

ANGLESEA MINE COAL COVERAGE PROJECT REVIEW – TECHNICAL REVIEW RECOMMENDATIONS

Alcoa engaged Mining One to undertake a Technical Review of their coal coverage project being undertaken a key initiative as part of the mine shutdown plan. Several recommendations have been made as a result of the review and are listed below together with a response from Alcoa, together with action plans where applicable.

RECOMMENDATION	RESPONSE	ACTION
1. During the site visit there was evidence of heaped coal fines located along coal edges and within the pit floor area. These piles of fines pose a spontaneous combustion risk and should be minimised as far as practicable prior to encapsulation of the pit floor.	All heaped coal fines to be flattened and compacted prior to covering with overburden material as part of the coal coverage project. Alternatively, coal fines to be deposited in a purpose constructed trench and covered with clay.	To be completed by 31 st August 2015 as part of coal coverage project
2. The risk associated with ash attack is limited to the summer period and therefore encapsulation of all horizontally exposed coal is recommended with at least one metre of waste material and this will also provide encapsulation of the coal to prevent oxidation of the coal and foreseeable spontaneous combustion events	Coverage of horizontally exposed coal will be completed, where possible, using at least one metre of waste material with the exception of the west batter (see 5 below)	To be completed by 31 st August 2015 as part of coal coverage project
3. Where coal seams are being covered, it is advised that the capping material contain not less than 10% clay to help retain moisture and seal the seam against oxidation.	Capping material to be selected based on clay content to meet recommended minimum 10% content when covering coal seam areas.	To be completed by 31 st August 2015 as part of coal coverage project
4. Compaction is recommended and can be achieved using either loaded trucks or the water cart during the placement of the material. Failing this a vibrating roller would be recommended.	Compaction to be completed by accessible areas being wheel rolled by either loaded trucks or the water cart. Current standard dumping procedure leads to compaction by loaded trucks as part of the ongoing coal coverage project.	To be completed by 31 st August 2015 as part of coal coverage project

<p>5. Where practical, the preferred method of securing the exposed seams in the pit faces (vertically exposed coal) is to encapsulate this with waste material by dozing over the exposed areas, this is more critical for vertical faces that have been exposed for less than two years.</p> <p>However due to timing constraints and the practicalities of this, the following mitigation can be adopted as an optional strategy:</p> <p style="padding-left: 40px;">Leave the vertically exposed coal open to the elements. For faces that have been exposed for less than two years daily monitoring must be conducted for the initial three months post closure and then twice weekly thereafter. For faces that have been exposed for more than two years the face must be inspected at least once a week for signs of spontaneous combustion.</p> <p>If a heating event does occur daily inspection must resume for a period of three months after the event the twice weekly until the face has shown no spontaneous combustion issues for more than two years.</p>	<p>This recommendation is made on the basis that many of these faces have been exposed to the elements for up to 28 years with no heating events being recorded. In addition the risks associated with a fire event have not changed from when the mine was operating and therefore these mitigation strategies are in line with historic actions.</p> <p>Daily monitoring will be maintained post the 31st August 2015 mine and power station shutdown date by appropriately trained resources using standard checklists that check for such things as: signs of spontaneous combustion, erosion of the coal coverage material that exposes coal, cracks and fines build up on the west batter etc.</p>	<p>System and regime developed by mid August ready for implementation post 31st August 2015.</p>
<p>6. Maintain a water cart on standby primarily for addressing ash attack and consider a product such as RST's "Flame-out" product if signs of spontaneous combustion become evident. Use this in accordance with the manufacturer's recommendations to quell any potential coal combustion risk.</p>	<p>Water cart (60,000 litres) already allocated to remain onsite post 31st August 2015.</p> <p>Evaluation of products such as RST's "Flame Out" product for use at Anglesea, however current view is water and other earthmoving is sufficient to manage any fire event given site history and current coal coverage strategy.</p>	<p>Complete</p> <p>To be completed 21st August 2015.</p>
<p>7. On-going monitoring of the site must be maintained throughout the interim shutdown</p>	<p>Daily monitoring will be maintained post the 31st August 2015 mine and power station shutdown date by appropriately trained</p>	<p>System and regime developed by mid</p>

<p>period as to ensure unplanned events are mitigated. It is also advised that the local CFA be made aware of the current coal coverage strategy and are familiar with the location of all infrastructure and equipment to assist if an unplanned event occurs.</p>	<p>resources using standard checklists that check for such things as: signs of spontaneous combustion, erosion of the coal coverage material that exposes coal, cracks and fines build up on the west batter etc.</p> <p>Local and regional CFA visit is being scheduled for early August to review updated PIP and tour mine area to ensure familiarity with post shutdown site status.</p>	<p>August ready for implementation post 31st August 2015.</p>
<p>8. As a minimum, weekly inspections of the mining area must be carried out to ensure the encapsulation has not been compromised and that there are no signs of spontaneous combustion:</p>	<p>Daily monitoring will be maintained post the 31st August 2015 mine and power station shutdown date by appropriately trained resources using standard checklists that check for such things as: signs of spontaneous combustion, erosion of the coal coverage material that exposes coal, cracks and fines build up on the west batter etc.</p>	<p>System and regime developed by mid August ready for implementation post 31st August 2015.</p>
<p>9. The site must be inspected shortly after all significant rain events to inspect the coal encapsulation for water erosion as the waste material at site will be susceptible to coal being exposed due to erosion.</p>	<p>Daily monitoring will be maintained post the 31st August 2015 mine and power station shutdown date by appropriately trained resources using standard checklists that check for such things as: signs of spontaneous combustion, erosion of the coal coverage material that exposes coal, cracks and fines build up on the west batter etc.</p>	<p>System and regime developed by mid August ready for implementation post 31st August 2015.</p>
<p>10. During fire events the fire brigade must be notified and frequent inspections of the pit made to ensure ash attack has not occurred. The event of an unplanned fire event is a low probability however it is recommended that a TARP (Target Action Response Plan) be prepared to ensure appropriate actions are taken in the event of a local bush fire.</p>	<p>Daily monitoring will be maintained post the 31st August 2015 mine and power station shutdown date by appropriately trained resources using standard checklists that check for such things as: signs of spontaneous combustion, erosion of the coal coverage material that exposes coal, cracks and fines build up on the west batter etc. CFA to be notified in the event of a fire/local bush fire event as is the current practice.</p> <p>TARP will be established to include updated Anglesea Emergency Plan, PIP and SWI-Management of Hot Coal and Coal Fires together with help chain and associated resourcing.</p>	<p>System and regime (including TARP) developed by mid August ready for implementation post 31st August 2015.</p>