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AFRS 2: SURFACE MOBILE EQUIPMENT STANDARD

CONTENTS

1 AIM

To eliminate or minimise the risk of fatalities, injuries and incidents arising from the use of surface mobile equipment.

2 APPLICATION

This Standard applies to surface mobile equipment such as rear dump, belly dump and water trucks, graders, dozers, loaders and pressurised road and rail tankers. Where surface mobile equipment falls outside these groups (e.g. draglines, shovels, excavators, forklifts, mobile cranes, buses, backhoes, bobcats and other trucks larger than light vehicles), the application of some requirements of this Standard may not be practicable. In these cases, a risk-based approach shall be used to determine the level of compliance needed for each of the specific requirements.

This Standard applies to all Anglo American Group managed businesses and operations, including contractors and visitors when involved in controlled activities.

3 DEFINITIONS

None

4 REASON FOR INCLUSION

Surface mobile equipment has been involved in a significant proportion of our fatal and high-potential incidents. Identified causes and contributing factors include:

a) overtaking
b) ineffective communications
c) loss of traction
d) poor visibility
e) overturning
f) dropped loads
g) reversing
h) structural failure
i) unplanned movements on slopes and inclines
j) brake failure
k) operator error due to fatigue and substance abuse
l) parking protocols
m) non-adherence to operating procedures.

5 REQUIREMENTS

Application of the Anglo Fatal Risk Standards is mandatory at all Anglo American managed businesses and operations. This mandatory nature is indicated by the use of the word “shall” within the Standards.

In some places, the word “should” is used. This means that the primary intent remains, but specific circumstances may mean that implementation of the requirements is not reasonably practicable.

Any deviation from the specifications set forth in these Standards should be formally approved following an exemption procedure.

The exemption procedure comprises the following steps:

1. Documented and detailed description of the implementation difficulties
2. Documented and detailed risk assessment of the situation under proposed alternative control measures
3. Documented formal approval from the Divisional Head of Safety and the Divisional Chief Executive Officer that the level of risk as a result of the alternative control measures is understood, tolerable for the organisation and in line with the Anglo American Group vision of Zero Harm.

6 PLANT EQUIPMENT REQUIREMENTS

1. Surface mobile equipment shall have the following minimum safety specifications:
   - seat belts for all occupants
   - adequate lighting (e.g. headlights, tail, turn, brake, strobe, flashing lights)
   - identified isolation/lockout point in accordance with the Isolation Standard
   - adequate walkways, railing, steps/grab handle combinations and boarding facilities, including an alternative path of disembarking in case of emergency
   - collision-avoidance technology and/or procedures
   - reversing alarms
   - chock blocks for rubber-tyred surface mobile equipment
   - horn
   - effective windscreen wipers
   - effective guarding on accessible moving parts (consistent with the Equipment Safeguarding Standard)
   - signage on the equipment that allows clear and easy identification from a distance
   - security systems to prevent unauthorised operation.
2. Surface mobile equipment should have the following minimum safety specifications, unless exempted by risk assessment:
   - approved or certified roll-over protection (ROP)
   - fail-to-safe brakes
   - a fire-detection and suppression system capable of being activated from both

ground and cabin levels

- non handheld two-way radio or other forms of communication
- falling object protection (FOP)
- enclosed and tightly-sealed air-conditioned cabins, with consideration of requirements for noise and dust suppression systems and suitable protective glass (e.g. toughened, laminated, shatterproof)
- a method for transporting supplies and personal items to and from the operator cabin (e.g. a back pack or shoulder strap bag) to enable drivers to maintain three points of contact continuously while mounting and disembarking from the equipment
- safety checks, supports, interlocks, etc. to be used when working on the machine.

3. Advances in technology for collision avoidance, safety management systems, fleet management and visibility improvement shall be monitored and appropriate engineering reviews should be conducted to determine whether new technology should be implemented or used.
4. Design, inspection and maintenance requirements should be in place for all roadways including collision protection of hazardous and critical plant and equipment. Risk assessments should be carried out prior to any changes to traffic movements.
5. Systems (such as safety berms) shall be in place along roadways, excavations and dump areas to prevent vehicles from entering dangerous areas as determined by risk assessment.
6. Layout of cabins should take into consideration the ergonomics of seating, operator controls and retrofitted devices.
7. Fleet and control consistency should be considered, where possible, to minimise operator error when changing machines.
8. All pressurised road and rail tankers shall be subjected to a bi-annual inspection in accordance with Anglo American specifications and local health and safety regulations. The manufacturing certificate and inspection records shall be submitted to the access control point prior to entering an Anglo American site.

7 SYSTEM AND PROCEDURAL REQUIREMENTS

9. Seat belts shall be used in all cases by all occupants.
10. A formal risk-based selection and acceptance process shall be in place for all new (to site) and modified surface mobile equipment prior to commencement of work on site.
11. Selection of equipment, and any modification to equipment, shall be subjected to a rigorous change management process.
12. A procedure and checklist system, including a brake functionality test, shall be in place for pre-operation inspection by the operator. Logs shall be maintained on the machine and audited.
13. Procedures shall be in place to ensure vehicles are not overloaded.
14. Procedures shall be in place to ensure surface mobile equipment operates only on sufficiently stable surfaces and on gradients that are within the limits of safe operation.
15. A post-maintenance (scheduled or breakdown) machine test shall be conducted.

16. On-the-job risk assessments shall be conducted as part of the planning process for surface mobile equipment operations, including maintenance and other activities.
17. Adequate road maintenance, dust control and water management plans for roads, mining and haulage operations shall be in place. Consideration shall be given to extreme wet weather and the over-watering of roads.
18. Parking standards shall include requirements for the immobilisation of surface mobile equipment (e.g. chocking or the use of ditches/trenches) and consideration for breakdown maintenance activities.
19. An inspection and maintenance programme shall be in place for surface mobile equipment, including critical equipment and components.
20. A site-based traffic management plan should be in place including, but not limited to:
    - segregation of pedestrians, light vehicles and heavy mobile equipment, where possible
    - clear instructions about where pedestrians must give way to vehicles
    - systems to alert mobile equipment operators of the presence of pedestrians
    - setting of appropriate speed limits and the installation and maintenance of road signage
    - right-of-way rules (including overtaking restrictions)
    - access planning in areas identified as hazardous and having significant associated risks
    - systems to control movement of mobile equipment in areas accessible to pedestrians, into and out of workshops, and for controls on pedestrian and light vehicle movement around mobile equipment
    - designated parking areas for heavy vehicles and light vehicles, including around maintenance areas
    - systems to control approaching, refuelling, parking, boarding, disembarking and isolation by production and maintenance crews and other pedestrians
    - clear instructions that equipment operators or drivers shall be out of the cabin and dismounted to ground level when their direct involvement with maintenance or servicing is not required
    - guidelines for abnormal road conditions (e.g. rain, high winds) giving “go/no go” criteria and stating the responsible person for this decision
    - clear communication procedures for interactions between all vehicles
    - truck loading/unloading procedures to avoid material or objects falling from the vehicle
    - guidelines for wide or abnormal loads, including off-site transport
    - systems to control equipment use within the vicinity of overhead power lines.
21. Risk assessments shall be carried out prior to any changes to traffic movements or road systems.
22. Procedures should be in place to provide details of the maintenance tasks that an operator is allowed to perform and the operations that maintenance personnel can carry out under testing conditions.

23. A tyre management system shall be in place to address issues including fire, heating, explosion, electrical contact, separations, maintenance, tyre changes, etc.
24. Mobile telephones, whether hands-free or not, shall be used by the driver of surface mobile equipment only when it is stationary and in a safe location.
25. A procedure shall be in place for the checking and verification of inspection records of pressurised road and rail tankers prior to such vehicles accessing an Anglo American site.

8 PEOPLE REQUIREMENTS

26. Recruitment and induction processes for surface mobile equipment operators shall encompass past work history, site testing and comprehensive medical examinations that confirm fitness for work.
27. Site and area induction of operators shall be performed prior to starting work in a new area.
28. A permit or certification system shall be in place to ensure drivers are competent to drive on site, including the ability to respond under emergency conditions. In addition, a system shall be in place to verify that operators of Anglo American vehicles have a valid driver's licence prior to operating Anglo American vehicles off-site.
29. A fit-for-work policy shall be in place, incorporating the clearly-defined maximum levels of drugs (including prescribed medication) and alcohol allowed in the system of drivers/operators.
30. A system shall be in place to manage driver-fatigue.
31. Behaviour-based observations shall include the operation of surface mobile equipment. Any need for additional specific re-training shall incorporate the results of these observations.

APPENDIX A: REFERENCED DOCUMENTS

AA GTS 28, AFRS 2: Surface Mobile Equipment Standard

None

APPENDIX B: RECORD OF AMENDMENTS

Issue 0 : New document based on AA AFRS 2 (Dr. J. Wannenburg, May 2011)