

14th May 2021

NSW Resources Regulator

Amendments to the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Regulation

With regard to Question (xxiii) of the discussion paper (Reference DOC20/948755) ;

“Do you support the proposed amendments to the explosion-protection provisions in clauses 78(2) and 78(3) of the WHS (MPS) Regulation to make it explicit that electrical plant used in an underground coal mine must **comply** with the requirements of the certificate of conformity or Departmental approval?”

We do not support this amendment for the seven reasons listed on the accompanying document.

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On the basis of the following points we do not support the proposed amendments outlined in clause 4 of DOC20/948755 Amendments to the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulation, with particular reference to clause 4.1 – ‘Certificates of conformity for explosion protected electrical equipment’.

1. All proposed amendments contained within Clause 4 ‘Other matters’ of the above mentioned document have been raised by Resource Regulator staff but have not been subject to the rigorous review, public consultation (via discussion paper), public forums (both face to face and online) and online survey as outlined in DOC20/445520 Statutory Review of the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Regulation.
2. The recommendations that form part of DOC20/445520 have sufficient background information, factual and/or practical information provided to the public that allows them to make a decision on the proposed amendments. However, the proposed amendments outlined in clause 4 of the DOC20/948755 Amendments to the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulation, with particular reference to clause 4.1 – ‘Certificates of conformity for explosion protected electrical equipment’ fail to provide the same level of background information to allow the public to make a factual informed decision on the proposed amendment.

In the absence of sufficient background, factual information and the practical issues supporting the reason for the proposed amendment it is impossible for the operator / end users, maintainers and licenced repair facilities to make a factual informed decision on the proposed amendment and hence continue to comply with the WHS(MPS) Regulation.

With particular reference to clause 4.1 – ‘Certificates of conformity for explosion protected electrical equipment’ of DOC20/948755 Amendments to the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulation in conjunction with the reasons 1 and 2 above, we do not support the proposed amendment contained within this clause on the following basis:

3. The proposed amendment seeks to mandate the requirement that in addition to electrical plant having a valid certificate of conformity that the plant must also comply with that certificate of conformity. In general the certificate of conformity and its associated documents contain enough information to allow the end user to ascertain that the electrical plant has been **manufactured** to meet the requirements of the certificate of conformity and does not generally contain enough information to allow the end user to **maintain** conformity throughout the lifecycle of that piece of equipment. In the absence of such information on the certificate of conformity, end users, maintainers and licenced facilities rely on the application of the appropriate Australian / New Zealand and/or International Standards to maintain the conformity throughout the lifecycle of that piece of plant.

In the absence of information on the certificate of conformity to instruct the end user of the requirements to maintain compliance with the certificate of conformity throughout the lifecycle of the plant, this proposed amendment would make it impossible for the operator to comply with the WHS(MPS) Regulation.

4. Original Equipment Manufacturers (OEM's) are required to supply end users (Mine Operators) with specific information according to applicable Act's, Regulation's, and Standard's. The information required does not necessarily cover all aspects of design and tolerance's required for a piece of plant to meet the certificate of conformity throughout its lifecycle due to many different Information Protection policies and Laws. If the words 'must also comply' are added to clause 78(2) and 78(3) of the WHS(MPS) Regulation as proposed, we believe that only the OEM has the relevant information available to allow us to comply with the certificate of conformity. Some OEM's of plant used under clauses 78(2) and 78(3) of the WHS(MPS) Regulation are not set up or appropriately licenced to perform maintenance tasks on the plant that they hold the certificate of conformity for, therefore it is likely that the end user, maintainers and licenced facilities cannot comply to the proposed amendment.

In the absence of information on the certificate of conformity and the inability for some OEM's to perform the maintenance tasks required to maintain compliance with the certificate of conformity throughout the lifecycle of the plant, this proposed amendment would make it impossible for the operator to comply with the WHS(MPS) Regulation.

With particular reference to the third paragraph of clause 4.1 – 'Certificates of conformity for explosion protected electrical equipment' of DOC20/948755 Amendments to the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Regulation in conjunction with the reasons 1 through 4 above, we do not support the proposed amendment contained within this clause on the following basis:

5. In our opinion by adding the words 'must also comply' would make it a mandatory requirement that the blind threaded holes which house 'Fasteners' designed to provide retention between the two flameproof surfaces on Ex 'd' enclosures which form the flameproof 'Joint' (Refer AS/NZS 60079.1), will be required to remain in an 'as manufactured' condition throughout the equipment's lifecycle.

In practise this cannot be achieved. The high tensile screw / bolt will always wear the mild steel threaded hole. During the process of transport, routine maintenance and fault finding (which could involve several openings and closings of the enclosure due to the hazardous zone where the equipment operates) causes wear in the threaded hole.

Research has proven that a non-compliance can occur with as little wear as one quarter of the diameter of a human hair on either side of the threaded hole depending on the thread pitch of that hole when referencing a 6g/6H manufacturing tolerance for that thread.

If this were to be made mandatory no mine could comply. Acceptable wear tolerances exist in industry recognised Australian and International standards (AS1721), these tolerances need to be adopted in the certificates of conformity or associated maintenance standards so that mines can practically comply and are not being forced to employ unnecessary additional maintenance practices for zero-safety gain to try to maintain equipment in an as manufactured condition. Once a wear tolerance is exceeded (as per the recognised standards) the threaded hole is required to be repaired / overhauled to the as manufactured condition.

In this specific scenario, the absence of maintenance tolerance information on the certificate of conformity and the inability to utilise recognised Australian and International standards for thread tolerances, would make it impossible for the operator to comply with the WHS(MPS) Regulation if this proposed amendment was passed.

6. The second sentence in the above-mentioned Clause / Paragraph indicates that some mines are choosing to apply maintenance tolerances to explosion-protected thread tolerances which are outside the manufacturing tolerances that were performance tested during the explosion - protected certification process. We do not believe this statement as being correct and once again adds to the lack of background / fact offered to the public to make an informed decision on the proposed amendment.

As far as we are aware 'some mines' are applying a maintenance tolerance to a recognised standard on blind threaded holes which house 'Fasteners' designed to provide retention between the two flameproof surfaces on Ex 'd' enclosures which form the flameproof 'Joint' (Refer AS/NZS 60079.1). This differs greatly from applying a maintenance tolerance to explosion protected threads which could be considered a type of flameproof 'Joint' covered under serrated joints (Refer AS/NZS 60079.1).

In the absence of sufficient background, factual information and accurate description of the actions of other mines supporting the reason for the proposed amendment, it is impossible for the operator / end users, maintainers and licenced repair facilities to make a factual informed decision on the proposed amendment and hence continue to comply with the WHS(MPS) Regulation.

In further reference to clause 4.1 – 'Certificates of conformity for explosion protected electrical equipment' of DOC20/948755 Amendments to the Work Health and Safety (Mines and Petroleum Sites) Act 2013 and Regulation in conjunction with the reasons 1 through 6 above, we do not support the proposed amendment contained within this clause due to a potential overlap and practical application with other clauses of Work Health and Safety (Mines and Petroleum Sites) Regulation.

7. In our opinion if the words 'must also comply' are added to clause 78(2) and 78(3) of the WHS(MPS) Regulation as proposed there will be a significant overlap with clause 78(4) of the WHS(MPS) Regulation. Clause 78(4) sets out the requirements of the operator to ensure electrical plant used in a hazardous zone is maintained in accordance with AS/NZS 2290.1 2014. This standard sets out such things as:

- Application of risk management principals to determine controls for ongoing safe use
- Introduction of lifecycle management of explosion – protected equipment
- Types of inspections
- Recommended periodic inspection requirements
- Determination of accessibility for inspection

All of the above topics covered in this standard allow the operator to apply good risk management and electrical engineering practices combined with the limitations of the appropriate standards to develop a lifecycle management plan to ensure the electrical equipment is kept safe for the environment it is operating in. By changing 78(2) and 78(3) of the WHS(MPS) Regulation as proposed, we see a large contradiction in the application of this well embedded standard.

AS/NZS 2290.1 does not contain any requirement for electrical apparatus used in a hazardous area to continuously comply to the conditions of the certificate of conformity.

The standard outlines recommended intervals that need to be complied with in the absence of a risk managed lifecycle approach.

Under the recommended inspection intervals of AS/NZS 2290.1, at any point in time between the inspection periods a component may 'wear' or otherwise deteriorate beyond the 'as manufactured' condition as set out in the certificate of conformity. This 'wear' or deterioration may not necessarily be beyond the limits of an acceptable standard and does not affect the safe performance of the plant. In this situation, if the proposed amendment is ratified and the certificate of conformity is silent on any tolerance for components, it may mean that for a period of time the piece of plant has been in operation in a 'technically' non-compliant state for an undefined period of time between inspections. This is not practical and contradicts the intent of AS/NZS 2290.1.

Due to a clash between the proposed amendment and clause 78(4) of the WHS(MPS) Regulation, it would be impossible for the operator / end users and maintainers to continue to comply with clauses 78(2), (3) and (4) concurrently if the proposed changes were ratified.