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Safer Storage of Ammonium Nitrate in NSW

NSW Minerals Council Submission – 18th November 2022

Introduction

NSW Minerals Council (NSWMC) appreciates the opportunity to provide comments on the *Separation Distances for Solid Ammonium Nitrate in NSW* Discussion Paper (the discussion paper).

NSWMC is the peak industry organisation representing NSW's minerals industry. NSWMC provides a single, united voice on behalf of almost 100 members, from junior exploration companies to international mining companies and associated service providers.

Health and safety is the highest priority of the NSW mining industry. The industry operates to the highest standards and continues to strive towards improved health and safety outcomes.

We acknowledge that the scope of the discussion paper does not include mine sites at this stage and that further consultation would occur if mine sites were to be included.

However, the impacts of the proposal set out in the Discussion Paper on the manufacturing, storage, and transport industries for Ammonium Nitrate (AN) do directly impact the minerals industry and will have significant negative impacts on the NSW mining industry, threatening its operating viability, and driving perverse safety outcomes.

We therefore provide our feedback for consideration to assist SafeWork NSW in understanding the full implications of the proposed changes.

We believe the NSW minerals industry has robust and mature risk management systems embedded within our businesses. A risk-based approach is applied to all areas of our industry, including the storage of AN.

This established approach to determining and managing separation distances for AN across our industry is based on existing guidance and regulation across NSW and Australia, including, the Explosive Act 2003, NSW Explosive Regulation 2013, QLD Explosive Regulation 2017, Australian Standards 4326 – Storage & Handling Oxidizing agents (AN), Australian Standards 2187, Australian Dangerous Goods Code and the AEISG Code for storage of Ammonium Nitrate.

The risk-based approach taken across our industry and the regulation we adhere to is also applied by our members when engaging with AN suppliers and transport providers.

The risks associated with the production, storage, and transport of AN are well known and have been managed well in NSW by industry through adherence to current legislation and the implementation of best practice.

The NSW minerals industry is committed to continuing to uphold the highest safety standards to ensure safe and secure management of Ammonium Nitrate continues to be achieved across NSW to continue keeping our people and surrounding communities safe.

The proposal set out in the discussion paper would result in the industry needing to replace existing domestic supply and storage locations with imported product in alternative storages. Not only would this destroy a local manufacturing sector, but the replacement imported product would need to be shipped, stored, and trucked creating perverse safety outcomes. This directly undermines the stated objective of

SafeWork NSW of creating consistency in storage standards, as this product would be stored at ports, where SafeWork NSW does not intend to implement the proposed separation distances.

Given the likely perverse safety outcomes, the flawed justification and simplistic consequence-based approach, NSWMC strongly opposes the proposal set out in the discussion paper being applied in any way.

Following the consideration of industry feedback, NSWMC would be pleased to work with SafeWork NSW to demonstrate the effectiveness of the existing controls and refine any regulatory approach to ensure that it is practical, outcomes and risk-based and does not jeopardise the mining industry.

NSWMC makes the following overarching recommendations on the discussion paper:

- that SafeWork NSW pause work on the current proposal.
- that SafeWork demonstrate the purported inadequacies of the current controls.
- that SafeWork develop a comprehensive assessment of the impacts of the proposal, in consultation with industry, taking into consideration the flow on effects to the whole AN supply chain and the extensive work of AEISG that includes separation distances calculated using a valid scientific basis.
- That the release of this assessment be accompanied by a Regulatory Impact Assessment of costs / benefits of the various options and be subject to detailed, targeted industry consultation.

The following detailed comments address the feedback questions posed in the discussion paper.

Response to consultation questions

1. **Do you have concerns about the storage of ammonium nitrate in or around your local community? If yes, what are your concerns?**

   The NSW minerals industry and its suppliers uphold the highest possible standards of management of Ammonium Nitrate (AN). The existing approach to determining and managing separation distances for AN across our industry is based on existing guidance and regulation across NSW and Australia, which dictates risk-based separation distances and other suitable and effective controls to keep our people and surrounding communities safe.

   NSW AN facilities have been storing AN for more than 50 years under regulation with no storage fires or explosions. The industry has been able to demonstrate the safe handling of AN.

   We also note that none of the example incidents listed in the Discussion Paper (clause 2.3) relate to sites operating under the existing strict regulatory control in NSW. The incident examples mentioned have significant differences and circumstances not relevant to the current NSW context and application of NSW Regulations. We do not allow for non-compatible materials to be stored in the same location as AN in NSW and the inclusion of these events in the Discussion Paper can be very misleading to the public who are not well informed on the current regulations.

   Accordingly, we do not believe the current storage arrangements should be cause for concern.

2. **Does the proposal incorporate appropriate measures to manage the risks associated with the storage of ammonium nitrate?**

   No. We do not believe the current proposal incorporates appropriate measures to manage the risks associated with the storage of ammonium nitrate (AN).

   Industry is supportive of ensuring appropriate, risk based, measures are in place to manage the storage of AN, however the proposed approach of mandatory separation distances is flawed and may actually drive poorer safety outcomes, such as insufficient separation distances for smaller quantities of AN storage, and shifting risk towards ports and roads, which will not improve safety for the community of NSW.

   The approach set out in the discussion paper is not based on the actual properties of AN and fails to consider a combination of controls.

   We also note that clause 1.2 of the discussion paper references an alignment with other states, however, fails to identify that other states that currently prescribe separation distances for AN have provisions to risk assess the situation and use controls (including, but not isolated to, separation distances) to demonstrate appropriate management. SafeWork NSW have proposed a minimum distance requirement, developed in the absence of other controls. Industry effectively employs a variety of controls, such as fire deluge systems, early detection systems, drainage systems, etc. which, in conjunction with separation distances and segregation of products, are sufficient controls to manage risk.

   Recommendation: It is recommended that SafeWork NSW should **not** adopt the proposed safe separation distances as detailed in the *Separation Distances for Solid Ammonium Nitrate in NSW* Discussion Paper dated October 2022. It is recommended that SafeWork NSW should consider an appropriate risk-based approach, such as the work the Australian Explosive Industry Safety Group (AEISG) has recently completed and released as a draft Code of Practice for storage of AN. AEISG have included all states in the development of the draft code to establish National Harmonisation of Legislation across Australia. It is recommended that SafeWork NSW should be actively involved in the working group that developed the draft

Industry Code to streamline the approach to the industry for all stakeholders and work to the common goal of improving the safety and security of our industry and the NSW community.

3. **How can ammonium nitrate storage facilities located near residential and commercial areas be made safer?**

   The NSW mining industry and existing AN storage facilities, maintain a risk-based approach with robust controls in place. There is strict regulatory oversight that monitors compliance with the existing NSW regulations.

   Industry has however been limited by the ongoing encroachment on buffer zones by urban sprawl. While the current facilities maintain adequate controls, if this encroachment continues it would be difficult to maintain current storage arrangements.

   Recommendation: The NSW government should consider assisting to maintain the existing safety record and enable ongoing safe storage of AN by reviewing NSW planning and land zoning instruments around existing facilities and proposed new facilities in NSW to prevent further encroachment and exposure through urban sprawl close to such facilities in NSW (e.g., buffer zones/land use controls for existing facilities).

4. **What will be the impacts on industry and the community if the NSW Government's proposal is adopted?**

   We believe the impact on the NSW minerals industry and our suppliers (manufacturers, storage, and transport) would be so severe that it would threaten the industry's ability to operate.

   The proposal would jeopardise local manufacturing, significantly impact the NSW mining industry through loss of supplies and drive massively increased costs.

   Mining is one of the most important economic drivers in NSW and impacts to its competitiveness and ability to operate would seriously impact the tens of thousands of jobs that are supported across NSW.

   The local NSW coal mining industry, as an example, has an annual requirement of some 600,000 tonnes (t) of AN. The NSW manufacturing industry provides some 420,000t of this requirement, with the balance imported to meet industry demands. Any reduction, loss of supply or delays to the NSW local supply of AN, which would be expected if any of the NSW sites were required to meet the proposed changes, would prevent blasting which is an essential process to open cut mining.

   Adherence to the proposed new separation distances would make existing storage and manufacturing locations unsuitable. The time and detailed approvals and associated processes with establishing new sites would have a significant financial impact on the industry and ripple effects across the economy. It is questionable whether it would even be possible to find suitable locations for re-establishing these functions to meet the requirements of the proposed changes given how radical they are.

5. **What is an appropriate transition period to provide to existing sites which may have difficulty complying with prescriptive separation distances? What other strategies should be considered to enable existing sites to comply with prescriptive separation distances?**

   We do not believe there would be an appropriate transition period for existing mine site storages, or the existing storages of our suppliers (manufacturers, storage, and transport) to enable them to meet the proposed separation distances.

The changes that would be required to meet the prescriptive separation distances would not be possible for a large portion of existing NSW storages. The footprint that would be required for AN storage to meet the requirements will not physically be available to the majority of the existing storages and facilities. The available footprints in the existing locations will always be deemed to impact existing communities, current infrastructure, public roads, train lines, etc. and make the ability to meet separation (and evacuation) requirements as proposed in the Discussion Paper insurmountable.

Recommendation: It is recommended that existing and currently proposed facilities should not be subject to the requirements set out in the discussion paper. Should any transitional period be required for potential changes in the future, the transitional period should be commensurate with the timeframe associated with sourcing new locations, seeking planning approvals, community and regulator consultation periods, construction, and commissioning periods for a new storage facility.

6. **What barriers are there for existing facilities moving or relocating ammonium nitrate stores within sites, to comply with prescriptive separation distances?**

The main barriers for existing facilities to move or relocate ammonium nitrate (AN) storages within sites in order to comply with the proposed prescriptive separation distances include:

- Lack of physical space available. The footprint that will be required to meet the proposed prescriptive separation distances is not available at the majority of existing storage sites. Most sites are landlocked by public roads/highways, railway lines, public or private infrastructure, and/or their own operational infrastructure (mining, manufacturing, etc.) and therefore are unable to fit storages within the available footprint based on the distances proposed.
- Those sites that do not have the additional space to meet the prescribed distances will have to close on site storages or significantly reduce the amount of AN that can be stored on any given site. This will negatively impact the supply and demand chain for suppliers and operational sites.
- Those sites that do have suitable distances available will be presented with significant costs associated with multi-agency approval processes, construction, and commissioning of multiple AN storage sites and the associated services and infrastructure. The cost of production losses and/or business interruption and/or loss of potential earnings will also be a potential barrier for a number of businesses in the industry. The increased footprint will introduce greater security concerns in order to keep that larger footprint secure from external persons.

7. **Are there any unintended consequences associated with the NSW Government's proposal, for industry and/or communities located within the vicinity of an ammonium nitrate storage facility?**

Yes. We believe an unintended consequence associated with the NSW Government's proposal will be the closure of a number of, if not all, existing storages, and manufacturing in NSW. This will have a significant negative impact on industry, as well as communities located in the areas of which they operate (employment, financial input into communities and the state).

The potential disruption to supply in NSW will see an increased reliance on importation of AN into NSW, taking the financial and business benefit away from NSW. It will also potentially deter future investment in industry across our state.

Further, there would be an increase in overall risk due to the increased quantity of AN stored in port facilities and on the road network across NSW due to the need to minimise the quantities stored and/or the limited number of storage sites that will be available under the proposed new requirements. The risk will shift to road transport and the exposure to road users and the communities in which transport providers travel and park up. The risk will essentially be mobilised across the state, away from safe and secure storage in-situ at the manufacturing and storage facilities currently in place. An increase in the number of smaller storage sites, spread across NSW communities is also a likely outcome if the existing larger storages have to close or reduce their capacity.

In addition, while the scope of the proposed changes does not include mine sites, an unintended consequence of the NSW Government's proposal will be the direct and indirect impact of the proposed separation distance on the NSW minerals industry. Outside of the key points raised above and the impact the supply chain disruptions will have on the NSW minerals industry, the adoption of changes to the *Explosives Act* and/or *Explosives Regulation* in NSW will expect that all PCBUs who store and use explosive products to adhere to or at least consider and document why they are not adhering to published separation distances as a control to manage the universal risks across any site (regardless of industry). This will put the onus back on our industry to then justify why we are not adopting the published recommended distances. The AN separation distances, if adopted and published, will be considered as a publicly recognised standard, and by default our industry must consider it and it will be admissible if ever challenged legally. We note that this is also the case for any Code or Standard, including the AEISG Code, if it were to come into practice in the future. The SafeWork NSW concerns that the proposed AEISG Code would only apply to a subset of AN facilities present in NSW and would exclude non-AEISG members, for example, is not true. It would impact all of industry, in the same any changes to the *Explosives Act* and/or *Explosives Regulation* will.

8. Do you think the prescriptive separation distances will achieve the desired safety outcome?

No. The prescriptive approach will drive perverse safety outcomes as described above. The desired safety outcome is achievable without the simplistic, consequence-based separation distances proposed in the Discussion Paper. A risk-based approach and a combination of controls will achieve the desired safety outcome in a practical and feasible way.

9. Are there other costs that the proposal should consider, such as socio-economic costs?

Retrospective legislation, if applied, may have a significant impact on the safety and security of ammonium nitrate in NSW, as well as a major impact upon the ammonium nitrate supply chain, and therefore the mining sector and economic well-being of NSW.

The introduction of prescriptive and ill-considered regulatory requirements such as this is a key driver of sovereign risk that drives away investment in NSW.

Further, this proposal would drive the continued decline of the local manufacturing industry.

Consideration should be given to how the costs associated with impacted infrastructure (if expansion or acquisition of new land is required to meet the proposed separation distances) will be funded. The expectation on industry and end users to cover costs of roads, power, water, etc. to gain access to remote locations will need to be considered if such areas, away from existing communities, are going to be viable options for existing and potential future industry stakeholders.

10. **What measures can be taken to offset the potential economic impact of some within the industry?**

    The impacts of what is proposed by SWNSW in the discussion paper are of such a magnitude that there are no measures that can be taken to 'offset' the potential economic impact.

    SafeWork NSW should review the need for such reforms, consider the existing controls that are in place across the industry and work with the industry in a risk-based approach to address any gaps.

11. **Do you have any further comments regarding the NSW Government's proposal and the storage of ammonium nitrate in NSW?**

    We offer the following further comments regarding the NSW Government's proposal and the storage of ammonium nitrate in NSW:

    - There is a lack of clarity and understanding around the scope of the proposed changes. Whilst the SafeWork NSW position has been made clear in that this will not apply to mine sites, it is difficult to understand how it would not be, in that the NSW minerals industry operate under the same legislative instruments and are regulated and have licenses issued by NSW SafeWork.
    - We believe there is insufficient discussion of the technical issues that drive the development of the proposed separation distances put froward in the Discussion Paper. The TNT equivalent approach is too simplistic and the technical information that supports the proposed distances needs to be reviewed based on more appropriate options that are better reflective of the risk associated with AN. The current proposal has adopted the formula from the AEISG code for ANE UN 3375 and applied a TNT Explosive factor of 32% to calculate a minimum distance. SafeWork NSW have not modelled the actual properties of Ammonium Nitrate and therefore there has been no consideration to the fact that AN does not burn.
    - The proposed changes in the Discussion Paper includes transit stores for loading and change of drivers, parking area etc. which will therefore also be required to meet the calculation for minimum distance (i.e., 518m for a loaded B Double). The practicality of parking transport trucks 518m from other trucks or the community is not achievable. The proposed transport and separation distances in the Discussion Paper are also considered contradictory to the existing Australian Dangerous Goods Code for Transport (ADG Code). It is unclear if the intent would be for the ADG Code to also be updated as an outcome of the proposed changes.
    - The ripple effect on transit storage, deliveries and transport do not appear to be well understood by SafeWork NSW. A potential lack of awareness of the magnitude of this proposal and the supply chain impacts, disruption to the minerals industry, and the financial impact on the state of NSW is significant. A proposed change such as this should have a cost/benefit assessment conducted to determine the potential outcomes across the state of NSW.
    - If the proposed changes were to be introduced in their current form, the NSW Government would have the most stringent, conservative regulation framework in the world.

In addition, as a participant in the *Ammonium Nitrate Consultation Webinar* facilitated by Department of Customer Service on 10th November 2022, we offer the following comments in response to the SafeWork *Aims and Objectives* of the proposed reforms:

- **Increased Safety**

  We do not believe *Increased Safety* will be achieved through the proposed prescriptive approach to AN storage in NSW. The proposed approach is not risk based and may inadvertently reduce safety outcomes through introducing more AN transport, fewer alternative controls for storages, insufficient separation distances for smaller quantities of AN storage, and increased footprint security concerns.

  The desired increased safety outcome is achievable without the prescribed separation distances proposed in the Discussion Paper. A risk-based approach and a combination of controls will achieve the desired safety outcome in a practical and feasible way.

- **AN is currently the only substance with no prescribed separation distance requirements by SafeWork NSW**

  The existing approach to determining and managing separation distances for AN across our industry is based on existing guidance and regulation across NSW and Australia, which dictates risk-based separation distances and other suitable and effective controls to keep our people and surrounding communities safe. Prescribed separation distances are only one control and consistency with other substances has no relevance.

- **Ensure Consistent regulation of AN, ANE and explosives under NSW legislation**

  Consistency will not be achieved through the proposed approach as the scope of the proposal applies to *identified non-mining sites* and *excludes Port storages*.

- **Provide certainty for investment in NSW**

  Certainty will be achieved as the proposed prescriptive approach will make it almost impossible to invest in NSW. The proposal would jeopardise local manufacturing, significantly impact the NSW mining industry through loss of supplies and drive massively increased costs. Current planned investments have become very uncertain with the release of the Discussion Paper, and companies have put investment decisions on hold until this proposal is resolved.

- **Level playing field**

  The introduction of the proposed separation distances for AN storage will not achieve a *level playing field*. The NSW proposal would disadvantage the NSW industry considerably, with other states as the proposed requirement does not account for the presence of other controls and would impose an impractical requirement on industry. The comparison with other states and desire to align, as detailed in the webinar and discussion paper, fails to identify that other states that currently prescribe separation distances for AN have provisions to risk assess the situation and use controls (including, but not isolated to, separation distances) to demonstrate appropriate management. Industry effectively employs a variety of controls, such as fire deluge systems, early detection systems, drainage systems, etc. which, in conjunction with separation distances and segregation of products, are sufficient controls to manage risk.

  Inconsistencies will also remain across NSW under the proposed changes, as the proposal does not apply across all AN storage facilities (such as ports) and therefore a *level playing field* will not be achieved.

- **Regulation in NSW to keep pace with other Australian jurisdictions**

  The NSW mining industry and existing AN storage facilities maintain a risk-based approach with robust controls in place. There is strict regulatory oversight that monitors compliance with the existing NSW regulations and the implementation of best practice. The introduction of the proposed separation distances would make NSW the most heavily regulated jurisdiction globally creating a significant competitive disadvantage for no safety improvement.

  SafeWork NSW should review the need for such reforms, consider the existing controls that are in place across the industry and work with the industry on a risk-based approach to address any gaps.

- **Efficient license assessments**

  Efficient licensing may be achieved, however, simplicity for the Regulator is not a valid objective for the reforms. The outcome should be risk-based regulation that works with industry to deliver feasible and practical safety outcomes.