



Mines Safety

Significant Incident Report No. 143

Use of dozers for tree clearing operations

Incident

In June 2007 the operator of a D11 dozer experienced a near miss when a 20 metre high jarrah tree fell onto the dozer during tree clearing operations at a mine site in the South West of Western Australia.

Significant Incident Report No. 116, released in July 2002, identified the potential for timber limbs to penetrate through safety glass windows on earthmoving scrapers at mine sites in Western Australia, and recommended that guards, mesh or grids be fitted to cab windows to protect the operator.

Causes

- The jarrah tree being felled was hollow, due to fire damage, and parts of the timber had rotted.
- Potentially dangerous trees had not been identified prior to tree clearing commencing.
- A risk assessment of the task had not been conducted.
- The job safety analysis (JSA) undertaken was inadequate.
- No safe work procedures or work instructions had been developed.
- There was inadequate contractor management.
- An inadequate induction was given to the contractor conducting the tree clearing.
- An inappropriately sized dozer was used for the task.
- The dozer had rollover protective and falling object protective structures (ROPS/FOPS). However, it was not fitted out for tree clearing operations, had no tree-pushing arm, tree canopy cover nor windows made of armoured glass or covered by steel mesh.

Recommendations

- Ensure that the area to be cleared of trees is inspected by a competent person to identify and clearly mark dead and dangerous trees, such as those that are hollow, rotted, burnt out, wedged or entangled with other trees and those with damaged root systems.
- Develop a plan to deal with dangerous trees, such as the use of explosives.
- Conduct a full risk assessment of tree clearing with plant such as dozers. Consideration should also be given to the environmental conditions, such as ground wetness, the steepness of the terrain, and wind speed and direction.
- Ensure that the dozer operator is competent to perform tree clearing operations and has a certificate of competency for operating dozers.

- Provide site specific training to operators on tree clearing operations while using dozers.
- Ensure a JSA is carried out in consultation with experienced tree clearing dozer operators and safety and health representatives on site.
- Develop safe work procedures or work instructions for tree clearing, utilising information from the risk assessment conducted, the JSA, the manufacturer's operating instruction manual, current practice in industry, the *Mines Safety and Inspection Act 1994*, Australian Standards, industry guides and codes, and experienced tree clearing operators.
- Ensure emergency procedures are developed for tree clearing operations.
- Ensure means of communication with the operator.
- Ensure that the operator is provided with a thorough induction.
- Ensure that the operator is adequately supervised.
- Ensure contractor safety is managed effectively.
- Ensure the correct size dozer is used.
- Ensure that the dozer is provided with ROPS/FOPS to Australian Standard AS 2294.1 *Supplement 1 – 2003 Earth-moving machinery – Protective structures – Part 1: General – Operator protective structures fitted to plant used in the timber industry (forest operations)*.
- Ensure that the windows in the dozer are made of armoured glass or covered in steel mesh in accordance with Australian Standard AS 2294.1.
- Dependent on the risk assessment, environmental conditions and the size, location and type of trees to be cleared, the dozer should be modified to include a full length canopy cover with large size mesh, a tree pushing arm and an extension on the top of the blade or rake.
- Ensure the tree clearing area is clearly sign posted and access controlled.



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