is less valuable than learning technical aspects required to provide a safe working environment (pit design, geotechnical evaluation, blast design) (submission 6-individual).
- opposes requiring both a degree-holder and non-degree holder to complete two years of production experience as this is less valuable than having safe design and risk management skills (submission 16-individual).

### 3.3. Definition of 'being present at extraction' is unclear

Some stakeholders outlined concerns with the definition of 'being present at extraction':

- requires further definition. Must be considered as being 'present at the site' (IQA)
- unclear what this means in a metalliferous context (Glencore). Doesn't translate well to the metalliferous sector (submissions 4 and 6-individuals)
- the activities are confusing, unclear and poorly defined. They use coal-mining terminology that is inappropriate and unfamiliar to metalliferous mining (Luke Neesham-individual )
- further clarification is necessary to define the term. Should be taken as experience at the whole site, not just the extraction face (CCAA).
- redefine the requirement for face extraction time for mine engineering manager to include experience in production engineering skills such as: geotechnical engineering design or

monitoring, drill and blast, emergency response training, activity scheduling, surveying, remote equipment operation (Aeris Resources-Tritton).

- two years is appropriate for underground supervisors-metalliferous if this means mining and direct mining support work including drilling, charging, loading and primary service work (submissions 4 and 6-individuals and AMEC).

### 4. Do you have any other comments of a general nature?

Other stakeholder comments were based around the following themes:

- **Clarification of terms:** Some stakeholders noted confusion over some of the terms in the proposed experience requirements, including the following:
  - *'Practical'* - appears this term means 'on the tools' with no time to learn how to be a mining engineering manager (Luke Neesham-individual).
  - *'Experience'* – In relation to quarry managers, need for clear, consistent guidelines on how 'experience' will be defined and assessed (CCAA).
  - *'May include up to one year in any other class of mine'* – this contradicts the opening statement (for quarry manager) of 'a minimum of four years practical mine (other than underground or coal) experience (Clean Teq Sunrise Pty Ltd).
- **Use of current prerequisites:** support the concept of using the details of the current prerequisites as guidance going forward (Luke Neesham-7). Using these as guidance implies the current requirements are adequate (submission 16-individual).
- **Transition arrangements:** a need for transition measures so ensure effective planning and management of workforce (CCAA and IQA).
- **RII60215 Advanced Diploma of Extractive Industries:** this qualification should be listed in the Guide: *Applying for examinations and statutory functions certificates* as an acceptable qualification for quarry managers (IQA and CCAA).
- **Part A examinations should be reinstated for Mining Engineering Managers:** this would provide experienced miners without a degree with a pathway to attempt examination process (NSW Minerals Council).
- **Competency requirements should be aligned:** there should be a greater effort to align competency requirements between states (IQA, APESMA Collieries Staff Division).
- **Consultation:** Further consultation with industry is needed (submission 4-individual CCAA).

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