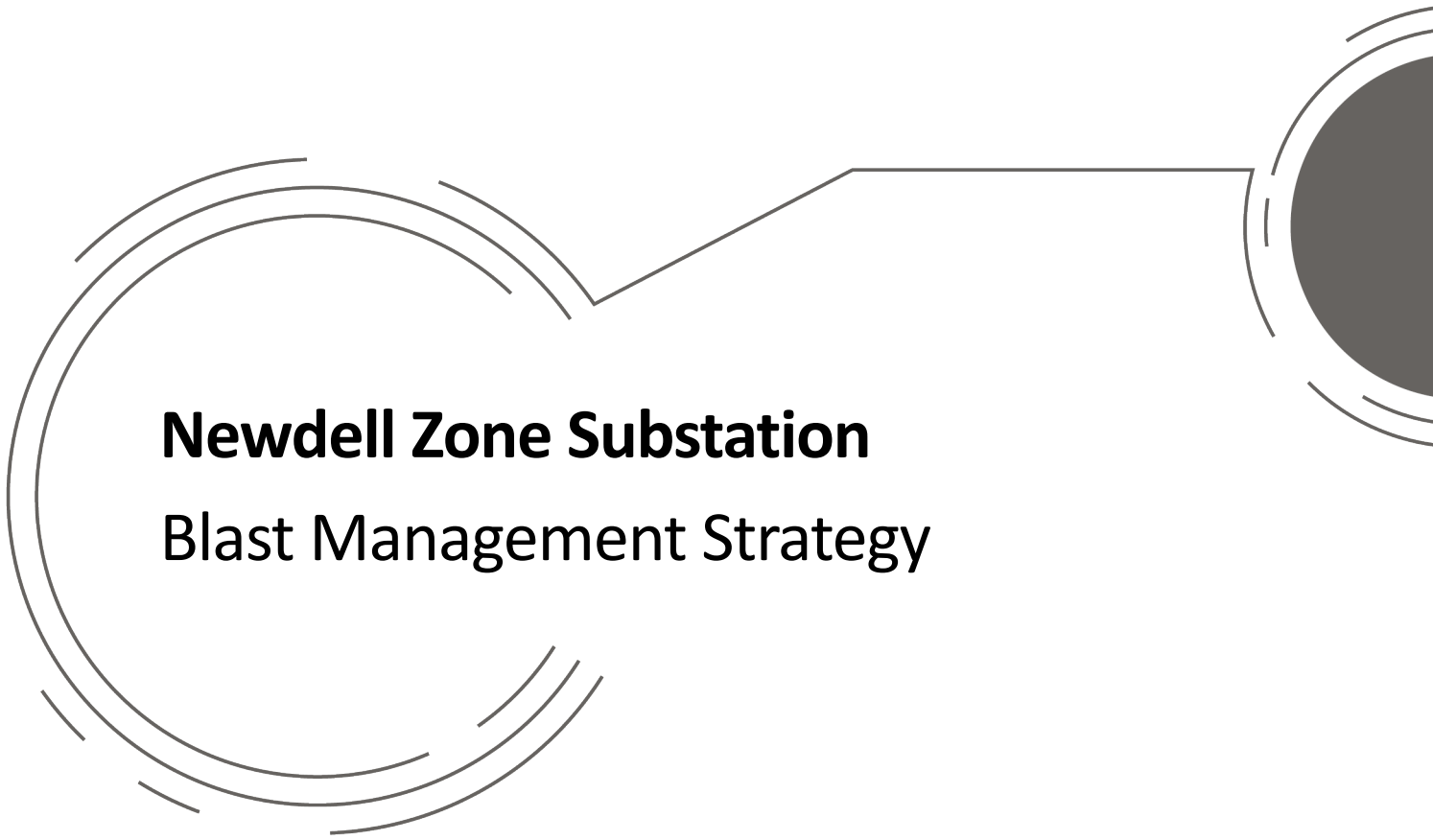


LIDDELL

GLENCORE



Newdell Zone Substation Blast Management Strategy

Number: LIDOC-90533967-3741
Owner: Technical Services Manager

Status: Approved
Version: 6.0

Effective: 05/01/2021
Review: 05/01/2022

Uncontrolled unless viewed on the intranet

Table of Contents

1.	Background	3
2.	Purpose	3
3.	Scope	5
4.	Planning	6
4.1	Studies Undertaken.....	6
4.2	Consultation	8
5.	Implementation	10
5.1	Blasting Protocol	10
5.2	Meeting targets and blast design.....	11
5.2.1	Vibration.....	11
5.2.2	Advancing Vibration and Airblast Limits	12
6.	Measurement and Evaluation	12
6.1	Monitoring and Assessment	12
6.2	Make Good Measures.....	12
6.3	Reporting.....	13
7.	Accountabilities.....	13
8.	Document Information	14
8.1	Related Documents.....	14
8.2	Reference Information	15
8.3	Change Information	16
Appendix A - Ausgrid Correspondence		17
Appendix B - DPIE Approval		18

1. Background

The Newdell Zone Substation was constructed in the early 1980s and is located adjacent to Liddell Coal Operations. The substation is part of the electricity network supplying electricity to Liddell Coal Operations, Hunter Valley Operations, Ravensworth Underground and Ravensworth Open Cut mines.

2. Purpose

In 2013, LCO submitted a development application to modify development consent DA 305-11-01 (Mod 5) to extend the existing open cut mining operations in both the South Pit and Entrance Pit, to enable continuity of mining and maximise recovery of coal resources within the existing development consent boundary. Development Consent was granted 1st December 2014.

The Newdell Zone Substation is located on the Old New England Highway, and is within 110m of the open cut pit shell associated with the South Pit (refer **Figure 3-1**).

This Blast Management Strategy has been developed by LCO to document the management of potential blast related impacts on the Newdell Zone Substation, and is a requirement of DA305-11-01 (as modified). The relevant condition requirements, and where they are addressed in this document, are provided in **Table 2-1**.

In accordance with DA305-11-01, the primary objective of this Strategy is to ensure that blasting at LCO has a negligible impact on the structural integrity and does not accelerate the deterioration of electrical equipment efficiency (directly caused by blasting activities and exclusive of normal operational deterioration) of the Newdell Zone substation, compared to the existing condition and structural integrity of the substation at the date that consent was granted to DA305-11-01 MOD 5 (December 2014).

DA305-11-01 Schedule 3 Conditions				Section
Chain of Ponds Inn				Section 2.0
The Applicant shall ensure that blasts on site do not exceed the criteria in Table 2.				
Table 2: Blasting impact assessment criteria				
Location	Airblast overpressure level (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	
Residence on privately-owned land	115	5	5% of the total number of blasts over a period of 12 months	
	120	10	0%	
Newdell zone substation	-	20 (interim)	10% of the total number of blasts over a period of 12 months	
	-	25 (interim)	0%	
Other public infrastructure	-	50	0%	
However, these criteria do not apply if the applicant has:				
a) A written agreement with the relevant owner to exceed these criteria, and has advised the Department in writing of the terms of this agreement; or				
b) In the event that the applicant is unable to secure a written agreement with an infrastructure owner, demonstrated to the satisfaction of the Secretary that blasting can be carried out at levels in excess of the criteria without causing any damage.				
Notes:				
• The interim criteria for the Newdell zone substation are based on consultation with the substation owner (Ausgrid). It is acknowledged that alternative criteria may be agreed as part of the blast management strategy for the substation (see condition 15A).				
• An alternate limit for public infrastructure may be agreed by the Secretary if it can be justified in accordance with the structural design methodology in AS2187.2-2006, or another methodology agreed to be the Secretary.				
Blast Management Plan				
15A (f) include a specific Blast Management Strategy for the Newdell Zone Substation. This Strategy must:				This document
be prepared in consultation with the owner of the substation;				
if alternative criteria to those in Table 2 are proposed, include detailed justification for the criteria based on investigations by a suitably qualified expert(s) whose appointment has been endorsed by the Secretary in consultation with the owner of the substation;				
provide details on the management of potential ground vibration and flyrock impacts to ensure that blasting does not affect the structural integrity or serviceability of the substation;				

DA305-11-01 Schedule 3 Conditions	Section
include a monitoring program for blast vibration and structural integrity at the substation; and	
include a protocol for repairing any damage to the substation in the event that this occurs.	

Table 2-1 – Project Approval Requirements for the Blast Management Strategy

3. Scope

This document addresses the management of potential blast related impacts on the structures that comprise the Newdell Zone Substation as a result of operations at LCO. It does not address the management and mitigation of blast impacts on other infrastructure, receptors or the natural environment.

This document is also not intended to address the overarching management and long term use of the Newdell Zone Substation, given that the substation is under the ownership and management of Ausgrid. A key consideration in the preparation of this management strategy was however to ensure that the management and mitigation measures committed to by LCO do not in any way impinge on Ausgrid's plans for the long term use and management of the substation.



Figure 3-1 – Newdell Zone Substation proximity to mining operations 9Aerial Photo date Jan 2018Planning

4. Planning

4.1 Studies Undertaken

Very limited studies have been undertaken on blast management impacts to substations.

LCO engaged Terrock in 2013 to liaise with Ausgrid and assess acceptable blast vibration criteria for the substation. Ausgrid subsequently commenced structural analysis of the substation infrastructure with assistance from Wilkinson Murray to determine appropriate structural factors of safety and subsequent blast vibration thresholds of the infrastructure. Swinburne University was also engaged to peer review the assessment process, assumptions and conclusions.

Further studies undertaken by Ausgrid aimed to identify the blast vibration threshold for significant structural components within the substation. The blast vibration threshold is likely to vary for components, therefore each component was to be investigated for opportunities to replace or strengthen the particular component to potentially increase the blast vibration threshold of the substation.

The report titled “Structural Modifications to Improve Blast Vibration Performance – Newdell Zone Substation” was finalised in August 2015 (Ausgrid document number D15/535232). **Table 4-1** shows the limits for each significant component based on mitigation measures installed.

Item	Current Theoretical Limit (PPV in mm/s)	Proposed Mitigation	Expected Limit (PPV in mm/s)
Transformer and 66kV bushings	12	Base isolation with anti-vibration pads as documented on drawing 236545. Monitor mitigation measures. Change 66 kV bushing connections from rigid copper tube to stranded aluminium conductor supported by 66 kV post insulator and relocate 66 kV surge arresters onto a new structure. This also decouples the transformer bushing from the 66 kV busbar	30 (<12 Hz) 50 (>12 Hz)
Control Buildings	20	Base Isolation with rubber mounts as documented on drawing 236545. Monitor mitigation measures.	50
66kV Circuit Breakers (SOV CB)	47	Add damping and monitor Accelerate the strategic replacement of the oil filled porcelain shelled SOV CB with SF6 DTCB, as currently planned, to reduce the HV explosive failure risk.	50
Old 66 kV Busbar support	53	Add damping and monitor.	>50
New 66 kV VTs on new landing structure	35	Modify structure by adding weight to reduce the natural frequency. [100 kg below end VTs and 150 kg below central VT] Monitor. Replacing the existing VTs with cast resin units will reduce the HV explosive failure risk. Refer Note [1]	50
Batteries		Add lateral support to the batteries by connecting the support frames to the walls of the control building	
Note [1] The use of cast resin units (for VTs etc.) will have reduced electrical performance in polluted conditions, and will require additional outages for cleaning.			

Table 4-1 – Expected PPV limits for significant structural components within the substation (from D15/535232)

The performance of blast vibration mitigation measures installed at the Newdell Zone Substation in 2016 was assessed for 12 blasts between 21/11/2016 and 13/4/2017 (Ausgrid document number D16/1027587). The review confirmed that the measures proposed for the transformers and the control building are effectively reducing the effect of the blast vibrations. The report identified that the mitigation measures for the VTs on the landing structure and in the main bus had not performed as expected due to an underestimate of the importance of the vertical components of the vibration. Further modifications were proposed by Ausgrid (add struts and modify damping weights for VT on the landing structure) and these works were completed 18th October 2017.

4.2 Consultation

This document has been prepared in consultation with Ausgrid, as the owners of the substation. **Table 4-1** describes the formal consultation undertaken in preparation of this plan.

Date	Stakeholder	Outcomes
12 March 2013	Ausgrid	Meeting with Ausgrid regarding development of appropriate communication protocols when the Newdell Zone Substation is within LCO's 500m blast exclusion zone
26 July 2013	Ausgrid	Meeting with Ausgrid regarding appropriate blast vibration limits for the Newdell Zone Substation
20 December 2013	Ausgrid	Meeting to discuss progress and further actions relating to vibration impacts at the Newdell substation
30 May 2014	Ausgrid	Meeting with Ausgrid to discuss next steps in Newdell substation review
8 August 2014	Ausgrid	Meeting to discuss progress with the structural monitoring and modelling at Newdell substation
1 September 2014	NSW Dept. Planning & Environment (DPE)	Letter from Ausgrid to DPE advising DPE of substation vibration limits and Ausgrid's preparedness to enter into formal negotiations with LCO to conduct technical studies to identify works required for alternative blast limits and possibly replace or upgrade key components
30 October 2014	Ausgrid	Meeting to review initial structural modelling results
18 March 2015	Ausgrid	Meeting to review progress of structural modelling and associated peer review, present draft Blast Management Strategy for Ausgrid review
30 April 2015	Ausgrid	Meeting to review progress of structural modelling and associated peer review
4 June 2015	Ausgrid	Meeting to review progress of structural modelling and associated peer review
9 July 2015	Ausgrid	Meeting to review progress of structural modelling and associated peer review
20 August 2015	Ausgrid	Meeting to review progress of structural modelling and associated peer review
19 January 2016	Ausgrid	Final review comments and updates received from Ausgrid on blast management strategy. All accepted.
14 April 2016	Ausgrid	Meeting to review outcomes of structural modelling and recommended mitigation actions.
27 April 2016	Ausgrid	Fortnightly meetings held from this date to review progress with implementing monitoring and mitigation measures.

Date	Stakeholder	Outcomes
31 August 2016	Ausgrid	Agreement reached between LCO and Ausgrid for the Blast Vibration Consent Deed
31 August 2016	Ausgrid	Agreement reached between LCO and Ausgrid for the Blast Vibration Mitigation Works Agreement
14 December 2016	Ausgrid	Received Notice of Completion for Blast Mitigation Works
3 July 2017	Ausgrid	Report provided to LCO on the Assessment of the Effectiveness of Blast Vibration Mitigation. Identified further works required on VT on Landing Structure required to progress past VPPV limit of 28mm/s. Variation to mitigation works suggested (add struts and modify damping weight) to enable 40mm/s limit.
18 October 2017	Ausgrid	Notice received by LCO that further VT mods had been completed (variation 1).
1 November 2017	Ausgrid	Notice of increase to limits received by LCO as per Blast Vibration Consent Deed (Stage 1 of Annexure A, VPPV $\leq 30\text{mm/s}$ above 12Hz and $\leq 26\text{mm/s}$ below 12Hz)
1 November 2017	Ausgrid	LCO returned signed copy of Blast Vibration Works Monitoring Agreement to Ausgrid.
16 January 2018	Ausgrid & DPE	Notification of a potential blast exceedance at the Substation.
31 January 2018	Ausgrid & DPE	Investigation report issued by LCO into January's blast exceedance.
3 April 2018	Ausgrid	Blast Exceedance close out received from Ausgrid regarding blast fired 16th Jan 2018.
7 September 2018	Ausgrid	Temporary limit increase for maximum two blasts before 8 November 2018 for VPPV $\leq 34\text{mm/s}$ above 12Hz and $\leq 26\text{mm/s}$ below 12 Hz.
15 March 2019	Ausgrid	Temporary limit increase till 1 October 2019 for VPPV $\leq 34\text{mm/s}$ above 12Hz and $\leq 28\text{mm/s}$ below 12 Hz or any individual blast Or VPPV $\leq 36\text{mm/s}$ above 12Hz and $\leq 30\text{mm/s}$ on more than two occasions with the period.
24 September 2019	Ausgrid	Letter agreeing to 6-month extension of the temporary increases outlined in previous correspondence date 15 March 2019. Temporary increase valid till 1 April 2020.

Table 4-2 – Management Strategy Revision

5. Implementation

LCO and Ausgrid have developed several agreements related to blasting in proximity to the Newdell Zone Substation. These agreements include:

- Blast Vibration Mitigation Works Agreement – At the time, this related to vibration mitigation measures to be installed at the substation following investigations carried out by Ausgrid. Note that these works have been completed.
- Blast Vibration Consent Deed – This outlines that Ausgrid consents to LCO blasting above the previous vibration limits (20mm/s for 90% of blasts and 25mm/s for 100% of blasts) on the basis that blast mitigation works are completed at the Newdell Zone Substation. It allows for a staged approach to increases in blasting limits.
- Blast Vibration Works Monitoring Agreement – This outlines the respective obligations for Ausgrid to carry out the blast vibration works monitoring and commercial arrangements for Liddell to reimburse Ausgrid for the cost of the monitoring.

A staged increase in the vibration level at the Newdell Zone Substation, combined with continual monitoring of vibration levels and corresponding structural behaviour, will enable an adaptive management approach to blasting in the vicinity of the substation. The strategy involves *at-source* management measures (blast design control), particularly within a distance of 350 metres to the substation, combined with an inspection and blast review regime to effectively manage blasting in the vicinity of the substation.

The key components of the strategy are summarised below.

5.1 Blasting Protocol

Strict blast design, loading and blast execution protocols will be implemented to ensure blasting is well controlled in the vicinity of the Newdell Zone substation.

350 m Blast Control Zone

The blast strategy for the Newdell Zone substation focuses on blasting within 350 metres of the substation.

Blasting Protocol

The control of blasting within 350 metres of the substation will involve the following steps for each blast.

- a) Initial blast design will be based on a Maximum Instantaneous Charge (M.I.C) determined from the use of site parameters that are constantly reviewed to incorporate recent site data.
- b) Unless subject to review by an appropriately qualified expert, all blasts fired within 350 metres of the substation will have blasting specifications that have been proven by prior experience to result in vibration levels, frequencies and air blast levels that conform with applicable structural limits
- c) Blast execution, including vibration monitoring at the substation.
- d) Ongoing revision of the predictive model based on vibration monitoring results from subsequent blasts.

5.2 Meeting targets and blast design

5.2.1 Vibration

From 1 November 2017, Ausgrid has consented to the first stage of vibration limits increases as outlined in Annexure A of the Blast Vibration Consent Deed (as notified to DPE on 2 November 2017):

- VPPV less than or equal to 30mm/s for frequency above 12Hz
- VPPV less than or equal to 26mm/s for frequency below 12Hz

The Blast Vibration Consent Deed outlines the staged increases to blasting limits up to a VPPV of 50mm/s above 12Hz and 30mm/s below 12Hz.

A series of temporary increases to the above limits have been agreed with Ausgrid and notified to DPE in accordance with Section 5.2.2 below. The temporary increases were sought in order to verify implemented blast mitigation strategies and there are no additional adverse impacts on the substation. Table 4-1 above summarises the consultation with Ausgrid. Once the temporary increase period has expired, vibration limits revert to original limits above unless otherwise agreed.

Management of Flyrock

The Liddell South Pit has come within 110 metres of the Newdell Zone substation at its closest point. As a result, a number of blasts have been fired within the 300 metre equipment blast exclusion zone. This 0-300 metre area is considered a high risk zone in relation to flyrock, and therefore a number of precautionary measures have been implemented to minimise the possibility of flyrock occurrence and resulting potential impacts on the Newdell Zone substation. Specific controls implemented by LCO to control flyrock include:

- Exploration drilling and modelling to determine the depth of the coal and planned blast bench height;
- Survey of blast areas prior to planning blast hole locations;
- Verification of hole depths prior to loading explosives and reconciliation of planned and actual depths that affect the design stemming height;
- Stemming heights for each explosive column calculated based on explosive quantity per column;
- Use of imported consistent grade gravel for stemming material;
- Use of electronic load sheets at the point of loading to calculate, record and verify quantities of explosives and stemming for each blast hole allowing for corrective action to be taken if appropriate; and
- Consideration of geological and bench conditions as evident in the drill pattern; and
- Flyrock predictive modelling.

Flyrock predictive modelling is based on the Terrock flyrock model. This model predicts the distance that rock will fly based on significant blast parameters that can be readily controlled, and a site constant that is determined by a calibration process. A substantial safety factor is then applied to the “worst case” distances measured resulting in the determination of a conservative clearance zone. The Terrock flyrock model has been widely used by major quarry companies in Australia, and in larger operations such as the Kalgoorlie “Super Pit”.

The Terrock flyrock model has been refined and calibrated by analysing several blasts at LCO and are based on a scaled depth of burial approach combined with basic trajectory theory that considers launch angle and launch velocity. It is used to predict flyrock distances and set clearance zones for blasts within 300 metres of the substation.

In the event that flyrock is observed or is found to have entered the substation complex then this will be notified to DPE as an incident in accordance with Schedule 4 Condition 11 of DA305-11-01. The intent is to trigger an investigation and review of the blast models and loading practices to identify the root cause and action required to mitigate the reoccurrence of a flyrock incident.

5.2.2 Advancing Vibration and Airblast Limits

Prior to advancing to the next vibration and airblast trigger level, LCO will advise the DPE of the proposed change and provide justification for advancement.

6. Measurement and Evaluation

6.1 Monitoring and Assessment

Monitoring of the substation will be undertaken on an ongoing basis. Monitoring and evaluation of blast results will form an important component of the strategy, using an adaptive management approach to allow for continual improvement and refinement of the blast design as required. This will involve the following:

- e) Ground and structure based vibration monitoring at the substation, together with periodic frequency analyses to show that the blast design is keeping within the established parameters;
- f) Suitable ground based monitoring to check for the entry of flyrock into the substation;
- g) Verification of the monitoring results at the substation and comparison with the vibration and flyrock predictive models; and
- h) Ongoing review of the vibration and flyrock predictive models for subsequent blasts.

Following any blast vibration result exceeding the specified criteria, or where flyrock has entered the substation, LCO will notify Ausgrid and the DPIE as soon as the result is known. Ausgrid will arrange an inspection of the substation to determine the impact to the infrastructure and any corrective actions that may be required.

6.2 Make Good Measures

If any damage to the substation has been determined to have been caused by an LCO blast, an appropriately qualified Engineer will be engaged by Ausgrid as agreed with LCO to assess the damage at LCO's cost. Any damage determined to have been caused by an LCO blast will be repaired by Ausgrid approved contractors as soon as practicable at LCO's cost.

If the substation is damaged as a result of a LCO blast that exceeded the approved (interim or alternative) blast vibration limits, or as a result of flyrock entering the substation, the following shall occur:

- Blasting by LCO is to cease at the distance from the substation of the contributing blast,

- LCO will consult with Ausgrid and agree on an acceptable strategy if blasts loaded with explosives prior to the exceedance need to be fired for safety reasons within the appropriate “sleep time” of the explosives in order to prevent increased risks associated with deteriorated explosives;
- A review will be undertaken by LCO of the blast design, site parameters and other factors used in the predictive models for vibration limits and/or flyrock management;
- Blast designs will be revised by LCO following the review of the offending blast;
- The revised blast designs, including any reduced blast vibration limits or other strategies, will be reviewed and agreed with Ausgrid for future blasts and possible loaded explosives.
- Should structural analysis by the appropriately qualified structural engineer engaged by Ausgrid as agreed with LCO determine that it is safe to do so, blasting may continue at the approved or reduced vibration limits as agreed; and
- As a minimum visual inspections and/or further monitoring will be conducted as recommended by the appropriately qualified structural engineer engaged by Ausgrid as agreed with LCO after each subsequent blast to identify if further damage is occurring.

If investigations into the cause of any substation damage find that modifications to this Blast Management Strategy are required, these modifications will be made in consultation with Ausgrid and will be resubmitted for approval by the Department of Planning and Environment.

If the electricity supply network is disrupted due to a failure of the Newdell Zone substation as a direct result of blasting at LCO, Ausgrid will take all reasonable steps to temporarily reinstate the electricity supply network, to the extent practicable, at LCO's cost. All endeavours will be made by Ausgrid to fully reinstate the Newdell Zone substation as soon as practicable at LCO's cost.

6.3 Reporting

A summary and review of blast results are documented in the LCO Annual Review.

7. Accountabilities

Role	Accountabilities for this Role
Operations Manager	Maintain a working knowledge of this BMS and be aware of all environmental legislative requirements associated with its implementation Mine operations are undertaken in accordance with this BMS. Provide adequate resources for environmental management including: qualified personnel, adequate financial resources and training as required for all employees.
Drill & Blast Engineer	All blasts are designed to comply with the limits in this BMS. Blast monitors are operational before each blast. Inform Liddell Coal Operations Environment and Community Department weekly on blasting schedule and blast parameter predictions.

Role	Accountabilities for this Role
Technical Services Manager	Liaise with Ausgrid, government and community stakeholders regarding management of the Newdell Zone Substation in relation to blasting at LCO. Liaise with senior management personnel to promote awareness and delegate tasks associated with blast management and heritage issues/commitments. Develop and deliver necessary environmental management/awareness training to all personnel, including management of the Newdell Zone Substation. Coordinate the activities of specialist consultants for vibration monitoring and structural inspections.
All Persons	Have a general awareness of this BMS. Conduct their work activities in accordance with this BMS. Report all heritage incidents to the Environment and Community Department or their immediate supervisor. Participate in relevant environmental training.

8. Document Information

8.1 Related Documents

Related documents, listed in **Table 8-1** below, are *documents* directly related to or referenced from within this document.

Number	Title
LIDOC-90533967-3742	Blast Management Plan
LIDOC-90533967-145	Explosives Management Plan
LIDOC-90533967-1415	Post Blast Fume Procedure
GCAA-625378177-9975	11.12 Blast Management Protocol

Table 8-1 – Related documents

8.2 Reference Information

Reference information, listed in **Table 8-2** below, is *information* that is directly referred to for the development of this document.

Reference	Title
Legislation	Work Health and Safety (Mines and Petroleum Sites) Act 2013
	Work Health and Safety (Mines and Petroleum Sites Regulations 2014
	Work Health and Safety (Mines and Petroleum Sites) Amendment Act 2014
	Work Health and Safety Act 2011
	Work Health and Safety Regulation 2011
	Environmental Planning and Assessment Act 1979
	Environmental Planning and Assessment Regulation 2000
	Protection of the Environment Legislation Amendment Act 2011
	Explosives Act 2003
	Explosive Regulation 2013
Australian Standard	AS2187.2 :2006 Explosives – Storage and use, Part 2 - Use of Explosives
Ausgrid	Blast Vibration Mitigation Works Agreement - 50917038(5)
	Blast Vibration Consent Deed - 50917064(5)
	Blast Vibration Works Monitoring Agreement - 545870664(4)
	Structural Modifications to Improve Blast Vibration Performance - Newdell Zone Substation (D15-535232)
	Ausgrid Drawing 215159
	Ausgrid Drawing 221858
	Assessment of the Effectiveness of Blast Vibration Mitigation – Newdell Zone Substation (D16-1027587)
	Ausgrid Drawing 236546_01r01

Table 8-2 – Reference information

8.3 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 8-3** below. Example detail shown below.

Version	Date	Review Team	Change Details
1.0	May 2015	D Brogan, B de Somer, D Foster	New document
2.0	June 2016	D Brogan, B de Somer, D Foster, Ausgrid	Address comments and updates from Ausgrid and DPE. DPE approve 24/8/2016.
3.0	October 2016		Document migration to new SharePoint
4.0	July 2018	C Gerard, B de Somer	Update to take into consideration blast mitigation measures installed at the substation, current LCO and Ausgrid agreements, and current agreed vibration limits. DPE Approval letter added to Appendix B. H Simms, B De Somer - Transferred to current template.
5.0	November 2019	D Mitchell, D Shirley	Full review. Update reference to WHS regulation. Added approval letter from Ausgrid of temporary vibration increase to Appendix A.
6.0	05/01/2021	B de Somer, D Mitchell	Full review. Update Section 4.2 Consultation. Update Section 5.2.1 to reflect temporary vibration limits agreed with Ausgrid.
7.0			

Table 8-3 – Change information

Appendix A - Ausgrid Correspondence



145 Newcastle Road
Wallsend NSW 2287
All mail to PO Box 487
Newcastle NSW 2300
T +61 2 131 525
www.ausgrid.com.au

24 September 2019

David Foster
Liddell Coal operations Pty Limited
PO Box 7
SINGLETON NSW 2330

Dear David

Re: Blast Vibration limit temporary increase - Newdell Substation

I refer to your letter dated 12 September 2019 in relation to the previously agreed blast vibration limit temporary increase at Ausgrid's Newdell Substation (Newdell).

Ausgrid acknowledges that Liddell Coal Operations (LCO) has to date, been unsuccessful in achieving blast events that allow for verification of the implemented blast mitigation strategies at Newdell.

On this basis, Ausgrid will agree to LCO's request for a six-month extension of the blast vibration limit temporary increase. This temporary change is now valid until 1 April 2020.

All other terms and conditions, as outlined in Ausgrid's previous correspondence dated 15 March 2019, shall remain unchanged.

If you require further information, please do not hesitate to contact Robert Mitchison, Customer Manager on 4399 8132 or Chris Hatch – Head of Asset Engineering, Policy and Standards on (02) 9269 7238.

Yours sincerely

A handwritten signature in black ink, appearing to read "Hatch", written over a light blue horizontal line.

Chris Hatch
Head of Asset Engineering Policy and Standards

Appendix B - DPIE Approval



Planning Services
Resource Assessments
Name: Ingrid Berzins
Phone: 9373 2885
Email: Ingrid.Berzins@planning.nsw.gov.au

Ben de Somer
Environment & Community Manager
Liddell Coal Operations
PO Box 7
Singleton NSW 2330

Dear Mr de Somer,

**Liddell Colliery (DA 305-11-01)
Approval of Management Plans**

I refer to your emails dated 30, 31 July and 31 August 2018 submitting revised management plans for Liddell Colliery. The Department has reviewed the following revised management plans and is satisfied that they address the relevant conditions of consent:

- Noise Monitoring Program v7.1 (condition 3 of Schedule 3);
- Blast Management Plan v5.1, Blast Management Strategy – Chain of Ponds Inn v4.1, Blast Management Strategy – Newdell Zone Substation v3.1 (condition 15A of Schedule 3);
- Air Quality Management and Monitoring Program v4.1 (condition 19 of Schedule 3);
- Water Management Plan v7.1 (condition 23 of Schedule 3); and
- Environmental Management Strategy v9.0 (condition 1 of Schedule 5).

The Secretary therefore approves these revised plans, on the condition that:

- the statement regarding cosmetic damage on page 13 of Blast Management Strategy – Chain of Ponds Inn is amended so that minor cosmetic repairs can only be waived if agreed by the relevant stakeholders; and
- references in Table 2-1 of the Water Management Plan are updated, and the first sentence in Section 8.10 is rephrased to avoid using "maybe".

Please provide final (untracked) versions of these plans to the Department at your earliest convenience and place a copy of them on your company website.

If you have any enquiries about this matter, please contact Ingrid Berzins on the details above.

Yours sincerely

A handwritten signature in black ink, appearing to read 'MgB Dawson', followed by the date '4/10/18'.

Megan Dawson
Acting Director
Resource Assessments
as the Secretary's nominee